

**UC DAVIS**

**VETERINARY MEDICAL CENTER VISION**

**Final Tiered Initial Study and Mitigated Negative Declaration**

The following Initial Study has been prepared in compliance with CEQA.

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**October 2017**

State Clearinghouse No. 20170520251

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## ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
°F	degrees Fahrenheit
2003 LRDP	University of California Davis 2003 Long Range Development Plan
AB	Assembly Bill
AB 32	California Global Warming Solutions Act of 2006
ASIC	All Species Imaging Center
BMP	best management practice
CAA	federal Clean Air Act
CAP	2009-2010 Climate Action Plan
CAP	criteria pollutant
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCAH	Center for Companion Animal Health
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDDB	California National Diversity Database
CNEL	the Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CRC	Clinical Research Center
CRHR	California Register of Historical Resources
CUPA	Certified Unified Program Agency
CWA	Woodland-Davis Clean Water Agency
dB	decibel
dB(A)	A-weighting
DBH	diameter at breast height
DJUSD	Davis Joint Unified School District
DTSC	Department of Toxic Substances Control
DVM	Doctor of Veterinary Medicine
DWR	California Department of Water Resources
DWWSP	Davis-Woodland Water Supply Project
EAPL	Hoffman Equine Athletic Performance Laboratory
EH&S	Office of Environmental Health and Safety
EIF	Equine Isolation Facility
EIR	environmental impact report
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPC	Equine Performance Center
FMMP	Farmland Mapping and Monitoring Program
GHG	greenhouse gases
GWP	Global Warming Potential
HCP	Habitat Conservation Plan
HRA	health risk assessment
ICU	intensive care unit
IPCC	Intergovernmental Panel on Climate Change
LAC	VMTH Large Animal Clinic
L <sub>dn</sub>	the Day-Night Average Sound Level
L <sub>eq</sub>	the equivalent energy noise level
LOS	Level of service
MEI	Maximally Exposed Individual
MMT CO <sub>2e</sub>	million metric tons of CO <sub>2</sub> equivalents

MTP/SCS	2016 Metropolitan Transportation Plan/SCS
MUTCD	California Manual on Uniform Traffic Control Devices
NCCP	Natural Community Conservation Plan
NHTSA	U.S. Department of Transportation, National Highway Traffic Safety Administration
NO <sub>2</sub>	nitrogen dioxide
NOP	Notice of Preparation
NO <sub>x</sub>	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OEHHA	Office of Environmental Health Hazard Assessment
Pb	lead
PM <sub>10</sub>	particulate matter less than 10 microns in diameter
PM <sub>2.5</sub>	particulate matter less than 2.5 microns in diameter
PRC	Public Resource Code
ROG	reactive organic gases
RTP	regional transportation plan
RWQCB	Regional Water Quality Control Board
SAC	VMTH Small Animal Clinic
SACOG	Sacramento Area Council of Governments
SCS	Sustainable Communities Strategy
sf	square feet
SHPO	State Historic Preservation Officer
SO <sub>2</sub>	sulfur dioxide
SVAB	Sacramento Valley Air Basin
SVM	School of Veterinary Medicine
SWMP	Phase II Stormwater Management Plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
TCRs	tribal cultural resources”
the proposed project	Veterinary Medical Center Vision
UC	University of California
USBR	U.S. Bureau of Reclamation
USFWS	U.S. Fish and Wildlife Service
VM2	Veterinary Medicine 2
VMC Vision	Veterinary Medical Center Vision
VMTH	Veterinary Medical Teaching Hospital
WAPA	Western Area Power Association
WDR	Waste Discharge Requirement
WDRs	waste discharge requirements
WWTP	wastewater treatment plant
YCDEH	Yolo County Department of Environmental Health
YSAQMD	Yolo-Solano Air Quality Management District
ZEV	zero-emission vehicle

# 1 PROJECT INFORMATION

<b>Project title:</b>	Veterinary Medical Center Vision
<b>Project location:</b>	University of California, Davis, Yolo County
<b>Lead agency's name and address:</b>	The Regents of the University of California 1111 Franklin Street Oakland, CA 94607
<b>Contact person:</b>	Matt Dulcich, Director of Environmental Planning UC Davis Campus Planning and Environmental Stewardship 530.752.9597
<b>Project sponsor's name and address:</b>	University of California, Davis One Shields Avenue 436 Mrak Hall Davis, CA 95616-8678
<b>Location of administrative record:</b>	See Project Sponsor
<b>Identification of previous documents relied upon for tiering purposes:</b>	<p>This environmental analysis is tiered from the Environmental Impact Report (EIR) for the University of California (UC) Davis 2003 Long Range Development Plan (2003 LRDP) (State Clearinghouse No. 2002102092). The 2003 LRDP is a comprehensive land use plan that guides physical development on campus to accommodate projected enrollment increases and expanded and new program initiatives through the 2015-16 academic year. Section 2.2 provides additional information about the tiering process. The 2003 LRDP and its EIR are available for review at the following locations:</p> <ul style="list-style-type: none"><li>• UC Davis Campus Planning and Environmental Stewardship in 436 Mrak Hall on the UC Davis campus</li><li>• Reserves at Shields Library on the UC Davis campus</li><li>• Yolo County Public Library at 315 East 14th Street in Davis</li><li>• Online at: <a href="http://sustainability.ucdavis.edu/progress/commitment/environmental_review/index.html">http://sustainability.ucdavis.edu/progress/commitment/environmental_review/index.html</a></li></ul>

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## 2 INTRODUCTION

### 2.1 INITIAL STUDY

Pursuant to Section 15063 of the California Environmental Quality Act (CEQA) Guidelines (Title 14, California Code of Regulations, Sections 15000 et seq.), an Initial Study is a preliminary environmental analysis that is used by the lead agency as a basis for determining whether an EIR, a Mitigated Negative Declaration, or a Negative Declaration is required for a project. The CEQA Guidelines require that an Initial Study contain a project description, description of environmental setting, identification of environmental effects by checklist or other similar form, explanation of environmental effects, discussion of mitigation for significant environmental effects, evaluation of the project's consistency with existing, applicable land use controls, and the name of persons who prepared the study.

### 2.2 TIERING PROCESS

The CEQA concept of “tiering” refers to the evaluation of general environmental matters in a broad program level EIR, with subsequent focused environmental documents for individual projects that implement the program. This environmental document incorporates by reference the discussions in the 2003 LRDP EIR (the Program EIR) and concentrates on project specific issues. CEQA and the CEQA Guidelines encourage the use of tiered environmental documents to reduce delays and excessive paperwork in the environmental review process. This is accomplished in tiered documents by eliminating repetitive analyses of issues that were adequately addressed in the Program EIR and by incorporating those analyses by reference.

Section 15168(d) of the State CEQA Guidelines provides for simplifying the preparation of environmental documents on individual parts of the program by incorporating by reference analyses and discussions that apply to the program as a whole. Where an EIR has been prepared or certified for a program or plan, the environmental review for a later activity consistent with the program or plan should be limited to effects that were not analyzed as significant in the prior EIR or that are susceptible to substantial reduction or avoidance (CEQA Guidelines Section 15152[d]).

This Initial Study is tiered from the UC Davis 2003 LRDP EIR in accordance with Sections 15152 and 15168 of the CEQA Guidelines and Public Resources Code Section 21094. The 2003 LRDP EIR is a Program EIR that was prepared pursuant to Section 15168 of the CEQA Guidelines. The 2003 LRDP is a comprehensive land use plan that guides physical development on campus to accommodate projected enrollment increases and expanded and new program initiatives. The 2003 LRDP EIR analyzes full implementation of uses and physical development proposed under the 2003 LRDP, and it identifies measures to mitigate the significant adverse program-level and cumulative impacts associated with that growth. The proposed project is an element of the growth that was anticipated in the 2003 LRDP and evaluated in the 2003 LRDP EIR.

By tiering from the 2003 LRDP EIR, this Initial Study will rely on the 2003 LRDP EIR for the following:

- a discussion of general background and setting information for environmental topic areas;
- overall growth related issues; and
- issues that were evaluated in sufficient detail in the 2003 LRDP EIR for which there is no significant new information or change in circumstances that would require further analysis.

This Tiered Initial Study evaluates the potential environmental impacts of the proposed project with respect to the 2003 LRDP EIR to determine what level of additional environmental review, if any, is appropriate. As shown in the Determination in Chapter 6 of this document, and based on the analysis contained in this Initial Study, it has been determined that the proposed project would result in potentially significant impacts related to air quality emissions, greenhouse gas emissions and climate change, that could be mitigated to less-than-significant levels

through the adoption of project-specific mitigation measures. Therefore, the campus proposes to adopt a Mitigated Negative Declaration for the VMC Vision (see Appendix A).

This Initial Study concludes that many potentially significant project impacts are addressed by the measures that have been adopted as part of the approval of the 2003 LRDP. Therefore, those 2003 LRDP EIR mitigation measures that are related to, and may reduce the impacts of, this project are identified in this Initial Study. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they will not be readopted, but rather are incorporated as part of the project and the impact analysis assumes implementation for purposes of determining the significance of any project impact. The benefits of these mitigation measures will be achieved independently of considering them as specific mitigation measures of this project. Nothing in this Initial Study in any way alters the obligations of the campus to implement the 2003 LRDP EIR mitigation measures.

## 2.3 PUBLIC AND AGENCY REVIEW

The Tiered Initial Study and proposed Mitigated Negative Declaration (in Appendix A) was circulated for public and agency review from May 19, 2017 to June 19, 2017. Copies of this document, the 2003 LRDP, and the 2003 LRDP EIR were available for review at the following locations:

- UC Davis Campus Planning and Environmental Stewardship in 436 Mrak Hall on the UC Davis campus
- Reserves at Shields Library on the UC Davis campus
- Yolo County Public Library at 315 East 14th Street in Davis
- Online at: [http://sustainability.ucdavis.edu/progress/commitment/environmental\\_review/index.html](http://sustainability.ucdavis.edu/progress/commitment/environmental_review/index.html)

The Tiered Initial Study and proposed Mitigated Negative Declaration were reviewed by various state, regional, and local agencies, and by a number of interested individuals and organizations, on- and off-campus. During the comment period, two comments were received from the State Clearinghouse, documenting compliance with CEQA public review requirements, and from the Central Valley Regional Water Quality Control Board, which provided guidance on the agency's jurisdiction and regulations related to surface and ground waters of the state and the permitting requirements for projects. The comments did not raise any new environmental impact issues that had not been identified, analyzed, and mitigated to a less-than-significant level, as discussed in the Tiered Initial Study. No changes to the Tiered Initial Study or proposed Mitigated Negative Declaration were required to acknowledge these comments. The comment letters and responses to the comments are provided in the Appendix D.

## 2.4 PROJECT APPROVALS

As a public agency principally responsible for approving or carrying out the proposed project, the Regents of the University of California (or its delegate) is the Lead Agency under CEQA and is responsible for reviewing and certifying the adequacy of the environmental review and approving the proposed project. The Chancellor of the UC Davis campus is considering approval of project components in winter of 2017. Because the project includes a phased sequence of multiple projects, future project approvals are expected to subsequently utilize the Mitigated Negative Declaration through the year 2025.

## 2.5 ORGANIZATION OF THE INITIAL STUDY

This Tiered Initial Study is organized into the following sections:

**Chapter 1 – Project Information:** provides summary background information about the proposed project, including project location, lead agency, and contact information.

**Chapter 2 – Introduction:** summarizes the Initial Study's relationship to the 2003 LRDP EIR, the scope of the document, the project's review and approval processes, and the document's organization.

**Chapter 3 – Project Description:** includes a description of the proposed project, including the need for the project, the project’s objectives, and the elements included in the project.

**Chapter 4 – Consistency with the 2003 LRDP and 2003 LRDP EIR:** describes the consistency of the proposed project with the 2003 LRDP and 2003 LRDP EIR.

**Chapter 5 – Environmental Factors Potentially Affected:** contains the Environmental Checklist form for each resource area. The checklist is used to assist in evaluating the potential environmental impacts of the proposed project with respect to the 2003 LRDP EIR. This section presents a background summary for each resource area, the standards of significance, relevant project impacts and mitigation measures from the 2003 LRDP EIR, and substantiation of all checklist conclusions.

**Chapter 6 – Determination:** indicates whether impacts associated with the proposed project are significant, and what, if any, additional environmental documentation is required.

**Chapter 7 – Evaluation of Environmental Impacts:** contains the Environmental Checklist form for each resource area. The checklist is used to assist in evaluating the potential environmental impacts of the proposed project with respect to the 2003 LRDP EIR. This section also presents a background summary for each resource area, the standards of significance, relevant impacts and mitigation measures from the 2003 LRDP EIR, and an explanation of all checklist answers.

**Chapter 8 – Fish and Wildlife Determination:** indicates if the project has a potential to impact wildlife or habitat and if the associated Fish and Wildlife filing fee would be paid.

**Chapter 9 – References:** lists references used in the preparation of this document.

**Chapter 10 – Agencies and Persons Consulted:** provides the names of individuals contacted in preparation of this document.

**Chapter 11 – Report Preparers:** lists the names of individuals involved in the preparation of this document.

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## 3 PROJECT DESCRIPTION

### 3.1 REGIONAL LOCATION

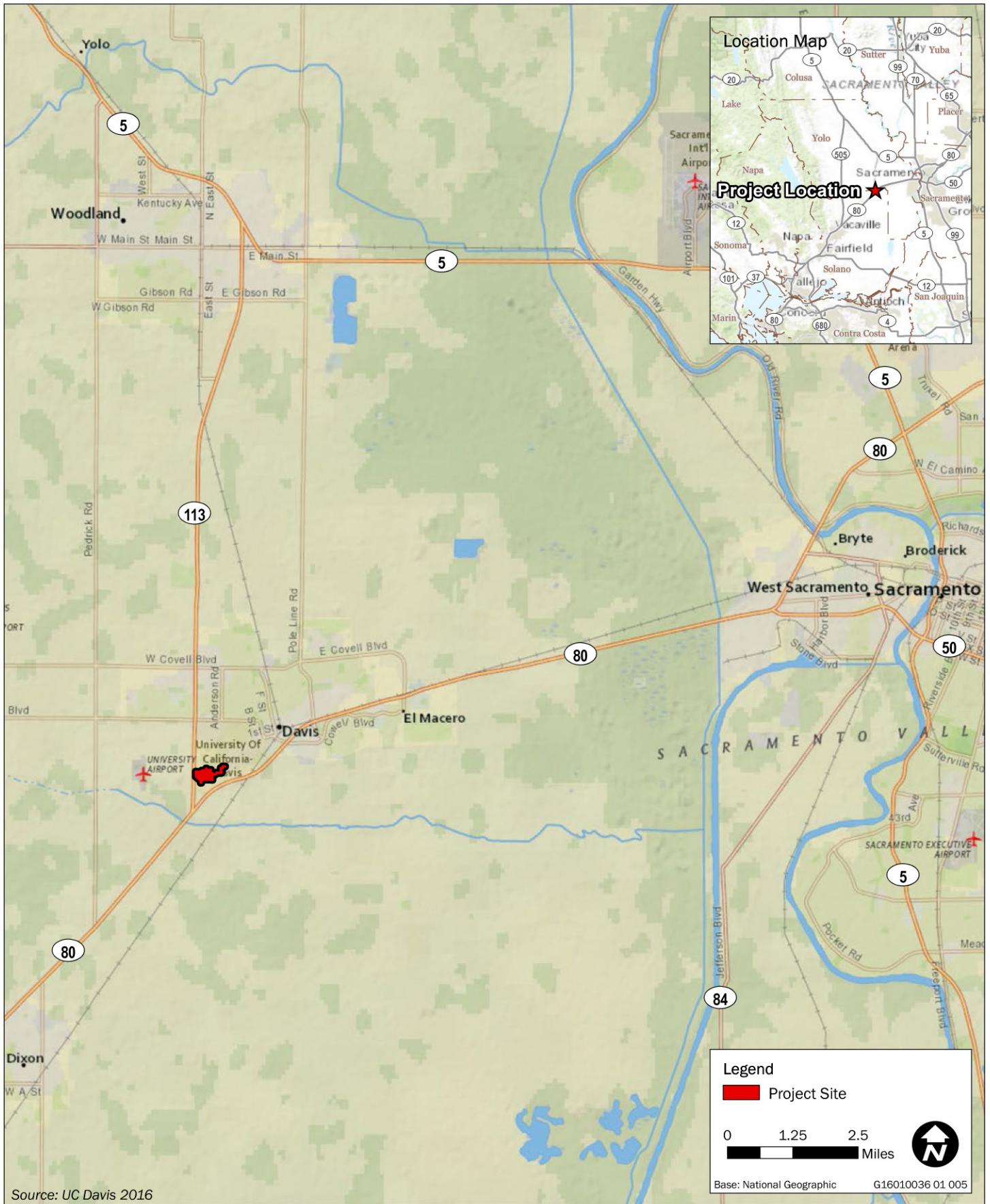
The approximately 5,300-acre UC Davis campus is located in Yolo and Solano counties, approximately 72 miles northeast of San Francisco, 15 miles west of the City of Sacramento, and adjacent to the City of Davis (see Figure 3-1). The campus is composed of four general campus units: the central campus, the south campus, the west campus, and Russell Ranch (see Figure 3-2). Most laboratory, office, and classroom-based academic and extracurricular activities occur within the central campus. The central campus is bounded approximately by Russell Boulevard to the north, SR 113 to the west, I-80 and the Union Pacific Railroad tracks to the south, and A Street to the east. The south campus is located south of I-80 and north of the South Fork of Putah Creek. The west campus is bounded by SR 113 to the east, Putah Creek to the south, Russell Boulevard to the north, and extends approximately one-half mile west of County Road 98. The south and west campus units are contiguous with the central campus, and are used primarily for field teaching and research. The approximately 1,600-acre Russell Ranch portion of the campus lies to the west, separated from the west campus by approximately one and one-half miles of privately owned agricultural land. Russell Ranch was purchased in 1990 for campus uses including large-scale agricultural and environmental research, study of sustainable agricultural practices, and habitat mitigation. Russell Ranch is bordered roughly by County Road 96 on the east, Putah Creek on the south, Covell Boulevard on the north, and Russell Boulevard and privately owned agricultural land on the west and northwest.

### 3.2 PROJECT OVERVIEW

Since its inception in 1948, the School of Veterinary Medicine (SVM) has shaped the field of veterinary medicine, setting the bar for education and discovering clinical and scientific breakthroughs to benefit humans and animals. The SVM provides education to approximately 700 students enrolled primarily in the four-year Doctor of Veterinary Medicine (DVM) program as well as the Master of Preventative Veterinary Medicine, a dual DVM/PhD for Veterinary Scientists, and graduate degree programs in a variety of academic disciplines including Epidemiology, Immunology, and Integrative Pathobiology. The SVM is home to the largest veterinary residency program in the nation, a program that trains post-graduate veterinarians in 34 clinical specialties.

As the world's leader of educating veterinary scientists and practitioners, the SVM must provide state of the art facilities and an unsurpassed clinical training environment for veterinary medical students, residents, interns, and graduate students. The main facility of the William R. Pritchard Veterinary Medical Teaching Hospital (VMTH) first opened in 1970 and was designed to accommodate 3,000 patients per year. With a current annual caseload of approximately 50,000 patients, the existing VMTH is inadequate to support current and future operations. A significant investment in clinical facilities is necessary in order to maintain the quality of education and patient care available through the SVM, support cutting edge translational veterinary medical and interdisciplinary clinical research at the patient care interface, and serve as a model of enduring sustainability for veterinary medical facilities.

UC Davis proposes to implement the Veterinary Medical Center Vision ("VMC Vision," the proposed project), which encompasses a series of component projects to renovate and expand the VMTH complex into a re-envisioned Veterinary Medical Center intended to provide the highest quality of care, the best environment for learning, and an exemplary setting for the advancement of veterinary science. The VMC Vision projects would be implemented within the existing VMTH complex to renovate existing structures, demolish some structures, develop new facilities, make site improvements, and upgrade the utility infrastructure.



**Figure 3-1**

**Regional Location**



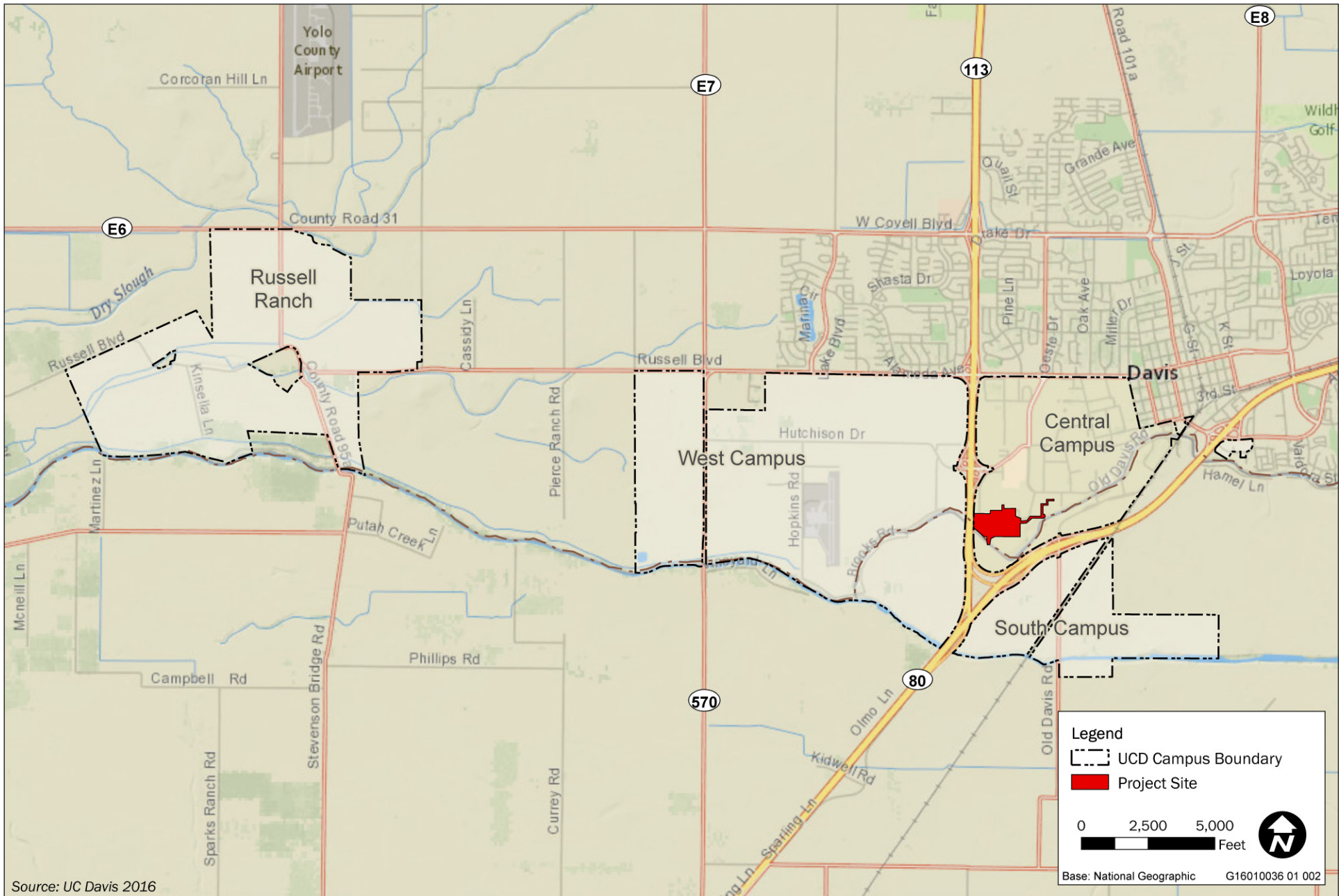


Figure 3-2

Project Location



### 3.3 PROJECT SITE

The VMTH is located within the Health Sciences District on the UC Davis central campus area. The district is located on the southwest portion of the campus and is bounded by State Route (SR) 113 to the west and Interstate 80 to the south (Figure 3-2). This location allows for easy access for both clients and animal patients, and provides sufficient space for care and hospitalization of the breadth of small animal and large animal species. The district is currently home to the SVM Dean's Office, academic departments and teaching facilities, and for many of the key research areas for the SVM and other divisions of the life sciences.

As shown in Figure 3-3, the VMC Vision project site encompasses approximately 40 acres and includes several existing buildings. In addition to the buildings described below, the project site includes parking lots, outdoor animal pens, an equestrian arena, urban landscaping, ruderal grasslands, and valley-foothill riparian woodland. A brief description of each existing building within the project site boundary, including its size and current use, is provided below.

#### 3.3.1 Pritchard VMTH

The Pritchard VMTH building was constructed in 1969. The two-story building with a partial basement includes approximately 85,000 square feet (sf) of area. The VMTH building includes administrative offices, small group rounds teaching rooms, client waiting areas, animal treatment and examination areas, wards, diagnostic services, and nursing services stations for the VMTH Small Animal Clinic (SAC), VMTH Large Animal Clinic (LAC), and other departments including radiology and laboratory services.

#### 3.3.2 Hay Barn

The Hay Barn, also known as the VMTH Feed Building and as Building F, was constructed in 1969 and includes 14,000 sf of area for the storage of hay, straw, shavings, and associated equipment. The Hay Barn has a corrugated metal exterior and is open on one side to allow for the easy movement of materials.

#### 3.3.3 B Barn

B Barn, also known as the VMTH Equine Ward, is a single-story structure that was constructed in 1969. B Barn includes nearly 20,000 sf that is used primarily for examination, treatment and hospitalization of horses. Barn B is home to the adult equine intensive care unit (ICU), as well as two anesthesia induction and recovery areas and a limited amount of storage space.

#### 3.3.4 C Barn

C Barn, also known as the Livestock Barn (VMTH Surgical), is a single-story structure constructed in 1969. C Barn includes approximately 15,000 sf of area and is used to house livestock species (cattle, sheep, goats, pigs) and horses. The Livestock Barn includes animal holding and hospitalization stalls, treatment and examination areas, surgery rooms, administrative offices, a staff on-call room, and locker rooms.

#### 3.3.5 D Barn

D Barn, also known as VMTH Holding, is a semi-open single-story structure constructed in 1969. D Barn is approximately 6,000 sf and is used for animal housing, laboratory, and treatment space used primarily by the livestock and equine reproduction services. Much of the structure includes covered outdoor pens adjacent to the animal quarters.



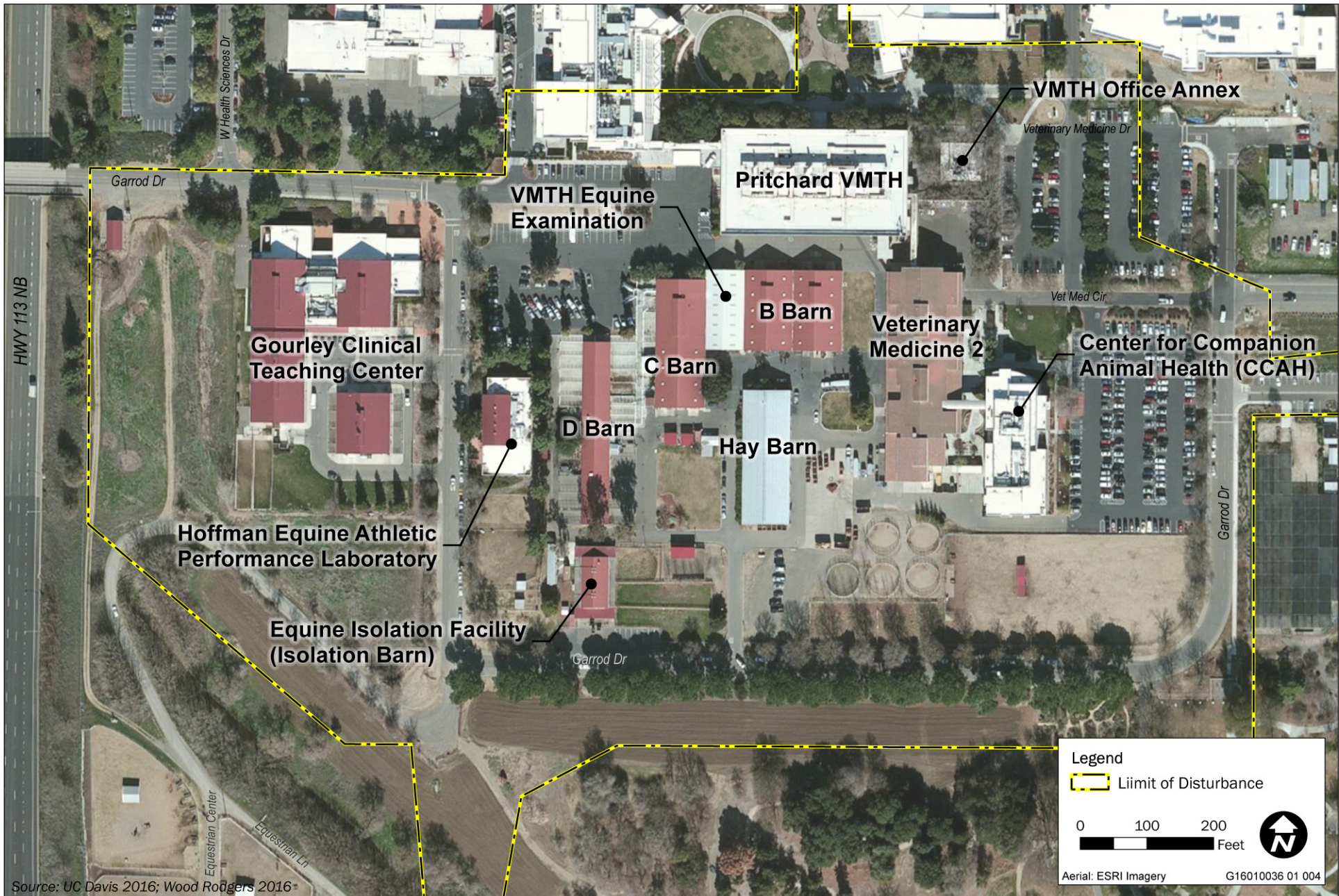


Figure 3-3

Existing Conditions



### **3.3.6 Equine Isolation Facility (Isolation Barn)**

The Equine Isolation Facility (Isolation Barn) was constructed in 1969 and includes approximately 2,200 sf of animal quarters used exclusively by the LAC. The Isolation Barn is reserved for animals presenting with signs of infectious contagious disease. Access is restricted to prevent the spread of pathogens. The overall isolation area covers approximately 14,000 sf.

### **3.3.7 Veterinary Medicine 2**

The Veterinary Medicine 2 (VM2) building was constructed in 1979. This two-story building includes approximately 50,000 sf of area for laboratories, treatment, examination, and surgery rooms and areas, academic offices, rounds teaching rooms, and animal quarters for use by the VMTH SAC, VMTH LAC, VMTH Imaging, and the Center for Companion Animal Health (CCAH). VM2 also includes a large animal ICU that is used principally for equine neonatal cases during the foaling season.

### **3.3.8 VMTH Office Annex**

The VMTH Office Annex was constructed in 1991 and provides approximately 3,599 sf of additional administrative support space and resident offices for the teaching hospital and its clinics. This single-story structure is located just east of the Pritchard VMTH and north of VM2.

### **3.3.9 VMTH Equine Examination**

The VMTH Equine Examination building is a single-story structure covering approximately 7,000 sf. This building was constructed in 1995, houses a small arena for examining lame horses, and is located between B Barn and C Barn.

### **3.3.10 Gourley Clinical Teaching Center**

The Gourley Clinical Teaching Center was constructed in 2002. This 43,553 sf building contains animal exam, treatment, and surgery rooms as well as service laboratory support for the teaching program. It contains a suite with 28 surgery tables as well as anesthesia and recovery rooms. The building also holds classrooms and animal holding areas, including 131 kennels.

### **3.3.11 Center for Companion Animal Health**

The Center for Companion Animal Health (CCAH) building is a two-story structure constructed in 2004. The CCAH facility includes approximately 36,000 sf of area and houses the CCAH's administrative offices, as well as state-of-the-art research laboratories, faculty offices, and conference space on the second floor. The first floor is dedicated to clinical services, including the Community Practice, Medical Oncology and Radiation Oncology Services. The veterinary hospital's oncology services have been enhanced with the addition of a linear accelerator housed at the CCAH, which can treat both small and large animals. The facility also includes client waiting areas, examination rooms, chemotherapy treatment rooms, an outpatient pharmacy, and rounds teaching rooms.

### **3.3.12 Hoffman Equine Athletic Performance Laboratory**

The Hoffman Equine Athletic Performance Laboratory (EAPL) is a single-story structure constructed in 2005. The EAPL is an approximately 10,000 sf state-of-the-art, climate-controlled facility which includes two high-speed treadmills, a video motion analysis system, and the laboratory equipment and support necessary to perform in-depth investigations of respiratory, cardiac, musculoskeletal, and metabolic causes of poor performance and exercise intolerance in horses and other species.

## 3.4 PROJECT NEED

The acute need for near-term investment in the VMC Vision is driven by the need to catch up with the current growth in the SVM (enrollment and research program) and in caseload at the VMTH; functional shortfalls stemming from the current size and configuration of the VMTH; and opportunities to enhance the interdisciplinary team approach to patient care and clinical translational research that could be realized with modernized and expanded facilities. As stated above, VMTH was designed to accommodate 3,000 patients per year. However, patient caseload has increased over the years from approximately 30,000 in 2002-2003, approximately 35,000 in 2009-2010, to approximately 50,000 in 2016-2017 (Curby, pers. Comm., 2017).

A master planning process conducted 20 years ago identified the need for new clinical facilities, but funding constraints and other facilities priorities (teaching and research) have precluded the development of much needed new clinical space. Acute clinical facilities needs coupled with unprecedented philanthropic support of the SVM's mission are now driving the SVM to actively pursue the VMC Vision. Without a significant investment in clinical facilities, the SVM will be challenged to recruit and retain top tier faculty and will be threatened by competition from other veterinary schools and specialty hospitals (Figure 3-4).

### 3.4.1 Clinical Facilities Needs

The existing space at the VMTH is inadequate for current patient caseload, student, and resident counts; does not permit efficient veterinary practices; and puts research and clinical needs in direct competition.

*Inadequate space to serve the size of the current SVM.* Though the SVM has benefitted from some growth in facilities over the last fifteen years, this growth has been heavily concentrated in the diagnostic, teaching, and research areas. The VMTH continues to operate within a main facility that opened in 1970 and was designed to accommodate an annual caseload that is a fraction of current patient volume. Additionally, patient demographics have shifted heavily to companion animals, thereby further exacerbating the already serious space shortages for provision of patient care and clinical instruction.

The VMTH is home to the nation's largest veterinary post-graduate clinical specialty (resident) training program. Faculty and highly trained staff treat patients as they teach essential clinical skills to veterinary students and specialty-level skills to residents. The existing VMTH complex lacks adequate exam rooms, holding areas, small group rounds teaching space and other appropriate spaces to support the current student and resident enrollment and patient caseload. This impacts quality of patient care and has resulted in many suboptimal situations, including overcrowded waiting rooms, inability to segregate dogs from cats and other species, and the need to collect medical histories, perform examinations and conduct teaching rounds outdoors or in lobbies and hallways.

*Existing layout does not permit efficient veterinary practices.* The existing VMTH layout does not support an integrated and efficient approach to patient care or the clinical trials that underpin new approaches to successful treatment of diseases that are resistant to existing treatments. Currently, clinicians must take unstable patients from the ICU - where they are receiving intensive care - to the radiology, ultrasound or advanced diagnostic imaging areas that are located several hundred feet away. Moving unstable or anesthetized patients, together with the required anesthetic and monitoring equipment, over long distances between buildings for diagnostic procedures or surgery, poses an undeniable risk to patients. Space deficiencies also severely limit student access to participate first-hand in diagnostic and treatment procedures, and compromises safety for personnel and patients.

*Clinical and research space needs in direct competition.* Advancement of veterinary medicine at the interface between research and clinical applications through clinical trials aligns with the mission and vision of the SVM; however, growth in this area is currently restricted because much of the research space directly adjacent to the hospital has been converted over the years to house hospital functions and accommodate the growth in caseload and student class size. SVM faculty are poised to expand activities in many critically important areas of clinical medicine, but need adequate facilities to advance veterinary medicine through novel clinical trials.

# Why do we need the VMC?

## Accommodate Growth (to date)

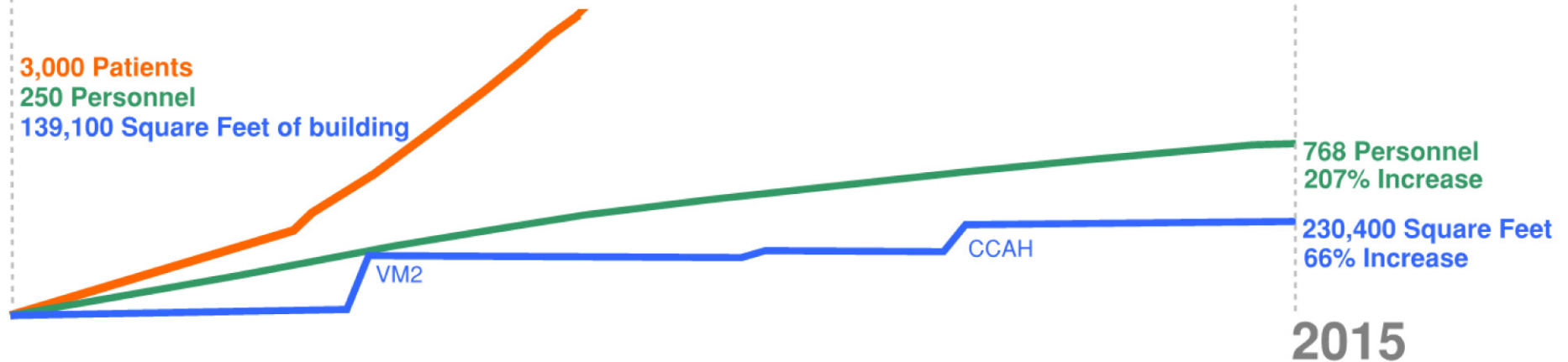
Space is inadequate for current caseload, student & residents counts.

Quality of care impacts:

- Shared examination tables
- Students' education and research results
- Patients held for treatments are leashed to sinks and tables because of insufficient space for holding cages.
- Medical histories are being taken outdoors and in lobbies because of insufficient exam rooms.

1969

3,000 Patients  
250 Personnel  
139,100 Square Feet of building



2015

Source: UC Davis 2016

X16010036 01 003

Figure 3-4

Growth Chart and Project Need



### 3.5 PROJECT OBJECTIVES

The VMC Vision is intended to address current space shortages and inefficient layouts that currently compromise best practices in integrated patient care, student and resident learning, and cutting edge translational medicine. The VMC Vision's goal is to allow the SVM to retain its status among the top veterinary schools in the world by providing the facilities necessary to support further development of the vision to lead veterinary medicine and address societal needs. The objectives of the VMC Vision are to:

- utilize existing VMTH facilities to the extent feasible; renovate and construct new facilities as needed within the existing VMTH property;
- provide high quality patient care for a broad range of companion animal, equine and livestock species;
- optimize the overall client experience, including way finding;
- provide state of the art clinical training environment for veterinary medical students, residents, interns and graduate students;
- optimize the work environment for staff, faculty, residents, interns and DVM students;
- provide continual advancement of cutting edge translational veterinary medicine through integration of innovative, multidisciplinary clinical research at the patient care interface;
- provide a model of enduring sustainability for veterinary medical facilities;
- maximize the link between basic science and clinical trials for drug or procedure development;
- provide space for cutting-edge technology in specialty areas of veterinary medicine, including new equipment to support advanced imaging, minimally invasive surgery, and interventional radiology;
- provide fully-equipped gait labs to enhance transitional orthopedics and sports medicine programs, particularly for horses and dogs;
- increase biosecurity by reducing opportunities for cross-contamination;
- alleviate traffic congestion in receiving areas;
- increase efficiency of patient receiving areas;
- centralize specialized imaging to support to small and large animal clinics;
- provide central space for integrated clinical research that facilitates movement among service providers; and
- maintain teaching, clinical, and research activities throughout construction.

Maintaining the current standard of patient care and quality of instruction during the implementation of the VMC Vision is a guiding principle. The VMC Vision has been developed such that the improvements delivered via each project would allow the VMTH to continue to operate both during and post implementation, and to synchronize the implementation of projects with the availability of funds. While component projects of the VMC Vision are planned to be built in a particular sequence for operational reasons, the sequencing of each project provides both individual and incremental - yet concrete - benefits to the function of the Veterinary Medical Center.

### 3.6 PROJECT ELEMENTS

The VMC Vision encompasses fourteen (14) projects that include:

- carefully planned and sequenced new facilities and utility improvements with centralized spaces dedicated to functions such as imaging that would be shared by both the Small and Large Animal Clinics; and
- extensive renovation of spaces vacated when new facilities open to serve new and expanded uses, such as clinical trials, molecular diagnostics and integrative medicine.

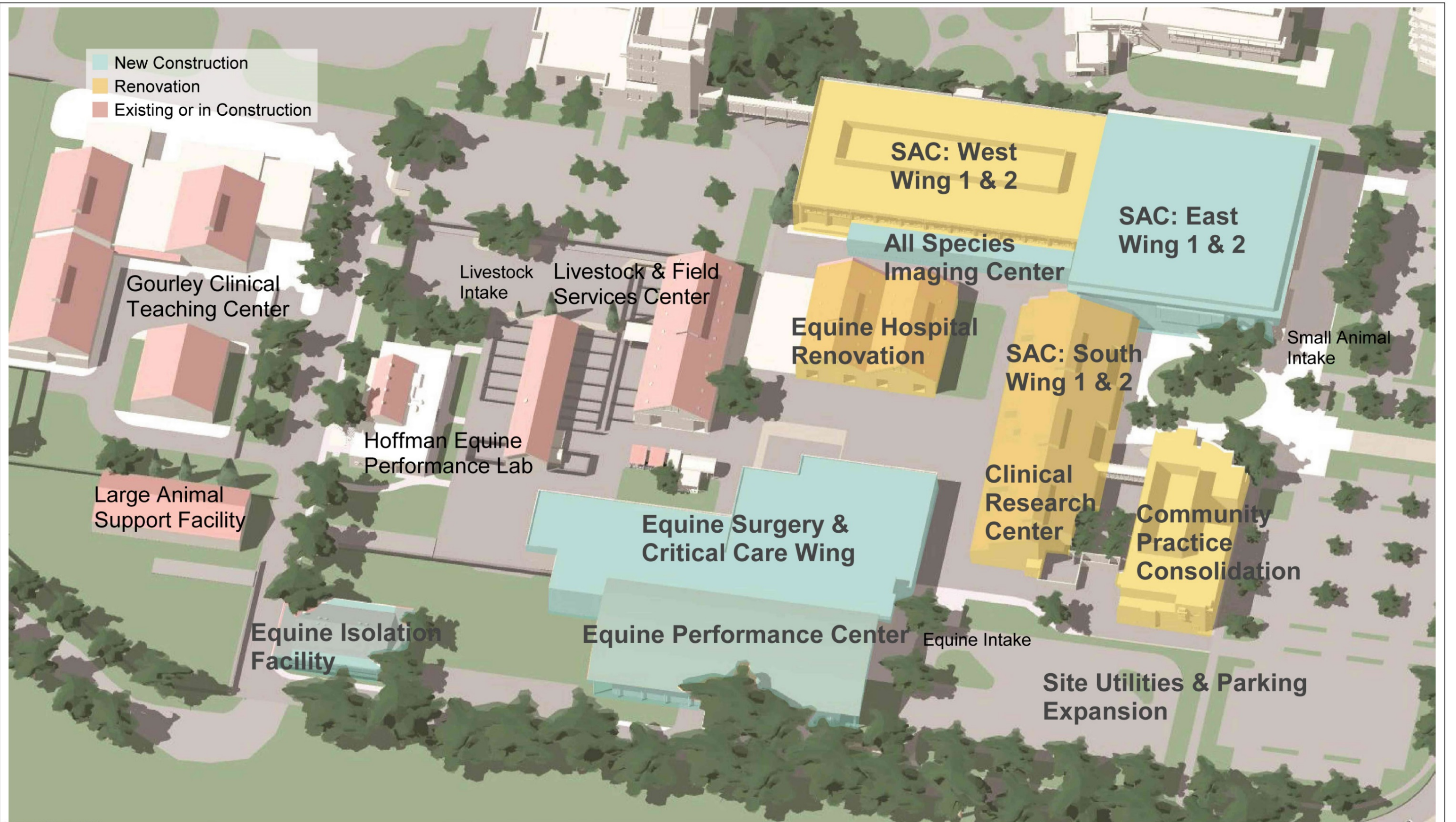
Table 3-1 lists the fourteen proposed VMC Vision projects, in the order that they are proposed to be implemented. Figure 3-5 shows the proposed VMC site plan, and is keyed to coordinate with the projects listed in Table 3-1.

**Table 3-1: VMC Vision Projects**

Element	Name	Description	Start*	End*
1	Site Utilities and Parking Expansion	Off-site connections to the campus central plant and district utilities, and reconfiguration of existing parking lots and construction of new parking lots.	Q1 2018	Q2 2019
2	All Species Imaging Center	New construction and renovation of VMTH space. Includes relocation of utility runs to buildings B, C, and D.	Q4 2018	Q3 2018
3	Equine Performance Center	New construction and site improvements.	Q3 2020	Q3 2021
4	Small Animal Clinic (SAC) West Wing 1	Renovation of existing space in VMTH.	Q4 2021	Q3 2022
5	Small Animal Clinic (SAC) South Wing 1	Renovation of existing space in VM2.	Q4 2021	Q3 2022
6	Equine Surgery and Critical Care Wing	New construction and site improvements. This facility would be linked to the new Equine Performance Center via an open breezeway to create a unified Equine Health Center (EHC).	Q3 2023	Q1 2025
7	Equine Hospital Renovation	Renovation of existing space in building B.	Q1 2025	Q3 2025
8	Clinical Research Center	Renovation of existing space in VM2.	Q1 2025	Q4 2025
9	Small Animal Clinic (SAC) East Wing 1	New construction and site improvements.	Q3 2019	Q4 2021
10	Small Animal Clinic (SAC) West Wing 2	Renovation of existing space in VMTH.	Q1 2022	Q1 2023
11	Small Animal Clinic (SAC) East Wing 2	Build out of shell space created as part of EW1.	Q4 2022	Q4 2023
12	Small Animal Clinic (SAC) South Wing 2	Renovation of existing space in VM2.	Q1 2024	Q4 2024
13	Community Practice Consolidation	Renovation of existing space in CCAH.	Q4 2024	Q4 2025
14	Equine Isolation Facility	New construction and site improvements. Includes demolition of the existing 14,000 sf isolation facility.	Q2 2024	Q3 2025

\* Estimated construction start and end dates by calendar quarter and year.

UC Davis is currently implementing three near-term renovations of existing VMTH facilities to create some capacity to serve immediate needs. Interior renovations have been approved to create exam space in the VMTH and VM2 buildings. A new facility is in the approval process, the Large Animal Support Facility, which will relocate support services to relieve congestion in the main clinical area (Figure 3-5). In addition, the existing C and D Barns will be remodeled and renamed the Livestock and Field Services Center; this renovation will differentiate treatment areas for cattle and small ruminants (sheep, goats), and pigs to correct existing safety issues (Figure 3-5). These improvements to the VMTH facilities will be completed prior to the VMC Vision projects listed in Table 3-1 and are considered as part of the cumulative conditions considered in the cumulative analysis in Section 4.5 of this document.



Source: UC Davis 2016

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Figure 3-5

Proposed VMC Site Plan







### 3.6.1 Building Demolition

The VMC would involve demolition of the existing VMTH Office Annex, Hay Barn, Isolation Barn, and Equine Examination buildings.

### 3.6.2 Renovation

Renovations would be made to the VMTH and VM2 buildings. Project renovations would convert the VMTH to the SAC West Wing. The SAC West Wing would ultimately include area for clinical trials, a blood bank, a blood donor colony, student services, imaging, surgery services, medicine, wards, neurology, and transfusion medicine. Renovations to the VMTH for SAC West Wing 1 would cover 44,800 sf, and renovations for SAC West Wing 2 would cover 23,000 sf.

Renovations to VM2 would transform the building to become the SAC South Wing and the Clinical Research Center (CRC). The SAC South Wing would include areas for SAC's integrative medicine, hospital administration, and companion avian and exotic pet services. The CRC would provide space for clinic-related research, including experimental surgery and a biomedical engineering shop. Renovations to VM2 for SAC South Wing 1 would cover 8,800 sf, and renovations for SAC South Wing 2 would cover 19,250 sf. Renovations to VM2 for the CRC would cover 6,200 sf.

The existing CCAH would be renovated to become the Community Practice Consolidation. The renovation would cover 14,300 sf and would allow for expansion of the Community Practice program and the inclusion of the Community Surgery service functions currently located in the Gourley Clinical Teaching Center. The Community Practice Service, complemented by the Community Surgery Service, keeps pets in the best health possible through a multitude of offerings such as wellness exams, vaccinations, spay and neuter surgeries, and treatment of minor ailments.

The existing B Barn would be renovated to function as the Equine Hospitalization Barn for all equine services. Space in this renovated building would include equine theriogenology (reproduction), improved hospital stall configurations, and support space. Renovations would cover 14,000 sf.

### 3.6.3 New Construction

In addition to the interior renovations that would take place in the VMTH and VM2 buildings, a new SAC East Wing would be constructed east of the VMTH and north of VM2. The new SAC East Wing 1 would include 155,500 sf of area to be used for clinic space. SAC East Wing 2 would add 43,500 sf of space for small animal specialty services such as cardiology, behavior, dermatology, ophthalmology, and dentistry. Like the existing VMTH and VM2 buildings, the new SAC East Wing would include three stories above ground and a basement.

The proposed new All Species Imaging Center (ASIC) would provide 8,500 sf of new area and 3,000 sf of renovations to the VMTH. The ASIC would be capable of housing the latest imaging modalities to support both the SAC and LAC. The new ASIC would be located adjacent to the south face of the VMTH and a new loading dock would be located on the west side of the VMTH, making it convenient for small animals and large animals.

The proposed new Equine Performance Center (EPC) would be located along the southern border of the project site, directly north of Garrod Drive. The EPC would be a 46,500 sf equine performance-focused facility for diagnosing and treating lameness and other gait problems in otherwise healthy horses.

Just north of the EPC and connected by an open breezeway, the proposed Equine Surgery and Critical Care Wing would provide 36,000 sf of area for equine surgery, medicine, intensive care, and anesthesia.

The proposed new Equine Isolation Facility (EIF) would create approximately 11,700 sf of modern isolation space. The new EIF would allow the VMC to adhere to strict biosecurity protocols.

### 3.6.4 Utilities, Infrastructure, and Site Work

The VMC Vision would also include utilities, infrastructure, and site work. Figure 3-6 shows the proposed utility plan. Utility lines that would be installed to support the new and renovated facilities include the following:

- **Domestic Water:** The campus' domestic/fire water system has historically obtained water from six deep aquifer wells to serve the needs of campus. However, UC Davis is a project partner in the regional Davis-Woodland Water Supply Project (DWWSP), operated by the Woodland-Davis Clean Water Agency (CWA). Initial surface water deliveries from the DWWSP began in June 2016; UC Davis anticipates a sharp drop in groundwater use due to these surface water deliveries. The proposed project would connect to the campus domestic water system through the installation of approximately 4,282 linear feet of new 12-inch, 10-inch, 8-inch, 6-inch, and 2-inch pipes.
- **Utility Water:** Shallow/intermediate depth sand and gravel aquifers have historically supplied the campus utility water system, main campus agricultural water needs, cooling towers, and campus and tenant farmer irrigation needs at Russell Ranch. However, as described above, UC Davis is now receiving surface water supplies, which will result in a drop in groundwater use. The proposed project would add 867 linear feet of 6-inch and 4-inch utility water pipes within the VMC Vision area.
- **Chilled Water:** A new chilled water line would be installed from the Chiller Plant located approximately one-quarter mile northeast of the VMTH. Approximately 13,690 linear feet of new chilled water lines would be installed beneath previously-disturbed land from the Chiller Plant to the project site.
- **Building Fire Water:** Campus buildings include water lines that carry water to the buildings in the event of a fire. The proposed project would include the addition of 46 linear feet of building fire water lines.
- **Sanitary Sewer:** UC Davis operates a campus wastewater conveyance and treatment system that is independent from regional facilities. The campus wastewater treatment plant (WWTP) is located in the south campus, and treated effluent from the plant discharges to Putah Creek. The existing buildings are currently served by sanitary sewer pipes, and the proposed project would add 2,436 linear feet of sanitary sewer pipes for the new structures.
- **Storm Drainage:** The central campus drainage system involves a system of underground pipes that drain to the Arboretum Waterway (which provides the only major detention storage in the system), from which stormwater is pumped to the South Fork of Putah Creek during large storm events. Approximately 2,345 linear feet of new storm drain pipes would be added to accommodate the new buildings, with new pipes ranging from 8-inches to 36-inches in diameter. In addition, bio-swales and small stormwater infiltration basins would be installed adjacent parking areas and in landscape areas of the project site to infiltrate and offset project-related increases in stormwater runoff.
- **Electricity:** The main campus currently receives electricity from the Western Area Power Administration (WAPA) through PG&E transmission lines at the campus substation located south of I-80. The proposed project would utilize electricity from the campus distribution system and would install 4,425 linear feet of new underground electric utility lines that would connect with the existing lines.
- **Steam:** The proposed project would utilize the existing steam pipe that provides steam service to the VMTH, but would add 3,749 linear feet of steam lines, primarily within the existing alignment of Garrod Drive.
- **Natural Gas:** Some buildings within the VMC would utilize natural gas. The proposed project would add 1,841 linear feet of natural gas lines.
- **Telecommunications:** The majority of all telephone, data, video, and wireless infrastructure and facilities on the campus are owned by the campus and operated by the UC Davis Communications Resources Department. The proposed project would add approximately 800 linear feet of telecom utility lines to serve the new buildings.

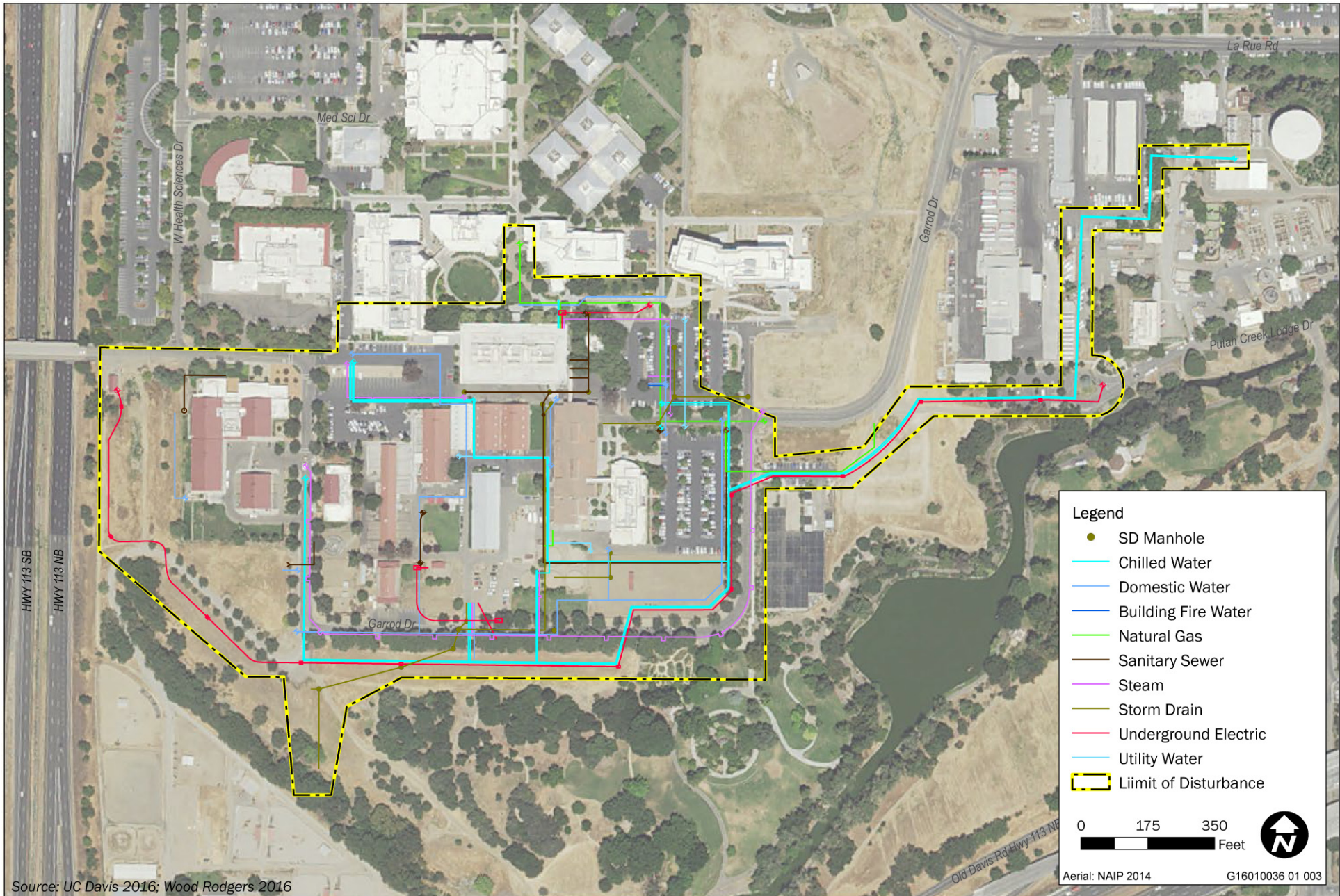


Figure 3-6

Proposed VMC Utility Connections



### 3.6.5 Parking and Circulation

The construction of new structures within the project site would require the relocation of existing parking. The VMC would maintain the existing parking capacity; there would be no net increase or decrease in the number of parking spaces. The East Parking Lot and West Parking Lots would be reconfigured, and a new South Parking Lot would be added.

The new site plan would allow for greater biosecurity by separating the patient intake areas for livestock, horses, and small animals (Figure 3-6). The intake area for livestock would be at the Livestock and Field Services Center in the northwestern area of the site. Equine intake would be on the east side of the Equine Performance Center and Equine Surgery and Critical Care Wing buildings, accessible from Garrod Drive. Small animal intake would continue to be east of VM2 and the CCAH, but would extend north to the eastern side of the new SAC East Wing building.

### 3.6.6 Landscaping and Lighting

The project landscape design would focus on maximizing tree canopy shading and limiting lawn area. The limited lawn areas would serve specific VMC Vision functions, such as for patient anesthesia and recovery adjacent to the Equine Health Center. All building frontages along Garrod, courtyards, and parking islands would be landscaped with native drought-resistant landscaping, to limit the need for landscape irrigation. In addition to water savings, native plants are adapted to locally available nutrient sources and are resistant to most pests and diseases. Therefore, minimal fertilizers, pesticides, fungicides, or herbicides would be used, improving the quality of stormwater runoff. Paved areas would be shaded by structural overhangs and shade trees, which would be chosen based on their ability to become mature consistent with LEED criteria (i.e., able to provide shade within ten years of landscape installation) to prevent excessive ambient heating of the immediate area or “heat island.”

Exterior lighting would be shielded and directed down and/or to the sides, preventing light pollution in the night sky.

### 3.6.7 Sustainable Design Elements

#### Sustainability Goals.

The proposed project would comply with the UC Policy on Sustainable Practices and would meet the campus baseline<sup>1</sup> as applicable to the project. The VMC Vision’s goal for renovation of existing buildings is to improve them so they are equal to or more efficient than Title 24 standards. The goal for new VMC buildings is to be 20 percent more efficient than Title 24 standards. In addition, UC Davis implements Green Building practices under the U.S. Green Building Council’s Leadership in Energy and Environmental Design program (LEED). The VMC Vision is targeting to achieve LEED Gold Certification for all renovated and new buildings. The design elements of the VMC Vision that support these sustainability goals, including carbon neutrality, alternative transportation, and water and energy efficiency measures, are described further below.

#### Carbon Neutrality Initiative

In November 2013, the University of California Office of the President committed the University of California Campuses to achieve net zero greenhouse gas (GHG) emissions, or carbon neutrality, from campus buildings and vehicle fleet, excluding commuter-related mobile-source emissions, by 2025. To meet this goal, the ten UCs, as well as the UC Office of the President, UC Agriculture and Natural Resources, and Lawrence Berkeley National Laboratory, must reduce their GHG emissions by 1.2 million metric tons of carbon dioxide equivalent (MMCO<sub>2e</sub>) by 2025 through the expansion of energy efficiency and new investments in renewable energy sources. VMC Vision, which is expected to be fully built-out by 2025, would be required to comply with the UC-wide goal of carbon neutrality.

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<sup>1</sup> UC Davis has established a campus baseline, which is the minimum number of applicable *Leadership in Energy and Environmental Design* (LEED) rating system “points” that each project on the campus will achieve.

## Alternative Transportation

The existing VMTH is served by local bus and campus shuttle stops; these would remain during project construction and at buildout. In addition, the project would include installation of bike racks and showering/changing facilities to support transportation by bicycle.

## Water and Energy Efficiency

All interior water fixtures would be optimized for low-flow while maintaining hospital standards, which would reduce building water demand. In addition, water brooms are specified for cleaning of clinical space flooring and pavement surfaces to avoid excessive hosing of surfaces.

As with the existing VMTH, the new and renovated VMC buildings would use energy for heating and cooling, ventilation, hot water, lighting, and equipment. In addition, some of the VMC buildings would also use energy to sterilize surgical instruments, to purify lab grade water, and to wash bedding and towels. To achieve a high level of energy efficiency, a comprehensive energy efficiency approach would be implemented, including:

- Demand reduction through research, monitoring, and quantifying occupant needs
- Passive strategies including high performance building envelope, daylighting, natural ventilation and cooling
- High efficiency building designs and equipment
- Control strategies that optimize equipment operational efficiencies
- Alternative energy sources - roof areas would support solar thermal panels to generate hot water for washing and building heating with remaining roof space reserved for on-site photovoltaic (PV) panels and conduit pathways connect them to the main electrical room
- Capturing waste energy (recover heating and cooling from exhaust)
- Capturing renewable energy (future)

Building materials would be specified to maximize recycled content, use renewable materials, use regional materials to reduce transportation energy use, minimize embodied energy, eliminate use of toxic materials, minimize off-gassing of chemicals in the building, and increase their recyclability. Diverted construction wastes would include concrete and asphalt from site clearing, which would be crushed and re-used on site, and recyclables would be sorted onsite and hauled to a recycling center. Material recycling by the building occupants would be well supported by placing recycling stations on each floor.

### 3.6.8 Population

The VMC Vision would increase the overall UC Davis building area by 269,050 sf and would accommodate approximately 57 additional employees. However, because the existing facilities are severely inadequate for the current student population, the VMC Vision would not provide any additional capacity for students. A summary of actual UC Davis 2015-2016 population, 2003 LRPDP projections, remaining capacity, and the increase in employment due to the VMC Vision is summarized in Table 3-2.

**Table 3-2: UC Davis 2003 LRDP Projections and Proposed VMC Vision Projections**

	2003 LRDP Projections	2015-2016 Actual	Remaining Capacity	Proposed VMC Vision Projections	Post-Project Capacity
Students	30,000 <sup>1</sup>	32,663	(2,663)	0	(2,663)
Employment	16,900 <sup>2</sup>	12,181	4,719	57	4,662
Building Area	10,820,000 sf <sup>3</sup>	9,500,000 sf	1,320,000 sf	269,050 sf	1,050,950 sf

<sup>1</sup> The 2003 LRDP projected a total of approximately 32,000 students through 2015-2016; however, approximately 2,000 of these students were projected to be accommodated off the main campus at other facilities such as the UC Davis Medical Center in Sacramento, the Bodega Marine Laboratory, and study abroad sites. Therefore, UC Davis anticipated that approximately 30,000 students would be accommodated on campus through 2015-2016.

<sup>2</sup> The 2003 LRDP projected approximately 14,500 campus faculty and staff as well as approximately 2,400 non-university employees working at the proposed Research Park I-80 and West Campus through 2015-2016.

<sup>3</sup> The 2003 LRDP EIR, pages 3-15 and 3-16, indicates that the 2001-2002 building total was 6,620,000 sf and that the 2003 LRDP would allow for an additional 4,200,000 sf, totaling 10,820,000 sf.

### 3.6.9 Patient Capacity

As discussed previously, the current VMTH facilities serve a caseload of approximately 50,000 patients annually, which is over sixteen times greater than the caseload the facilities were designed to accommodate. The VMC Vision would provide additional space and improved facility designs to the VMTH to allow for teaching, clinical, and research activities that serve the caseload. As shown in Table 3-2, the proposed increased space and improvements are not intended to expand student capacity at the SVM and there are no long-term plans to increase its enrollment. Nonetheless, the increased facility space in the VMC Vision could potentially allow for approximately 3,000 additional patients annually (fewer than 10 per day). Because of its core teaching function, the hospital caseload is limited by factors beyond the physical facility space, as detailed below. The patient caseload would not be expected to increase beyond approximately 3,000 because the number of students to serve the caseload would not increase (UC Davis 2017).

#### Student Class Size

The SVM teaching facilities, including Gourley Clinical Teaching Facility (built in 2002), VM3A Multi-Purpose Teaching Facility (built in 2006), and Valley Hall (built in 2006), were designed for a maximum class size of 150 students. These facilities required a 10- to 20-year cycle to plan and construct, and they were constructed to match the optimum class size of 150 students for the foreseeable future. There are no plans to increase teaching space at the SVM because there are fundamental concerns by many faculty that increasing class sizes beyond 150 would reduce the quality of the educational experience for students.

The incoming class for the 2017-2018 year is 145 students, and the class size of the fourth-year students in the hospital is typically less than the incoming class because of attrition. While it is likely that incoming SVM class sizes will reach the 150 maximum over the next three to five years, even the small increase of five students causes increased strain on the teaching faculty and stress on the Small Animal Clinic facilities, which will not see significant space relief until 2022 with the completion of the new East Wing. Increasing beyond the designed class size capacity of 150 students during the life span of the proposed VMC Vision is restrained by the number of teaching faculty and hospital space, and would require the construction of additional teaching space to supplement Gourley, VM3A and Valley Hall, none of which are proposed or foreseeable at this time (UC Davis 2017).

#### Faculty and Resident Positions

A survey of clinical faculty in 2016 confirmed that the current caseload was adequate to serve the student teaching needs and that the caseload could not be increased without additional clinical faculty or residents. There are no new campus-funded clinical faculty positions planned at this time. Although the VMC Vision anticipates 57 new faculty and staff, which would be hospital-funded clinical faculty positions, these positions require detailed financial and academic justification before being hired. Additionally, there are no new residencies planned at this time (UC Davis 2017).

## Clinical Competition

The rate of growth in caseload seen in the years since 2008 is appearing to slow as the number of competing specialty clinics has grown. A recent survey identified 40 specialty veterinary clinics within an 80-mile radius of UC Davis and these clinics (as industry competitors) are expected to reduce demand for caseload growth at the SVM (Curby, pers. Comm., 2017 and UC Davis 2017).

## Strategic Growth

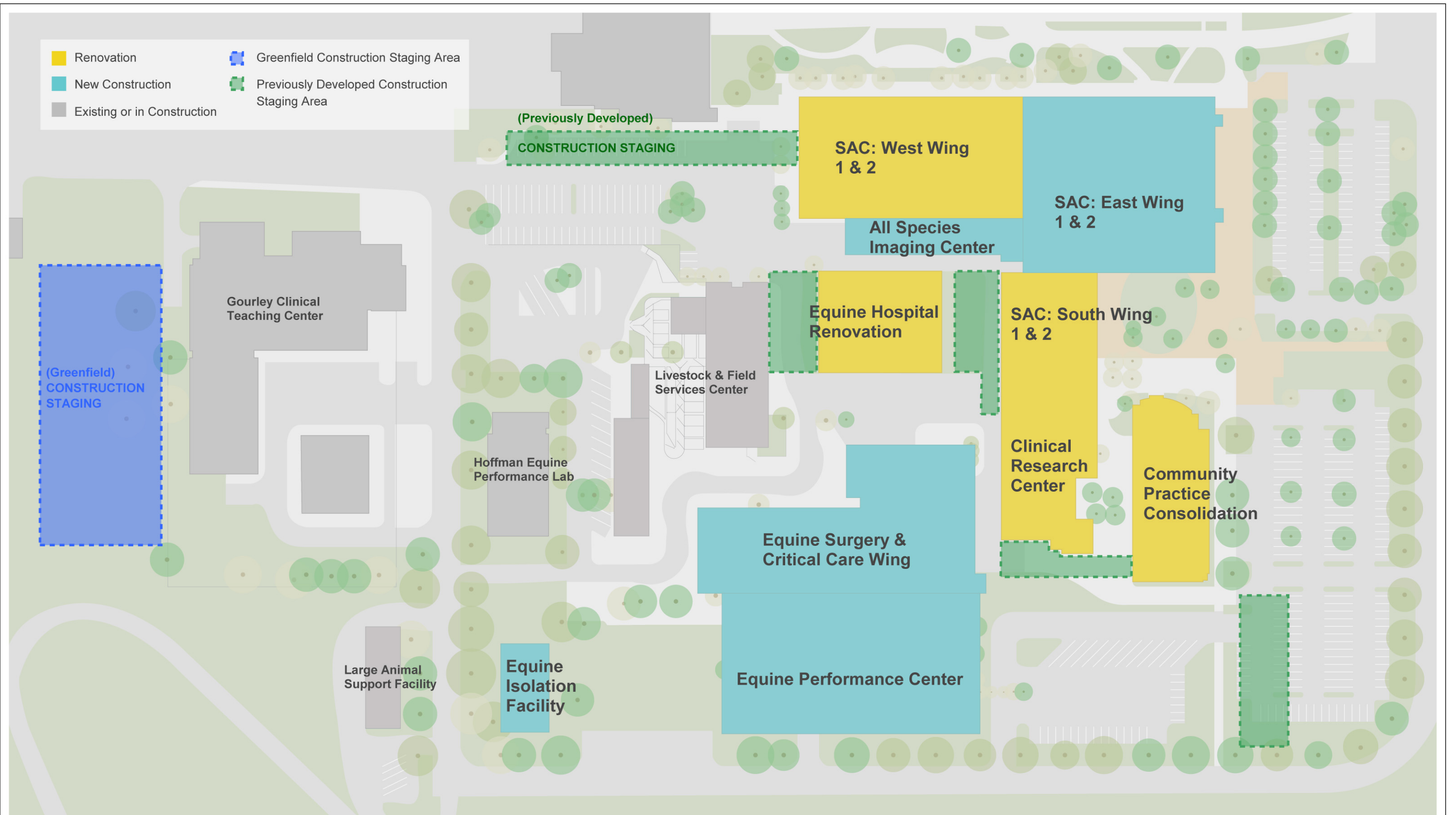
The planning criteria for veterinary hospital building space have, consistently over time, required increased facilities space to provide appropriate separation of animals, increased equipment space (particularly imaging equipment), and increased space for patient care and treatment. While veterinary caseload historically increased within the old facilities at the VMTH, the current veterinary hospital building requirements dictate that additional square footage is needed to catch up with prior caseload growth. Any additional caseload growth would be limited by the available building space and the factors described above (UC Davis 2017).

## 3.7 CONSTRUCTION PHASING AND STAGING

Construction of the VMC Vision projects is anticipated to begin as early as 2017, with full buildout taking approximately 10 years. Construction would be phased to maintain the teaching, clinical, and research functions at all times. The phasing of the fourteen VMC Vision projects is shown in Table 3-1, above. Although the VMC Vision projects are planned to be built in the indicated sequence for operational reasons, projects could be undertaken as funding is secured. The sequencing of each project provides both individual and incremental - yet concrete - benefits to the function of the VMC. Staging for construction activities would occur on both previously developed and greenfield sites as indicated on Figure 3-7.

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Source: R2 Resources Consultants, Inc. 2014

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Figure 3-7

Proposed VMC Site Plan with Construction Staging Areas





## 4 CONSISTENCY WITH THE 2003 LRDP AND 2003 LRDP EIR

To determine the proposed project's consistency with the 2003 LRDP and 2003 LRDP EIR, the following questions must be answered:

- Is the proposed project included in the scope of the development projected in the 2003 LRDP?
- Is the proposed location of the project in an area designated for this type of use in the 2003 LRDP?
- Are the changes to campus population associated with the proposed project included within the scope of the 2003 LRDP's population projections?
- Are the objectives of the proposed project consistent with the objectives adopted for the 2003 LRDP?
- Is the proposed project within the scope of the cumulative analysis in the 2003 LRDP EIR?

The following discussion describes the proposed VMC Vision's relationship to and consistency with the development projections, population projections, land use designations, objectives, and cumulative impacts analyses contained in the 2003 LRDP and the 2003 LRDP EIR.

### 4.1 2003 LRDP SCOPE OF DEVELOPMENT

The 2003 LRDP identified the need for improved academic space in the core campus to support overall growth and development at UC Davis. The 2003 LRDP also projected growth to be predominantly infill academic and research space within the Academic Core and the Health Sciences District (2003 LRDP pages 13, 39, and 59; 2003 LRDP EIR page 3-16). To illustrate the growth and development anticipated by the 2003 LRDP in the Health Sciences District, page 77 of the LRDP discussed siting a 1,500-space parking structure as well as additional parking spaces in Lot 57 within the Health Science District. However, to date, only spaces have been added to Lot 57. The VMC Vision is consistent with the LRDP projection for campus development, as it would renovate existing facilities and construct additional academic and administrative space with the existing VMTH, located within the Health Sciences District in the central campus of UC Davis. The VMC Vision would catch up to current growth by improving and increasing VMTH facilities to provide adequate space for current caseload, student, and resident counts, which will in-turn provide the highest quality of care, the best environment for learning, and an exemplary setting for the advancement of veterinary science. As shown in Table 3-2, above, the VMC Vision would increase the building area by 269,050 sf, which is within the 2003 LRDP Growth Program that provides for up to 2.5 million square feet of new academic and administrative facilities within the academic and administrative land use designations (2003 LRDP page 13; 2003 LRDP EIR page 3-16). As indicated in Table 3-2, the project-related increase in building area would be within the 1,320,000 sf of remaining 2003 LRDP building area capacity, and would leave a post-project capacity of 1,050,950 sf.

### 4.2 2003 LRDP LAND USE DESIGNATION

The majority of the VMC Vision project site is designated as *Academic and Administrative-High Density* under the 2003 LRDP. In addition, portions of the project site are identified in the 2003 LRDP as *Parking, Formal Open Space*, and *Teaching and Research Open Space* (Figure 4-1). The proposed project would provide renovated and newly constructed academic and administrative space within the *Academic and Administrative-High Density* designation, consistent with this 2003 LRDP designation. The project's proposed parking lot renovations and utility connections would not alter the *Parking, Formal Open Space*, and *Teach and Research Open Space* land use designations; rather, construction disturbances in open space areas and parking lots would be temporary and no land use change would occur.

### 4.3 2003 LRDP POPULATION PROJECTIONS

The 2003 LRDP estimates that the on-campus population would increase to include 30,000 students and 16,900 employees in 2015-2016. The actual campus population in 2015-2016 included 32,663 students and 12,181 employees (see Table 3-2, above). As explained above in Section 3.6.9, “Patient Capacity,” the proposed VMC Vision is intended to accommodate growth that generally has already occurred at the VMTH. The current veterinary hospital building requirements dictate that additional square footage is needed to catch up with prior caseload growth (UC Davis 2017). It would not provide any new student capacity at the SVM and there are no long-term plans to increase its enrollment (see Table 3-2). Therefore, the project would introduce no new students; accordingly, the project would not increase the campus student population.

The project would add approximately 57 new employees, which would not exceed the 2003 LRDP projections; rather this increase is within the remaining capacity of 4,719, leaving post-project faculty and staff capacity per the LRDP at 4,662 (see Table 3-2). These positions would be hospital-funded clinical faculty positions, which require detailed financial and academic justification before being hired. Additionally, there are no new residencies planned at this time (UC Davis 2017).

Although the VMC Vision would increase facility space that could potentially allow for approximately 3,000 additional patients annually (fewer than 10 per day), because of its core teaching function, the hospital caseload is limited by factors beyond the physical facility space. Please refer to Section 3.6.9, above, for details regarding why patient caseload would not increase beyond approximately 3,000. Further, as discussed in Section 4.1, above, the 2003 LRDP anticipated development of infill academic and research space within the Health Sciences District (2003 LRDP EIR pages 39 and 59) and the 2003 LRDP EIR considered visitors (such as patient-related vehicle trips) in the analysis (see page 4.14-42 of the 2003 LRDP EIR regarding traffic methodology). The VMC Vision, including students, faculty, and patient caseload, is within the 2003 LRDP’s on-campus population projections and the VMC Vision population is consistent with the LRDP.

### 4.4 2003 LRDP OBJECTIVES

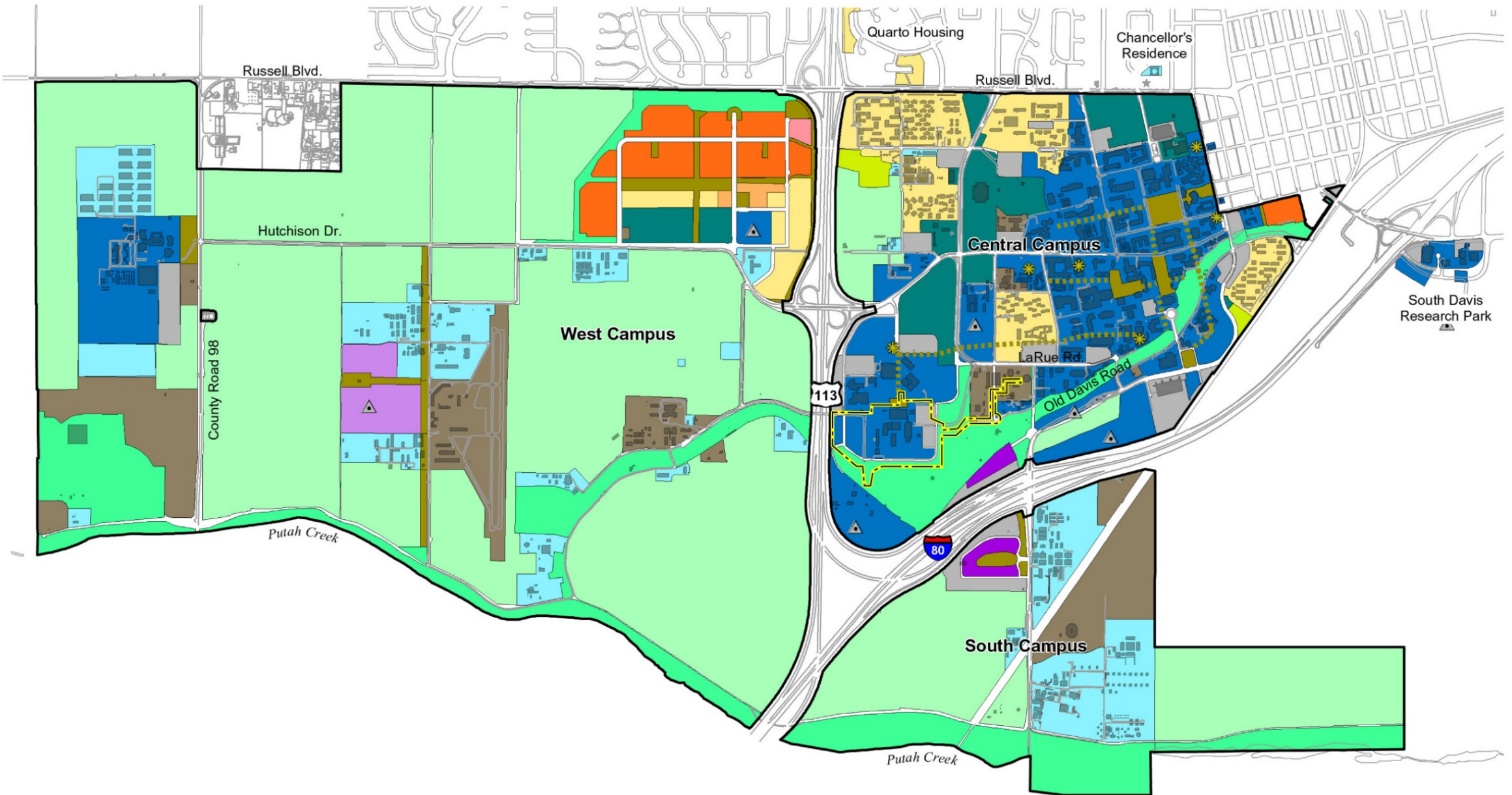
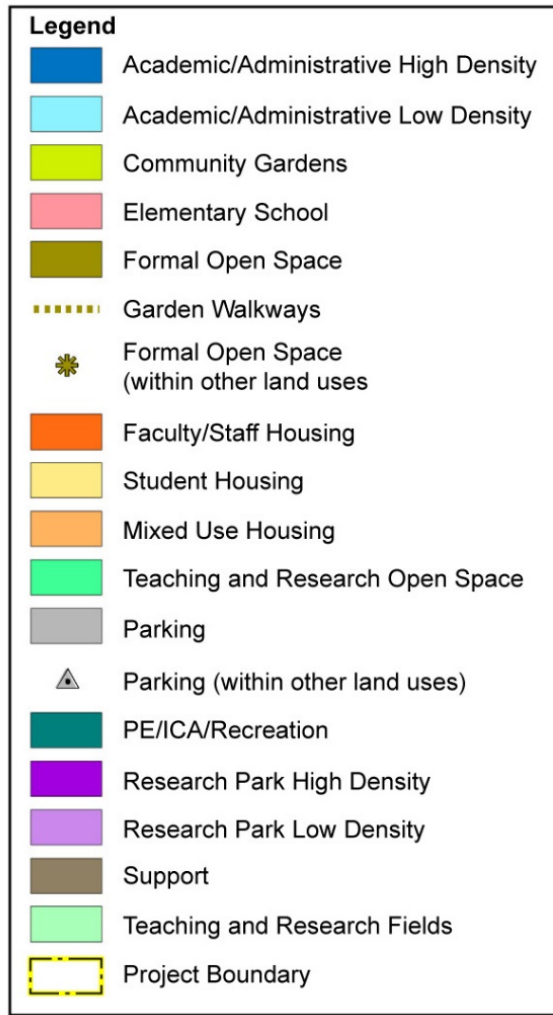
The primary objective of the 2003 LRDP is to plan for the Davis campus’ share of the University of California’s short- and long- term enrollment demands. In addition, the 2003 LRDP aims to:

- create a physical framework to support the teaching, research, and public service mission of the campus;
- manage campus lands and resources in a spirit of stewardship for the future; and
- provide an environment that enriches campus life and serves the greater community.

The proposed project would support these 2003 LRDP objectives by addressing current VMTH space shortages and layouts that are severely limiting best practices in integrated patient care and student learning environments as well as cutting-edge translational medicine. The VMC Vision’s goal is to allow the SVM to retain its status among top veterinary schools and provide the facilities necessary to support further development of the vision to lead veterinary medicine and address societal needs.

### 4.5 2003 LRDP EIR CUMULATIVE IMPACTS

In addition to evaluating the environmental effects directly associated with projected campus development, the 2003 LRDP EIR evaluated the cumulative effects of campus development combined with off-campus development. The cumulative context considered in the 2003 LRDP EIR varies, depending on the nature of the issue being studied, to best assess each issue’s geographic extent. For example, the cumulative impacts on water and air quality are best analyzed within the boundaries of the affected resources, such as water bodies and air basins. For other cumulative impacts, such as hazard risks, traffic, and the need for new public service facilities, the cumulative impact is best analyzed within the context of the population growth and associated development that are expected to occur in the region.



Source: UC Davis 2016 X16010036 01 004

Figure 4-1

Project Boundary





As discussed in Sections 4.1 through 4.4 above, the VMC Vision is within the scope of campus development and population evaluated in the 2003 LRDP EIR. However, it is now 2017 and the proposed VMC Vision would be implemented post-2017, which is beyond the timeframe considered in the cumulative analysis for the 2003 LRDP EIR (2015-2016). Therefore, UC Davis has evaluated the status of growth and development in the region as of 2016 in comparison to the local growth projections considered in the 2003 LRDP EIR to determine whether actual growth differs from the projections and whether such a difference could substantially change the 2003 LRDP EIR conclusions regarding cumulative impacts. This evaluation then looks at the potential for the proposed VMC Vision to contribute to cumulative impacts and whether this project's contribution would exceed the cumulative impact determinations identified in the 2003 LRDP EIR.

The 2003 LRDP EIR looked at regional growth in the context of the cities of Davis, Dixon, Winters, and Woodland as well as in the context of Yolo and Solano Counties. Table 4.11-5 of the 2003 LRDP EIR presented the anticipated population and housing growth through 2015. Those projections have been compared to the actual populations for these jurisdictions in Table 4.5-1, below. Growth in the region has been lower than anticipated for all jurisdictions except the City of Davis, which grew by 1,074 persons (or 0.016 percent) more than anticipated.

**Table 4.5-1: 2003 LRDP EIR Population Projections vs Actual**

Jurisdiction	LRDP EIR Projected 2015	Actual 2015	Difference
City of Davis	67,240	68,314	1,074
City of Winters	10,610	7,214	-3,396
City of Woodland	60,415	57,526	-2,889
Yolo County	227,130	214,555	-12,575
City of Dixon	24,300	19,018	-5,282
Solano County	512,000	431,498	-80,502
Sacramento County	1,574,420	1,495,297	-79,123
Three-County Total	2,313,550	2,141,350	-172,200

*Source: UC Davis 2003: Table 4.11-5. California Department of Finance 2016.*

## Aesthetics

Scenic vistas across agricultural fields west to the Coast Range occur near campus and throughout the surrounding Davis region. Specifically, viewpoints along SR 113, Hutchison Drive, La Rue Road, and Russell Boulevard provide scenic vistas to the west across agricultural land to the Coast Range. Impact 4.1-4 of the 2003 LRDP EIR determined that cumulative development in the Davis region could obscure some scenic vistas, including development on campus under the 2003 LRDP. Growth under the 2003 LRDP was determined to result in a significant and unavoidable loss of scenic vistas from viewpoints along SR 113, Russell Boulevard and La Rue Road (2003 LRDP EIR Impact 4.1-1), which would contribute regional impacts to scenic vistas. Although UC Davis requires implementation of LRDP Mitigation 4.1-1 and 4.1-4 to reduce the magnitude campus impacts to scenic vistas, the cumulative decreased visual access to scenic vistas is significant and unavoidable impact.

As discussed in Section 7.1, below, the VMC Vision is located east of SR 113 within the central campus and is occupied by existing SVM facilities. The proposed renovation and new construction would occur on the eastern portion of the project site, where views to the west are obstructed by the existing Gourley Clinical Teaching Center, Equine Isolation Facility, Hoffman Equine Performance Lab, the Livestock and Field Services Center, as well as vehicular parking and landscaped trees. Therefore, the VMC Vision would not disrupt views of the Coast Range to the west and would result in a less-than-significant contribution to this cumulative impact. Furthermore, cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR. This impact was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

Impact 4.1-5 of the 2003 LRDP EIR determined that campus development under the 2003 LRDP, in conjunction with other development in the region, could conflict with the area's visual elements and other aspects of aesthetic character. UC Davis requires implementation of 2003 LRDP EIR Mitigation 4.1-2(a) to reduce campus-related degradation of visual character and quality to a less-than-significant level. In addition, the City of Davis General Plan includes goals, policies, and standards that address the preservation of scenic resources (including natural habitat and resources reflective of place and history), the maintenance of greenery, and architectural consistency and design standards to maintain the City's visual character and quality. Similarly, Yolo and Solano Counties, and the Cities of Woodland, Winters, and Dixon have general plan policies and design guidelines that they use to review each proposed project to ensure that new development does not adversely affect visual quality of its setting. Although implementation of LRDP Mitigation 4.1-2(b) would reduce the magnitude of the impact, the feasibility and/or implementation of the mitigation cannot be guaranteed by the University of California because enforcement and monitoring fall within other jurisdictions. For this reason, the University considers the cumulative impact on aesthetic character significant and unavoidable.

The VMC Vision project would include renovation of existing buildings and construction of new buildings within the existing footprint of the existing SVM site. Because all development would be within the existing developed central campus and SVM, no taller than existing structures, and consistent with LRDP planning and design guidelines (per 2003 LRDP EIR Mitigation 4.1-2[a]), the VMC Vision would result in a less-than-significant contribution to this cumulative impact. Furthermore, cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR. This impact was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

Impact 4.1-6 of the 2003 LRDP EIR determined that campus development under the 2003 LRDP, in conjunction with other development in the region, would add new sources of light and glare that could adversely affect daytime or nighttime views in the area. Development under the 2003 LRDP, in combination with other regional development, could result in a significant increase in light and glare sources that could adversely affect nighttime views in the area. LRDP Mitigation 4.1-3(a) and (b) would serve to reduce the effects of lighting and glare to a less-than-significant level on campus. In addition, the City of Davis Municipal Code includes requirements for outdoor lighting to minimize light pollution and glare, which would serve to reduce the adverse effects of lighting and glare in the immediate area. Similarly, the City of Winters General Plan includes a policy designed to avoid excess glare, spillage and brightness. Some of the other jurisdictions in the region do not have specific lighting policies on light and glare from new development. Therefore, the cumulative development in the region would create new sources of light and glare that could adversely affect daytime and/or nighttime views in the region. Implementation of LRDP Mitigation 4.1-6(b) would reduce the magnitude of the identified impact; however, the feasibility and/or implementation of the mitigation cannot be guaranteed by the University of California because enforcement and monitoring fall within other jurisdictions. For this reason, the University considers the cumulative impact on aesthetic character significant and unavoidable.

The VMC Vision project would include new structures that could result in new sources of light or glare. However, because all development would occur within a fully developed portion of the campus and consistent with LRDP planning and design guidelines (per 2003 LRDP EIR Mitigation 4.1-3[a and b]), the VMC Vision would result in a less-than-significant contribution to this cumulative impact. Furthermore, the proposed VMC Vision project would not add building space beyond that contemplated by the 2003 LRDP EIR and cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR. This impact was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

## **Agricultural and Forestry Resources**

Impact 4.2-3 of the 2003 LRDP EIR concluded that campus development under the 2003 LRDP, in conjunction with other development in the region, would result in a significant and unavoidable cumulative impact related to



the conversion of Important Farmland to non-agricultural uses in the region. Although Yolo County, Solano County, the City of Davis, and UC Davis have established goals to preserve agricultural lands, the 2003 LRDP EIR anticipated that development proposed under the City of Davis General Plan Update (2001) could result in the conversion of approximately 450 acres of prime farmland through 2010 (Jones & Stokes, 2000). The 2003 LRDP also stated that additional conversion of agricultural land could occur beyond the City's current planning horizon through 2015-16. The loss of approximately 745 acres of prime farmland on the UC Davis campus in combination with the conversion of prime farmland anticipated under the City's General Plan represents a significant adverse impact. Although UC Davis requires mitigation for loss of prime farmland on campus through conserving 525 acres of prime farmland at Russel Ranch (2003 LRDP Mitigation 4.2-3), it does not replace agricultural land lost. Because reconversion of developed lands to agricultural uses is considered infeasible, the cumulative loss of prime farmland is considered to be a significant and unavoidable impact.

As addressed in Section 7.2, below, the VMC Vision would not convert Farmland to non-agricultural use, would not convert forest land, and would have no impacts on Williamson Act agreements. Therefore, the proposed VMC Vision project would not contribute to the campus' significant and unavoidable farmland conversion impact. This impact was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

## Air Quality

Impact 4.3-6 of the 2003 LRDP EIR found that implementation of the 2003 LRDP, in conjunction with other regional development, would contribute to emissions of criteria pollutants for which the region is nonattainment with respect to ambient air quality standards. The Yolo Solano Air Quality Management District (YSAQMD) has accounted for a certain amount of regional growth in the existing Sacramento Regional Clean Air Plan. Campus growth under the 2003 LRDP has been incorporated in the plan update, which was most recently updated in March 2009 and extends until 2022. LRDP Mitigation 4.3-6, included in the proposed project, requires implementation of LRDP Mitigation 4.3-1 (a-c). Regardless, because the YSAQMD remains a nonattainment area for ozone, this cumulative impact is considered significant and unavoidable.

The VMC Vision project is within the development assumptions analyzed in the 2003 LRDP EIR. Because the project would not increase campus population or regional population beyond levels already anticipated under the LRDP, the project would not result in new or substantially worse impacts related to emissions of criteria pollutants. As discussed in Section 7.3, "Air Quality," the project would result in construction emissions of PM<sub>10</sub> that would exceed YSAQMD's thresholds of significance for construction emissions; however, VMC Vision would comply with 2003 LRDP mitigation to reduce emissions to a less-than-significant level and would not produce a cumulative considerable contribution of emissions during construction activity. Further, the project would not emit operational emissions that would exceed YSAQMD's thresholds. Therefore, the project would result in a less-than-significant contribution to this cumulative impact. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

Impact 4.3-7 evaluated whether implementation of the 2003 LRDP, in conjunction with cumulative development in the region, would contribute to a cumulatively considerable increase in or expose receptors to substantial carbon monoxide (CO) concentrations. The analysis demonstrated that implementation of the 2003 LRDP would not cause a violation of the CO standards, and the impact was determined to be less than significant. The VMC Vision project is within the scope and development assumptions of the 2003 LRDP and would not result in any new or substantially worse impacts related to CO emissions. This impact was adequately analyzed in the 2003 LRDP EIR. Conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

Impact 4.3-8 evaluated whether regional growth could result in an increase in toxic air contaminants if compensating technological improvements are not implemented. The analysis concluded that because the U.S. Environmental Protection Agency (EPA) and California Air Resources Board (CARB) were expected to continue the development and implementation of programs to reduce air toxics, and UC Davis would continue its efforts in this area, the impact would be less than significant. The VMC Vision project is within the scope and development assumptions of the 2003 LRDP and would not result in any new or substantially worse impacts related to toxic air contaminants. This impact was adequately analyzed in the 2003 LRDP EIR. Conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

## Biological Resources

Impact 4.4-12 of the 2003 LRDP EIR concluded that growth in the City of Davis and Yolo and Solano counties would result in a significant and unavoidable cumulative loss of habitat for resident and migratory species. The continued loss of these habitat types around the campus and the City of Davis also would contribute to the regional loss of foraging habitat for the Swainson's hawks that may contribute to this species' decline in California. The burrowing owl also would be subject to a substantial loss of habitat as development occurs in the region. While Yolo County's Natural Communities Conservation Plan and Solano County's HCP would address impacts to biological resources and compensate for losses, UC Davis will compensate for habitat loss on campus by developing and implementing habitat mitigation on the UC Davis campus. The campus will therefore not contribute to this cumulative impact. However, the regional conversion of habitat around the campus, the City of Davis and throughout Yolo and Solano Counties to urban development is considered a substantial reduction in the acres of habitat for native wildlife. Implementation of the Yolo County NCCP and Solano County HCP may reduce these effects to a less-than-significant level. However, UC Davis cannot guarantee implementation; therefore, the impact remains significant and unavoidable.

The VMC Vision project would include renovation of existing structures and construction of new buildings within the existing footprint of the existing SVM site. Portions of the utility lines included in the VMC Vision project would be installed in areas of foraging habitat. However, mitigation measures presented in Section 7.4 of this Initial Study would mitigate the project-specific impacts such that the project would result in a less-than-significant contribution to this cumulative wildlife habitat impact. Furthermore, cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR. This impact was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

Impact 4.4-13 of the 2003 LRDP EIR concluded that growth in the City of Davis and other cities of Yolo and Solano counties could convert wetland and riparian habitat to urban uses, and that there could be a cumulative loss of habitat for resident and migratory wildlife species and special status plants. The most significant wetland features (waters of the U.S) on the campus are the Putah Creek and South Fork Putah Creek drainages, and the Arboretum Waterway. The only modifications of Putah Creek or South Fork of Putah Creek planned under the 2003 LRDP were drainage improvements and maintenance. The Arboretum Waterway may be subject to disturbance from drainage improvement projects, bank stabilization measures and landscape maintenance activities. UC Davis will compensate for habitat loss on campus by implementing the mitigation measures 4.4-1(a)-(b) to mitigate for impacts to special-status plants 4.4-8(a)-(c) ensure no net loss of wetland functions and values. No campus mitigation is required for impacts to migratory corridors. Implementation of the Yolo County NCCP and Solano County HCP may reduce these effects to a less-than-significant level. However, UC Davis cannot guarantee implementation; therefore, the impact remains significant and unavoidable.

The VMC Vision project would include a new storm drain outfall to the Arboretum Waterway. As discussed in Section 7.4 of this Initial Study, 2003 LRDP EIR Mitigations 4.4-8 (a, b, and c) would reduce impacts on riparian habitat and wetlands through avoidance, creation, preservation, or enhancement such that the project would result in a less-than-significant contribution to the cumulative impact. Because the 2003 LRDP EIR anticipated impacts from drainage improvements within the Arboretum Waterway area, the impacts of the proposed VMC Vision project would be within the scope of the 2003 LRDP EIR's development assumptions. Furthermore, cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR. This impact was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

Impact 4.4-14 of the 2003 LRDP EIR determined that campus development under the 2003 LRDP, in conjunction with other development in the region, would result in a significant and unavoidable cumulative impact to valley elderberry longhorn beetle (VELB) habitat. While implementation of LRDP Mitigation 4.4-6(a)-(b) could reduce this campus impact to a less-than-significant level and implementation of the Yolo County NCCP and Solano County HCP may reduce these effects to a less-than-significant level, UC Davis cannot guarantee implementation; therefore, the impact remains significant and unavoidable.

As discussed in Section 7.4 of this Initial Study, development of the VMC Vision project could impact elderberry shrubs within the project site. LRDP Mitigation 4.4-6(a)-(b) would reduce potential impacts to a less-than-significant level by determining whether VELB are present, ensuring that impacts to elderberry shrubs are avoided, and in areas where impact avoidance is infeasible, to transplant elderberry shrubs in the Russell Ranch Mitigation Area. Thus, the proposed VMC Vision project would result in a less-than-significant contribution to this cumulative impact. Furthermore, cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR. This impact was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

Impact 4.4-15 of the 2003 LRDP EIR concluded that development under the 2003 LRDP, in conjunction with other development in the region, would not result in significant cumulative impacts on special status fish species. The VMC Vision project area is approximately one mile north of the Putah Creek corridor. Therefore, the project would not interfere with the movement of any native resident or migratory fish or wildlife species. Because the proposed VMC Vision project is within the scope of development under the 2003 LRDP and existing conditions have not changed substantially since preparation of the 2003 LRDP EIR, the VMC Vision project would not alter this previous analysis.

## **Cultural Resources**

Any disturbance of native soils carries the potential to result in impacts to archaeological resources. Impact 4.5-5 of the 2003 LRDP EIR determined that campus development under the 2003 LRDP, and other development in Yolo and Solano counties over time would be anticipated to result in some impacts to historical resources and unique archaeological resources. UC Davis cultural resources protocols, as stipulated in LRDP EIR Mitigation Measures 4.5-1 through 4.5-4, minimize the impact of development under the 2003 LRDP on unique archaeological resources and historical resources, because the campus carries out a continuing program of archaeological investigation, which in most cases enables the campus to avoid or preserve unique archaeological resources and historical resources, and appropriately recover data from and document resources that cannot be preserved in place. The campus mitigation program has proven effective in preventing or mitigating damage to unique archaeological resources and historical resources; therefore, the mitigation program is considered to have reduced the campus impacts to less-than-significant levels in all cases to date. However, because there are no measures that can fully mitigate this impact, and because UC Davis cannot guarantee implementation by other agencies of measures to protect historical resources and unique archaeological resources, this cumulative impact is considered significant and unavoidable.

As discussed in Section 7.5 of this Initial Study, the proposed VMC Vision project site does not include historic architectural resources and would not contribute to cumulative impacts on historic resources. However, consistent with the 2003 LRDP EIR, the VMC Vision could potentially contribute to cumulative archaeological resource impacts or disturbance of human remains. Implementation of the UC Davis cultural resource protocols (Mitigation Measures 4.5-1 through 4.5-4) described above shall reduce the VMC Vision contribution to such cumulative impacts to less than significant. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis or conclusion.

### **Geology, Soils, and Seismicity**

Impact 4.6-5 of the 2003 LRDP EIR concluded that development under the 2003 LRDP, in conjunction with other development in the region, would not result in significant cumulative impacts related to geology, soils, and seismicity. The campus minimizes hazards associated with damage or destruction to buildings and other structures by reviewing and approving all draft building plans for compliance with the California Building Code (CBC). The CBC (Title 24 California Code of Regulations) identifies the minimum standards for structural design and construction in California, including specific requirements for seismic safety. The campus also adheres to the University of California Seismic Safety Policy, which requires compliance with the provisions of the CBC and anchorage for seismic resistance of nonstructural building elements such as furnishings, fixtures, material storage facilities, and utilities that could create a hazard if dislodged during an earthquake. Because the proposed VMC Vision project is within the scope of development under the 2003 LRDP and existing conditions have not changed substantially since preparation of the 2003 LRDP EIR, the VMC Vision project would not alter this previous analysis or conclusion.

### **Greenhouse Gas Emissions**

Although scientists and the government were well aware of possible climate effects of continued GHG emissions as early as the 1970s, the 2003 LRDP EIR did not address or assess the effects of GHG emissions or climate change, as was the near-universal approach under CEQA at that time. Senate Bill 97 (SB 97), signed August 2007, acknowledged that climate change is a prominent environmental issue that requires analysis under CEQA. The California Natural Resources Agency adopted guidelines for analysis and mitigation of GHG emissions under CEQA in 2009, and these guidelines became effective in March 2010. Since the guidelines took effect, numerous court decisions have affirmed that climate change is not a “new” issue even if societal concern about it has been growing in recent years. Thus, the fact that the 2003 LRDP EIR did not expressly address the impacts of greenhouse gas emissions does not disqualify the determination that the proposed VMC Vision project is within the scope of the project as analyzed in the 2003 LRDP EIR. As discussed relative to other environmental topics in this section, the proposed VMC Vision project fits within the overall development assumptions analyzed in the 2003 LRDP EIR.

In light of changes made to the CEQA Guidelines requiring analysis of GHGs in 2008, emissions of GHGs were evaluated in this IS/MND. Impacts of GHG emissions and climate change are inherently cumulative because project emissions of GHGs by themselves would not be so substantial as to alter the global climate. For this reason, the impact analysis in Section 7.7, “Greenhouse Gas Emissions,” while cumulative, is discussed in the project impact discussion and no further discussion is required here.

### **Hazards and Hazardous Materials**

As discussed in LRDP Impact 4.7-1 through 4.7-9, implementation of the 2003 LRDP could increase campus use of hazardous materials and generation of hazardous waste. Most of the potential hazards associated with the increased use of hazardous materials on the UC Davis campus, including hazardous chemicals, radioactive materials, and biohazardous materials, would have localized impacts affecting workers or students who handle the materials or work in the immediate vicinity. Although the impacts were determined to be less than significant, the 2003 LRDP EIR requires the implementation of Mitigation Measures 4.7-1 through 4.7-8 to further reduce

potential impacts. Therefore, the 2003 LRDP EIR concluded that implementation of the 2003 LRDP, in conjunction with other development in the region, would not result in significant cumulative effects. Because the proposed VMC Vision project is within the scope of development under the 2003 LRDP and existing conditions have not changed substantially since preparation of the 2003 LRDP EIR, the VMC Vision project would not alter this previous analysis or conclusion.

## Hydrology and Water Quality

Impact 4.8-10 of the 2003 LRDP EIR concluded that urban development within the Putah Creek watershed would increase impervious areas and consequently increase stormwater runoff. While mitigation measures requiring compliance with National Pollutant Discharge Elimination System (NPDES) Phase II regulations would protect water quality, implementation of mitigation measures for all projects in the cumulative context cannot be guaranteed by the University of California because it falls within other jurisdictions to enforce and monitor, and the effectiveness of the program in these jurisdictions has not been demonstrated. Therefore, the cumulative impact is significant and unavoidable.

The VMC Vision project would increase impervious surfaces, which could increase stormwater runoff. However, the VMC Vision project is within the scope of the 2003 LRDP and would be subject to the mitigation measures and requirements in the 2003 LRDP EIR. In accordance with LRDP Mitigation 4.8-3(a), included in the project, a drainage study has been performed for the VMC Vision project to determine if capacity in the existing storm drainage system exists. The study concluded that the stormwater system has sufficient capacity to absorb additional runoff generated by the project. Therefore, the VMC Vision would result in a less-than-significant contribution to this cumulative impact. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Because the proposed VMC Vision project is within the scope of development under the 2003 LRDP and existing conditions have not changed substantially since preparation of the 2003 LRDP EIR, the VMC Vision project would not alter this previous analysis or conclusion.

Impact 4.8-11 of the 2003 LRDP EIR found that implementation of the 2003 LRDP in combination with regional development could alter drainage patterns and increase the rate or amount of surface runoff, which could cumulatively exceed the capacity of stormwater drainage systems and result in flooding within the Putah Creek watershed. In most cases, this flooding would consist of temporary water ponding at storm drain inlets and along roads, and would not result in property damage or other serious consequences. With implementation of LRDP Mitigation 4.8- 11, which requires implementation of LRDP Mitigation 4.8-3, the 2003 LRDP EIR concluded that this cumulative impact would be less than significant.

The VMC Vision project would alter existing drainage patterns by relocating some drain inlets and increasing impervious surfaces. As required by LRDP Mitigation 4.8-11, a drainage study has been performed for the VMC Vision project to determine if capacity in the existing storm drainage system exists. The study concluded that the stormwater system has sufficient capacity to absorb additional runoff generated by the project. Because the proposed VMC Vision project is within the scope of development under the 2003 LRDP and existing conditions have not changed substantially since preparation of the 2003 LRDP EIR, the VMC Vision project would not alter this previous analysis or conclusion.

Impact 4.8-12 of the 2003 LRDP EIR found that growth under the 2003 LRDP and other development in the region would increase the cumulative discharge of treated effluent to the Putah Creek watershed, which could degrade receiving water quality. However, UC Davis is currently the largest discharger of treated effluent to Putah Creek, and no other major dischargers are expected in the future. LRDP Mitigation 4.8-12 requires implementation of LRDP Mitigation 4.8-4(a-b), which would reduce the impact of increased effluent discharge from the campus wastewater treatment plant (WWTP) to Putah Creek to a less-than-significant level. Therefore, with implementation of LRDP Mitigation 4.8-12, which is included in the proposed project, the cumulative impact would be less than significant.

With implementation of the VMC Vision project, the campus will continue to monitor effluent discharge in compliance with the applicable waste discharge requirements (WDRs) for the WWTP, and if effluent limits are exceeded, the campus will modify its pretreatment program and WWTP operation as appropriate. These practices are confirmed in LRDP Mitigation 4.8-4(a), which is included as part of the project. In compliance with LRDP Mitigation 4.8-4(b), which would also be implemented as part of the project, the campus would target monitoring and pretreatment for the contaminants specifically identified as of potential concern by the Central Valley RWQCB. Because these measures would, at a minimum, maintain compliance with NDPES regulations and associated WDRs, the impact of the proposed project to water quality would be reduced to a less-than-significant level. Because the proposed VMC Vision project is within the scope of development under the 2003 LRDP and existing conditions have not changed substantially since preparation of the 2003 LRDP EIR, the VMC Vision project would not alter this previous analysis.

Impact 4.8-13 evaluated whether increased extraction from the deep aquifer in the Davis area could cause groundwater levels to decline and could result in a deficit in the overall groundwater budget. Mitigation 4.8-13(a) requires implementation of LRDP Mitigation 4.8-5(a-d), which require water conservation and aquifer monitoring. Mitigation 4.8-16(b) identifies City of Davis policies aimed at reducing the amount of water withdrawn from the deep aquifer. While these measures would help reduce the impact to the deep aquifer, UC Davis cannot guarantee implementation of LRDP Mitigation 4.8-13(b) because the actions are under the authority of the City of Davis. Thus, the impact was determined to be cumulatively significant and unavoidable.

As discussed in further detail in Impacts 7.9 a, b, and f of this Initial Study, implementation of the VMC Vision project would result in a decrease in domestic water demand. That impact also discussed that the DWWSP now provides surface water supplies to UC Davis, thereby reducing groundwater use. For these reasons, the VMC Vision project would have a less-than-significant impact on groundwater levels in the deep aquifer. While other regional projects may contribute to the significant and unavoidable cumulative impact related to groundwater levels, the VMC Vision would result in a less-than-significant contribution to this cumulative impact.

Impact 4.8-14 of the 2003 LRDP EIR evaluated whether growth under the 2003 LRDP and other development in the region would increase the amount of water extracted from shallow/intermediate aquifers and increase impervious surfaces. This could contribute to local subsidence, substantially deplete groundwater supplies, and could interfere substantially with recharge of the shallow/intermediate depth aquifer, resulting in a net deficit in the shallow/intermediate aquifer volume or a lowering of the local groundwater table. The analysis concluded that even with implementation of 2003 LRDP Mitigation 4.8-14(a) and (b), the impact would be significant and unavoidable. This impact was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP.

As discussed in further detail in Impact 7.9b of this Initial Study, UC Davis is a project partner in the regional DWWSP. Initial surface water deliveries from the DWWSP began in June 2016; UC Davis anticipates a sharp drop in groundwater use due to these surface water deliveries. Furthermore, the VMC Vision would decrease water demand at the VMTH. Therefore, water supply and groundwater impacts from the VMC Vision would be less than significant. While other regional projects may still contribute to the significant and unavoidable cumulative impact related to groundwater levels, the VMC Vision project would not result in a substantial contribution to this cumulative impact.

## Land Use and Planning

Impact 4.9-4 of the 2003 LRDP EIR stated that implementation of the 2003 LRDP and the cumulative impacts of other regional growth may result in development and land use planning pressures for other cities in the surrounding region. However, the 2003 LRDP EIR concluded that these cumulative impacts would be less than significant. The proposed project would redevelop existing buildings and add new structures within the existing VMTH site in the central campus, consistent with the 2003 LRDP land use designations. Because the proposed VMC Vision project is within the scope of development under the 2003 LRDP and existing conditions have not changed substantially since preparation of the 2003 LRDP EIR, the VMC Vision project would not alter this previous analysis or conclusion.

## Mineral Resources

Because development on campus would not impede extraction or result in the loss of availability of mineral resources, the 2003 LRDP EIR did not identify any standards of significance, impacts, or mitigation measures associated with mineral resources. Where a proposed project would not have any project-specific impacts, the project also would not result contribute to cumulative impacts. Thus, no cumulative analysis was necessary or included in the 2003 LRDP EIR. As discussed in this section of this Initial Study, the proposed project is within the scope of analysis in the 2003 LRDP EIR. Therefore, the proposed project would not contribute to any cumulative impacts to mineral resources.

## Noise

Impact 4.10-5 of the 2003 LRDP EIR recognized that development under the 2003 LRDP in combination with other regional development would cumulatively increase ambient noise levels. Cumulative development would increase the number of people in the region who would be exposed to temporary construction-related noise. LRDP Mitigation Measure 4.10-5 requires application of the recommended noise control measures detailed in LRDP Mitigation Measure 4.10-1. LRDP Mitigation Measure 4.10-5 also requires the application of LRDP Mitigation Measure 4.10-2, which includes recommended noise control measures to mitigate for noise generated by vehicle traffic.

As shown in Table 3-2, the capacity for employees as analyzed for the 2003 LRDP is 16,900. In 2015-2016, the actual number of staff and employees totaled 12,181, leaving remaining capacity of 4,719. The proposed project would result in 57 additional staff members at the VMTH site, which is well within the capacity as analyzed in the 2003 LRDP EIR. The 57 new employees could result in a slight increase in traffic noise, but this increase would be extremely small and not expected to impact noise sensitive uses. The 2003 LRDP EIR found that, with mitigation, the cumulative impact associated with construction noise would be less than significant. Because the proposed VMC Vision project is within the scope of development under the 2003 LRDP and existing conditions have not changed substantially since preparation of the 2003 LRDP EIR, the VMC Vision project would not alter this previous analysis or conclusion.

## Population and Housing

Impact 4.11-3 of the LRDP EIR concluded that development under the 2003 LRDP, in conjunction with other development in the region, would not result in significant cumulative impacts related to housing demand. The proposed VMC Vision project would not increase student population. The project would add 57 new employees to the UC Davis campus, which is well below the total number of new employees assumed in the analysis in the 2003 LRDP EIR (see Table 3-2). As discussed in Section 4, above, the proposed VMC Vision project is within the scope of development and population anticipated under the 2003 LRDP and existing conditions have not changed substantially since preparation of the 2003 LRDP EIR. Because there would be no new students related to the VMC Vision, the number of new employees would be well below the overall amount assumed in the 2003 LRDP EIR, and patient caseload would remain consistent with the 2003 LRDP growth and development projections, this minor increase would not alter the previous analysis or conclusions.

## Public Services

The LRDP-related off-campus population, in conjunction with other regional development, would contribute to increased demands for public services in Davis, Dixon, Woodland, and Winters. New population in these communities would not be added at one time, but over the life of the 2003 LRDP. The LRDP-associated population would contribute to the growth anticipated by each jurisdiction in its respective General Plan. Implementation of the 2003 LRDP, in conjunction with regional growth, could generate a cumulative demand for new or expanded police and fire service facilities in the region, the construction of which could result in significant and unavoidable adverse environmental impacts to prime farmland and habitat (Impact 4.12-6). Implementation of the 2003 LRDP, in conjunction with cumulative growth in the region, would increase demand for school facilities; construction of new schools in the Cities of Davis, Winters, Dixon, and Woodland could

result in development of agricultural areas, which could result in the significant and unavoidable loss of prime farmland and habitat (Impact 4.12-7). Impact 4.12-8 determined that the campus population in general would result in a less-than-significant cumulative impact on regional libraries because campus-related population would have easy access to the campus libraries.

The proposed VMC Vision project would add 57 new employees, but would not add additional students to the project area. This number of new employees is within the employment projections for the 2003 LRDP EIR. Thus, new employees from the VMC Vision project would not result in greater demands for fire, police, school, or library services. Furthermore, as described above under “Agricultural and Forestry Resources,” the proposed VMC Vision project would not contribute to the campus’ significant and unavoidable farmland conversion impact. This impact was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Because the proposed VMC Vision project is within the scope of development under the 2030 LRDP and existing conditions related to public services have not changed substantially since preparation of the 2003 LRDP EIR, the VMC Vision project would not alter the previous analysis or conclusions.

## Recreation

The LRDP-related population would place a demand on recreation facilities in Davis, Dixon, Winters, and Woodland, which would combine with effects stemming from other regional growth. Depending on specific park and recreation sites, development of recreation facilities to meet additional demands was determined in the 2003 LRDP EIR to result in potential impacts such as loss of prime farmland or loss of valuable habitat. The 2003 LRDP EIR concluded that it would be speculative for that EIR to arrive at the conclusion that the impacts would be less than significant. Therefore, the 2003 LRDP EIR concluded that the environmental impacts from the development of recreation facilities triggered by the cumulative demand in the region would be significant and unavoidable even with implementation of LRDP Mitigation 4.13-2. This impact was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. As discussed previously, the proposed VMC Vision project would not increase student population, but would add 57 new employees to the UC Davis campus. Because the number of new employees would be well below the overall amount assumed in the 2003 LRDP EIR, this minor increase would not alter the previous analysis or conclusions.

## Transportation, Circulation, and Parking

The 2003 LRDP EIR traffic analysis considered future conditions (2015) both with and without implementation of the 2003 LRDP. The analysis included consideration of planned transportation improvements as identified in the *Metropolitan Transportation Plan for 2025* (Sacramento Area Council of Governments May 2002), also known as the MTP. The MTP is a federally mandated long-range transportation plan for the six-county area that includes El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba Counties. The analysis in Impact 4.14-2 of the 2003 LRDP EIR concluded that implementation of the 2003 LRDP would result in unacceptable intersection and freeway LOS operations at off-campus facilities, including facilities contained in the Yolo County and Solano County Congestion Management Plans. While mitigation measures would help reduce this impact, it was determined to be significant and unavoidable.

The VMC Vision project is within the scope of the 2003 LRDP. As noted previously, growth under the 2003 LRDP for the UC Davis campus, as well as in several nearby jurisdictions, has not yet met growth projections, and there remains excess employment capacity within the 2003 LRDP. Because the VMC Vision project is within the scope of development analyzed in the 2003 LRDP EIR, it is anticipated that impacts to transportation would not exceed those identified in the 2003 LRDP EIR. Thus, while the addition of 57 new employees for the VMC Vision project may add additional trips to the local roadway network, this increase is within the increases already assumed by the 2003 LRDP EIR. Because the number of new employees would be well below the overall amount assumed in the 2003 LRDP EIR, the VMC Vision would result in a less-than-significant contribution to this cumulative impact, and this minor increase would not alter the previous analysis or conclusions.



## Utilities and Service Systems

### *Wastewater*

Impact 4.15-10 of the 2003 LRDP EIR found that campus development under the 2003 LRDP, in conjunction with regional growth, would significantly increase demand for wastewater treatment facilities in the region. However, there is no evidence indicating that LRDP-related population in Davis, Woodland, Winters, and Dixon will contribute to the need for new or expanded utility systems that will have a significant effect on the environment. To the extent that LRDP-related population growth contributes to the need for expanded wastewater treatment facilities and infrastructure that result in loss of farmland, in compliance with LRDP Mitigation 4.15-10, the campus would negotiate with affected jurisdictions to determine the University's fair share of costs for feasible mitigation to reduce associated significant environmental impacts. The campus' contribution to mitigation could include implementation of preservation mechanisms for on-campus prime farmland and/or habitat conservation. However, impacts associated with an irreversible loss of farmland and habitat could not be reduced to less-than-significant levels. Therefore, this impact is considered significant and unavoidable. This impact was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. As discussed previously, the proposed VMC Vision project would not increase student population, but would add 57 new employees to the UC Davis campus. Because the number of new employees would be well below the overall amount assumed in the 2003 LRDP EIR, this minor increase would not alter the previous analysis or conclusions.

### *Domestic Water*

Impact 4.15-11 of the 2003 LRDP EIR found that campus development under the 2003 LRDP, in conjunction with regional growth would significantly increase demand for domestic water in the region. Therefore, it is likely that under the 2003 LRDP, the domestic water distribution systems of surrounding jurisdictions would need to be expanded to serve growth. The LRDP-related population that resides in these communities could contribute to the need for these improvements. However, environmental impacts from distribution system improvements are expected to be less than significant because these improvements would likely include minor disturbances and would likely be located within existing roads or other already disturbed environments. The cumulative impact on regional aquifers from increased withdrawal of groundwater to serve the increased population is discussed in Section 4.8 Hydrology and Water Quality of the 2003 LRDP EIR. As discussed in further detail in Impact 7.9b of this Initial Study, UC Davis is a project partner in the regional DWWSP. Initial surface water deliveries from the DWWSP began in June 2016; UC Davis anticipates a sharp drop in groundwater use due to these surface water deliveries. Furthermore, the VMC Vision would implement water efficiency measures and would decrease water demand from baseline conditions at the VMTH. The proposed project is within the scope of growth evaluated in the 2003 LRDP and would not increase campus population or regional population beyond levels already anticipated under the LRDP. Therefore, the proposed project would not contribute to the cumulative impact identified in the 2003 LRDP EIR.

### *Solid Waste*

Impact 4.15-11 of the 2003 LRDP EIR found that campus development under the 2003 LRDP, in conjunction with regional growth would significantly increase demand on the regional landfill. As discussed in LRDP EIR Impact 4.15-5, there is adequate capacity at the Yolo County landfill, and an expansion of the County landfill would not be required through the 2003 LRDP's planning horizon. Therefore, there would not be any environmental effects associated with landfill expansion from the growth associated with the off-campus population. Furthermore, the VMC Vision would be incorporated into the campus waste and recycling program, consistent with UC Policy on Sustainable Practices. Therefore, the proposed project would not increase demand for the Yolo County Landfill beyond what was analyzed in the 2003 LRDP EIR. The proposed VMC Vision project is within the scope of development under the 2030 LRDP and would not alter the previous analysis or conclusions.

***Electricity and Natural Gas***

Impact 4.15-11 of the 2003 LRDP EIR found that campus development under the 2003 LRDP, in conjunction with regional growth, would significantly increase demand for electricity and natural gas. The campus and other communities in the region would depend upon the regional suppliers of natural gas and electricity. While the demand for electricity and natural gas at full development of the campus under the 2003 LRDP would not by itself be sufficient to trigger the need for new electric or gas generation facilities, this demand, when combined with demand due to other regional growth, would require that new generation facilities be established. It is not possible to reasonably predict where the new generation facilities would be located, or to evaluate environmental impacts from the construction and operation of these new facilities. However, should they be proposed in California, the California Energy Commission conducts a complete environmental review of proposed power plant projects 50 megawatts and larger before approving them, and requires as a matter of practice that all significant impacts be mitigated to a less-than-significant level. Smaller projects must also go through environmental review under the oversight of the local jurisdiction in which they are proposed. Accordingly, this cumulative impact is considered to be less than significant. The proposed project would not increase demand for the electricity and natural gas beyond what was analyzed in the 2003 LRDP EIR. The proposed VMC Vision project is within the scope of development under the 2030 LRDP and would not alter the previous analysis or conclusions.

## 5 ENVIRONMENTAL RESOURCES POTENTIALLY AFFECTED

The following environmental resources, if checked below, would be potentially affected by this project and would involve at least one impact that is a significant or potentially significant impact that has not been previously addressed in the 2003 LRDP EIR.

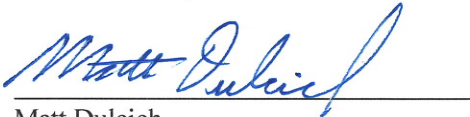
- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Aesthetics                     | <input type="checkbox"/> Agriculture and Forestry Resources             | <input type="checkbox"/> Air Quality                        |
| <input type="checkbox"/> Biological Resources           | <input type="checkbox"/> Cultural Resources (Tribal Cultural Resources) | <input type="checkbox"/> Geology and Soils                  |
| <input type="checkbox"/> Greenhouse Gas Emissions       | <input type="checkbox"/> Hazards and Hazardous Materials                | <input type="checkbox"/> Hydrology and Water Quality        |
| <input type="checkbox"/> Land Use and Planning          | <input type="checkbox"/> Mineral Resources                              | <input type="checkbox"/> Noise                              |
| <input type="checkbox"/> Population and Housing         | <input type="checkbox"/> Public Services                                | <input type="checkbox"/> Recreation                         |
| <input type="checkbox"/> Transportation and Circulation | <input type="checkbox"/> Utilities/Service Systems                      | <input type="checkbox"/> Mandatory Findings of Significance |
|   |   | <input checked="" type="checkbox"/> None with Mitigation    |

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## 6 DETERMINATION

On the basis of this initial evaluation:

- The proposed project **COULD NOT** have a significant effect on the environment that has not been previously addressed in the 2003 LRDP EIR, and no new mitigation measures, other than those previously identified in the 2003 LRDP EIR, are required. A **NEGATIVE DECLARATION** will be prepared.
- Although the proposed project **COULD** have a significant effect on the environment, the project impacts were adequately addressed in an earlier document or there will not be a significant effect in this case because revisions in the project have been made that will avoid or reduce any potential significant effect to a less-than-significant level. A **MITIGATED NEGATIVE DECLARATION** will be prepared.
- The proposed project **MAY** have a potentially significant effect on the environment that was not previously addressed in the 2003 LRDP EIR. A **TIERED ENVIRONMENTAL IMPACT REPORT** will be prepared to address new impacts not previously identified in the 2003 LRDP EIR.



Matt Dulcich  
Director of Environmental Planning  
UC Davis Campus Planning and Environmental Stewardship

5/17/17  
Date

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## 7 EVALUATION OF ENVIRONMENTAL IMPACTS

### INTRODUCTION

The University has defined the column headings in the Initial Study as follows:

- Impact to be Analyzed in the EIR: This column is checked when an impact, which may or may not be significant, is not adequately analyzed in the 2003 LRDP EIR and will therefore be addressed in a Focused Tiered EIR. The effect may be a new less-than-significant impact that will be addressed to provide a more comprehensive analysis, a new impact for which further analysis is necessary or desirable before a determination about significance can be made, a new impact that is potentially significant but may be reduced to a less-than-significant level with the adoption of mitigation measures, or a new impact that may be significant and unavoidable.
- No Additional EIR Analysis Required: This column is checked for impact categories that are adequately addressed in the Initial Study; a Focused Tiered EIR will not be prepared to further address the issue. The additional categories described below are also applicable when this column is checked to further indicate whether the impact category was adequately analyzed in the 2003 LRDP EIR, whether the project would result in a less-than-significant impact, an impact that is mitigable to less than significant with project-specific mitigation measures, or no impact.
- Impact Adequately Addressed in the 2003 LRDP EIR: This column is checked where the potential impacts of the proposed project are adequately addressed in the 2003 LRDP EIR and mitigation measures identified in the LRDP EIR will mitigate any impacts of the proposed project to the extent feasible. All applicable LRDP EIR mitigation measures are incorporated into the project as proposed. The impact analysis in this document summarizes and cross references (including section/page numbers) the relevant analysis in the LRDP EIR.
- Less-than-Significant Impact: This column is checked when the project will not result in any significant effects. The effects may or may not have been discussed in the LRDP EIR. The project impact is less than significant without incorporation of LRDP or project-level mitigation.
- Impacts Mitigable to Less than Significant: This column is checked when the project would result in a new potentially significant impact that was not evaluated in the LRDP EIR, but which will be reduced to a less-than-significant level with the adoption of project-specific mitigation measure(s).
- No Impact: This column is checked when a project would not result in any impact in the category or the category does not apply. “No impact” answers need to be adequately supported by the information sources cited or should note that the impact does not apply to projects like the one involved (e.g., the project outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on project specific screening analysis.)

## 7.1 AESTHETICS

### 7.1.1 Background

Section 4.1 of the 2003 LRDP EIR addresses the aesthetics effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.1 of the 2003 LRDP EIR.

#### Campus

The campus is surrounded by extensive agricultural uses to the west and south, and by residential, institutional, and commercial land uses in the City of Davis to the north and east. Views within the Davis area are generally of two types: open views of agricultural land and supporting facilities with views of hills to the west, and views of developed areas within UC Davis and the City of Davis.

UC Davis consists of four general land units that have distinct visual characters. The central campus is the most developed area of campus and is characterized by varied architectural styles, large trees, and formal landscaping. The west and south campus units and Russell Ranch primarily include teaching and research fields with agricultural buildings (although the west and south campus units also include more developed areas including campus support facilities and academic and administrative facilities).

The 2003 LRDP identifies the following as valued visual elements of the central campus: the large, open lawn of the Quad at the heart of the campus; the framework of tree-lined streets, particularly around the Quad where the street tree branches arch to create a canopy overhead; the Arboretum, with its large trees and variety of landscapes along the waterway; the shingle-sided buildings from the founding years of the University Farm; buildings from the second era of campus development such as Hart Hall and Walker Hall; green open spaces that face the community along Russell Boulevard and A Street; bicycles as a distinct and valued visual emblem on campus; and the South Entry area, including the new entrance quad and the Robert and Margrit Mondavi Center for the Performing Arts.

The campus Arboretum is a distinct visual amenity within the central campus. The Arboretum includes a landscaped area with bicycle and pedestrian paths along both sides of the Arboretum Waterway. The Arboretum extends approximately 1.5 miles from the Solano Park housing area on the east side of the central campus to the west side of the central campus in the Health Sciences District. From within the Arboretum, few buildings or roads are visible and the aesthetic experience is dominated by the linear views of the waterway and the extensive landscaping surrounding the waterway.

Night lighting includes street lights, interior and exterior building lights, and automobile headlights. Glare is caused by light reflections from pavement, vehicles, and building materials, such as reflective glass and polished surfaces. During daylight hours, the amount of glare depends on intensity and direction of sunlight. Dominant sources of night lighting on the central campus are the field lights used for illumination of sports and recreation fields, which can cause a skyglow effect that can be visible from long-distance viewpoints. Field lighting on campus is limited after 10 PM to minimize conflicts with astronomy classes and other observatory use. Glare and night lighting from other sources on the campus are minimized by mature landscaping and low building profiles that tend to minimize glare. The generally low buildings and large amounts of landscaping, combined with the central campus’ urban location, keep night lighting from appearing particularly intrusive to individuals in nearby buildings and residences.

Design review of campus development projects takes place during the project planning, design, review, and approval processes to sustain valued elements of the campus’ visual environment, to assure new projects contribute to a connected and cohesive campus environment, and to otherwise minimize adverse aesthetics effects as feasible. Formal design review by the campus Design Review Committee takes place for every major capital project. This Committee includes standing members from the Offices of Campus Planning, Design and Construction Management, Grounds, and other departments concerned with potential aesthetic effects, as well as



program representatives and invited design professionals with expertise relevant to the project type. Campus design standards and plans that provide the basis for design review include the 2003 LRDP, the Campus Physical Design Framework, the Campus Standards and Design Guide manual, the campus Architectural Design Guidelines, and the Campus Core Study.

## Project Site

The VMTH is located within the Health Sciences District on the UC Davis central campus area. The project site is located on the southwest portion of the central campus and is bounded by SR 113 to the west, additional buildings in the Health Sciences District to the north, open space to the east, and the Arboretum to the south. As shown in Figure 3-3, the VMC Vision project site encompasses existing VMTH buildings, parking lots, outdoor animal pens, and an equestrian arena. The majority of the existing facilities were constructed in 1969 (Prichard VMTH, Hay Barn, B Barn, C Barn, D Barn, and Equine Isolation Facility); Veterinary Medicine 2 (VM2) was constructed in 1979; the VMTH Office Annex was constructed in 1991; the VMTH Equine Examination building was constructed in 1995; Gourley Clinical Teaching Center was constructed in 2002; Center for Companion Animal Health (CCAH) was constructed in 2004; and the Hoffman Equine Athletic Performance Laboratory was constructed in 2005. Photographs illustrating existing site conditions are provided in Figures 7.1-1 and 7.1-2; views are provided of CCAH, VM2, VMTH, as well as the Hay Barn, B Barn, and D Barn. The buildings are not distinct in appearance and are consistent with the overall aesthetic of the central campus. However, as a veterinary medical area, there are barns which are a unique feature to the project site but not architecturally distinct. The area surrounding the barns is fairly open with animal pens. In addition, the project site includes some ruderal grassland areas (primarily along the western, southern, and eastern portions of the project site) and landscaping. There are mature landscaped trees along the boundaries of at the northeastern corner, screening views of the VMTH building and Vet Med 2, as well as mature trees along Garrod Drive along the southern and eastern sides of the project site.

### 7.1.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers an aesthetic impact significant if growth under the 2003 LRDP would:

- Have a substantial adverse effect on a scenic vista.

A scenic vista is defined as a publicly accessible viewpoint that provides expansive views of a highly valued landscape. On campus, the open view across agricultural lands west to the Coast Range is considered a scenic vista. This vista is primarily viewed from public viewpoints along SR 113, Hutchison Drive, La Rue Road, and Russell Boulevard.

- Substantially degrade the existing visual character or quality of the site and its surroundings.

For the campus, this standard is interpreted in terms of the effect of development under the 2003 LRDP on the valued elements of the visual landscape identified in the LRDP, or the effect associated with allowing incompatible development in or near areas with high visual quality such as the Arboretum Waterway, the shingle-sided buildings from the founding years of the University Farm, or buildings from the second era of campus development such as Hart Hall or Walker Hall.

- Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.

An additional standard from the CEQA Guidelines' Environmental Checklist ("b" in the checklist below) was found not applicable to campus growth under the 2003 LRDP.



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Figure 7.1-1

Representative Photos of Existing Site Conditions



B Barn looking northwest



D Barn looking north



Hay Barn looking northwest



X16010036/01.006

Figure 7.1-2

Representative Photos of Existing Site Conditions



### 7.1.3 2003 LRDP EIR Impacts and Mitigation Measures

The proposed VMC Vision is within the scope of the 2003 LRDP and impacts of campus growth under the 2003 LRDP on aesthetics are evaluated in Section 4.1 of the 2003 LRDP EIR. Significant and potentially significant aesthetics impacts identified in the 2003 LRDP EIR that are relevant to the proposed project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR.

<b>2003 LRDP EIR Impacts</b>		<b>Level of Significance Prior to Mitigation</b>	<b>Level of Significance After Mitigation</b>
AESTHETICS			
4.1-2	Development on the campus from implementation of the 2003 LRDP could degrade the visual character of the campus by substantially degrading the valued elements of the visual landscape identified in the 2003 LRDP.	PS	LS
4.1-3	Development under the 2003 LRDP could create substantial light or glare on campus that could adversely affect daytime or nighttime views in the area.	PS	LS

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the proposed project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the project description and will not be readopted in this Initial Study. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

#### **2003 LRDP EIR Mitigation Measures**

##### AESTHETICS

4.1-2(a)	New structures, roads and landscaping at UC Davis shall be designed to be compatible with the visual elements and policies identified in the 2003 LRDP.
4.1-2(b)	Prior to design approval of development projects under the 2003 LRDP, the Campus Design Review Committee must determine that project designs are consistent with the valued elements of the visual landscape identified in the 2003 LRDP, applicable planning guidelines, and the character of surrounding development so that the visual character and quality of the project area are not substantially degraded.
4.1-3(a)	Design for specific projects shall provide for the use of textured nonreflective exterior surfaces and nonreflective glass.
4.1-3(b)	Except as provided in LRDP Mitigation 4.1-3(c), all new outdoor lighting shall utilize directional lighting methods with shielded and cutoff type light fixtures to minimize glare and upward directed lighting.
4.1-3(c)	Non-cutoff, non-shielded lighting fixtures used to enhance nighttime views of walking paths, specific landscape features, or specific architectural features shall be reviewed by the Campus Design Review Committee prior to installation to ensure that: (1) the minimum amount of required lighting is proposed to achieve the desired nighttime emphasis, and (2) the proposed illumination creates no adverse effect on nighttime views.
4.1-3(d)	The campus will implement the use of the specified lighting design and equipment when older lighting fixtures and designs are replaced over time.

### 7.1.4 Environmental Checklist and Discussion

<b>AESTHETICS</b>		Impact to be Analyzed in the EIR	No Additional EIR Analysis Required	Impact adequately addressed in 2003 LRDP EIR	Less-than-Significant Impact	No Impact
Would the project...						
a)	Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- a) The 2003 LRDP EIR defined a scenic vista as an expansive view of a highly-valued landscape from a publicly accessible viewpoint, and identified the only scenic vista on the UC Davis campus to be the view west across agricultural land to the Coast Range. As discussed in 2003 LRDP EIR Impact 4.1-1, on and near campus, viewpoints along SR 113, Hutchison Drive, La Rue Road, and Russell Boulevard provide scenic vistas to the west across agricultural land to the Coast Range. However, the VMC Vision would not alter these viewpoints. Rather, the proposed project site is located east of SR 113 and is occupied by existing SVM facilities. As shown on Figure 3-4, the proposed renovation and new construction would occur on the eastern portion of the project site, where views to the west are obstructed by the existing Gourley Clinical Teaching Center, Equine Isolation Facility, Hoffman Equine Performance Lab, the Livestock and Field Services Center, as well as vehicular parking and landscaped trees. Therefore, redevelopment of existing facilities and construction of new buildings within the developed site would not disrupt views of the Coast Range to the west. Therefore, the VMC Vision would have no impact on a scenic vista.
- b) As explained in Section 4.1.2.2 of the 2003 LRDP EIR, I-80 and SR 113, the highways in the vicinity of the campus, are not designated as state scenic highways. Therefore, neither the campus nor the project site is located near a state scenic highway. There would be no impacts to scenic resources within a state scenic highway.
- c) The 2003 LRDP EIR found that development on campus (including off-campus properties) under the 2003 LRDP could degrade the visual character of the campus by substantially degrading the valued elements of the campus’ visual landscape, which are identified above in the background discussion and include specific treed areas, historic buildings, and open space areas (2003 LRDP Impact 4.1-2). The VMC Vision would have no effect on valued elements of the UC Davis visual landscape because the proposed demolition, renovation, and construction would not occur in an area identified as having valued elements of the visual landscape, nor would it disturb an area of high visual quality. The VMC Vision would remove or renovate buildings that are unremarkable and build new buildings within a developed high-density academic and administrative area. Furthermore, the project would not alter the Arboretum to the south nor open space to the east of the site. Although there would be a temporary disturbance to install a utility lines in these areas, the utility lines would be undergrounded and the ground surface would be restored to pre-project conditions; there would be no permanent change to the visual character of the Arboretum or open space due to utility installation. Consistent with 2003 LRDP EIR Mitigation 4.1-2(a-b), UC Davis would design renovated and new structures, roads, and landscaping to be compatible with the visual elements and policies identified in the 2003 LRDP and, prior to design approval, the Campus Design Review Committee must determine that project designs are consistent with the valued elements of the visual landscape identified in the 2003 LRDP, applicable planning guidelines, and the character of

surrounding development so that the visual character and quality of the project area are not substantially degraded. Therefore, although the visual character of the project site would change, it would not represent a significant adverse effect. The VMC Vision would have a less-than-significant effect on the visual character of the campus.

- d) The existing buildings within the VMC Vision project site contain building and security lighting that are existing sources of glare and light. The 2003 LRDP EIR found that development on campus under the 2003 LRDP could create substantial light or glare that could adversely affect daytime or nighttime views in the area (2003 LRDP Impact 4.1-3). The proposed VMC Vision consists of demolition of existing buildings, redevelopment of buildings, and new development, which would result in new interior lighting and exterior lighting that could change the light and glare conditions at the site. In compliance with LRDP Mitigation 4.1-3(a), the project would use textured nonreflective exterior surfaces and nonreflective glass. The exterior lighting would be limited to building entrances, bike parking lots, and lighting along walkways. Consistent with 2003 LRDP EIR Mitigation 4.1-3(b-c) the project would prevent light spill and light pollution per LEED requirements, and new outdoor lighting associated with the project would use directional lighting methods with shielded and cutoff-type light fixtures to minimize glare and upward directed lighting. The Campus Design Review Committee would also review the proposed project's use of non-directional lighting design to ensure that no adverse effects on nighttime views occur. Furthermore, in compliance with 2003 LRDP Mitigation 4.1-3(d), the campus would implement the use of the specified lighting design and equipment when older lighting fixtures and designs are replaced over time. With implementation of LRDP Mitigation 4.1-3(a-d), which is included in the proposed project, the project's impact associated with light and glare would be less than the existing baseline condition. The project would have a less-than-significant light and glare impact.

## 7.2 AGRICULTURAL AND FORESTRY RESOURCES

### 7.2.1 Background

Section 4.2 of the 2003 LRDP EIR addresses the agricultural resources effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.2 of the 2003 LRDP EIR.

#### Campus

As discussed in the 2003 LRDP EIR, of the approximately 5,300 acres of campus land, the California Department of Conservation’s Farmland Mapping and Monitoring Program (FMMP) designates approximately 3,700 acres as Prime Farmland and approximately 90 acres as Farmland of Local Importance. The FMMP designates the remaining 1,520 acres of campus land as Urban and Built-Up (approximately 1,400 acres) and Other Land (approximately 120 acres). Most of the campus’ agricultural lands are located on the west and south campuses and at Russell Ranch. The central campus includes land primarily designated as Urban and Built-Up, but small areas within the central campus that are used for teaching and research fields and community gardens are designated as Prime Farmland.

The 2003 LRDP EIR identifies that development under the 2003 LRDP could result in conversion of approximately 745 acres of campus land that is considered prime farmland by the California Department of Conservation to nonagricultural uses. Approximately 330 acres of this land would be converted to habitat at Russell Ranch, which would not result in an irreversible loss of prime soil. Mitigation under the 2003 LRDP EIR requires the conservation of prime farmland at a one-to-one (1:1) ratio for prime farmland converted to developed uses and a one-third-to-one (1/3:1) ratio for prime farmland converted to habitat at Russell Ranch.

#### Project Site

The project site is identified as “Urban and Built-Up” land (2003 LRDP EIR Figure 4.2-1) within the urbanized portion of the UC Davis central campus within the Health Sciences District. There are no agricultural resources on or immediately adjacent to the site. Furthermore, campus lands, including the project site, are state-owned lands and are not eligible for Williamson Act agreements.

### 7.2.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considered an agricultural impact significant if growth under the 2003 LRDP would:

- Convert prime farmland, unique farmland or farmland of statewide importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency to nonagricultural use.
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland considered prime, unique, or of statewide importance to nonagricultural use.
- Conflict with existing zoning for agricultural use or a Williamson Act contract.
- Result in the loss of forest land or conversion of forest land to non-forest use.

### 7.2.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP on agricultural resources are evaluated in Section 4.2 of the 2003 LRDP EIR. As discussed in Section 4 of this Initial Study, the proposed project is within the scope of analysis in the 2003 LRDP EIR. However, the significant agricultural impacts identified in the 2003 LRDP EIR

are not relevant to the proposed VMC Vision because the proposed project would not result in the conversion of farmland or forest land and no mitigation measures would be required.

### 7.2.4 Environmental Checklist and Discussion

<b>AGRICULTURAL AND FORESTRY RESOURCES</b>					
Would the project...	Impact to be Analyzed in the EIR	No Additional EIR Analysis Required	Impact adequately addressed in 2003 LRDP EIR	Less-than-Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) The FMMP designates the project site as Urban and Built-Up Land. The proposed project would not convert Farmland to non-agricultural use. No impact would occur.
- b) Campus lands are state lands and are not eligible for Williamson Act agreements, nor are they subject to local zoning controls. No impact would occur.
- c) None of the campus lands are zoned as forest land or timberland. The proposed project would redevelop an existing academic building in the core campus at UC Davis and would not conflict with zoning or result in rezoning of forest or timberlands. No impact would occur.
- d) There are no forest lands on or adjacent to the project site. Therefore, the proposed project would not result in the loss of forest land or the conversion of forest land to non-forest use. No impact would occur.
- e) The project site is not adjacent to agricultural, forest land, or timberland. Therefore, the proposed project would not involve any changes that could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. No impact would occur.



## 7.3 AIR QUALITY

### 7.3.1 Background

Section 4.3 of the 2003 LRDP EIR addresses the air quality effects of campus growth under the 2003 LRDP. The following discussion summarizes updated information presented in the ‘Setting’ subsection of Section 4.3 of the 2003 LRDP EIR.

The following sources were used to prepare this section of the Initial Study:

- UC Davis 2003 Long Range Development Plan (2003 LRDP)
- Yolo-Solano Air Quality Management District (YSAQMD) Handbook for Assessing and Mitigating Air Quality Impacts
- California Emissions Estimator Model (CalEEMod) User’s Guide Version 2016.3.1
- U.S. Environmental Protection Agency (EPA) AP-42: Compilation of Air Emission Factors

#### Campus

The campus is subject to air quality regulation programs of both the federal Clean Air Act (CAA) and its amendments and the California Clean Air Act (CCAA). The federal and state statutes identify ambient air quality standards to protect public health, timetables for progressing toward achieving and maintaining ambient standards for criteria pollutants (CAPs), and the development of plans to guide the air quality improvement efforts of state and local agencies. Within the campus vicinity, air quality is monitored, evaluated, and regulated by the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (CARB), and the Yolo-Solano Air Quality Management District (YSAQMD). YSAQMD is one of five air districts located in the Sacramento Valley Air Basin (SVAB) and has jurisdiction over air quality in Yolo County and the northeastern portion of Solano County. YSAQMD attains and maintains air quality conditions in its jurisdiction through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of YSAQMD includes the preparation of plans and programs for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. YSAQMD also inspects stationary sources, responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements other programs and regulations required by the CAA and CCAA.

Historically, air quality laws and regulations have divided air pollutants into two broad categories: CAPs and toxic air contaminants (TACs). Federal and state air quality standards have been established for the following CAPs: ozone, carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter less than 10 microns in diameter (PM<sub>10</sub>), lead (Pb), and particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>). Ozone is evaluated by assessing emissions of its precursors: reactive organic gases (ROG) and oxides of nitrogen (NO<sub>x</sub>).

TACs are airborne pollutants for which there are no air quality standards but which are known to have adverse human health effects. TACs are regulated under federal and state statutes, primarily with control technology requirements for stationary and mobile sources, as well as by exposure reduction measures identified in project-specific human health risk assessments (HRAs). TACs are generated by a number of sources, including stationary sources such as gasoline fueling pumps, combustion sources (e.g., boilers, backup diesel generators), and laboratory fume hoods; mobile sources such as automobiles (including high-volume freeways); and area sources such as farms, landfills, wastewater treatment plants, and construction sites.

Air quality on the campus is influenced by both meteorological conditions and pollutant emissions. EPA has classified Yolo County, which includes the campus, as a severe nonattainment area for ozone and a moderate nonattainment area for PM<sub>2.5</sub>. CARB has also designated the area as being in nonattainment under the state

ambient air quality standards for ozone and PM<sub>10</sub>. These designations are based on data collected at ambient air quality monitoring stations located in the county.

## Project Site

The project site is in the Health Sciences District on southwestern portion of the UC Davis central campus. The district is bounded by SR 113 to the west and Interstate 80 to the south. The district houses a number of key teaching and research areas, and other divisions of the Life Sciences Program.

### 7.3.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers an air quality impact significant if growth under the 2003 LRDP would:

#### *Criteria Pollutants*

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation. (According to YSAQMD, emissions of NO<sub>x</sub> and ROG in excess of 10 tons per year (tpy), PM<sub>10</sub> emissions of 80 pounds a day (lb/day), and/or result in a concentration of CO that exceeds the state ambient air quality standard for CO, would be considered a significant air quality impact.)
- 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 the mass emission thresholds for ozone precursors stated above).
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.

#### *Toxic Air Contaminants*

- Result in concentrations of carcinogenic TACs that would expose the Maximally Exposed Individual (MEI) to an incremental increase in cancer risk greater than 10 in one million.
- Result in concentrations of non-carcinogenic TACs that would result in a Hazard Index (chronic or acute) equal to or greater than 1.0.
- Generates emissions of CO that result in a violation of a NAAQS or CAAQS.

## Methodology

### *Construction*

Short-term construction-generated GHG emissions were calculated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.1 computer program (SCAQMD 2016), as recommended by YSAQMD and other air districts in California. Model assumptions were based on project-specific information (e.g., square footage of new and renovated facilities, construction phasing); and default values in CalEEMod that are based on the project's location and land use types. The modeling assumed that project construction/grading phases would begin in early 2017 and continue through the end of 2025. For a detailed description of model input and output parameters and assumptions, refer to Appendix B.

### *Operations*

Mobile- and area-source operational emissions of criteria air pollutants and precursors were estimated in CalEEMod using increased vehicle trips developed as part of the analysis presented in Section 7.16, "Transportation, Circulation, & Parking" and CalEEMod defaults for area sources consistent with YSAQMD Rule 2.14 regarding architectural coatings.

Emissions from natural gas consumption were modeled based on the natural gas combustion emissions factors from EPA’s AP-42, Fifth Edition Compilation of Air Pollutant Emissions Factors for Stationary Point and Area Sources (EPA 1998). For additional details of modeling inputs and outputs, refer to Appendix B.

**7.3.3 2003 LRDP EIR Impacts and Mitigation Measures**

Impacts of campus growth to air quality under the 2003 LRDP are evaluated in Section 4.3 of the 2003 LRDP EIR. As analyzed in Section 4 of this Initial Study, the proposed project would be within the scope of the analysis provided in the 2003 LRDP EIR. Significant impacts to air quality identified in the 2003 LRDP EIR that are relevant to the proposed project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR. Mitigation is relevant to reduce the magnitude of project-level LRDP Impact 4.3-1, but this impact is identified as significant and unavoidable because it cannot be mitigated to a less-than-significant level. Mitigation was identified to reduce the magnitude of project-level LRDP Impact 4.3-3, but this impact was identified as significant and unavoidable due to uncertainty about the effectiveness of the required mitigation.

<b>2003 LRDP EIR Impacts</b>		<b>Level of Significance Prior to Mitigation</b>	<b>Level of Significance After Mitigation</b>
<b>AIR QUALITY</b>			
4.3-1	Implementation of the 2003 LRDP would result in daily operational emissions above the YSAQMD thresholds that may contribute substantially to a violation of air quality standards or hinder attainment of the regional air quality plan.	S	SU
4.3-3	Emissions from construction activities associated with the 2003 LRDP would exceed YSAQMD thresholds.	S	SU
4.3-4	Implementation of the 2003 LRDP would not expose campus occupants and other populations in the vicinity of the campus to substantial air toxics concentrations.	LS	LS
Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable			

Mitigation measures in the 2003 LRDP EIR applicable to the proposed project are presented below. Because these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the project description and would not need to be readopted. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

**2003 LRDP EIR Mitigation Measures**  
AIR QUALITY

- 4.3-1(a) Vehicular Sources. The following measures will be implemented to reduce emissions from vehicles, as feasible.
  - The campus shall continue to actively pursue Transportation Demand Management to reduce reliance on private automobiles for travel to and from the campus.
  - Provide pedestrian-enhancing infrastructure to encourage pedestrian activity and discourage vehicle use.
  - Provide bicycle facilities to encourage bicycle use instead of driving.
  - Provide transit-enhancing infrastructure to promote the use of public transportation.
  - Provide facilities to accommodate alternative-fuel vehicles such as electric cars and CNG vehicles.
  - Improve traffic flows and congestion by timing traffic signals to facilitate uninterrupted travel.
  - When the campus purchases new vehicles, the campus will evaluate the practicality and feasibility of acquiring low-pollution vehicles that are appropriate for the task and will purchase these types of vehicles when practical and feasible. When replacing diesel engines in existing equipment, the campus will install up-to-date technology.
- 4.3-1(b) Area Sources. The following measures will be implemented to reduce emissions from area sources, as feasible.

## 2003 LRDP EIR Mitigation Measures

### AIR QUALITY

- Use solar or low-emission water heaters in new or renovated buildings.
  - Orient buildings to take advantage of solar heating and natural cooling and use passive solar designs.
  - Increase wall and attic insulation in new or renovated buildings.
  - For fireplaces or wood-burning appliances, require low-emitting EPA certified wood-burning appliances, or residential natural-gas fireplaces.
  - Provide electric equipment for landscape maintenance.
- 4.3-1(c) The campus will work with the YSAQMD to ensure that emissions directly and indirectly associated with the campus are adequately accounted for and mitigated in applicable air quality planning efforts. The YSAQMD can and should adopt adequate measures consistent with applicable law to ensure that air quality standard violations are avoided.
- 4.3-3(a) The campus shall include in all construction contracts the measures specified below to reduce fugitive dust impacts, including but not limited to the following:
- All disturbed areas, including storage piles, which are not being actively utilized for construction purpose, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover.
  - All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
  - All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
  - When demolishing buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition.
  - When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least two feet of freeboard space from the top of the container shall be maintained.
  - All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices also is expressly forbidden.
  - Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions by utilizing sufficient water or chemical stabilizer/suppressant.
- 4.3-3(b) The campus shall include in construction contracts for large construction projects near receptors, the following control measures:
- Limit traffic speeds on unpaved roads to 15 mph.
  - Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
  - To the extent feasible, limit area subject to excavation, grading, and other construction activity at any one time.
  - Limit the area subject to excavation, grading, and other construction activity at any one time.
- 4.3-3(c) The campus shall implement the following control measures to reduce emissions of ozone precursors from construction equipment exhaust:
- To the extent that equipment is available and cost effective, the campus shall encourage contractors to use alternate fuels and retrofit existing engines in construction equipment.
  - Minimize idling time to a maximum of 5 minutes when construction equipment is not in use.
  - To the extent practicable, manage operation of heavy-duty equipment to reduce emissions.

**2003 LRDP EIR Mitigation Measures**

**AIR QUALITY**

- To the extent practicable, employ construction management techniques such as timing construction to occur outside the ozone season of May through October, or scheduling equipment use to limit unnecessary concurrent operation.

**7.3.4 Environmental Checklist and Discussion**

<b>AIR QUALITY</b>		Impact to be analyzed in the EIR	No Additional EIR Analysis Required	Impact Adequately Addressed in 2003 LRDP EIR	Less-than-Significant Impact	No Impact
Would the project...						
a)	Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b)	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d)	Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e)	Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**a,b,c,d) Construction-Generated Emissions of Criteria Air Pollutants and Precursors**

The 2003 LRDP EIR found that emissions of criteria pollutants from construction activities under the 2003 LRDP could exceed YSAQMD thresholds (LRDP Impact 4.3-3).

Project-related construction activities would result in emissions of CAPs and precursors from site preparation (e.g., grading, and clearing), heavy-duty off-road equipment, material delivery, and construction worker commute exhaust emissions, asphalt paving, and the application of architectural coatings. Fugitive dust emissions, including PM<sub>10</sub> and PM<sub>2.5</sub>, would be generated during site preparation and vary as a function of soil silt content, soil moisture, wind speed, and area of disturbance. Exhaust emissions of PM<sub>10</sub> and PM<sub>2.5</sub> would result from combustion of fuels. Ozone precursor emissions would primarily be associated with exhaust from construction equipment, haul truck trips, and worker trips. Emissions of ROG would also be generated during asphalt paving and the application of architectural coatings.

The state ambient air quality standards for PM<sub>10</sub> and PM<sub>2.5</sub> could be violated if multiple construction projects, especially those involving ground disturbance (i.e., grading, excavation), would take place simultaneously in close proximity to each other. Housing or other sensitive receptors located near construction areas could be adversely affected by high concentrations of PM<sub>10</sub>. If construction of multiple portions of the proposed project take place at the same time, the combined emissions of CAPs and precursors could exceed applicable YSAQMD mass emission thresholds.

The 2003 LRDP EIR found that construction emissions under the 2003 LRDP could substantially contribute to a violation of ambient state and federal air quality standards or hinder the attainment of the regional air quality plan (LRDP Impact 4.3-3). The proposed project would contribute to this impact. The campus is located in an area that is designated as nonattainment with respect to the ambient air quality standards for ozone and PM<sub>10</sub>. The 2013 State Sacramento Regional 8-hour Ozone Attainment and Reasonable Further Progress Plan, which covers the Sacramento region including the campus, contains strategies for reducing emissions in the region to attain the 8-hour national ambient air quality standard for ozone by 2018. LRDP Mitigation 4.3-3 (a) and 4.3-3 (b) require dust control measures to reduce fugitive PM<sub>10</sub> and PM<sub>2.5</sub> dust emissions. LRDP Mitigation 4.3-3(c) requires measures to reduce exhaust emissions from heavy-duty construction equipment. However, this impact was considered significant and unavoidable at the LRDP program level. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Statements of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP.

YSAQMD now recommends mass emission thresholds for evaluating a project’s construction-related emissions that are different from the thresholds recommended by YSAQMD at the time the 2003 LRDP EIR was prepared. Based on YSAQMD’s recommended mass emissions thresholds, the project would have a significant effect on air quality if construction emissions exceed 10 tpy for ROG and NO<sub>x</sub>, 80 lb/day for PM<sub>10</sub>, and/or result in a concentration of CO that exceeds the CAAQS for CO.

Construction would occur for the 14 phases of the VMC Vision over the course of 10 years and would entail the construction of new facilities and renovation of existing facilities. Phases would overlap, resulting in multiple sources of emissions per year. A summary of project-related construction emissions are summarized below in Table 7.3-1, Estimated Unmitigated Construction Emissions.

**Table 7.3-1: Estimated Unmitigated Construction Emissions**

Construction Emissions by Year	Emissions		
	ROG (tpy)	NO <sub>x</sub> (tpy)	PM <sub>10</sub> (lb/day)
2017	0.3	1.9	<b>87.5</b>
2018	0.1	0.8	4.0
2019	0.2	1.5	78.5
2020	0.4	3.6	<b>101.3</b>
2021	1.3	1.4	63.1
2022	0.1	0.5	56.6
2023	0.5	1.4	<b>83.4</b>
2024	0.4	1.3	31.3
2025	0.1	0.2	16.2
<b>YSAQMD Threshold</b>	<b>10</b>	<b>10</b>	<b>80</b>
Exceeds Threshold?	NO	NO	YES

*Notes: ROG=reactive organic gases; NO<sub>x</sub>=oxides of nitrogen, PM<sub>10</sub>=respirable particulate matter, tpy=tons per year, lb/day=pounds per day, YSAQMD=Yolo Solano Air Quality Management District*

*Source: Modeling performed by Ascent Environmental, January 2017.*

As the results of Table 7.3-1 show, construction of the project would result in emissions that would exceed the YSAQMD thresholds of significance for construction-related emissions of PM<sub>10</sub> for three of the nine construction years. However, the project includes implementation of the 2003 LRDP EIR Mitigation Measure 4.3(a) which includes measures to reduce emissions of construction-related fugitive dust (PM<sub>10</sub>). Implementation of the 2003 LRDP EIR Mitigation Measure 4.3(a) would be sufficient to reduce construction-related impacts to a less-than-significant level.

### Long-Term Operational Emissions of Criteria Air Pollutants and Precursors

The project would add 57 new employees in the Health Sciences District, which would result in more emissions-emitting vehicle travel associated with commute trips to and from campus. The proposed increased space and improvements are not intended to expand the student capacity at the SVM and there are no long-term plans to increase its enrollment (see Table 3-2 of this Initial Study). Nonetheless, as explained in Section 3.6.9, above, the increased facility space due to the VMC Vision may allow for approximately 3,000 additional patients annually (fewer than 10 per day on average); however, an increased patient caseload would not increase beyond that number because the students to serve the caseload would not increase. The proposed project would not increase the residential population on campus, the number of students attending UC Davis, or the number or length of motor vehicle trips associated with travel by students. The project would also result in new stationary sources of CAPs and precursors, such as boilers used for space and water heating, and back-up diesel generators.

The 2003 LRDP EIR found that operational emissions under the 2003 LRDP could substantially contribute to a violation of ambient state and federal air quality standards or hinder the attainment of the regional air quality plan (LRDP Impact 4.3-1). The proposed project would contribute to this impact. The campus is located in an area that is designated as nonattainment with respect to the ambient air quality standards for ozone and PM<sub>10</sub>. The 2013 State Sacramento Regional 8-hour Ozone Attainment and Reasonable Further Progress Plan, which covers the Sacramento region including the campus, contains strategies for reducing emissions in the region to attain the 8-hour national ambient air quality standard for ozone by 2018. LRDP Mitigation 4.3-1 (a-b), which includes measures that encourage alternative transportation and no- or low-emission building designs and operations, would aid in reducing daily emissions of ozone precursors from campus vehicular and stationary sources. LRDP Mitigation 4.3-1(c) ensures that the campus would coordinate with YSAQMD during all future updates of the regional air quality plan. However, this impact is considered significant and unavoidable at the LRDP program level. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Statements of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP.

YSAQMD now recommends mass emission thresholds for evaluating a project's operational emissions that are different from the thresholds recommended by YSAQMD at the time the 2003 LRDP EIR was prepared. As discussed previously, operational-related emissions of criteria air pollutants and ozone precursors would have a significant effect on air quality if operational (i.e. mobile, area, and energy sources) emissions exceed 10 tpy for ROG and NO<sub>x</sub>, 80 lb/day for PM<sub>10</sub>, and/or result in a concentration of CO that exceeds the CAAQS for CO.

Pursuant to Section 15125 of the CEQA Guidelines, "the physical environmental conditions in the vicinity of a project, as they exist...at the time the environmental analysis is commenced...will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant." As discussed in Section 3.3, "Project Site," the existing physical conditions on the project site consist of 12 facilities (i.e., Pritchard VMTH, Hay Barn, B Barn, C Barn, D Barn, Equine Isolation Facility, Veterinary Medicine 2, VMTH Office Annex, VMTH Equine Examination, Gourley Clinical Teaching Center, Center for Companion Animal Health, and Hoffman Equine Athletic Performance Laboratory), which currently provide veterinary and educational services on campus. Operational emissions of criteria air pollutants and ozone precursors originate from patient-, student-, and worker-related vehicle trips; natural gas-fueled equipment (i.e., the UC Davis Central Power Plant); and landscaping equipment such as mowers and leaf blowers.

Operational-related sources of criteria air pollutants and ozone precursors would be similar under the project; however, as discussed in Section 7.16, “Transportation, Circulation, & Parking,” the project would be expected to generate up to 57 additional worker-related vehicle trips per peak period, and 25 additional patient-related vehicle trips (139 total daily trips). This minor increase in vehicle trips combined with increases in natural gas demand and gross square footage would result in additional emissions of air pollutants as compared to baseline conditions.

Table 7.3-2 summarizes the maximum daily and yearly project-generated, operational-related emissions of criteria air pollutants at full buildout in 2025 as compared to baseline conditions. As shown in Table 7.3-2, “Summary of Existing and Projected Operational Emissions of Air Pollutants,” operational-related activities would not result in an exceedance of YSAQMD’s mass emissions thresholds.

**Table 7.3-2: Summary of Existing and Projected Operational Emissions of Air Pollutants**

Source	ROG <sup>1</sup> (tpy)	NO <sub>x</sub> <sup>1</sup> (tpy)	PM <sub>10</sub> <sup>1</sup> (lb/day)
Project	3.3	4.9	0.6
Existing Project Site	1.9	2.9	0.1
<b>Difference</b>	<b>1.4</b>	<b>2.0</b>	<b>0.5</b>
<b>YSAQMD Threshold</b>	<b>10</b>	<b>10</b>	<b>80</b>
Exceeds Thresholds?	NO	NO	NO

*Notes: ROG=reactive organic gases, NO<sub>x</sub>=oxides of nitrogen, PM<sub>10</sub>=respirable particulate matter, tpy=tons per year, lb/day=pounds per day, YSAQMD=Yolo-Solano Air Quality Management District*

<sup>1</sup> Operational-related emissions of criteria air pollutants and ozone precursors are generated by mobile, energy, and area sources.

Source: Modeling performed by Ascent Environmental, January 2017.

Implementation of the project would not produce operational emissions of criteria air pollutants and ozone precursors such that YSAQMD’s mass emissions thresholds for operational emissions of air pollutants would be exceeded (see Table 7.3-2). The project would have a less-than-significant impact on air quality.

**Toxic Air Contaminants**

The HRA performed for the 2003 LRDP EIR predicted that the cancer risk from campus operations through academic year 2015-16 will be less than 10 in one million for both the off-campus and on-campus Maximally Exposed Individual (MEI), assuming a 70-year exposure period. The HRA also estimated that campus-related emissions of TAC would not result in a chronic hazard index or an acute hazard index greater than 1.0 for both the off-campus and on-campus MEI. Therefore, the 2003 LRDP EIR concluded that development under the 2003 LRDP would not exceed applicable health risk standards, and the impact associated with TAC generation in the 2003 LRDP EIR was found to be less than significant.

The proposed project would likely consist of new on-site sources of TAC emissions such as laboratory fume hoods and back-up diesel generators, the specifications and exact locations of which are not known at this time. Also, in 2015 the Office of Environmental Health Hazard Assessment (OEHHA) has since published new guidance about how HRA’s should be conducted (OEHHA 2015). This guidance includes new parameters for estimating health risk exposure, including age sensitivity factors and default breathing rates (OEHHA 2015:5-29 and 8-5). It also recommends using different exposure periods for different types of land uses, including places of employment and residential land uses and has more specific requirements for the meteorological date used (OEHHA 2015:4-27).



However, as described in Section 3.6.9, “Patient Capacity,” the existing VMTH site serves a caseload of approximately 50,000, and this load would not be anticipated to grow beyond an additional 3,000 patients (53,000) with project implementation. As described in Section 4, above, this patient caseload is consistent with the development and population anticipated in 2003 LRDP and evaluated in the 2003 LRDP EIR. It would be expected that TAC emissions associated with project operations would not be notably different such that receptors would be exposed to harmful levels of TACs as compared to current conditions. Further, the project site is located in the southwest portion of the campus which is primarily composed of research facilities. The closest student housing is the Tercero Residence Hall approximately 2,000 feet from the project site.

Project implementation would not alter the conclusions found in the 2003 LRDP EIR; this impact would be less than significant.

- e) The 2003 LRDP EIR concluded that odor impacts associated with development under the 2003 LRDP would be less than significant. The proposed project would not result in new sources of odors on campus, the relocation of existing odor sources, or the development of residences near an existing odor source. Therefore, the project would result in a less-than-significant odor impact.

## 7.4 BIOLOGICAL RESOURCES

### 7.4.1 Background

Section 4.4 of the 2003 LRDP EIR addresses the effects of campus growth under the 2003 LRDP on biological resources. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.4 of the 2003 LRDP EIR, a records search of the California National Diversity Database (CNDDDB), and a reconnaissance-level wildlife survey of the project site by a wildlife biologist.

#### Campus

The 5,300 acre UC Davis campus is located within a primarily urban and agricultural area, and abuts the Putah Creek riparian corridor on the south end of campus. Habitat types on campus include agricultural, ruderal grassland, open water ponds, valley-foothill riparian woodland, and urban landscaping/development. The UC Davis Arboretum is considered urban landscaping; however, it provides oak savanna habitat for native wildlife species in the area (Figure 7.4-1).

The 2003 LRDP EIR considers special status species to be those taxa that are: (1) listed as threatened or endangered under either the California or Federal Endangered Species Acts; (2) candidates for either state or federal listing; (3) species afforded protection under the Fish and Game Code of California; (4) federal and California Department of Fish and Wildlife (CDFW) “Species of Special Concern”; (5) CDFW “Species of Special Concern” highest and second priority lists; or (6) California Native Plant Society (CNPS) List 1-3 plants.

A database search identified 15 special status plant species, eight special status invertebrates, 11 special status fish, three special status amphibians, three special status reptiles, 26 special status birds, and seven special status mammals that have the potential to occur on or within a 10-mile radius of the campus. However, only a few of these species may occur on campus or have potential habitat present on campus.

#### Project Site

The project site consists of approximately 40 acres of the UC Davis VMHS district, including several buildings, parking lots, roads, and approximately six and a half acres of the UC Davis Arboretum. The project site is located north of the Arboretum waterway, a historic portion of the Putah Creek riparian corridor (Figure 3-2).

#### *Habitat*

##### Urban Landscaping/Developed

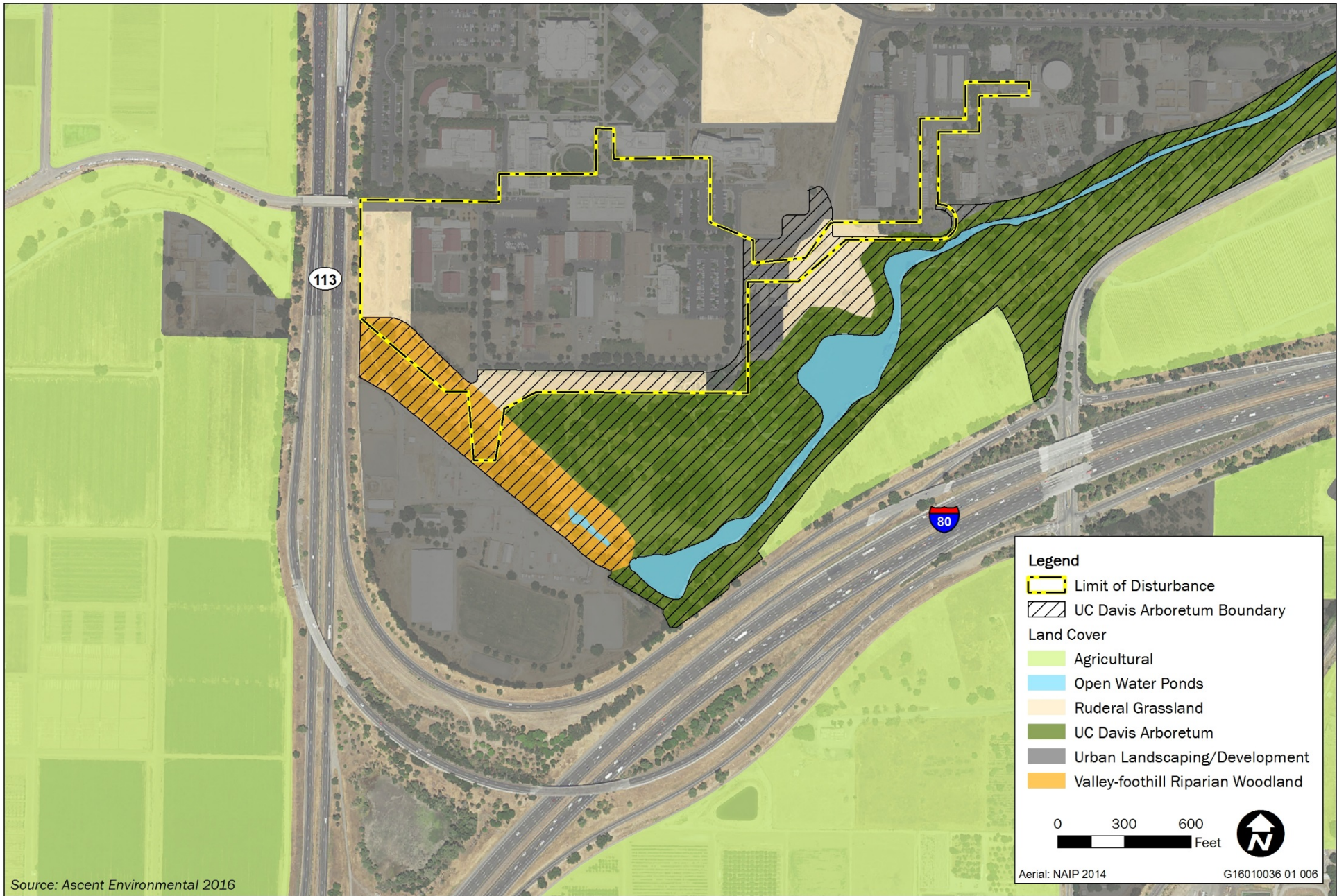
The project site is dominated by urban landscaping/developed area, including buildings, roads, and parking lots (Figure 7.4-1). Nearly all sidewalks and roads have been landscaped with valley oak (*Quercus lobata*), live oak (*Quercus* sp.), and pine (*Pinus* sp.) trees with diameter at breast height (DBH) of 12 to 48 inches. Large oak, pine, *Eucalyptus*, and unidentified broad-leaf deciduous ornamental tree species are present throughout the project area, in parking lots, and between buildings (Appendix C).

##### UC Davis Arboretum

Approximately six and a half acres of the project site are within the Arboretum, which is identified by UC Davis as a developed, landscaped area. The portion of the Arboretum within the project site encompasses ruderal annual grassland and valley-foothill riparian woodland habitats, which are described in more detail below (Figure 7.4-1).

##### Ruderal Annual Grasslands

Ruderal annual grasslands are present in the project site as shown on Figure 7.4-1. There are at least 20 California ground squirrel (*Otospermophilus beecheyi*) burrows within the approximately two-acre ruderal grassland area adjacent to SR 113 on the westernmost end of the project site. Ground squirrels are present in the area, as evidenced by observation of squirrels escaping to their burrows, and alarm calls. Two California walnut (*Juglans hindsii*) trees are also present in the area (Appendix C), and a complex of ground squirrel burrows is especially



Source: Ascent Environmental 2016

Figure 7.4-1

Land Cover



concentrated below the trees. Approximately two and a half acres of additional ruderal grassland habitat is located along the south and east portions of the project site within the Arboretum. This area also contains many ground squirrel burrows, and direct evidence of ground squirrel presence.

**Valley-Foothill Riparian Woodland**

Approximately two acres of valley-foothill riparian woodland is present along the southwest corner of the project site within the Arboretum (Figure 7.4-1). This area is dominated by non-native ailanthus or “Tree of Heaven” (*Ailanthus altissima*), and also contained valley oak, live oak, blue elderberry (*Sambucus nigra ssp. caerulea*) and willow (*Salix* sp.). The 2003 LRDP EIR confirmed the presence of blue elderberry within the riparian woodland area, but additional elderberry shrubs have grown since then, most notably along the driveway to the UC Davis Equestrian Center (Exhibit 7.4-1). The valley-foothill riparian area includes an intermittent wetland that is likely part of the historic north fork of Putah Creek. Although it was dry during the reconnaissance-level wildlife survey, it likely contains water during heavy rains and flooding events.

**Special Status Species**

A search of the California Natural Diversity Database (CNDDDB) was conducted for sensitive biological resources or special-status species that have been documented within a five-mile radius of the project site. Based on a review of the CNDDDB records search results (CNDDDB 2016), documented species ranges, and the reconnaissance-level wildlife survey, 12 special-status wildlife species (Table 7.4-1) and nine special-status plant species (Table 7.4-2) have potential to occur on the project site. Of these species, six wildlife species may occur in the project area: western pond turtle (*Actinemys marmorata*), burrowing owl (*Athene cunicularia*), Swainson’s hawk (*Buteo swainsoni*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). Six wildlife species and all 10 plant species are not expected to occur due to the lack of suitable habitat in the project site.

Only one special status species, western pond turtle, was observed during the reconnaissance-level wildlife survey. A list of all species observed during the survey can be found in Appendix C.

**Table 7.4-1: Potential for Special-Status Wildlife to Occur on the Project Site**

Species	Listing Status <sup>1</sup>		Habitat	Potential for Occurrence <sup>2</sup>
	Federal	State		
<b>Amphibians and Reptiles</b>				
Western pond turtle <i>Actinemys marmorata</i>	-	SC	Forage in ponds, marshes, slow-moving streams, sloughs, and irrigation/drainage ditches; nest in nearby uplands with low, sparse vegetation.	May occur. Three western pond turtles were observed less than ¼ mile from the project site in the Arboretum Waterway during the wildlife reconnaissance survey.
California tiger salamander <i>Ambystoma californiense</i>	T	T	Suitable habitats include vernal pools and seasonal wetlands with a minimum 10-week inundation period, and surrounding uplands, primarily grasslands, with burrows and other belowground refugia (e.g., rock or soil crevices).	Not expected to occur. Suitable vernal pool or wetland habitat is not present within or directly adjacent to the project site. Additionally, there are no records of the species near the project site (CNDDDB 2016).
Giant garter snake <i>Thamnophis gigas</i>	T	T	Slow-moving streams, sloughs, ponds, marshes, inundated floodplains, rice fields, and irrigation/drainage ditches on the Central Valley floor with mud bottoms, earthen banks, emergent vegetation, abundant small aquatic prey and absence or small numbers of large predatory fish. Also require upland refugia not subject to flooding during the snake’s inactive season.	Not expected to occur. Suitable habitat is not present within the project site. The only known occurrence was near Putah Creek, over a mile south of the project site, nearby suitable habitat.

**Table 7.4-1: Potential for Special-Status Wildlife to Occur on the Project Site**

Species	Listing Status <sup>1</sup>		Habitat	Potential for Occurrence <sup>2</sup>
	Federal	State		
<b>Birds</b>				
Tricolored blackbird <i>Agelaius tricolor</i>	-	SC	A colonial species, most numerous in the central valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	Not expected to occur. Suitable nesting habitat is not present within the project site. Additionally, there have not been past or current documented observations within or directly adjacent to the project site (CNDDDB 2016, eBird 2016).
Burrowing owl <i>Athene cucularia</i>	-	SC	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 ( <i>Otospermophilus beecheyi</i> ).	May occur. Ground squirrel burrows were observed throughout the fields adjacent to the project site, and throughout the adjacent portion of the UC Davis Arboretum. Nesting burrowing owls are known to occur on the UC Davis campus, as outlined in the 2003 LRDP EIR.
Swainson's hawk <i>Buteo swainsoni</i>	-	T	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannas, 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.	May occur. The area adjacent to the project site contains many large trees, including various oak ( <i>Quercus</i> ) species, cottonwoods, pines and <i>Eucalyptus</i> that would be suitable for nesting. The project site is adjacent to suitable riparian habitat in Putah Creek and agricultural land that would be suitable foraging habitat for Swainson's hawks.
Northern harrier <i>Circus cyaneus</i>	-	SC	Uses a variety of open grassland, wetland, and agricultural habitats. Breeding habitats include marshy meadows, wet and lightly grazed pastures, and freshwater and brackish marshes; and dry upland habitats, such as grassland, cropland, drained marshland, and shrub-steppe in cold deserts. Wintering habitat includes grassland, pastures, cropland, coastal sand dunes, brackish and freshwater marshes, and estuaries.	May occur. Suitable foraging habitat is present in the agricultural land surrounding the project site. A known nest site is located approximately four miles north of the project site (CNDDDB 2016), and the species has been observed foraging within the project site recently (eBird 2016).
Western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	T	E	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	Not expected to occur. An unconfirmed sighting was recorded approximately two miles east of the project site along Putah Creek in 2013 (CNDDDB 2016). Though the project site is within the historic range of this species, there is not suitable habitat within the project site.
White-tailed kite <i>Elanus leucurus</i>	-	FP	Forages in grasslands and agricultural fields; nests in riparian zones, oak woodlands, and isolated trees.	May occur. White-tailed kite is known to nest and forage on the UC Davis campus. Suitable nesting habitat is present within the project site.
<b>Mammals</b>				
Pallid bat <i>Antrozous pallidus</i>	-	SC	Deserts, grasslands, shrub lands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from thermal stress. Very sensitive to disturbance of roosting sites.	Not expected to occur. Suitable roosting habitat is not within the project site. Pallid bats prefer roosting in rocky, arid areas, but will use basal hollows in redwood trees, oak trees, and snags. While redwood and oak trees are present on the project site, they are landscape trees without sufficient size or hollow areas.

**Table 7.4-1: Potential for Special-Status Wildlife to Occur on the Project Site**

Species	Listing Status <sup>1</sup>		Habitat	Potential for Occurrence <sup>2</sup>
	Federal	State		
American badger <i>Taxidea taxus</i>	-	SC	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.	Not expected to occur. The CNDDDB reports one historic record for badger in the vicinity of Davis, CA. However, badger has not been documented on the UC Davis campus, and is not expected to occur on the project site due to a lack of suitable habitat.
<b>Invertebrates</b>				
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	T	-	Elderberry shrubs below 3,000 feet in elevation, typically in riparian habitats. Found in stems measuring 1 inch or greater at ground level.	May occur. Several stands of elderberry shrubs are present within the project site in the valley-foothill riparian area. Many of the shrubs were of appropriate size and maturity to be potential habitat for valley elderberry longhorn beetle.

Note: CNDDDB = California Natural Diversity Database

<sup>1</sup> Legal Status Definitions

Federal:

E Endangered (legally protected)

T Threatened (legally protected)

D Delisted

PT Proposed Threatened

State:

D Delisted

FP Fully protected (legally protected)

SC Species of special concern (no formal protection other than CEQA consideration)

E Endangered (legally protected)

T Threatened (legally protected)

CT Candidate Threatened

<sup>2</sup> Potential for Occurrence Definitions

**Not expected to occur:** Species is unlikely to be present in the project area due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

**May occur:** Suitable habitat is available in the project area; however, there are little to no other indicators that the species might be present.

**Likely to occur:** The species, or evidence of its presence, was observed in the project area during reconnaissance surveys, or was reported by others.

Source: CNDDDB 2016; eBird 2016

**Table 7.4-2: Special-Status Plant Species Known to Occur in the Project Region and their Potential for Occurrence in the Project Area**

Species	Status <sup>1</sup>			Habitat and Blooming Period	Potential for Occurrence <sup>2</sup>
	Federal	State	CRPR		
Ferris' milk-vetch <i>Astragalus tener</i> var. <i>ferrisiae</i>	-	-	1B.1	Meadows and seeps, valley and foothill grassland. Subalkaline flats on overflow land in the central valley; usually seen in dry, adobe soil. 16-246 feet in elevation. Blooms April to May.	Not expected to occur. Suitable habitat is not present on the project site. The nearest occurrence is greater than one mile from of the project site (CNDDDB 2016, Calflora 2016).
Alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>	-	-	1B.2	Alkali playa, valley and foothill grassland, vernal pools. Low ground, alkali flats, and flooded lands; in annual grassland or in playas or vernal pools. 0-551 feet in elevation. Blooms March to June.	Not expected to occur. Suitable habitat is not present on the project site. The nearest occurrences are greater than two miles from of the project site, and most are likely extirpated (CNDDDB 2016, Calflora 2016).

**Table 7.4-2: Special-Status Plant Species Known to Occur in the Project Region and their Potential for Occurrence in the Project Area**

Species	Status <sup>1</sup>			Habitat and Blooming Period	Potential for Occurrence <sup>2</sup>
	Federal	State	CRPR		
Heartscale <i>Atriplex cordulata</i> var. <i>cordulata</i>	–	–	1B.2	Chenopod scrub, valley and foothill grassland, meadows. Alkaline flats and scalds in the central valley, sandy soils. 0-1,837 feet in elevation. Blooms April to October.	Not expected to occur. Suitable habitat is not present on the project site. The nearest occurrence is greater than three miles north of the project site, and likely extirpated (CNDDDB 2016, Calflora 2016).
Brittlescale <i>Atriplex depressa</i>	–	–	1B.2	Chenopod scrub, meadows, playas, valley and foothill grassland, vernal pools. Usually in alkali scalds or alkali clay in meadows or annual grassland; rarely associated with riparian, marshes, or vernal pools. 3-1,050 feet in elevation. Blooms April to October.	Not expected to occur. Suitable habitat is not present on the project site. The nearest occurrences are greater than two miles north of the project site (CNDDDB 2016, Calflora 2016).
San Joaquin spearscale <i>Extriplex joaquinana</i>	–	–	1B.2	Chenopod scrub, alkali meadow, playas, valley and foothill grassland. In seasonal alkali wetlands or alkali sink scrub with <i>Distichlis spicata</i> , <i>Frakenia</i> , etc. 3-2,739 feet in elevation. Blooms April to September.	Not expected to occur. Suitable habitat is not present on the project site. The nearest occurrences are greater than four miles north of the project site (CNDDDB 2016, Calflora 2016).
Northern California black walnut <i>Juglans hindsii</i>	–	–	1B.1	Riparian forest, and riparian woodland. Few extant native stands remain; widely naturalized. Deep alluvial soil, associated with a creek or stream. 0-2,100 feet in elevation. Blooms April to May.	Not expected to occur. While there are two California walnut trees on the project site, they are ornamental, horticultural plantings, and therefore not native species.
Heckard's pepper-grass <i>Lepidium latipes</i> var. <i>heckardii</i>	–	–	1B.2	Valley and foothill grassland, and sometimes vernal pool edges. Alkaline soils. 7-656 feet in elevation. Blooms March to May.	Not expected to occur. Suitable habitat is not present on the project site. The nearest occurrences are greater than four miles northeast of the project site (CNDDDB 2016, Calflora 2016).
Colusa grass <i>Neostapfia colusana</i>	T	E	1B.1	Vernal pools. Usually at the bottoms of large, or deep vernal pools; adobe soils. 16-410 feet in elevation. Blooms May to August.	Not expected to occur. Suitable habitat is not present on the project site. The nearest occurrences are greater than four miles southeast of the project site (CNDDDB 2016, Calflora 2016).
California alkaligrass <i>Puccinellia simplex</i>	–	–	1B.2	Meadows and seeps, chenopod scrub, valley and foothill grasslands, vernal pools. Alkaline, vernal mesic sinks, flats, and lake margins. 3-3,002 feet in elevation. Blooms March to May.	Not expected to occur. Suitable habitat is not present on the project site. The nearest occurrence, which is northeast of the project site on the UC Davis campus, is likely extirpated as the area is now developed (CNDDDB 2016, Calflora 2016).
Crampton's tuctoria <i>Tuctoria mucronata</i>	E	E	1B.1	Vernal pools, valley and foothill grassland. Clay bottoms of drying vernal pools and lakes in valley grassland. 16-33 feet in elevation. Blooms April to August.	Not expected to occur. Suitable habitat is not present on the project site. The nearest occurrences are greater than four miles southeast of the project site (CNDDDB 2016, Calflora 2016).

Notes: USFWS = CRPR = California Rare Plant Rank; CNDDDB = California Natural Diversity Database

<sup>1</sup> Legal Status Definitions

**Table 7.4-2: Special-Status Plant Species Known to Occur in the Project Region and their Potential for Occurrence in the Project Area**

Species	Status <sup>1</sup>			Habitat and Blooming Period	Potential for Occurrence <sup>2</sup>
	Federal	State	CRPR		
<i>Federal:</i>					<i>California Rare Plant Ranks:</i>
<i>E Endangered (legally protected by ESA)</i>					<i>1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)</i>
<i>T Threatened (legally protected by ESA)</i>					
<i>State:</i>					<i>Threat Ranks</i>
<i>E Endangered (legally protected by CESA)</i>					<i>0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)</i>
<i>R Rare (legally protected by CNPPA)</i>					<i>0.2-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)</i>

<sup>2</sup> **Potential for Occurrence Definitions**

**Not expected to occur:** Species is unlikely to be present on the project site due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

**May occur:** Suitable habitat is available at the project site; however, there are little to no other indicators that the species might be present.

**Likely to occur:** The species, or evidence of its presence, was observed at the project site during reconnaissance surveys, or was reported by others.

Sources: CNDDDB 2016; Calflora 2016

**Trees**

The 2003 LRDP EIR defines “specimen” trees as any “healthy trees or stand of trees that are of high value to the campus due to their size, species, extraordinary educational and research value, and/or other exceptional local importance.” The proposed project site includes the following “specimen” trees: seven Chinese elm trees (*Ulmus parvifolia*), three coast redwoods (*Sequoia sempervirens*), and two northern California black walnut (*Juglans hindsii*) trees within the ruderal grassland on the west side of the project site, which are ornamental, horticultural plantings rather than natural occurrences (Appendix C).

**7.4.2 2003 LRDP EIR Standards of Significance**

The 2003 LRDP EIR considers a biological resources impact significant if growth under the 2003 LRDP would:

- Result in a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS).
- Result in the “take” (defined as kill, harm, or harass) of any listed threatened or endangered species or the habitat of such species.
- Result in a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS.
- Result in 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, or coastal wetland) through direct removal, filling, hydrological interruption, or other means.
- 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.
- Conflict with any applicable local policies protecting biological resources such as a tree protection policy or ordinance.

An additional standard from the CEQA Guidelines’ Environmental Checklist (“F” in the checklist below) was found not applicable to campus growth under the 2003 LRDP.



### 7.4.3 2003 EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP on biological resources are evaluated in Section 4.4 of the 2003 LRDP EIR. The proposed project is within the scope of analysis in the 2003 LRDP EIR and the significant and potentially significant biological resources impacts identified in the 2003 LRDP EIR that are relevant to the proposed project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR.

<b>2003 LRDP EIR Impacts</b>		<b>Level of Significance Prior to Mitigation</b>	<b>Level of Significance After Mitigation</b>
<b>BIOLOGICAL RESOURCES</b>			
4.4-2	Development allowed under the 2003 LRDP would result in the conversion of approximately 550 acres of Agricultural Land and Ruderal/Annual Grassland habitat to campus-related development, which would result in the loss of general wildlife habitat for resident and migratory species, including foraging habitat for the Swainson’s hawk.	PS	LS
4.4-3	Development allowed under the 2003 LRDP would result in the conversion of approximately 65 acres of Agricultural Land and Ruderal/Annual Grassland habitat suitable for nesting burrowing owls to campus-related development.	PS	LS
4.4-4	Development allowed under the 2003 LRDP could result in the failure of nesting efforts by nesting raptors, including Swainson’s hawks or other birds of prey.	PS	LS
4.4-5	Development allowed under the 2003 LRDP would result in the loss of active nest sites for Swainson’s hawk.	PS	LS
4.4-6	Development allowed under the 2003 LRDP would result in the loss of potential habitat for the VELB.	PS	LS
4.4-8	Development allowed under the 2003 LRDP could result in the loss or adverse modification of natural wetlands or other waters of the U.S. that fall under the jurisdiction of the ACOE and/or CDFW.	PS	LS
4.4-11	Development under the 2003 LRDP could result in the removal of trees recognized to meet the campus’ standards for important trees, including:		
	a. Heritage Trees: Healthy valley oak trees with trunk diameters of 33 inches or greater at a height of 54 inches from the ground.	PS	LS
	b. Specimen Trees: Healthy trees or stands of trees that are of high value to the campus due to their size, species, extraordinary educational and research value, and/or other exceptional local importance.		

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the proposed project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the project description and will not be readopted in this Initial Study. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

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4.4-2 The campus shall mitigate the loss of foraging habitat due to development through the establishment of 650 acres of mitigation lands located within or near the Putah Creek Riparian Reserve. Approximately 370 acres of this area shall be converted from existing agricultural uses to restored Valley-Foothill Riparian Woodland and Valley Grassland at Russell Ranch. An additional 280 acres of agricultural land will be protected with a habitat and farmland conservation mechanism either at the Russell Ranch or the Kidwell and McConeghy parcels. These grassland and agricultural lands would be available as foraging habitat for Swainson’s hawk and other special-

## 2003 LRDP EIR Mitigation Measures

### BIOLOGICAL RESOURCES

status species such as prairie falcon, golden eagle, wintering or migrating birds and birds of prey that may occasionally forage on campus lands. Restored Valley-Foothill Riparian Habitat would be available as nesting habitat for Swainson's hawk and other birds of prey.

An additional 15-acre mitigation area shall be established along the North Fork Cutoff. This area shall be restored as an oak grassland and would be a nesting and foraging site for Swainson's hawk and other birds of prey.

- 4.4-3(a) The Russell Ranch Mitigation Area shall include at least 195 acres of grassland habitat suitable for use by burrowing owls. Ground squirrels in the mitigation area shall not be subject to control measures and will be allowed to fluctuate in response to local conditions. Artificial burrows may be installed if ground squirrel populations are not providing a sufficient number of burrows to support burrowing owls.
- 4.4-3(b) The campus shall survey proposed development areas with potential habitat for the presence or absence of burrowing owls.
- 4.4-3(c) The campus shall conduct a pre-construction survey of proposed project sites during the breeding season (from approximately February 1 through August 31), consistent with CDFW guidelines, in the same calendar year that construction is planned to begin. The survey shall be conducted by a qualified biologist to determine if any burrowing owls are nesting on or directly adjacent to any proposed project site. If phased construction procedures are planned for the proposed project, the results of the above survey shall be valid only for the season when it is conducted.

If the pre-construction breeding season survey does not identify any nesting raptor species on the project site, then no further mitigation would be required. However, should any burrowing owls be found nesting on the project site, then LRDP Mitigation 4.4-3(d) shall be implemented.

- 4.4-3(d) During the breeding season, the campus, consistent with CDFW guidelines, shall not disturb an occupied burrow while there is an active nest and/or juvenile owls are present. Avoidance shall include the establishment of a non-disturbance buffer zone around the nest site consistent with CDFW guidelines. The buffer zone shall be delineated by highly visible temporary construction fencing. The occupied nest site shall be monitored by a qualified biologist to determine when the juvenile owl is fledged and independent. Disturbance of an occupied burrow shall only occur outside the breeding season and when there is no nest or juvenile owl based on monitoring by a qualified biologist.

Based on approval by CDFW, pre-construction and pre-breeding season exclusion measures may be implemented to preclude burrowing owl occupation of the project site prior to project-related disturbance. These include the following measures:

- Obviously inactive burrows in the project area will be closed. Active or potentially active ground squirrel burrows will be monitored to confirm use by ground squirrels and not by burrowing owls before ground squirrels are removed and the burrow is closed. One-way doors will be used on active burrows if use by ground squirrels cannot be confirmed.
- The owls will be displaced from the occupied burrows according to the CDFW burrowing owl guidelines. The owls will be displaced from their burrows by installing one-way exit doors in occupied or potential burrows within the area of disturbance. After 48 hours with the doors in place, the burrows will then be closed to prevent reoccupation by owls.
- Where feasible, artificial burrows will be provided in adjacent suitable habitat consistent with CDFW guidelines.

- 4.4-4(a) The campus shall conduct a pre-construction survey of trees on and adjacent to a project site during the raptor breeding season (approximately March 1 to August 31). Additionally, the campus shall conduct surveys within a ½-mile radius of the site to determine the presence or absence of any nesting Swainson's hawks. The surveys shall be conducted by a qualified biologist during the same calendar year that the proposed activity is planned to begin to determine if any nesting birds-of-prey would be affected. If phased construction procedures are planned for the proposed activity, the results of the above survey shall be valid only for the season when it is conducted.

If any Swainson's hawks are nesting within a one-half-mile radius of the project site or if other raptors are nesting in, on or adjacent to the project site, a qualified biologist shall determine the potential for disturbance to nesting raptors, including Swainson's hawks. If the biologist determines that there is a significant potential for disturbance, the campus shall implement feasible changes in the construction schedule or make other appropriate adjustments to the project in response to the specific circumstances. If feasible project changes are not readily identifiable, the campus will consult with CDFW to determine what actions should be taken to protect the nesting efforts. If, after five years, a previously recorded nest site remains unoccupied by a Swainson's hawk, it will no longer be considered as a Swainson's hawk nest site subject to this mitigation.

## 2003 LRDP EIR Mitigation Measures

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- 4.4-4(b) The campus shall continue to conduct annual surveys to determine the location of nesting Swainson's hawks and other birds of prey on the campus outside the Putah Creek corridor. If nesting Swainson's hawks are found during the survey at a previously unknown location within one-half mile of a project site and/or at a location closer to the project or more visually exposed to the project site than a nearby previously documented site, a qualified biologist shall, prior to project construction, determine the potential for disturbance to nesting Swainson's hawks. If the biologist determines that there is a significant potential for disturbance, the campus shall implement feasible changes in the construction schedule or make other appropriate adjustments to the project in response to the specific circumstances (e.g. relocating noisy equipment or creating temporary sound barriers).
- The implementation of LRDP Mitigations 4.4-4(a) and (b) shall be conducted under the supervision of a biologist whose qualifications include:
- A bachelor's degree in biology or a related field;
  - Two years of field experience related to nesting raptors; and
  - Prior construction monitoring experience.
- Further:
- All decisions of the qualified biologist shall be made in consultation with the California Department of Fish and Wildlife;
  - Monitoring shall be conducted for a sufficient time (minimum of 3 consecutive days following the initiation of construction) to verify that the nesting pair does not exhibit significant adverse reaction to construction activities (i.e., changes in behavioral patterns, reactions to construction noise, etc.); and
  - Nest site monitoring will continue for a minimum of once a week through the nesting cycle at that nest.
- 4.4-5 Mitigation 4.4-4(a) and (b) will be implemented, including pre-construction survey of trees on and adjacent to a project site during the raptor breeding season (approximately March 1 to August 31). If a Swainson's hawk nest tree is present, the tree will be removed outside the nesting season (March-May).
- 4.4-6(a) During the project design stage and as a condition of project approval, the campus shall:
- Conduct a project-specific survey for all potential VELB habitat, including a stem count and an assessment of historic or current VELB use; and
  - Avoid and protect all potential VELB habitat within a natural open space area where feasible.
- 4.4-6(b) For those areas where avoidance is infeasible, the Russell Ranch Mitigation Area shall include approximately 20 acres within and adjacent to the riparian corridor of Putah Creek and within and adjacent to the existing drainage in the northeast corner of the site that will be used as a receptor site for transplanted elderberry shrubs and the associated elderberry seedlings and other native plant seedlings required to be planted in accordance with the USFWS VELB Mitigation Guidelines (USFWS 1999). The site is estimated to support between 100 and 500 transplanted elderberry shrubs, depending on the size and number of stems on the shrubs at the time they are transplanted.
- 4.4-8(a) During the project design phase, the campus shall conduct a wetlands delineation of the project site if wetlands are potentially present. The wetland delineation shall be verified by the ACOE.
- Should no wetland habitats or natural drainages be delineated on the site then no further mitigation shall be required. However, if any jurisdictional wetland habitats or natural drainages are delineated on a project site, then LRDP Mitigation 4.4-8(b) shall be required.
- 4.4-8(b) For projects that involve the fill of jurisdictional wetlands, the campus shall implement the following mitigation program that will ensure no net loss of wetland functions and values. To the extent feasible, the campus will avoid filling wetlands by redesigning the project to promote environmentally sensitive siting and design. If avoidance is not feasible, the campus shall minimize the fill acreage. If neither of these options is feasible, the wetlands will be mitigated for at a 3:1 ratio. This ratio will include both creation and preservation, with creation equaling at least a 1:1 ratio. To ensure no net loss of wetlands, the mitigation should include wetland enhancement as well. This would include monitoring, cleanup, and maintenance of preserved wetland habitats within and adjacent to the campus, as necessary.
- 4.4-8(c) The campus shall obtain the necessary ACOE, CDFW, and RWQCB permits prior to filling or other adverse modifications of any verified jurisdictional water of the U.S., or alteration, filling or modification of the channel, bed or bank of Putah Creek, South Fork of Putah Creek, Arboretum Waterway or any other natural drainage regulated under Section 1600 of the CDFW code.

**2003 LRDP EIR Mitigation Measures**

**BIOLOGICAL RESOURCES**

- 4.4-11 Before a project is approved under the 2003 LRDP, the campus will perform a tree survey of the project site. Grounds, the Office of Resource Management and Planning, and the Office of Architects and Engineers will provide input about tree classifications and will modify project design to avoid important trees if feasible. If a project cannot avoid an important tree, the following will apply:
- a. If a project would necessitate removal of a Heritage Tree, no mitigation would be available to fully mitigate the impact, and the impact would be significant and unavoidable. However, implementation of Mitigation 4.4-2 would restore Valley Foothill Riparian Woodland habitat at Russell Ranch, and plantings in this area would include valley oaks.
  - b. If a project would necessitate removal of a Specimen Tree, the project would relocate the tree if feasible, or would replace the tree with the same species or species of comparable value (relocation or replacement should occur within the project area if feasible). This would reduce the impact to a less-than-significant level.

**7.4.4 Environmental Checklist and Discussion**

**BIOLOGICAL RESOURCES**

Would the project...	Impact to be Analyzed in the EIR	No Additional EIR Analysis Required	Impact Adequately Addressed in 2003 LRDP EIR	Less-than-Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**a) Plants**

The proposed project site does not support habitat for sensitive plants and would have no impact on sensitive plant species.

See Wildlife section below for details related to removal of blue elderberry shrubs.

See item (e) below for details related to removal of trees.

**Wildlife**

Approximately four and a half acres of ruderal grassland, and approximately two acres of valley-foothill riparian woodland could be impacted by construction staging activities, and construction of utilities, including: water, electric, natural gas, and a storm drain. The 2003 LRDP EIR found that development under the 2003 LRDP could potentially result in the loss of special status wildlife species (2003 LRDP EIR Impact 4.4-2 through 4.4-5). Based on a reconnaissance-level wildlife survey of the VMC Vision project area, and a review of the sensitive plant and wildlife species within five miles of the project site, there is a potential for western pond turtle, burrowing owl, Swainson's hawk, northern harrier, white-tailed kite, and valley elderberry longhorn beetle to occur.

Western pond turtles are present within the open water ponds of the Arboretum Waterway, which is located to the south, outside of the project site. However, the culvert connecting the open pond area to the intermittent wetland associated with the valley-foothill riparian woodland within the project site is covered with a grate, which prevents pond turtles from crossing into the project site. In addition, the intermittent wetland area does not provide suitable habitat for western pond turtle, as it only seasonally contains water, and has no permanent pools. The project would have a less-than-significant impact to western pond turtle.

Northern harrier is known to forage within and adjacent to the project site. Northern harrier is not expected to nest within the project site because of the development, the grassland areas are mowed, there is a lack suitable cover, and there is frequent foot traffic and disturbance. The project would have a less-than-significant impact on nesting northern harriers. Furthermore, 2003 LRDP EIR Mitigation Measure 4.4-2 provides mitigation areas for foraging raptors.

Suitable burrowing owl habitat is present within the project site in the ruderal grassland areas, especially the areas on the western, southern, and eastern portions of the project site. Project construction activities, including vehicles, ground disturbance activities, and construction crews within close proximity of burrows could result in a potentially significant impact to burrowing owls. 2003 LRDP EIR Mitigations 4.4-3 (a through d) would be implemented as part of the project to ensure that burrows inhabited by burrowing owls are identified and avoided during construction activities. The 2003 LRDP EIR also identified mitigation areas purchased by the University that provide suitable habitat for burrowing owls at the Russell Ranch Mitigation Area. Therefore, the project would have a less-than-significant impact on burrowing owls.

Swainson's hawks and white-tailed kites are known to forage within and adjacent to the project site, and to nest near the project site. A known Swainson's hawk nesting occurrence is located less than one tenth of a mile west of the project site. Suitable nesting habitat is present throughout the project site, in the various large oak, pine, and Eucalyptus trees. Additionally, the UC Davis campus is surrounded by suitable foraging habitat (Figure 7.4-1). Project construction activities, including vehicles, ground disturbance activities, construction crews within close proximity of nesting trees, and disturbance to or removal of nesting trees, could result in a potentially significant impact to Swainson's hawk and white-tailed kite. Mitigations 4.4-2, 4.4-3 (a), 4.4-4 (a and b) and 4.4-5 from the 2003 LRDP EIR would be implemented as part of the project to prevent disturbance to active nests, and to mitigate for disturbance if it occurs. The 2003 LRDP EIR outlined mitigation areas purchased by the University that provide suitable foraging and nesting habitat for Swainson's hawks and white-tailed kite within or near the Putah Creek

Riparian Preserve. Therefore, the project would have a less-than-significant impact on Swainson's hawks and white-tailed kites.

There are no recorded occurrences of valley elderberry longhorn beetle within five miles of the project site (CNDDB 2016), and the beetle had not been observed on the UC Davis campus per the 2003 LRDP EIR. However, several stands of blue elderberry shrubs are present within the project site, in the valley-foothill riparian habitat (Exhibit 7.4-1). At least 30 individual shrubs, growing in clusters, border the driveway leading to the UC Davis Equestrian Center. Installation of underground electric lines is proposed near the elderberry shrubs. While it is possible that project construction activity could avoid the shrubs, it is also possible that several of the shrubs could be impacted either by direct removal, or by damage to the root system underground. Loss of elderberry shrubs would be a potentially significant impact. Mitigations 4.4-6 (a and b) from the 2003 LRDP EIR would be implemented as part of the project to determine whether valley elderberry longhorn beetles are present; to ensure that impacts to elderberry shrubs are avoided; and in areas where impact avoidance is infeasible, to transplant elderberry shrubs in the Russell Ranch Mitigation Area. Therefore, the project would have a less-than-significant impact on valley elderberry longhorn beetle.

- b, c) A portion of valley-foothill riparian habitat and an associated intermittent wetland is present within the southern portion of the project site, where a storm drain is proposed to be constructed. While the project limit of disturbance largely avoids the valley-foothill riparian area, approximately two acres of this sensitive habitat is within the disturbance area, including an intermittent wetland. Construction activities to install the proposed drainpipe, such as ground disturbance and vehicle use, could result in intentional or accidental fill of wetland habitat, or destruction of riparian habitat. However, the project includes implementation of 2003 LRDP EIR Mitigations 4.4-8 (a, b, and c) to identify and avoid wetlands. If avoidance is not feasible, mitigation involving creation and preservation of wetlands, as well as wetland enhancement, as outlined in Mitigation 4.4-8(b) would be implemented. In addition, mitigation for loss of riparian habitat would be provided such that no net loss occurs, in accordance with CDFW requirements under Fish and Game Code Section 1600. Therefore, the VMC Vision would have a less-than-significant impact on riparian habitat and wetlands.
- d) The Putah Creek corridor, which is the southern boundary of the UC Davis central campus, is the principal corridor for the movement of native resident and migratory fish and wildlife through the area. It is the regional connection between the hills in western Yolo County and the Sacramento River. The VMC Vision project area is approximately one mile north of the Putah Creek corridor. Therefore, the project would not interfere 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. No impact would occur.
- e) The 2003 LRDP EIR defines a "heritage" tree as a valley oak tree with trunk diameter of 33 inches or greater at a height of 54 inches from the ground. The proposed project would not remove any heritage oak trees.

Ten "specimen" trees would be removed due to project construction. These trees include seven non-native Chinese elm trees, and three coast redwoods. Coast redwoods are native to California coastal regions, but are not native to the central valley. 2003 LRDP EIR Mitigation Measure 4.4-11(b) would be implemented, requiring replacement of "specimen" trees if they are required to be removed by the project. Therefore, the VMC Vision would result in a less-than-significant impact on specimen trees.

- f) The campus does not fall within the boundaries of, nor is it adjacent to, an adopted regional Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP). The campus has implemented two low effects HCPs for valley elderberry longhorn beetle at Russell Ranch. The project is not located at Russell Ranch. Therefore, the proposed project would not conflict with an adopted HCP or NCCP. No impact would occur.

## 7.5 CULTURAL RESOURCES

### 7.5.1 Background

Section 4.5 of the 2003 LRDP EIR addresses the effects of campus growth under the 2003 LRDP on cultural resources. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.5 of the 2003 LRDP EIR and the *UC Davis Veterinary Medical Center Project Historic Resources Survey and Evaluation Report* (UC Davis 2016a).

#### Campus

Cultural resources on campus include prehistoric and historic resources. Prehistoric resources are those sites and artifacts associated with the indigenous, non-Euroamerican population, generally dating prior to contact with people of European descent. Historic resources include structures, features, artifacts, and sites that date from Euroamerican settlement of the region.

#### *Archaeological Setting*

The UC Davis campus lies in the ethnographic territory of the Patwin. Each Patwin tribelet was distributed among a principal semi-permanent village and several satellite settlements. The principal villages were situated on large waterways like the Sacramento River. During the warmer months, groups might move en masse to terraces and other high points along tributaries in the plains and hills. Houses in principal villages were semi subterranean and earth-covered, and villages usually also had a semi-subterranean ceremonial sweathouse. Archaeologically, occupation sites are characterized by tightly flexed burials associated with artifacts, dark soils, chipped stone tools and tool debris, shell beads and ornaments, and sometimes groundstone artifacts. Bedrock mortars are absent from valley sites, due to the absence of bedrock outcrops in the valley’s deep alluvium.

The earliest direct historic contacts in the Davis area probably occurred during the Moraga expedition, 1806 to 1808. At this time, the Spanish sought to locate new mission sites, capture Native American runaways, and punish those who were hostile to the missions. Most significant in the decimation of the Native population was the great malaria epidemic of 1833, which killed about 75 percent of the native population. The advent of the 1849 Gold Rush saw a huge inrush of people to the Sacramento area, with extensive travel on the Sacramento River. For natives of the area, increased competition for the use of land and resources, impacts on the essential river fisheries, introduced diseases, and even genocide followed. Few Patwin survived these events.

#### *Archaeological Resources*

Archaeological sensitivity for the UC Davis campus has been identified based on known site occurrences and finds in similar settings in the vicinity. Areas within 800 feet of the banks of the historic channel of Putah Creek and its tributaries and slough channels, and in the vicinity of known archaeological sites, were identified as sensitive for the presence of archaeological resources. Areas of the campus that are close to these features—the majority of the central campus—have high potential to contain archaeological resources (in particular, prehistoric archaeological resources), that might be affected by project development in these areas. Because of the depositional setting of the campus—an active alluvial plain with recent deep sediments—prehistoric and even historic archaeological deposits are frequently buried. Thus, archaeological resources may not be visible on the surface and might be relatively unaffected by surface activity, but could be affected by excavation and grading. Archaeological sites may be present that are not readily identifiable prior to groundbreaking.

Since 1991, and systematically since the implementation of the 1994 LRDP, project sites on the campus routinely have been assessed for cultural resources sensitivity. Large-scale projects and those within the high-sensitivity zone have been subjected to archaeological surveys, usually accompanied by archaeological testing and followed by archaeological monitoring. Since 1991, extensive archaeological investigations (survey, testing, monitoring, and/or excavation) have been conducted on campus in conjunction with the development of campus projects.

### ***Historic Setting***

The UC Davis campus is the second in the University of California system; it was founded to establish the University Farm for the University of California at Berkeley's (UC Berkeley) thriving College of agriculture. On March 18, 1905, Governor George C. Pardee signed into law "an Act providing for the Purchase of a University Farm" which authorized the Regents of the University of California to acquire a tract of land for an agricultural school. The school, administered by the university's College of Agriculture, was intended to conduct experimentation in agriculture and provide rural youth an opportunity to obtain practical training in vocations related to farming. The State Farm Commission authorized the purchase of the original farm site on about 780 acres in Yolo and Solano counties on April 5, 1906. The first Farm School students were officially enrolled in 1908, with UC Berkeley students arriving to join them for a semester or two of "practical education." Specialized short courses in agriculture were also offered to the public. The farm had six degree students in 1909 and grew to 95 students by 1912.

A school of veterinary medicine was approved by the California Legislature in 1941; the UC Davis campus was chosen and in 1948 the first students began classes in temporary quarters. Built at a cost of \$5 million, a permanent building (known as Haring Hall, after the first dean of the school) was completed two years later. The School of Veterinary Medicine (SVM) enrolled its first students in 1948; of the 42 students who enrolled, 41 had served in WWII. By the early 1960s, the SVM was on its way towards international excellence. As the SVM grew, departments were formally organized. The first Department of Clinical Pathology in any veterinary school in the world was organized under the direction of Oscar Schalm. Under the leadership of Clyde Stormont, the Veterinary Genetics Laboratory opened in 1963. In 1966, UC Davis approved a new Department of Epidemiology and Preventive Medicine, the first of its kind among veterinary schools. In 1967, the Equine Disease Research Laboratory was established and in 1968 the world's first veterinary-school-based program in zoological medicine was organized. In 1969, the school's experimental facilities were improved with the construction of 13 new buildings.

In the 1960s, a nation-wide need for veterinarians became evident. New kinds of animal medical research were expanding the role of veterinarians and the 17 colleges of veterinary medicine in the United States were not graduating enough students to fill this need. Dean Pritchard's expansion plans for the SVM were complicated by a few factors. The first was that with the decision to establish a School of Medicine at UC Davis, many in the administration and on the faculty hoped that the two schools could co-exist. Another complication in the planning of the expansion of the SVM was the push by legislators and others to establish a new veterinary program in southern California.

The Veterinary Medical Teaching Hospital and associated buildings opened in October 1970 after approximately eight years of planning. The buildings included the main teaching hospital, and those designed for cattle surgery, reproductive diseases of cattle and horses, contagious diseases of large animals, and feed storage. The VMTH was the clinical laboratory of the SVM in order to provide facilities and staff to care for a sufficient number of sick animals to meet the needs of the courses taught in the SVM. By May 1972 the VMTH was already overcrowded; and with the opening of VM2 in 1979, the School was able to expand its SVM class size to 128 students per class.

Today the UC Davis School of Veterinary Medicine is the largest veterinary school in the United States (nearly 550 Doctor of Veterinary Medicine students annually) and is currently ranked first among veterinary schools in the United States. In addition, it is ranked 1st in the world per the QS World University Rankings for two consecutive years: 2015 and 2016. QS rankings are based on reputational surveys and research citations. In 2016, QS evaluated 4,226 universities, qualifying 2,691 and ranking 945 institutions. The SVM now runs 28 research and clinical programs and provides clinical services to more than 50,000 animal patients in 34 specialties annually.

### ***Historic Resources***

Historic architectural features typically must be at least 50 years of age to be considered for listing on the California Register of Historical Resources (CRHR) or the National Register of Historic Places (NRHP). Although the NRHP criterion for evaluation and listing sets 50 years as one of the primary considerations for eligibility, the State Historic Preservation Officer (SHPO) provides guidance that any physical evidence of human activities over 45 years old may be recorded for purposes of inclusion in the Office of Historic Preservation's



filing system. SHPO states that the 45-year guideline recognizes that there is commonly a five-year lag between resource identification and the date that planning decisions are made.

In 1986, Hart Hall was listed in the National Register of Historic Places. Walker Hall has also been determined eligible for listing on the NRHP, though it has not been formally listed. All properties in California that are listed in or formally determined eligible for listing in the NRHP are eligible for the CRHR.

## Project Site

The UC Davis Veterinary Medical Center Vision Project site is located within the Health Sciences District in the UC Davis central campus area. The potential for intact buried archaeological resources is considered high because the southern portion of the project site is located within 800 feet of the historic channel of Putah Creek and its tributaries and slough channels, as shown on Figure 4.5-1 in the 2003 LRDP EIR.

The project consists of twelve buildings, six of which do not meet the minimum 45-year guideline for listing in either the NRHP or CRHR. The remaining six buildings include: Pritchard VMTH, Hay Barn, Isolation Barn, and B, C, and D Barns. In terms of cultural resources, the project would demolish the existing VMTH Office Annex, Hay Barn, Isolation Barn, and Equine Examination buildings; the construction of five new structures; and ground disturbance for utility lines including domestic water, utility water, sanitary sewer, storm drainage, electricity, and telecommunications. The six buildings on the project site that are over 45 years old (Pritchard VMTH, Hay Barn, Isolation Barn, and B, C, and D Barns) have been evaluated for historical significance in the *UC Davis Veterinary Medical Center Project Historic Resources Survey and Evaluation Report* (UC Davis 2016a).

The period of significance for the six buildings is 1969-1971; the date of construction until 45 years prior to the historic resources survey. As these buildings have not yet achieved 50 years of age, in addition to evaluation using the NRHP and CRHR significance criteria, they were subject to NRHP Criteria Consideration G and CRHR Special Consideration for properties less than 50 years of age. The evaluations below use the letter/number criterion references from the NRHP and CRHR, respectively. The evaluations are also based on the U.S. Department of the Interior, National Park Service Bulletin 15, *How to Apply the National Register Criteria for Evaluation*, which is the recognized national standard for evaluation of historic significance. The buildings were also evaluated in compliance with PRC Sections 5024 and 5024.5 requiring state agencies to consider project effects on state-owned historical resources. None appear to meet the criteria for listing in the NRHP, the CRHR, as a California Historical Landmark, or for the local Davis Register, either as a Landmark or Merit Resource. Because these buildings do not appear to meet the criteria for the NRHP or the CRHR, they are not considered to be significant for the purposes of CEQA.

### ***Pritchard VMTH***

Pritchard VMTH is associated with the growth of UC Davis that occurred after the Regents formally designated Davis as a General Campus in 1959 and the nation-wide shortage of veterinarians during the 1960s and 70s as the role of veterinarians expanded. However, while the UC Davis School of Veterinary Medicine has achieved numerous scientific advances over time, those events did not occur in the VMTH building during its period of significance. Because Pritchard VMTH is not associated with events that have made a significant contribution to the broad patterns of our nation's, California's, or local history, it does not appear to meet NRHP/CRHR Criterion A/1.

The building does not appear to be eligible for listing in the NRHP/CRHR Criterion B/2 because it does not have any direct associations with any individuals significant to history. Although Pritchard VMTH does not support research, it serves as the origination source for research projects. However, during the period of significance for this building, 1969-1971, historical research did not reveal specific individually significant researchers or lecturers within the context of veterinary medicine studies that have direct important association with the building.

The building does not appear to be eligible under Criterion C/3. The building lacks architectural distinction, does not have artistic qualities, and is not the work of a master. While elements of Pritchard VMTH could be described in the New Formalism style, it lacks the architectural value and main characteristics of the style.

The building does not appear to be eligible under Criterion D/4 because it is not likely to yield any additional important information about our history. Construction details about the existing building have been fully documented.

### ***Hay Barn***

The Hay Barn is associated with the growth of UC Davis that occurred after the Regents formally designated Davis as a General Campus in 1959 and the nation-wide shortage of veterinarians during the 1960s and 70s as the role of veterinarians expanded. However, while the UC Davis School of Veterinary Medicine has achieved numerous scientific advances over time, those events did not occur in the Hay Barn; therefore, the building does not appear to meet NRHP/CRHR Criterion A/1.

The building does not appear to be eligible for listing in the NRHP/CRHR Criterion B/2 because the Hay Barn provides a space for the storage of hay and associated equipment; historical research did not reveal specific individually significant researchers or lecturers within the context of veterinary medicine studies that have direct important association with the building.

The building does not appear to be eligible under Criterion C/3. The building lacks architectural distinction, does not have artistic qualities, and is not the work of a master.

The building does not appear to be eligible under Criterion D/4 because it is not likely to yield any additional important information about our history. Construction details about the existing building have been fully documented.

### ***Isolation Barn***

The Isolation Barn is associated with the growth of UC Davis that occurred after the Regents formally designated Davis as a General Campus in 1959 and the nation-wide shortage of veterinarians during the 1960s and 70s as the role of veterinarians expanded. However, while the UC Davis School of Veterinary Medicine has achieved numerous scientific advances over time, those events did not occur in the Isolation Barn; therefore, the building does not appear to meet NRHP/CRHR Criterion A/1.

The building does not appear to be eligible for listing in the NRHP/CRHR Criterion B/2 because the Isolation Barn is reserved for animals presenting with signs of infectious diseases; historical research did not reveal specific individually significant researchers or lecturers within the context of veterinary medicine studies that have direct important association with the building.

The building does not appear to be eligible under Criterion C/3 as the building lacks architectural distinction and does not have artistic qualities. The Isolation Barn was designed by William Koblik and Edward Simonds, both of whom designed other buildings for UC Davis and the Sacramento community. Considering the breadth of work between Koblik and Simonds, the Isolation Barn cannot be considered the best representation of their work.

The building does not appear to be eligible under Criterion D/4 because it is not likely to yield any additional important information about our history. Construction details about the existing building have been fully documented.

### ***B, C, and D Barns***

B, C, and D Barns are associated with the growth of UC Davis that occurred after the Regents formally designated Davis as a General Campus in 1959 and the nation-wide shortage of veterinarians during the 1960s and 70s as the role of veterinarians expanded. However, while the UC Davis School of Veterinary Medicine has achieved numerous scientific advances over time, those events did not occur in these buildings; therefore, they do not appear to meet NRHP/CRHR Criterion A/1.

The buildings do not appear to be eligible for listing in the NRHP/CRHR Criterion B/2 because they do not have any direct associations with any individuals significant to history. B Barn is home to the ICU for the large animal clinic (LAC) and functions primarily as animal quarters with additional areas for storage as well as treatment and examinations. C Barn includes animal quarters, treatment and examination areas, administrative offices, and a staff on-call room. D Barn is used exclusively for animal quarters by the LAC. Historical research

did not reveal specific individually significant researchers or lecturers within the context of veterinary medicine studies that have direct important association with these buildings.

B, C, and D Barns do not appear to be eligible under Criterion C/3. They lack architectural distinction, do not have artistic qualities, and are not the work of a master.

The buildings do not appear to be eligible under Criterion D/4 because they are not likely to yield any additional important information about our history. Construction details about B, C, and D Barns have been fully documented.

### Records Search and Literature Review

On September 15, 2016, staff members of the Northwest Information Center (NWIC) at Sonoma State University, Rohnert Park, California, part of the California Historical Resources Information System, conducted a cultural resources records search for the project site and a ¼ mile boundary (NWIC File No. 16-0256). The records search also included a review of the NRHP, CRHR, *California Inventory of Historic Resources* (1976), the Directory of Properties in the Historic Properties data file for Yolo and Solano Counties (2012), the State Historic Resources Inventory of Properties in Unincorporated Yolo County and West Sacramento, and the Yolo County Historic Resources Survey Master List.

The records search found no architectural or archaeological resources within the project site and only one within the ¼ mile buffer, a wastewater treatment plant that was evaluated as not appearing to meet any criteria for the NRHP or CRHR. There were eight reports within the project site (Table 7.5-1) and 16 within the ¼ mile buffer area.

**Table 7.5-1: Previous Cultural Resources Studies Within the Project Site**

NCIC Report #	Year of Study	Title of Study	Study Author
S-013532	1992	Cultural Resource Assessment of the Proposed University of California, Davis West Campus Wastewater System Connection, Yolo County, California	Peak & Associates, Inc.
S-016463	1994	Archaeological Investigations for the Putah Creek Lodge Parking Lot on the U.C. Davis Campus, Yolo County, California	BioSystems Analysis, Inc.
S-016787	1994	Archaeological Investigations for the West Campus Sewage Project on the U.C. Davis Campus, Yolo County, California	BioSystems Analysis, Inc.
S-017060	1995	Archaeological Services for Three Proposed Hay Barns at the Equestrian Center on the U.C. Davis Campus, Yolo County, California	BioSystems Analysis, Inc.
S-017173	1995	Archaeological Services for the Structure at the Equestrian Center on the U.C. Davis Campus, Yolo County, California	BioSystems Analysis, Inc.
S-018666	1996	Historic Building Inventory and Evaluation of California Register of Historic Resources and National Register of Historic Places Eligibility for the UC Davis Wastewater Treatment Plant Replacement Project	Jones & Stokes Associates, Inc.
S-020192	1998	Archaeological Investigation for the Proposed South Interstate 80 Enterprise Reserve	Pacific Legacy, Inc.
S-020193	1998	Archaeological Investigation for the Proposed North Interstate 80 Enterprise Reserve	Pacific Legacy, Inc.

Source: Data compiled by Ascent Environmental, Inc. in 2016.

### Native American Consultation

Assembly Bill (AB) 52, signed by Governor Edmund G. Brown, Jr., in September 2014, established a new class of resources under CEQA: “tribal cultural resources” (TCRs). AB 52, as provided in Public Resource Code (PRC) Sections 21080.3.1, 21080.3.2, and 21082.3, requires that lead agencies undertaking CEQA review must, upon written request of a California Native American Tribe, begin consultation once the lead agency determines that the application for the project is complete, prior to the issuance of a Notice of Preparation (NOP) of an environmental impact report (EIR) or notice of intent to adopt a negative declaration or mitigated negative declaration. AB 52 also requires revision to CEQA Appendix G, the environmental checklist to create a new category for TCRs.

Assembly Bill (AB) 52 establishes a consultation process, effective July 1, 2015, between California public agencies and California Native American Tribes. AB 52 further establishes a category of resources known as tribal cultural resources. At the outset of the CEQA process, public agencies must notify tribes that have requested such notice, of any project that has the potential to impact a tribal cultural resource.

UC Davis has not received a request for notification from any of the local tribes. UC Davis notifies the Yocha Dehe of all projects, and provides an update two or three times per year. No consultation request regarding this project has been made. However, on-going consultation regarding archaeological resources will continue related to the proposed project and all campus projects. If requested, particular site coordination could take place for the proposed project.

## 7.5.2 2003 LRDP EIR Standards of Significance

In addition to the following archaeological and historical standards of significance identified in the 2003 LRDP EIR, an additional standard from the CEQA Guidelines' Environmental Checklist ("c" in the checklist below) was found not applicable to campus growth under the 2003 LRDP.

### Archaeological Resources

The 2003 LRDP EIR considers an impact on archaeological resources significant if growth under the 2003 LRDP would:

- Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to CEQA Guideline § 15064.5.
- Disturb any human remains, including those interred outside of formal cemeteries.

A "unique archaeological resource" is defined under CEQA through Public Resources Code Section 21083.2(g). A unique archaeological resource implies an archaeological artifact, object, or site about which it can be clearly demonstrated that there is a high probability that it meets one of the following criteria:

- The archaeological artifact, object, or site contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information, or
- The archaeological artifact, object, or site has a special and particular quality, such as being the oldest of its type or the best available example of its type, or
- The archaeological artifact, object, or site is directly associated with a scientifically recognized important prehistoric or historic event or person.

For a resource to qualify as a unique archaeological resource, the agency must determine that there is a high probability that the resource meets one of these criteria without merely adding to the current body of knowledge (PRC § 21083.2(g)). An archaeological artifact, object, or site that does not meet the above criteria is a nonunique archaeological resource (PRC § 21083.2(h)). An impact on a nonunique resource is not a significant environmental impact under CEQA (CEQA Guidelines § 15064.5(c)(4)). If an archaeological resource qualifies as a historical resource under CRHR or other criteria, then the resource is treated as a historical resource for the purposes of CEQA (CEQA Guidelines § 15064.5(c)(2)).

Section 15064.5 of the CEQA Guidelines assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed under PRC § 5097.98. California Health and Safety Code § 7050.5(b) prohibits disturbance of human remains uncovered by excavation until the Coroner has made a finding relative to PRC § 5097 procedures.

### Historical Resources

For the purposes of this analysis, as mandated by PRC § 21083.2, impacts of the proposed project on an historical resource would be considered significant if it would:

- cause a significant adverse change in the significance of a historical resource as defined in CEQA Guidelines § 15064.5.

The standards of significance for historical resources are based on Appendix G and § 15064.5 of the CEQA Guidelines. Accordingly, historical resources include resources listed in, or determined to be eligible for listing in, the CRHR; resources included in a qualifying local register (such as the City of Davis Register of Historic Resources); and resources that the lead agency determines to meet the criteria for listing in the CRHR. These criteria may apply to any historic built environmental feature, and to historic or prehistoric archaeological sites. Properties or sites that are eligible for inclusion in the CRHR are termed “historical resources.” Under the provisions of CEQA Guidelines § 15064.5(a)(3), generally a lead agency should find that a property is historically significant if it determines that the property meets one or more of the criteria for listing on the CRHR, which extend to any building, structure, feature or site that:

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

With few exceptions, to qualify as a historical resource a property must be at least 50 years old and also must retain physical integrity and integrity to its period of significance. For historic structures and buildings, significantly altering the setting, remodeling, or moving the structure may diminish or destroy its integrity. Landscaping or landscape features may in some cases, contribute to the significance of an historic architectural property. Such elements would be assessed as part of the evaluation of the related historic architectural property. A structure or building that does not meet one of the criteria for eligibility to the CRHR is not a historical resource under CEQA, and impacts to such a property are not significant (CEQA Guidelines § 15064.5(c)(4)).

### 7.5.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP on cultural resources are evaluated in Section 4.5 of the 2003 LRDP EIR. The proposed project is within the scope of analysis in the 2003 LRDP EIR and significant and potentially significant cultural resources impacts identified in the 2003 LRDP EIR that are relevant to the proposed project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR.

<b>2003 LRDP EIR Impacts</b>		<b>Level of Significance Prior to Mitigation</b>	<b>Level of Significance After Mitigation</b>
<b>CULTURAL RESOURCES</b>			
4.5-1	Implementation of the 2003 LRDP could damage or destroy an archaeological resource or historic building or structure as the result of grading, excavation, ground disturbance or other project development.	PS	LS
4.5-2	Implementation of the LRDP could cause a substantial adverse change in the significance of a historical resource or unique archaeological resource, as defined in CEQA guidelines 15064.5, as the result of ground disturbance, alteration, removal or demolition associated with project development.	S	LS

<b>2003 LRDP EIR Impacts</b>		<b>Level of Significance Prior to Mitigation</b>	<b>Level of Significance After Mitigation</b>
<b>CULTURAL RESOURCES</b>			
4.5-3	Implementation of the LRDP could cause a substantial adverse change in the significance of a historical resource or unique archaeological resource, as defined in CEQA guidelines 15064.5, and the values that contribute to the significance of the resource cannot be preserved through documentation and data recovery.	S	SU
4.5-4	Implementation of the 2003 LRDP could disturb human remains, including those interred outside of formal cemeteries.	PS	LS

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the proposed project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the project description and will not be readopted in this Initial Study. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

**2003 LRDP EIR Mitigation Measures**

**CULTURAL RESOURCES**

- 4.5-1(a) As early as possible in the project planning process, the campus shall define the project’s area of potential effects (APE) for archaeological resources and, if structures are present on the site, for historic structures. The campus shall determine the potential for the project to result in cultural resource impacts, based on the extent of ground disturbance and site modification anticipated for the proposed project. Based on this information, the campus shall:
- (i) Prepare an inventory of all buildings and structures within the APE that will be 50 years of age or older at the time of project construction for review by a qualified architectural historian. If no structures are present on the site, there would be no impact to historic built environment resources from the project. If potentially historic structures are present, LRDP Mitigation 4.5-1(c) shall be implemented.
  - (ii) Determine the level of archaeological investigation that is appropriate for the project site and activity, as follows:
    - Minimum: excavation less than 18 inches deep and in a relatively small area (e.g., a trench for lawn irrigation, tree planting, etc.). Implement LRDP Mitigation 4.5-1(b)(i).
    - Moderate: excavation below 18 inches deep and/or over a large area on any site that has not been characterized and is not suspected to be a likely location for archaeological resources. Implement LRDP Mitigation 4.5-1 (b)(i) and (ii).
    - Intensive: excavation below 18 inches and/or over a large area on any site that is within 800 feet of the historic alignment of Putah Creek, or that is adjacent to a recorded archaeological site. Implement LRDP Mitigation 4.5-1 (b)(i), (ii) and (iii).
- 4.5-1(b) During the planning phase of the project, the campus shall implement the following steps to identify and protect archaeological resources that may be present in the APE:
- (i) For project sites at all levels of investigation, contractor crews shall be required to attend an informal training session prior to the start of earth moving, regarding how to recognize archaeological sites and artifacts. In addition, campus employees whose work routinely involves disturbing the soil shall be informed how to recognize evidence of potential archaeological sites and artifacts. Prior to disturbing the soil, contractors shall be notified that they are required to watch for potential archaeological sites and artifacts and to notify the campus if any are found. In the event of a find, the campus shall implement item (vi), below.
  - (ii) For project sites requiring a moderate or intensive level of investigation, a surface survey shall be conducted by a qualified archaeologist during project planning and design and prior to soil disturbing activities. For sites requiring moderate investigation, in the event of a surface find, intensive investigation will be implemented, as per item (iii), below. Irrespective of findings, the qualified archaeologist shall, in consultation with the campus, develop an archaeological monitoring plan to be implemented during the construction phase of the project. The frequency and duration of monitoring shall be adjusted in accordance with survey results, the nature of construction activities, and results during the monitoring period. In the event of a discovery, the campus shall implement item (vi), below.

## 2003 LRDP EIR Mitigation Measures

### CULTURAL RESOURCES

- (iii) For project sites requiring intensive investigation, irrespective of subsurface finds, the campus shall retain a qualified archaeologist to conduct a subsurface investigation of the project site, to ascertain whether buried archaeological materials are present and, if so, the extent of the deposit relative to the project's area of potential effects. If an archaeological deposit is discovered, the archaeologist will prepare a site record and file it with the California Historical Resource Information System.
  - (iv) If it is determined through step (iii), above, that the resource extends into the project's area of potential effects, the resource will be evaluated by a qualified archaeologist, who will determine whether it qualifies as a historical resource or a unique archaeological resource under the criteria of CEQA Guidelines § 15064.5. If the resource does not qualify, or if no resource is present within the project area of potential effects (APE), this will be noted in the environmental document and no further mitigation is required unless there is a discovery during construction (see (vi), below).
  - (v) If a resource within the project APE is determined to qualify as an historical resource or a unique archaeological resource (as defined by CEQA), the campus shall consult with the qualified archaeologist to consider means of avoiding or reducing ground disturbance within the site boundaries, including minor modifications of building footprint, landscape modification, the placement of protective fill, the establishment of a preservation easement, or other means that will permit avoidance or substantial preservation in place of the resource. If avoidance or substantial preservation in place is not possible, the campus shall implement LRDP Mitigation 4.5-2(a).
  - (vi) If a resource is discovered during construction (whether or not an archaeologist is present), all soil disturbing work within 100 feet of the find shall cease. The campus shall contact a qualified archaeologist to provide and implement a plan for survey, subsurface investigation as needed to define the deposit, and assessment of the remainder of the site within the project area to determine whether the resource is significant and would be affected by the project. LRDP Mitigation 4.5-1(b), steps (iii) through (vii) shall be implemented.
  - (vii) A written report of the results of investigations will be prepared by a qualified archaeologist and filed with the appropriate Information Center of the California Historical Resources Information System.
- 4.5-2(a) For an archaeological site that has been determined by a qualified archaeologist to qualify as an historical resource or a unique archaeological resource through the process set forth under LRDP Mitigation 4.5-1(b), and where it has been determined under LRDP Mitigation 4.5-1(b) that avoidance or preservation in place is not feasible, a qualified archaeologist, in consultation with the campus, shall:
- (i) Prepare a research design and archaeological data recovery plan for the recovery that will capture those categories of data for which the site is significant, and implement the data recovery plan prior to or during development of the site.
  - (ii) Perform appropriate technical analyses, prepare a full written report and file it with the appropriate information center, and provide for the permanent curation of recovered materials.
  - (iii) If, in the opinion of the qualified archaeologist and in light of the data available, the significance of the site is such that data recovery cannot capture the values that qualify the site for inclusion on the CRHR, the campus shall reconsider project plans in light of the high value of the resource, and implement more substantial modifications to the proposed project that would allow the site to be preserved intact, such as project redesign, placement of fill, or project relocation or abandonment. If no such measures are feasible, the campus shall implement LRDP Mitigation 4.5 3.
- 4.5-3 If a significant historic resource or unique archaeological resource cannot be preserved intact, before the property is damaged or destroyed the campus shall ensure that the resource is appropriately documented, as follows.
- (i) For a built environment feature, appropriate documentation is described under LRDP 4.5-2 (b) (iii).
  - (ii) For an archaeological site, a program of research-directed data recovery shall be conducted and reported, consistent with LRDP Mitigation 4.5-2(a).
- 4.5-4(a) Implement LRDP Mitigation 4.5-1, 4.5-2 and 4.5-3 to minimize the potential for disturbance or destruction of human remains in an archaeological context and to preserve them in place, if feasible.
- 4.5-4(b) Provide a representative of the local Native American community an opportunity to monitor any excavation (including archaeological excavation) within the boundaries of a known Native American archaeological site.
- 4.5-4(c) In the event of a discovery on campus of human bone, suspected human bone, or a burial, all excavation in the vicinity will halt immediately and the area of the find will be protected until a qualified archaeologist determines

**2003 LRDP EIR Mitigation Measures**

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whether the bone is human. If the qualified archaeologist determines the bone is human, or if a qualified archaeologist is not present, the campus will notify the Yolo or Solano County Coroner (depending on the county of the find) of the find before additional disturbance occurs. Consistent with California Health and Safety Code § 7050.5(b), which prohibits disturbance of human remains uncovered by excavation until the Coroner has made a finding relative to PRC 5097 procedures, the campus will ensure that the remains and vicinity of the find are protected against further disturbance. If it is determined that the find is of Native American origin, the campus will comply with the provisions of PRC § 5097.98 regarding identification and involvement of the Native American Most Likely Descendant (MLD).

- 4.5-4(d) If human remains cannot be left in place, the campus shall ensure that the qualified archaeologist and the MLD are provided opportunity to confer on archaeological treatment of human remains, and that appropriate studies, as identified through this consultation, are carried out prior to reinternment. The campus shall provide results of all such studies to the local Native American community, and shall provide an opportunity of local Native American involvement in any interpretative reporting. As stipulated by the provisions of the California Native American Graves Protection and Repatriation Act, the campus shall ensure that human remains and associated artifacts recovered from campus projects on state lands are repatriated to the appropriate local tribal group if requested.

**7.5.4 Environmental Checklist and Discussion**

**CULTURAL RESOURCES**

Would the project...	Impact to be Analyzed in the EIR	No Additional EIR Analysis Required	Impact Adequately Addressed in 2003 LRDP EIR	Less-than-Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code § 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	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.					



- a) No historic architectural resources were identified on the project site. As described above, the six buildings on the project site were evaluated and found not eligible for listing in the CRHR or NRHP. As a result, the buildings would not be considered significant for the purposes of CEQA. Therefore, project construction and operation would have no impact on historical resources.
- b) The project site is located within 800 feet of the historic channel of Putah Creek and its tributaries and slough channels, as shown on Figure 4.5-1 in the 2003 LRDP EIR. Areas within 800 feet of the banks of the historic channel of Putah Creek and its tributaries and slough channels, and in the vicinity of known archaeological sites, are identified as sensitive for the presence of archaeological resources. Areas of the campus that are close to these features—the majority of the central campus—have high potential to contain archaeological resources (in particular, prehistoric archaeological resources), that might be affected by project development in these areas. LRDP Mitigation Measure 4.5-1(a) (ii) states that excavation over a large area on a site that is within 800 feet of the historic alignment of Putah Creek requires an intensive archaeological investigation and that LRDP Mitigation Measure 4.5-1(b)(i), (ii), and (iii) shall be implemented. Consistent with Mitigation Measure 4.5-1, the following measures would be implemented as part of the VMC Vision:

LRDP Mitigation Measure 4.5-1(b)(i) Worker Training

LRDP Mitigation Measure 4.5-1(b)(ii) Archaeological Survey

LRDP Mitigation Measure 4.5-1(b)(iii) Subsurface Investigations – test pits

Therefore, currently undiscovered archaeological resources would be avoided, recorded, or otherwise treated appropriately, in accordance with pertinent laws and regulations. Because the project would avoid disturbance, disruption, or destruction of archaeological resources, this impact is less-than-significant.

- c) During the course of development at UC Davis, extensive excavation for buildings and infrastructure, and extensive agricultural operations have not revealed the presence of unique paleontological or geological resources. It appears that the campus lacks unique paleontological and geological resources due to the deep alluvial deposition of fairly uniform soil types in the area. No impact to paleontological resources would occur.
- d) The 2003 LRDP EIR found the potential for development under the 2003 LRDP to disturb human remains, including those interred outside of formal cemeteries (2003 LRDP EIR Impact 4.5-4). LRDP Mitigation 4.5-4(a-d), included in the proposed project, would ensure that human remains in archaeological and isolated contexts, if encountered during the removal of building foundations, utility trenching, or concrete installation, would be protected from destruction that might take place from development through measures including identification, Native American consultation, preservation in place or recovery, respectful treatment and study, and reinternment. Therefore, this impact would be less than significant.
- e) The issues of TCR's were added to CEQA in 2015 so were not specifically addressed in the 2003 LRDP EIR. To be considered a TCR, a resource must be either:
1. listed or determined to be eligible for listing, on the national, state, or local register of historic resources, or
  2. a resource that the lead agency determines, in its discretion and supported by substantial evidence, to treat as a tribal cultural resource pursuant to the criteria in PRC Section 50241(c). PRC Section 5024.1(c) provides that a resource meets criteria for listing as an historic resource in the California Register if any of the following apply:

- (1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- (2) Is associated with the lives of persons important in our past.
- (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- (4) Has yielded, or may be likely to yield, information important in prehistory or history.

The VMC Vision project site is located within the lands historically occupied by the Patwin (see "Archaeological Setting," above); however, the site is not known to have any special use. In addition, no archaeological remains have been identified on the project site.

In compliance with AB 52, UC Davis notifies the Yocha Dehe of all projects, and provides an update two or three times per year. No tribal consultation request regarding this project has been received by UC Davis and it is assumed that there are no resources on the project site that the Tribe considers to be a TCR as described under AB 52 and defined in PRC Section 21074. For these reasons, no areas within the project site meet any of the PRC 5024.1(c) criteria listed above. However, on-going consultation regarding archaeological resources will continue related to the proposed project and all campus projects. If requested, particular site coordination could take place for the proposed project. Therefore, the project would have a less-than-significant impact on TCRs as defined in PRC Section 21074.

## 7.6 GEOLOGY, SOILS, AND SEISMICITY

### 7.6.1 Background

Section 4.6 of the 2003 LRDP EIR addresses the geology, soils, and seismicity effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.6 of the 2003 LRDP EIR.

#### Campus

The campus is located within the Putah Creek Plain of California’s Great Valley geomorphic province. Except for the somewhat raised elevation along the levee adjacent to Putah Creek, the campus is topographically flat. Soils on campus generally contain a high amount of silt and clay, and as a result, are moderately to slowly permeable and have slow runoff rates, minimal erosion hazards, and moderate to high shrink-swell potential (the potential for soil volume to change with a loss or gain in moisture). The predominant soil constraint to construction on campus is soil shrink-swell potential.

A series of low foothills, including the Dunnigan Hills, the Capay Hills, and the English Hills, lie approximately 20 miles west of the campus at the eastern base of the Coast Range. The presence of subsurface thrust faults within these regional foothills and within 100 miles of the campus indicates the potential for seismic ground shaking in the Davis region. The Davis region is not located within an Alquist-Priolo Fault Zone as defined in the Alquist-Priolo Earthquake Fault Zoning Act, which is designed to prohibit the construction of new structures for human occupancy across active faults. According to the California Geological Survey’s Probabilistic Seismic Hazard Assessment for the State of California, the peak ground acceleration with a 10 percent probability of being exceeded in 50 years is 0.2 to 0.3g on the central campus, increasing to 0.3 to 0.4g on the western portion of Russell Ranch (UC Davis 2015:49). By comparison, in most parts of the San Francisco Bay Area, the peak ground acceleration is 0.5g or greater. Likely effects of ground shaking during a probable maximum intensity earthquake for the area could include structural damage to stucco, masonry walls, and chimneys, which could expose people to risks associated with falling objects and potential building collapse.

#### Project Site

The project site is an existing developed area of the Health Science District with academic and administrative buildings within the UC Davis central campus.

### 7.6.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers an impact related to geology, soils, and seismicity significant if growth under the 2003 LRDP would:

- Expose people or structures to potential substantial adverse effects involving strong seismic ground shaking.
- Expose people or structures to potential substantial adverse effects involving seismic-related ground failure.
- Result in substantial soil erosion or the loss of topsoil. (Impacts associated with the effect of erosion on water quality are addressed in Section 7.9, “Hydrology and Water Quality.”)
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse.
- Be located on expansive soil, creating substantial risks to life or property.
- 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.

Additional standards from the CEQA Guidelines' Environmental Checklist (a,i) and (a,iv) in the checklist below) were found not applicable to campus growth under the 2003 LRDP.

**7.6.3 2003 LRDP EIR Impacts and Mitigation Measures**

Geology, soils, and seismicity impacts of campus growth under the 2003 LRDP related to geology, soils, and seismicity are evaluated in Section 4.6 of the 2003 LRDP EIR. As analyzed in Section 4 of this Initial Study, the proposed project is within the scope of analysis in the 2003 LRDP EIR. No significant impacts identified in the 2003 LRDP EIR related to geology, soils, and seismicity are relevant to the proposed project.

**7.6.4 Environmental Checklist and Discussion**

<b>GEOLOGY, SOILS, &amp; SEISMICITY</b>					
Would the project...	Impact to be Analyzed in the EIR	No Additional EIR Analysis Required	Impact Adequately Addressed in 2003 LRDP EIR	Less-than-Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:					
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a,i) The UC Davis campus and the surrounding area are not located within an Alquist-Priolo Earthquake Fault Zone, and the closest known active fault rupture zones are over 30 miles away. Therefore, no impact would occur.

a,ii) The campus is located in a seismically active area that could experience ground shaking, liquefaction, and settlement. The peak ground acceleration for the main campus is estimated to be 0.2 to 0.3g. This intensity of seismic groundshaking has the potential to dislodge objects from shelves and to damage or

destroy buildings and other structures. In the case of such a seismic event, people on campus and in the area would be exposed to these hazards.

The campus minimizes hazards associated with damage or destruction to buildings and other structures by reviewing and approving all draft building plans for compliance with the California Building Code (CBC). The CBC (Title 24 California Code of Regulations) identifies the minimum standards for structural design and construction in California, including specific requirements for seismic safety. The campus also adheres to the University of California Seismic Safety Policy, which requires compliance with the provisions of the CBC and anchorage for seismic resistance of nonstructural building elements such as furnishings, fixtures, material storage facilities, and utilities that could create a hazard if dislodged during an earthquake. The campus' Office of Environmental Health and Safety (EH&S) provides guidance for preparing department-level Illness and Injury Prevention Plans (updated in October 2015). The Veterinary Medical Teaching Hospital Injury and Illness Prevention Program identifies methods for minimizing seismic hazards in laboratories, for example, by properly securing chemical containers and gas cylinders. The Safety Coordinator develops and maintains the emergency response plan, which must be submitted to the Emergency Preparedness Policy Group for annual review to assure consistency with the campus Emergency Operations Plan, including seismic safety and building evacuation procedures. The emergency procedures incorporated into the VMTH emergency response plan further reduce the hazards from seismic shaking by preparing faculty, staff, and students for emergencies. Therefore, hazards due to seismic shaking would be less than significant.

- a,iii) See the discussion in item (c) below.
- a,iv) The UC Davis campus and the surrounding area are characterized by flat topography and therefore would not be subject to landslides. No impact would occur.
- b) The soil types that occur on and near the UC Davis campus generally, including the project site (RA, Solano, Reiff Fine Sandy Loam and SP, Yolo Sycamore Silt Loam, drained), contain a high amount of silt and clay, and these soil types have minimal erosion hazard associated with them (see pages 4.6-1, 4.6-2, and Figure 4.6-1 of the 2003 LRDP EIR). Therefore, for new construction, this impact was determined to be less than significant in the 2003 LRDP EIR. The relationship between receiving water quality and potential soil erosion as a result of construction activities is addressed in items (a) and (c) in Section 7.9, "Hydrology and Water Quality."
- c) The potential for liquefaction on and near the campus is generally low because the depth to groundwater is relatively large (30 to 80 feet, depending on the season). Campus policy requires compliance with the CBC and the University of California Seismic Safety Policy. The CBC requires that a geotechnical investigation that addresses the potential for liquefaction, lateral spreading, and other types of ground failure be performed to provide data for the architect and/or engineer to responsibly design the project. As a consequence of continued compliance with the CBC and the University of California Seismic Safety Policy, this impact would be less than significant.

The Davis area subsided by approximately 2 inches between 1999 and 2002. Because the subsidence is regional, unlike local differential settlement, it would not affect building foundations. Subsidence can adversely affect utilities such as storm drains which rely on gradient for gravity-driven flow if the differential subsidence across the length of the pipeline causes the gradient of the pipelines to change direction. On the campus, the differential subsidence is about 0.4 inch per mile. Thus, over a period of 10 years, the gradient of a pipeline could change by as much as 4 inches per mile. Gravity-driven pipelines typically used for wastewater and stormwater are designed with gradients between 0.5 and 1 percent (27 to 53 feet drop per mile). Given these gradients, the small potential change of about 4 inches per mile over a period of 10 years would not affect the functioning of existing and proposed storm drains or other utilities.

- d) The moderate to high shrink-swell potential found on all campus soils, including at the project site, can cause damage to buildings, roads, and other structures. Campus policy requires compliance with the CBC, which includes provisions for construction on expansive soils such as proper fill selection, moisture control, and compaction during construction. Therefore, this impact would be less than significant.
- e) No septic tanks or alternative wastewater disposal systems are included in the proposed project. No impact would occur.

## 7.7 GREENHOUSE GAS EMISSIONS

This section discusses the existing global, national, and statewide conditions related to greenhouse gases (GHG) and global climate change and evaluates the potential impacts on global climate from the implementation of the proposed project. The section also provides a brief discussion of the applicable federal, state, regional, and local agencies that regulate, monitor, and control GHG emissions. The 2003 LRDP EIR was prepared prior to when GHG and climate change issues were typically addressed under CEQA and prior to when CEQA specifically required analysis of GHG impacts.

The following sources were used to prepare this section of the Initial Study:

- UC Davis 2003 Long Range Development Plan (2003 LRDP)
- YSAQMD's Handbook for Assessing and Mitigating Air Quality Impacts
- Cal-Adapt, developed by the California Energy Commission (CEC)
- California Emissions Estimator Model (CalEEMod) User's Guide Version 2016.3.1
- EPA's Emissions & Generation Resource Integrated Database (eGRID)
- The 2016 Climate Registry Emissions Factors
- The UC Davis 2009-2010 Climate Action Plan

### 7.7.1 Environmental Setting

### 7.7.2 Background

Global climate change refers to any significant change in climate measurements, such as temperature, precipitation, or wind, lasting for an extended period (i.e., decades or longer). Climate change may result from:

- natural factors, such as changes in the sun's intensity or slow changes in the earth's orbit around the sun;
- natural processes within the climate system (e.g., changes in ocean circulation, reduction in sunlight from the addition of GHG and other gases to the atmosphere from volcanic eruptions); and
- human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization, desertification).

The natural process through which heat is retained in the troposphere<sup>2</sup> is called the "greenhouse effect." The greenhouse effect traps heat in the troposphere through a threefold process as follows: (1) short-wave radiation in the form of visible light emitted by the sun is absorbed by the earth as heat; (2) long-wave radiation is re-emitted by the earth; and (3) GHGs in the upper atmosphere absorb or trap the long-wave radiation and re-emit it back towards the earth. This third process is the focus of current climate change actions.

While water vapor and carbon dioxide (CO<sub>2</sub>) are the most abundant GHGs, other trace GHGs have a greater ability to absorb and re-radiate long-wave radiation. To gauge the potency of GHGs, scientists have established a Global Warming Potential (GWP) for each GHG based on its ability to absorb and re-emit long-wave radiation over a specific time period. The GWP of a gas is determined using CO<sub>2</sub> as the reference gas, which has a GWP of 1 over 100 years (IPCC 1996).<sup>3</sup> For example, a gas with a GWP of 10 is 10 times more potent than CO<sub>2</sub> over 100 years. The use of GWP allows GHG emissions to be reported using CO<sub>2</sub> as a baseline. The sum of each GHG multiplied by its associated GWP is referred to as "carbon dioxide equivalents" (CO<sub>2</sub>e). This essentially means that 1 metric ton of a GHG with a GWP of 10 has the same climate change impacts as 10 metric tons of CO<sub>2</sub>.

<sup>2</sup> The troposphere is the bottom layer of the atmosphere, which varies in height from the earth's surface to 10 to 12 kilometers).

<sup>3</sup> All Global Warming Potentials are given as 100-year values.

## Effects of Climate Change on the Environment

The IPCC was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme to provide the world with a scientific view on climate change and its potential effects. According to the IPCC global average temperature is expected to increase relative to the 1986-2005 period by 0.3–4.8 degrees Celsius (°C) (0.5-8.6 degrees Fahrenheit [°F]) by the end of the 21st century (2081-2100), depending on future GHG emission scenarios (IPCC 2014:SPM-8). The California CNRA estimates that temperatures in California are projected to increase 2.7°F above 2000 averages by 2050 and, depending on emission levels, 4.1–8.6°F by 2100 (CNRA 2012:2).

Physical conditions beyond average temperatures could be affected by the accumulation of GHG emissions. For example, changes in weather patterns resulting from increases in global average temperature are expected to result in a decreased volume of precipitation falling as snow in California and an overall reduction in snowpack in the Sierra Nevada. Based upon historical data and modeling, the California Department of Water Resources (DWR) projects that the Sierra snowpack will decrease by 25 to 40 percent from its historic average by 2050 (DWR 2008:4). An increase in precipitation falling as rain rather than snow also could lead to increased potential for floods because water that would normally be held in the Sierra Nevada until spring could flow into the Central Valley concurrently with winter storm events (CNRA 2012:5). This scenario would place more pressure on California's levee/flood control system.

Another outcome of global climate change is sea level rise. Sea level rose approximately seven inches during the last century and, assuming that sea-level changes along the California coast continue to reflect global trends, sea level along the state's coastline in 2050 could be 10-18 inches higher than in 2000, and 31-55 inches higher by the end of this century (CNRA 2012:9).

As the existing climate throughout California changes over time, the ranges of various plant and wildlife species could shift or be reduced, depending on the favored temperature and moisture regimes of each species. In the worst cases, some species would become extinct or be extirpated from the state if suitable conditions are no longer available (CNRA 2012:11 and 12).

Changes in precipitation patterns and increased temperatures are expected to alter the distribution and character of natural vegetation and associated moisture content of plants and soils. An increase in frequency of extreme heat events and drought are also expected. These changes are expected to lead to increased frequency and intensity of large wildfires (CNRA 2012:11).

Cal-Adapt is a climate change scenario planning tool developed by CEC that downscales global climate model data to local and regional resolution under two emissions scenarios: the A-2 scenario represents a business-as-usual future emissions scenario, and the B-1 scenario represents a lower GHG emissions future. According to Cal-Adapt, annual average temperatures in the project area are projected to rise by 3.6-6.4°F by 2100, with the range based on low and high emissions scenarios (CEC 2015a).

## Greenhouse Gases

State law defines GHGs to include the following six compounds<sup>4</sup>:

- **Carbon Dioxide (CO<sub>2</sub>).** Carbon dioxide primarily is generated by fossil fuel combustion from stationary and mobile sources. Carbon dioxide is the most widely emitted GHG and is the reference gas (GWP of 1) for determining the GWP of other GHGs. In 2014, 84.3 percent of California's GHG emissions were CO<sub>2</sub> (CARB 2016).
- **Methane (CH<sub>4</sub>).** Methane is emitted from biogenic sources (i.e., resulting from the activity of living organisms), incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. In the United States, the top three sources of methane are landfills, natural gas systems, and enteric

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<sup>4</sup> Global warming potentials are based on the Intergovernmental Panel on Climate Change's Fifth Assessment Report released in 2014.



fermentation. Methane is the primary component of natural gas, which is used for space and water heating, steam production, and power generation. The GWP of methane is 28 (IPCC 2014).

- **Nitrous Oxide (N<sub>2</sub>O).** Nitrous oxide is produced by natural and human-related sources. Primary human-related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of nitrous oxide is 265 (IPCC 2014).
- **Hydrofluorocarbons (HFCs).** HFCs typically are used as refrigerants in both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam-blowing is growing particularly as the continued phase-out of chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) gains momentum. The GWP of HFCs ranges from 44 for HFC-161 to 12,400 for HFC-23 (IPCC 2014).
- **Perfluorocarbons (PFCs).** Perfluorocarbons are compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semiconductor manufacturing. Perfluorocarbons are potent GHGs with a GWP several thousand times that of carbon dioxide, depending on the specific PFC. Another area of concern regarding PFCs is their long atmospheric lifetime (up to 50,000 years) (Energy Information Administration 2007). The GWPs of PFCs range from 6,630 for PFC-14 to 11,100 for PFC-116 (IPCC 2014).
- **Sulfur Hexafluoride (SF<sub>6</sub>).** Sulfur hexafluoride is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. Sulfur hexafluoride is the most potent GHG that has been evaluated by IPCC with a GWP of 23,500 (IPCC 2014); however, its global warming contribution is not as high as the GWP would indicate due to its low mixing ratio, as compared to CO<sub>2</sub> (4 parts per trillion [ppt] in 1990 versus 365 parts per million [ppm] of CO<sub>2</sub>).

## Contributions to Greenhouse Gas Emissions

### *Global*

Worldwide anthropogenic (man-made) GHG emissions are tracked for industrialized nations (referred to as Annex I) and developing nations (referred to as Non-Annex I). Man-made GHG emissions for Annex I and non-Annex I nations are available through 2012. The sum of these emissions totaled approximately 44,815 million metric tons of CO<sub>2</sub> equivalents (MMT CO<sub>2</sub>e).<sup>5</sup> It should be noted that global emissions inventory data are not all from the same year and may vary depending on the source of the emissions inventory data.<sup>6</sup> The top five countries and the European Union accounted for approximately 55 percent of the total global GHG emissions according to the most recently available data (Table 7.7-1). The GHG emissions in more recent years may differ from the inventories presented in Table 7.7-1; however, the data are representative of currently available global inventory data.

<sup>5</sup> The CO<sub>2</sub> equivalent emissions commonly are expressed as “million metric tons of carbon dioxide equivalent (MMT CO<sub>2</sub>e).” The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP, such that MM TCO<sub>2</sub>e = (million metric tons of a GHG) x (GWP of the GHG). For example, the GWP for methane is 28. This means that the emission of one million metric tons of methane is equivalent to the emission of 28 million metric tons of CO<sub>2</sub>.

<sup>6</sup> The global emissions are the sum of Annex I and non-Annex I countries, without counting Land-Use, Land-Use Change and Forestry (LULUCF). For countries without 2013 data, the UNFCCC data for the most recent year were used (i.e. US).

**Table 7.7-1: Top Five GHG Producer Countries**

Emitting Countries	GHG Emissions (MMT CO <sub>2</sub> e)
China	10,975
United States	6,235
European Union (EU), 27 Member States	4,399
India	3,519
Russian Federation	3,013
Japan	1,344
<b>Total</b>	<b>29,485</b>

Source: World Resources Institute 2016.

### ***United States***

As noted in Table 7.7-1, the United States was the number two producer of global GHG emissions as of 2012. The primary GHG emitted by human activities in the United States is CO<sub>2</sub>, representing approximately 81 percent of the total GHG emissions of the US in 2014 (EPA 2016).

### ***State of California***

CARB compiles GHG inventories for the State of California. Based on the 2014 GHG inventory data (i.e., the latest year for which data are available), California emitted 441.5 MMT CO<sub>2</sub>e including emissions resulting from imported electrical power in 2014 (CARB 2016). Based on the CARB inventory data and GHG inventories compiled by the World Resources Institute, California's total statewide GHG emissions rank second in the U.S. (Texas is number one) (CARB 2016).

CO<sub>2</sub> produced by fossil fuel combustion in California was the largest source of California's GHG emissions in 2014, accounting for 82.3 percent of the total GHG emissions (CARB 2016). Emissions of CO<sub>2</sub> from other sources contributed 2 percent of the total GHG emissions; methane emissions contributed 9 percent; nitrous oxide emissions contributed 2.8 percent; and the remaining 3.9 percent was composed of emissions of high-GWP gases (CARB 2016). These high GWP gases are largely composed of refrigerants (i.e., HFCs), with small contributions of SF<sub>6</sub> used in connection with insulating materials for electricity transmission and distribution.

## **7.7.3 Regulatory Considerations**

### **Intergovernmental Panel on Climate Change**

The World Meteorological Organization and United Nations Environmental Program established IPCC in 1988. The goal of IPCC is to evaluate the risk of climate change caused by human activities. Rather than performing research or monitoring climate, the IPCC relies on peer-reviewed and published scientific literature to make its assessment. While not a regulatory body, IPCC assesses information (i.e., scientific literature) regarding human-induced climate change and the impacts of human-induced climate change, and recommends options to policy makers for the adaptation and mitigation of climate change. IPCC reports its evaluations in special reports called "assessment reports." The latest assessment report (i.e., Fifth Assessment Report) was published in 2014. In its 2014 report, the IPCC stated that global temperature increases since the mid-20th century were "very likely" attributable to man-made activities (greater than 90 percent certainty) (IPCC 2014).

### **Federal**

#### ***Supreme Court Ruling of Carbon Dioxide as a Pollutant***

The U.S. Environmental Protection Agency (EPA) is the federal agency responsible for implementing the federal Clean Air Act (CAA) and its amendments. The Supreme Court of the United States ruled on April 2, 2007 that CO<sub>2</sub> is an air pollutant as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs.

The ruling in this case resulted in EPA taking steps to regulate GHG emissions and lent support for state and local agencies' efforts to reduce GHG emissions.

### ***National Program to Cut Greenhouse Gas Emissions and Improve Fuel Economy for Cars and Trucks***

On August 28, 2014, EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) finalized a new national program that would reduce GHG emissions and improve fuel economy for all new cars and trucks sold in the United States (NHTSA 2012). EPA proposed the first-ever national GHG emissions standards under the CAA, and NHTSA proposed Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. This proposed national program allows automobile manufacturers to build a single light-duty national fleet that satisfies all requirements under both federal programs and the standards of California and other states. This program will increase fuel economy to the equivalent of 54.5 miles per gallon (mpg) for cars and light-duty trucks by Model Year 2025, and additional phases are being developed by NHTSA and EPA that address GHG emission standards for new medium- and heavy-duty trucks (NHTSA 2015).

## **State**

Key state laws and regulations related to GHG emissions are described below.

### ***Executive Order S-3-05 and the Climate Action Team***

In June 2005, Governor Schwarzenegger established California's GHG emissions reduction targets in Executive Order S-3-05. The Executive Order established the following goals: GHG emissions should be reduced to 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050. The Secretary of Cal EPA is required to coordinate efforts of various agencies in order to collectively and efficiently reduce GHGs. Some of the agency representatives involved in the GHG reduction plan include the Secretary of the Business, Transportation and Housing Agency, the Secretary of the Department of Food and Agriculture, the Secretary of the Resources Agency, the Chairperson of the CARB, the Chairperson of the CEC, and the President of the Public Utilities Commission.

Representatives from each of the aforementioned agencies comprise the Climate Action Team. The Cal/EPA secretary is required to submit a biannual progress report from the Climate Action Team to the governor and state legislature disclosing the progress made toward GHG emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global warming on California's water supply, public health, agriculture, coastline, and forests, and reporting possible mitigation and adaptation plans to combat these impacts. The Climate Action Team has fulfilled both of these report requirements through its March 2006 Climate Action Team Report to Governor Schwarzenegger and the Legislature (2006 CAT Report) (Cal EPA 2006). Some strategies currently being implemented by state agencies include the CARB introducing vehicle climate change standards and diesel anti-idling measures, the Energy Commission implementing building and appliance efficiency standards, and the Cal/EPA implementing its green building initiative. The Climate Action Team also recommends future emission reduction strategies, such as using only low-GWP refrigerants in new vehicles, developing ethanol as an alternative fuel, reforestation, solar power initiatives for homes and businesses, and investor-owned utility energy efficiency programs. According to the report, implementation of current and future emission reduction strategies have the potential to achieve the goals set forth in Executive Order S-3-05.

### ***AB 32, Global Warming Solutions Act of 2006***

In September 2006, Governor Schwarzenegger signed the California Global Warming Solutions Act of 2006 (AB 32). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also requires that these reductions "...shall remain in effect unless otherwise amended or repealed. (b) It is the intent of the Legislature that the statewide GHG limit continue in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020. (c) The (Air Resources Board) shall make recommendations to the Governor and the Legislature on how to continue reductions of GHG emissions beyond 2020." [California Health and Safety Code, Division 25.5, Part 3, Section 38551]

### ***AB 32 Climate Change Scoping Plan***

In December 2008, CARB adopted its Climate Change Scoping Plan, which contains the main strategies California will implement to achieve reduction of approximately 118 MMT CO<sub>2</sub>e emissions, or approximately 21.7 percent from the state's projected 2020 emission level of 509 MMT of CO<sub>2</sub>e under a business-as-usual scenario (this is a reduction of 87 MMT CO<sub>2</sub>e, or almost 15 percent, from 2008 emissions). CARB's original 2020 projection was 596 MMT CO<sub>2</sub>e, but this revised 2020 projection takes into account the economic downturn that occurred in 2008, and includes reductions anticipated from the Renewable Electricity Standard and Advanced Clean Cars (CARB 2015a). In May 2014, CARB released and has since adopted the *First Update to the Climate Change Scoping Plan* to identify the next steps in reaching AB 32 goals and evaluate the progress that has been made between 2000 and 2012 (CARB 2014:4 and 5). According to the update, California is on track to meet the near-term 2020 GHG limit and is well positioned to maintain and continue reductions beyond 2020 (CARB 2014:ES-2). The update also reports the trends in GHG emissions from various emission sectors.

On January 20, 2017, CARB released the 2017 Climate Change Scoping Plan Update (Draft Scoping Plan Update), which lays out the framework for achieving the 2030 reductions as established in EO B-30-15 and SB 32 and AB 197 (all three of these are discussed below). The Draft Scoping Plan Update identifies reductions to be made by sector to achieve a 40 percent reduction of 1990 levels of GHGs by 2030. The Draft Scoping Plan Update contains language recommending that land use development projects demonstrate a "no net increase" in GHG emissions as compared to baseline conditions to ensure consistency with statewide GHG reduction goals. CARB also recognizes that this approach will not be feasible for all projects and therefore recommends that lead agencies develop bright-line numerical thresholds consistent with the state's long-term GHG goals (40 percent of 1990 levels by 2030), or demonstrate consistency with GHG reduction plans (e.g., Climate Actions Plans) if applicable. At the time of writing this IS/MND, CARB has not yet approved the plan.

### ***Executive Order B-30-15***

On April 20, 2015, Governor Edmund G. Brown Jr. signed Executive Order (EO) B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's EO aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union, which adopted the same target in October 2014. The EO's new statewide emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2°C, the warming threshold at which there will likely be major climate disruptions such as super droughts and rising sea levels.

### ***SB 32 and AB 197, Statutes of 2016***

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize ARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050.

SB 32 was contingent upon AB 197, which grants the State Legislature stronger oversight over ARB's implementation of its GHG reduction programs. AB 197 amended the existing Health and Safety Code sections and established new statutory directions, including the following provisions. Section 9147.10 establishes a six-member Joint Legislative Committee on Climate Change Policies to ascertain facts and make recommendations to the Legislature. ARB is required to appear before this committee annually to present information on GHG emissions, criteria pollutants, and toxic air contaminants from sectors covered by the Scoping Plan. Section 38562.5 requires that ARB consider social cost when adopting rules and regulations to achieve emissions reductions, and prioritize reductions at large stationary sources and from mobile sources. Section 38562.7 requires that each Scoping Plan update identify the range of projected GHG and air pollution reductions and the cost-effectiveness of each emissions reduction measure.

### ***Senate Bill 375***

The California legislature passed SB 375 (Steinberg) on September 1, 2008. SB 375 requires the CARB to set regional greenhouse gas reduction targets after consultation with local governments. The target must then be incorporated within that region's regional transportation plan (RTP), which is used for long-term transportation planning, in a Sustainable Communities Strategy (SCS). SB 375 also requires each region's regional housing needs assessment to be adjusted based on the SCS in its RTP. Additionally, SB 375 reforms the environmental review process to create incentives to implement the strategy, especially transit priority projects. The governor signed SB 375 into law on September 30, 2008. On February 17, 2011, the CARB adopted regional GHG emission reduction targets for automobiles and light trucks.

The UC Davis Campus is located within the jurisdiction of the Sacramento Area Council of Governments (SACOG), which is responsible for developing and implementing the region's RTP/SCS pursuant to SB 375. SACOG released and adopted the 2016 Metropolitan Transportation Plan/SCS (MTP/SCS) in February 2016. The measures and strategies contained in the plan to reduce automobile-generated emissions of GHGs would apply to the campus. The MTP/SCS projects a 30 percent increase in UC Davis-related jobs and a 27 percent increase in households by 2036 as compared to 2008. According to the MTP/SCS, by 2038, average one-way commute to or from UC Davis is projected to be 35.4 minutes long (SACOG 2016).

### ***Advanced Clean Cars Program***

In January 2012, CARB approved the Advanced Clean Cars (ACC) program which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles (ZEVs), into a single package of standards for vehicle model years 2017 through 2025. The new rules strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's ZEV regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the state. Through investments in ZEV infrastructure, the ACC program increases the demand for and manufacturing of ZEVs, which will result in reductions in vehicle-related emissions of GHGs. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. Currently, manufacturers project a cumulative deployment of 53,000 hydrogen fuel cell vehicles in the State by 2017; however, a successful launch of these volumes of vehicles will require fueling stations. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions than the statewide fleet in 2016 (CARB 2015b).

### ***Title 24 Building Standards Code***

Buildings in California are required to comply with California's Energy Efficiency Standards for Residential and Nonresidential Buildings established by the CEC regarding energy conservation standards and found in Title 24, Part 6 of the California Code of Regulations. California's Energy Efficiency Standards for Residential and Nonresidential Buildings was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated on an approximately three-year cycle to allow consideration and possible incorporation of new energy efficient technologies and methods. All buildings for which an application for a building permit is submitted on or after January 1, 2017 must follow the 2016 standards (CEC 2015b). Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The CEC Impact Analysis for California's 2016 Building Energy Efficiency Standards estimates that the 2016 Standards are 28 percent more efficient for residential buildings and five percent more efficient than nonresidential buildings than the previous 2013 standards (CEC 2015c).

### **Local Plans and Policies**

#### ***University of California Policy on Sustainable Practices***

The University of California Policy on Sustainable Practices was adopted by The Regents in 2006 and last amended in September 2016. The policy was developed to standardize campus practices and is a system-wide

commitment to minimize the University of California's impact on the environment and reduce the University's dependence on non-renewable energy sources. The University of California Policy on Sustainable Practices promotes the principles of energy efficiency and sustainability in the following areas:

- Carbon Neutrality,
- Green Building Design,
- Clean Energy Standard,
- Climate Protection Practices,
- Sustainable Transportation Practices,
- Sustainable Operations,
- Recycling and Waste Management,
- Environmentally Preferable Purchasing Practices, and
- Food.

The policy guidelines that address these topics recommend that University operations:

- Incorporate the principles of energy efficiency and sustainability in all capital projects, operations and maintenance within budgetary constraints and programmatic requirements.
- Minimize the use of non-renewable energy sources on behalf of UC's built environment by creating a portfolio approach to energy use, including use of local renewable energy and purchase of green power from the grid as well as conservation measures that reduce energy consumption.
- Incorporate alternative means of transportation to/from and within the campus to improve the quality of life on campus and in the surrounding community. The campuses will continue their strong commitment to provide affordable on-campus housing, in order to reduce the volume of commutes to and from campus. These housing goals are detailed in the campuses' LRDPs.
  - Track, report and minimize GHG emissions on behalf of UC operations.
  - Minimize the amount of University-generated waste sent to landfill.
  - Utilize the University's purchasing power to meet its sustainability objectives.

The University of California has signed the American College and University Presidents Climate Commitment. Each signatory commits to completing an inventory of GHG emissions within one year, and to developing, within two years, an institutional plan to achieve climate neutrality as soon as possible (deadline of 2025). The commitment also includes specific interim actions, including requiring that new campus construction be built to at least the US Green Building Council's LEED Silver standard or equivalent, or strive to meet LEED Gold rating or higher; purchasing Energy Star appliances; offsetting GHG emissions generated by institutional air travel; encouraging and providing access to public transportation; encouraging ZEV travel on campus; purchasing or producing at least 15 percent of the institution's electricity consumption from renewable sources; supporting climate and sustainability shareholder proposals at companies where the institution's endowment is invested; and adopting measures to reduce waste to zero by 2020.

### ***UC Davis Climate Action Plan***

The Climate Protection section of the UC Policy on Sustainable Practices targets three goals: reduction of GHG emissions to 2000 levels by 2014, to 1990 levels by 2020, and ultimately climate neutrality as soon as feasible. Climate neutrality is defined in the Policy as the University having a net zero impact on the earth's climate, which is to be achieved by minimizing GHG emissions as much as possible and purchasing carbon offsets or other measures to mitigate the remaining GHG emissions.

UC Davis has prepared the 2009-2010 Climate Action Plan (CAP), which includes both the Davis and Sacramento campuses, as well as outlying facilities. The CAP describes and addresses policy and regulatory requirements of (1) the UC Policy on Sustainable Practices, (2) AB 32, including ARB's GHG Mandatory

Reporting Program (3) the American College and University Presidents Climate Commitment, (4) CEQA, and (5) U.S. EPA reporting requirements. The CAP provides documentation of how campus GHG emissions are calculated, a report of 2008 emissions, estimates of past (to 1990) and future emissions (to 2020), a statement of GHG emission reduction goals, a characterization of options and methods to reduce emissions, and a blueprint for future action.

The CAP focuses on the 2014 and 2020 targets, with the understanding that climate neutrality will require fundamental shifts in global and national energy policy, energy production, and technologies currently using fossil fuels. The CAP focuses on emissions related to campus operations, instead of commuting and business air travel. The CAP does provide analysis of commuting and air travel reduction options, but does not quantify emissions reductions for those options.

In the CAP, GHG emissions were estimated back to 1990 and including nearly every source of emissions. Calculated emissions for all of UC Davis, excluding commuting and air travel, for 2000 are 246,000 MT CO<sub>2</sub>e and for 1990 are 142,000 MT CO<sub>2</sub>e. In 2008, inventoried emissions in the California Climate Action Registry, excluding commuting and air travel, totaled 238,000, indicating that UC Davis had already met the 2014 target. Thus, the CAP defined a new emissions target of 210,000 MT CO<sub>2</sub>e, almost 15 percent below the 2000 emissions, as the new 2014 target. The UC Davis target to reach 1990 emissions by the year 2020 is about 40 percent below the 2008 emissions.

Four years of verified inventories of emissions have shown consistently that the Davis campus contributes about 70 percent of the emissions total, the Sacramento campus contributes about 29 percent of the total, and the outlying facilities contribute about 1 percent of the total. It should be noted, however, that the existing UC Davis CAP has not undergone environmental review and, therefore, is not considered a “qualified” CAP under CEQA. UC Davis is currently in the process of updating its CAP.

### ***UC Davis 2003 Long Range Development Plan***

The 2003 LRDP is the plan for the development of the campus. Although the 2003 LRDP does not contain policies that specifically address GHG emissions, it does contain a number of elements with respect to fuel- and energy-efficiency provisions and elements that would encourage walking and bicycling on campus and in surrounding neighborhoods, all of which would reduce GHG emissions.

### **Standards of Significance**

Project-related to GHG emissions would be significant if they would exceed either of the following significance criteria, in accordance with Appendix G of the *State CEQA Guidelines*:

- Generate GHGs, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

The UC Office of the President is a founding signatory to the American College and University President’s Climate Commitment and has committed to reducing UC GHG emissions to achieve climate neutrality by 2025 by addressing emissions from buildings and the campus’ fleet vehicles (does not include staff or student vehicle trips), the first year of project operation (Regents of the UC 2016). This commitment to achieve carbon neutrality by 2025 would be consistent with the statewide GHG reduction goal of 40 percent below 1990 levels of GHGs by 2030. As a member of the UC, the goal of carbon neutrality applies to UC Davis. By 2025, UC Davis and its projects must demonstrate zero net emissions from campus buildings and fleet, not including commute-related emissions, to comply with the UC’s climate change commitments. Therefore, consistent with CARB’s recommendations for assessing project-level direct and indirect impacts to global climate change in the Draft 2017 Climate Change Scoping Plan Update, for the purposes of this project, a no net increase threshold will be applied to the proposed buildings; however, staff and student vehicle trips will not be included. With a no net increase in building-related GHG emissions compared to existing conditions, the project would demonstrate a

less-than-significant cumulatively considerable contribution to global climate change and would not produce any inconsistencies with relevant plans.

## Methodology

### *Construction*

Short-term construction-generated emissions of GHGs were calculated using the CalEEMod Version 2016.3.1 computer program (SCAQMD 2016), as recommended by YSAQMD and other air districts in California. Modeling was based on project-specific information (e.g., square footage of new and remodeled building, construction phasing), and default values in CalEEMod that are based on project location and land use types. Construction GHG emissions were estimated using the same assumptions as outlined in Section 7.3, “Air Quality.” YSAQMD does not provide an assumption regarding project life. As such, consistent with guidance from SCAQMD, construction emissions are amortized over the project’s 30-year life (SCAQMD 2008).

### *Operations*

To demonstrate a no net increase in GHG emissions as compared to baseline conditions, emissions were estimated for the existing VMTH facilities as well as future conditions following project implementation. Existing mobile source GHG emissions were estimated in CalEEMod using the default values provided. Future mobile source GHG emissions were also estimated in CalEEMod based on the expected increase in daily trips described in Section 7.16, “Transportation, Circulation, & Parking.” See Appendix B for a detailed summary of modeling assumptions, inputs, and output.

UC Davis procures its electricity from the Western Area Power Association (WAPA), a federally-run utilities company that markets and transmits wholesale electricity from multi-use water projects (hydropower). WAPA’s supply of hydropower is contingent upon atmospheric conditions and precipitation events, and therefore varies widely year to year. Due to the inherently uncertainty of hydropower availability, WAPA supplements their energy with other sources (e.g., natural gas, solar). As such, WAPA-specific emissions factors are not available. Therefore, indirect, electricity-related operational emissions of GHGs for the existing site and project were calculated using emissions factors generated by the EPA’s Emissions and Generation Resource Integrated Database (eGRID) for the WECC California subregion. As recommended by EPA, annual non-baseload output emissions rates were used to calculate the GHG emissions associated with electricity use for the existing and future conditions of the project site (EPA 2014). It should be noted that indirect emissions of GHGs associated with the existing project site and project do not reflect use of hydropower, which has an emissions factor of zero for CO<sub>2</sub>; therefore, estimates are conservative. Indirect emissions from natural gas combustion were calculated using the 2016 Climate Registry Emissions Factors for natural gas boilers (The Climate Registry 2016). See Appendix B for a detailed summary of the modeling assumptions, inputs, and outputs.

As discussed in Section 7.9, “Hydrology & Water Quality,” water consumption associated with the project is expected to be reduced with project implementation as compared to existing demand. Water conservation strategies including drought-tolerant landscaping, recycled water use, and efficient fixtures would be applied to reduce overall water usage. These reductions, discussed in greater detail in Section 7.9, were quantified using CalEEMod. See Appendix B for more detail.

Project implementation would not be expected to result in a notable loss of vegetation; therefore, loss of carbon sequestration potential was not analyzed for the project.

### Issues Dismissed from Further Consideration

All GHG and climate change issues addressed in the significance criteria are evaluated herein. As described further in the cumulative analysis in Section 4.5, “2003 LRDP EIR Cumulative Impacts,” analysis of GHGs associated with the projects is inherently a cumulative impact analysis.



### 7.7.4 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP on greenhouse gas emissions were not evaluated in the 2003 LRDP EIR. The inclusion of GHG emissions as an environmental impact for CEQA analysis began in 2007-08 when AB 32 was enacted, and the guidance on this matter has been evolving since. In 2010, modifications to Appendix G of the *State CEQA Guidelines* resulted in the inclusion of detailed guidance for CEQA GHG impact analysis.

### 7.7.5 Environmental Checklist and Discussion

<b>GREENHOUSE GAS EMISSIONS</b>					
Would the project...	Impact to be Analyzed in the EIR	No Additional EIR Analysis Required	Impact adequately addressed in 2003 LRDP EIR	Less-than-Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose or reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) Project-related construction activities would emit GHGs from site preparation (e.g., grading, and clearing), heavy-duty off-road equipment, material delivery, and construction worker commute trips. GHG emissions would also be emitted over the operational life of the project. Sources of emissions may include motor vehicles and delivery trucks traveling to and from campus, consumption of natural gas for space and water heating, consumption of electricity (including electricity associated with the treatment and conveyance of water), generation of solid waste, operation of landscape maintenance equipment, and new stationary sources (e.g., backup generators). Project-related emissions of GHGs were not evaluated in the 2003 LRDP EIR because GHG-related impact analysis had not yet been required under CEQA at the time. GHGs generated by activities covered under the 2003 LRDP could potentially result in a cumulatively considerable contribution to climate change.

Project-related emissions of GHGs were calculated using the CalEEMod emissions model. CalEEMod provides outputs for construction-related and operational-related emissions. The following impact analysis discusses construction GHG emissions and then operational GHG emissions. See Section 7.3, “Air Quality,” for detailed modeling assumptions.

For construction emissions, project-specific data regarding construction and demolition timing were used as inputs in CalEEMod. Where project-specific information was not available, CalEEMod default values were used. The model outputs for construction activities are shown below in Table 7.7-2, Construction-Generated Greenhouse Gas Emissions.

**Table 7.7-2: Construction-Generated Greenhouse Gas Emissions**

Construction Year	GHG Emissions (MT CO <sub>2</sub> e/year)
2017	165
2018	77
2019	180
2020	501
2021	211
2022	67
2023	236
2024	249
2025	42
<b>Total</b>	<b>1,730</b>
30-Year Amortized	58

*Notes: MT CO<sub>2</sub>e/year=metric tons of carbon dioxide equivalent per year*

*Source: Modeling performed by Ascent Environmental, February 2017.*

During construction, the proposed project would directly contribute to GHG emissions from the exhaust of construction equipment, construction trucks, and construction workers’ vehicles. The manufacture of construction materials used by the projects would indirectly contribute to climate change (upstream emission source). Upstream emissions are emissions that are generated during the manufacture of products used for construction (e.g., cement, steel, and transport of materials to the region). The upstream GHG emissions for these projects, which may also include perfluorocarbons and sulfur hexafluoride, are not estimated in this impact analysis because they are not within the control of the University and a lack of data precludes their quantification without speculation.

The project would generate a total of 1,730 MT CO<sub>2</sub>e over the duration of construction activities (2017-2025). Total construction emissions were amortized over the project’s 30-year life consistent with guidance from SCAQMD. Amortized construction emissions (58 MT CO<sub>2</sub>e) are also shown in Table 7.7-1, Construction-Generated Greenhouse Gas Emissions.

Long-term operational emissions associated with the project would be directly and indirectly emitted and would occur over the life of the project. Sources of emission may include motor vehicles and trucks, energy usage, waste generation, and area sources such as landscaping activities. Operational emissions of GHGs were not evaluated in the 2003 LRDP EIR because GHG-related impact analysis had not yet been required under CEQA. It is reasonable to assume that operational emissions of GHGs from activities covered under the 2003 LRDP could contribute a cumulatively considerable amount of GHGs to global climate change, and this project would contribute to this impact.

Pursuant to Section 15125 of the CEQA Guidelines, “the physical environmental conditions in the vicinity of a project...as they exist at the time the environmental analysis is commenced...will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant.” As discussed in Section 3.3, “Project Site,” the existing physical conditions on the project site consist of 12 facilities (i.e., Pritchard VMTH, Hay Barn, B Barn, C Barn, D Barn, Equine Isolation Facility, Veterinary Medicine 2, VMTH Office Annex, VMTH Equine Examination, Gourley Clinical Teaching Center, Center for Companion Animal Health, and Hoffman Equine Athletic Performance Laboratory), which currently provide veterinary and educational services on campus. Operational activities within the facilities include, but are not limited to, examination, treatment, feeding, and housing of patients; and operation and cleaning of surgical and laboratory equipment.

Using UC Davis Campus Energy Education Dashboard (CEED), the energy usage of existing on-site facilities has been monitored and recorded from 2014 to 2016. Using the parameters described under the heading, “Methodology,” the associated GHG emissions related to energy usage are shown in Table 7.7-3, Indirect, Energy-Related Greenhouse Gas Emissions for the Existing Project Site.

**Table 7.7-3: Indirect, Energy-Related Greenhouse Gas Emissions for the Existing Project Site**

Facility	Indirect GHG Emissions (MT CO <sub>2</sub> e/year) <sup>1</sup>
B Barn	56
C Barn	95
D Barn	11
Center for Companion Animals	572
Equine Athletic Performance <sup>2</sup>	164
VMTH Equine Examination <sup>3</sup>	
Hay Barn	11
Equine Isolation Facility	4
Veterinary Medicine 2	332
Pritchard VMTH	1413
VMTH Office Annex <sup>3</sup>	
Gourley Clinical Teaching Center <sup>2</sup>	305
<b>Total</b>	<b>2,963</b>

Notes: MT CO<sub>2</sub>e/year=metric tons of carbon dioxide equivalent per year.

<sup>1</sup> Energy usage includes natural gas and electricity consumed on-site and at the campus’s Central Power Plant averaged over three years (2014-2016).

<sup>2</sup> These facilities will be retained by the project.

<sup>3</sup> Individual energy demand for these facilities is not available and are powered through the main VMTH meter. Due to the characteristics of these facilities, they are expected to have low energy demand.

Source: Kirk, pers. comm. 2017, Vargis, pers. comm. 2017, modeling performed by Ascent Environmental, January 2017.

As shown above, the indirect emissions of GHGs associated with energy consumption are 2,818 averaged over three years (2014-2016).

As discussed in further detail in Section 3, “Project Description,” VMC Vision includes renovation of existing facilities, demolition of some structures, development of new facilities, and upgrading of utility infrastructure. Emissions from the above-listed facilities would be altered or replaced during by VMC Vision-related facilities as existing facilities are expanded or demolished. Renovations of existing facilities would entail upgrading building features to comply with the 2016 Title 24 CALGreen standard. Further, new facilities will be constructed to exceed the 2016 CALGreen Standard by 20 percent.

Indirect GHG emissions associated with the operation of the renovated and new buildings under the project are shown in Table 7.7-4, “Indirect, Energy-Related Greenhouse Gas Emissions for the Project.”

**Table 7.7-4: Indirect, Energy-Related Greenhouse Gas Emissions for the Project**

Facility	Indirect GHG Emissions (MT CO <sub>2</sub> e/year) <sup>1</sup>
Large Animal Support Facility	361
Livestock, Field Services, & Site Prep (C & D Barns)	134
All Species Imaging Center	127
Small Animal Hospital East Wing	1,564
Small Animal Hospital East Wing 2	394
Equine Performance Center	226
Small Animal Hospital West Wing	627
Equine Surgery & Critical Care Wing	211
South Wing	174
Community Practice Consolidation	27
Equine Isolation	95
Clinical Research Center	164
Gourley Clinical Teaching Center <sup>2</sup>	305
Hoffman Equine Performance Lab <sup>2</sup>	45
<b>Total</b>	<b>4,454</b>

Notes: MT CO<sub>2</sub>e/year=metric tons of carbon dioxide equivalent per year.

<sup>1</sup> Energy usage includes natural gas and electricity consumed on-site and at the campus's Central Power Plant for the first year of operation (2025) with incorporation of 2016 Title 24 standards for modified buildings and a 20 percent exceedance of 2016 Title 24 standards for new buildings.

<sup>2</sup> These facilities will be retained by the project.

Source: Modeling performed by Ascent Environmental, January 2017.

As shown in Table 7.7-3, the indirect emissions of GHGs associated with energy usage would be 4,454 MT CO<sub>2</sub>e for the first year of full operation of all facilities (2025).

As discussed in Section 7.16, "Transportation, Circulation, & Parking," the project would be expected to generate up to 54 construction-related vehicle trips per day, 57 additional worker-related vehicle trips per peak period, and 25 additional patient-related vehicle trips. This volume of vehicle trips would result in an additional 14 MT CO<sub>2</sub>e per year of mobile source emissions as compared to existing conditions.

Project implementation would also include use of water conservation strategies. Discussed in more detail in Section 7.9, "Hydrology & Water Quality," the existing project site has a total domestic water consumption of approximately 17,959 gallons per day (gpd) and outdoor landscaping consumption of about 707,868 gallons per month (gpm). Through the use of more efficient plumbing fixtures, drought-tolerant landscaping, and low-flow irrigation features the project's projected domestic water consumption would be reduced to 2,875 gpd and outdoor landscaping water consumption would be reduced to 492,399 gpm. These reductions in water consumption would reduce the project's water- and wastewater-related GHG emissions by 96 MT CO<sub>2</sub>e/year as compared to current conditions.

Consistent with the recommendations found in the 2017 Climate Change Scoping Plan Update by CARB, the project must demonstrate no net increase in GHG emissions as compared to baseline conditions. Table 7.7-5, "Summary of Existing and Projected GHG Emissions," summarizes the existing GHG emissions on the project site and the additional GHG emissions associated with the project.

**Table 7.7-5: Summary of Existing and Projected GHG Emissions**

	Source	GHG Emissions (MT CO <sub>2</sub> e/year)
VMC Vision	Construction <sup>1</sup>	58
	Energy Consumption	4,454
	Mobile Sources	14
	Water and Wastewater	-96 <sup>3</sup>
	<b>Project Total</b>	<b>4,430</b>
Existing Project Site	Energy Consumption <sup>2</sup>	2,963 <sup>4</sup>
	<b>Total Increase</b>	<b>1,467</b>

Notes: MT CO<sub>2</sub>e/year=metric tons of carbon dioxide equivalent per year.

<sup>1</sup> Construction emissions are amortized over the project’s 30-year lifetime as recommended by the South Coast Air Quality Management District.

<sup>2</sup> Construction, mobile sources, and water and wastewater emissions were not included in existing GHG emission estimate. Rather, the project GHG emissions looked at the project-related increase in GHG emissions due to construction, mobile sources, and water and wastewater use.

<sup>3</sup> Value is negative to demonstrate lower emissions associated with the project from water reduction strategies as compared to the existing site (baseline conditions).

<sup>4</sup> These emissions are subtracted from the project’s total emissions, as they constitute the baseline under CEQA and would be replaced by the project’s total emissions.

Source: Modeling performed by Ascent Environmental, January 2017.

As shown above, the project would generate a total of 4,430 MT CO<sub>2</sub>e/year from energy consumption, mobile sources, and water and wastewater treatment, as well as amortized construction emissions over a 30-year period. The existing project site emits 2,963 MT CO<sub>2</sub>e/year from energy consumption; pursuant to the CEQA Guidelines, these emissions constitute the baseline for which to evaluate the project’s impacts. As shown in Table 7.7-4, the difference between existing conditions and proposed project conditions would be an increase of 1,467 MT CO<sub>2</sub>e/year.

To achieve consistency with the UC Office of the President’s goal of carbon neutrality by 2025, the project must demonstrate a no net increase in GHG emissions beyond baseline levels excluding emissions associated with commuter trips. Notably, as shown in Table 7.7-4 and detailed in Section 7.16, “Transportation, Circulation, & Parking,” the project would result in a minor increase in vehicle trips to and from the project site, which would generate 14 MT CO<sub>2</sub>e annually. These vehicle trip-related emissions would constitute less than 1 percent of the project’s total emissions and are therefore considered an insignificant contribution to the project’s overall emissions. As described above, the project would generate 1,467 MT CO<sub>2</sub>e/year (1,453 MT CO<sub>2</sub>e/year excluding mobile-source emissions) of GHG emissions that exceed the existing levels of GHGs associated with the project site. As such, the project would produce a potentially considerable contribution to cumulative emissions influencing global climate change. Impacts related to climate change would be potentially significant.

**Mitigation Measures**

**Mitigation Measure 7.7-1: Incorporate design features to reduce operational GHG emissions.**

The University shall incorporate mitigation measures into the project to reduce operational emissions of GHGs to zero, if feasible. Such measures may include the following:

## Energy

- Reduce on-site electricity use by 50 percent through use of on-site renewable energy (e.g., solar photovoltaic panels) where possible. Building design, landscape plans, and solar installation shall take into account solar orientation to maximize solar exposure.
- Install roofing materials with a minimum aged or Solar Reflective Index equal to 25.

## Area Sources

- Provide electrical outlets on the exterior of project buildings to allow sufficient power of electric landscaping equipment.

## Water Conservation

- Install a recycled water irrigation system for all on-site irrigation demand.

## Transportation

- Install 6 electric vehicle charging spaces (at least 10 percent of the project-generated demand for 57 parking spaces) consistent with the Tier 1 standards identified in Table A5.106.5.3.1 of the 2016 Title 24 CALGreen Code.
- Provide 6 designated parking spaces for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles (at least 10 percent of the project-generated demand for 57 parking spaces) consistent with the Tier 1 standards identified in Table A5.106.5.1.1 of the 2016 Title 24 CALGreen Code.

Incorporation of these mitigation measures would reduce GHG emissions; however, emissions would still remain above the no net increase threshold.

### **Mitigation Measure 7.7-2: Purchase Carbon Offsets**

YSAQMD does not provide recommendations for prioritizing project mitigation; therefore, guidance from SCAQMD is being used. SCAQMD recommends that mitigation be considered in the following prioritized manner: 1) project design features/on-site reduction measures; 2) off-site within neighborhood; 3) off-site within district; 4) off-site within state; 5) and off-site out of state. As such, UC Davis shall prioritize the implementation of on-site measures specified by Mitigation Measure 7.7-1 (SCAQMD 2008).

Implementation of the measures identified under Mitigation Measure 7.7-1 would reduce GHG emissions, but not to an extent that the no net increase threshold is met. The CEQA Guidelines recommend several options for mitigating GHG emissions. Section 15126.4(C)(3) of the Guidelines states that measures to mitigate the significant effects if GHG emissions may include “off-site measures, including offsets that are not otherwise required...” Through the purchase of GHG credits through voluntary participation in an approved registry, GHG emissions may be reduced at the project level.

Prior to issuing building permits for development within the project site, the University shall confirm that the project’s remaining (i.e., post implementation of Mitigation Measure 7.7-1) construction and operational GHG emissions over a 30-year project life be offsetting through the implementation of Mitigation Measure 7.7-2, described in detail below.

This measure is inherently scalable based on the volume of offsets. Further, consistent with statewide goals of reducing GHGs, offset programs should be prioritized by location (i.e., in state). As such, the University shall invest in on-campus programs to reduce GHG emissions from energy consumption (e.g., the University’s Energy Efficiency Program) to offset project-related emissions to the extent feasible. If,

after feasible local investments have been exhausted, project-related GHG emissions remain, the University shall purchase additional carbon offsets, giving priority to carbon offset projects occurring within the state.

It should also be noted that purchases of offsets would occur once and remain effective throughout the lifetime of the project, which, consistent with SCAMQD guidance, is assumed to be 30 years (SCAQMD 2008). In order for an offset to be considerable viable, it must exhibit “permanence.” To adequately reduce emissions of GHGs, carbon offsets must be able to demonstrate the ability to counterbalance GHG emissions over the lifespan of a project or “in perpetuity” (The Nature Conservancy 2016). For example, the purchase of a carbon offset generated by a reforestation project would entail the replanting or maintenance of carbon sequestering trees, which would continue to sequester carbon over several years, decades, or centuries (Forest Trends 2015). As such, carbon offsets purchased to reduce project-related emissions should demonstrate a lifespan of at least 30 years (i.e., the life of the project).

Compliance with Mitigation Measure 7.7-2 shall be demonstrated prior to obtaining building permits, and shall follow the preferred geographic hierarchy recommended by SCAQMD. Prior to commencing construction, the University shall purchase carbon offsets to mitigate the remaining GHG emissions following implementation of on-site mitigation as described under Mitigation Measure 7.7-1.

### **Significance after Mitigation**

Implementation of identified actions and achievement of performance standards identified under Mitigation Measure 7.7-1 combined with the reductions associated with the purchase of carbon offsets under Mitigation measure 7.7-2 would reduce the project’s emissions of GHGs to a less-than-significant level.

- b) UC Davis developed its Climate Action Plan (CAP) in 2010, which was adopted to allow UC Davis to meet the requirements of AB 32, the UC Policy on Sustainable Practices, and the American College and University Presidents Climate Commitment. The CAP sets goals for GHG reductions as well as policies to meet those goals. The CAP does not extend beyond 2020, and has not undergone environmental review and is therefore not considered “qualified” under CEQA. Consistency with the UC Office of the President’s commitment to achieve carbon neutrality across all UC campuses by 2025 will therefore be evaluated. As discussed above, the project would result in an additional 1,467 MT CO<sub>2</sub>e per year as compared to existing conditions. As discussed in Section 7.7.3, “Regulatory Considerations,” a no net increase threshold has been applied at the project level to reduce impacts to global climate change. Given that achieving carbon neutrality by 2025 is a benchmark goal in-line with the statewide goals, as discussed in the Draft 2017 Climate Change Scoping Plan Update, the additional emissions associated with the project would be in conflict with the state’s pathway to achieve a 40 percent reduction in 1990 levels of GHGs by 2030. The impact would be potentially significant.

### **Mitigation Measure 7.7-3: Implement Mitigation Measures 7.7-1 and 7.7-2**

The project applicant shall implement Mitigation Measures 7.7-1 and 7.7-2 to the extent that GHG emissions are reduced by 1,467 MT CO<sub>2</sub>e per year.

### **Significance after Mitigation**

Implementation of Mitigation Measures 7.7-1 and 7.7-2 would reduce project-generated GHGs to the level of GHGs currently being emitted by the project site. As such, the project would demonstrate a no net increase in GHGs. This would be consistent with the UC Office of the President’s commitment to achieving carbon neutrality by 2025 on all UC campuses, including UC Davis. Further, a no net increase in emissions would demonstrate the project’s participation in the state’s plan to reduce GHG emissions to 40 percent of 1990 levels by 2030. Through incorporation of the mitigation listed above, the project would remain consistent with the UC Office of the President’s commitment to achieve carbon neutrality by 2025. Therefore, the project-generated GHG impact would be less than significant with mitigation.

## 7.8 HAZARDS AND HAZARDOUS MATERIALS

### 7.8.1 Background

Section 4.7 of the 2003 LRDP EIR addresses the hazards and hazardous materials effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.7 of the 2003 LRDP EIR.

#### Campus

A variety of hazardous materials are used on campus during the course of daily operations. Hazardous chemicals used on campus include: chemical solvents, reagents, and aromatic hydrocarbons that are used in campus laboratories; pesticides, fungicides, and herbicides used by agricultural programs and in landscape maintenance; relatively small amounts of solvents, paints, and acids used by fine arts programs; gasoline and diesel fuels, oils and lubricants, antifreeze, cleaning solvents and corrosives, paints and paint thinners, and refrigerants used in vehicle and building maintenance. In addition, radioactive materials, biohazardous materials, and laboratory animals are used in teaching and research activities. The use of hazardous materials on campus generates hazardous byproducts that must eventually be handled and disposed of as hazardous wastes.

Generation, transportation, and disposal of hazardous wastes are regulated by various agencies. The lead federal regulatory agency is the Environmental Protection Agency. The State Department of Toxic Substances Control (DTSC) has primary state regulatory responsibility but can delegate enforcement authority to local jurisdictions that enter into agreements with the state agency, as it did with Yolo County Department of Environmental Health (YCDEH) under the Certified Unified Program Agency (CUPA) program.

The campus’ Office of Environmental Health and Safety (EH&S) coordinates most local, state, and federal regulatory compliance functions related to the campus’ health, safety, and environmental issues. EH&S performs safety education and training, regulatory interpretation and applicability, approval of potentially hazardous procedures, resolution of safety problems, surveillance, and monitoring. In addition, EH&S provides guidance for several campus safety programs, including: the Chemical Inventory System, which tracks inventory and use of hazardous materials on campus; the CUPA Self-Audit Program, which complies with the terms of an agreement with the YCDEH; development of laboratory-specific Chemical Hygiene Plans; the Radiation and X-Ray Safety Programs; and the Biological Safety Administrative Advisory Committee. EH&S is also a working partner in such campus administrative advisory groups as the Chemical Safety Committee, the Radiation Safety Committees, the Animal Use and Care Committee, and the Biological Safety Committee. External administrative and benchmarking reviews of the EH&S programs are conducted periodically to identify means of further improving the programs.

#### Project Site

The project site includes existing academic and clinical buildings that make up the VMTH. Completion dates of the buildings range from 1969 to 2005. The buildings have been used for a variety of teaching and research efforts with multiple phases of chemical use, building remodel, and equipment renovation. These on-going uses introduced a variety of substances to the site. To examine the project site for potential items of environmental concern such as contamination from hazardous chemicals or leaked materials, Phase 1 environmental site assessments were conducted for the project site and utility corridor (UC Davis 2016b). The assessments revealed no evidence of recognized environmental conditions, but advised that caution should be used when renovating laboratory spaces. The assessments also recommended that soil sampling to test for naturally-occurring asbestos should be conducted prior to earthmoving or grading activities of one acre or larger.

### 7.8.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers a hazards and hazardous materials impact significant if growth under the 2003 LRDP would:



- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- 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.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school.
- Be located on a site that 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.
- For a project within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Additional standards from the CEQA Guidelines’ Environmental Checklist (“f” and “h” in the checklist below) were found not applicable to campus growth under the 2003 LRDP.

### 7.8.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP related to hazards and hazardous materials are evaluated in Section 4.7 of the 2003 LRDP EIR. The proposed project is within the scope of analysis in the 2003 LRDP EIR and potentially significant hazards and hazardous materials impacts identified in the 2003 LRDP EIR that are relevant to the proposed project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR.

<b>2003 LRDP EIR Impacts</b>		<b>Level of Significance Prior to Mitigation</b>	<b>Level of Significance After Mitigation</b>
<b>HAZARDS &amp; HAZARDOUS MATERIALS</b>			
4.7-1	Implementation of the 2003 LRDP would increase routine hazardous chemical use on campus by UC Davis laboratories and departments and in maintenance and support operations, which would not create significant hazards to the public or the environment.	LS	LS
4.7-2	Implementation of the 2003 LRDP could increase routine generation of hazardous wastes on campus by UC Davis laboratories and departments and from maintenance and support operations, which would not create significant hazards to the public or the environment.	LS	LS
4.7-3	Implementation of the 2003 LRDP could increase routine use of radioactive materials on campus at UC Davis laboratories, which would not create significant hazards to the public or the environment.	LS	LS
4.7-4	Implementation of the 2003 LRDP could increase routine generation of radioactive wastes on campus by UC Davis laboratories, which would not create significant hazards to the public or the environment.	LS	LS
4.7-5	Implementation of the 2003 LRDP could increase routine use of biohazardous materials on campus by UC Davis laboratories, which would not create significant hazards to the public or the environment.	LS	LS
4.7-6	Implementation of the 2003 LRDP could increase routine generation of biohazardous wastes on campus by UC Davis laboratories, which would not create significant hazards to the public or the environment.	LS	LS

<b>2003 LRDP EIR Impacts</b>		<b>Level of Significance Prior to Mitigation</b>	<b>Level of Significance After Mitigation</b>
<b>HAZARDS &amp; HAZARDOUS MATERIALS</b>			
4.7-7	Implementation of the 2003 LRDP could increase routine use of laboratory animals on campus by UC Davis laboratories, which would not significantly increase risk of animal bites, escapes, and disease transmission.	LS	LS
4.7-8	Implementation of the 2003 LRDP would increase the routine transport of hazardous materials to and from campus, which would not significantly increase hazards to the public or the environment.	LS	LS
4.7-9	Implementation of the 2003 LRDP 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.	LS	LS
4.7-12	Construction activities on campus under the 2003 LRDP would not expose construction workers and campus occupants to contaminated soil or groundwater.	LS	LS
4.7-13	Demolition or renovation of buildings under the 2003 LRDP would not expose construction workers or campus occupants to contaminated building materials.	LS	LS
4.7-15	Implementation of the 2003 LRDP would include campus development within 2 miles of public use airports, which could result in safety hazards for people residing or working in the area, and would include lighting on recreation fields that could result in a hazard for aircraft.	PS	LS
4.7-16	Hazardous materials use on campus under the 2003 LRDP would not exceed emergency response capabilities.	LS	LS
4.7-17	Campus development under the 2003 LRDP could physically interfere with the campus' Emergency Operations Plan.	PS	LS

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the proposed project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the project description and will not be readopted in this Initial Study. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

**2003 LRDP EIR Mitigation Measures**

**HAZARDS & HAZARDOUS MATERIALS**

- 4.7-1 The campus shall continue to implement the same (or equivalent) safety plans, programs, practices, and procedures related to the use, storage, and disposal of hazardous chemical materials during the 2003 LRDP planning horizon, including, but not necessarily limited to, the Business Plan, Hazardous Materials Communication Program, Chemical Inventory System, CUPA Self-Audit program, Injury and Illness Prevention Program, Chemical Hygiene Plans, Medical Surveillance Program, Chemical Safety Advisory Committee, Chemical Carcinogen Safety Program, and EH&S audits and safety training. These programs may be replaced by other programs that incorporate similar health and safety measures.
- 4.7-2(a) Implement LRDP Mitigation 4.7-1
- 4.7-2(b) The campus shall continue to implement the same (or equivalent) hazardous waste management programs during the 2003 LRDP planning horizon, including, but not necessarily limited to, hazardous waste storage and handling procedures, the waste minimization program, the pretreatment program, and the Waste Exclusion Program. These programs may be subject to modification as more stringent standards are developed or if the programs become obsolete through replacement by other programs that incorporate similar health and safety protection measures.
- 4.7-3(a) Implement LRDP Mitigation 4.7-1

## 2003 LRDP EIR Mitigation Measures

### HAZARDS & HAZARDOUS MATERIALS

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- 4.7-3(b) The campus shall continue to implement the same (or equivalent) Health Physics Program during the 2003 LRDP planning horizon. This program may be subject to modification as more stringent standards are developed or if the program becomes obsolete through replacement by other programs that incorporate similar health and safety protection measures.
- 4.7-4(a) Implement LRDP Mitigation 4.7-1
- 4.7-4(b) Implement LRDP Mitigation 4.7-3(b)
- 4.7-4(c) The campus shall continue to implement measures to reduce the generation of radioactive waste, including the requirement that employees working with radioactive materials be trained in radioactive waste minimization, EH&S online information about radioactive waste minimization, and exploration of waste minimization techniques by EH&S staff.
- 4.7-5(a) Implement LRDP Mitigation 4.7-1
- 4.7-5(b) The campus shall continue to implement the same (or equivalent) Biosafety Program during the 2003 LRDP planning horizon. This program may be subject to modification as more stringent standards are developed or if the program becomes obsolete through replacement by other programs that incorporate similar health and safety protection measures.
- 4.7-6(a) Implement LRDP Mitigation 4.7-1
- 4.7-6(b) Implement LRDP Mitigation 4.7-5(b)
- 4.7-7(a) Implement LRDP Mitigation 4.7-1
- 4.7-7(b) Implement LRDP Mitigation 4.7-5(b)
- 4.7-7(c) The campus shall continue to implement the same (or equivalent) programs related to laboratory animal use during the 2003 LRDP planning horizon, including, but not necessarily limited to, inspections of animal facilities and study areas by the Campus Veterinarian, requiring investigators to prepare Animal Use and Care Protocols, review of Animal Use and Care Protocols by the AUCAAC and EH&S, employee training in animal handling, and the campus animal health program. These programs may be subject to modification as more stringent standards are developed or if the programs become obsolete through replacement by other programs that incorporate similar health and safety protection measures.
- 4.7-8 The campus shall continue to require that packaging of chemicals to be transported on public roads conform with all legal requirements.
- 4.7-9 Implement LRDP Mitigations 4.7-1 through 4.7-8
- 4.7-12 The campus shall perform due diligence assessments of all sites where ground-disturbing construction is proposed.
- 4.7-13 The campus shall survey buildings for potential contamination before any demolition or renovation work is performed.
- 4.7-15(a) The UC Davis Airport flight pattern for Runway 16 shall be changed to a right-hand approach.
- 4.7-15(b) Lighting for recreation fields in the NMP will be tested by night flights, and adjusted as necessary to eliminate glare that could pose a hazard for aircraft.
- 4.7-15(c) UC Davis or a developer acting on behalf of UC Davis shall include disclosure statements in marketing and sales materials for the NMP informing potential owners of property in the NMP of the presence of the University Airport.
- 4.7-17 To the extent feasible, the campus shall maintain at least one unobstructed lane in both directions on campus roadways. At any time only a single lane is available due to construction-related road closures, the campus shall provide a temporary traffic signal, signal carriers (i.e., flagpersons), or other appropriate traffic controls to allow travel in both directions. If construction activities require the complete closure of a roadway, the campus shall provide appropriate signage indicating alternative routes. To ensure adequate access for emergency vehicles when construction projects would result in temporary lane or roadway closures, the campus shall inform emergency services, including the UC Davis Police and Fire Departments, and American Medical Response, of the closures and alternative travel routes.
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### 7.8.4 Environmental Checklist and Discussion

<b>HAZARDS &amp; HAZARDOUS MATERIALS</b>					
Would the project...	Impact to be Analyzed in the EIR	No Additional EIR Analysis Required	Impact Adequately Addressed in 2003 LRDP EIR	Less-than-Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) **Hazardous Chemicals**

The proposed project would involve incidental use of construction-related hazardous materials during the demolition, renovation, and construction activities. Existing clinical, research, and teaching uses involve the use of hazardous chemicals.

Because of their age, buildings on site proposed for renovation or demolition may contain hazardous materials including asbestos and lead. Campus policy and 2003 LRDP EIR Mitigation Measure 4.7-13 require that the buildings be surveyed for potential contamination before any demolition can occur. This mitigation measure was included to further reduce an already less-than-significant impact.

**Radioactive Materials**

Radioactive materials are routinely used within the project site for academic, research, and clinical purposes. The VMC Vision would not increase use of radioactive material over baseline conditions. The

2003 LRDP EIR evaluated the potential impacts associated with the continued use of radioactive materials and determined that the impact would be less than significant. Mitigations 4.7-4(a), 4.7-4(b), and 4.7-4(c) would further reduce this less-than-significant impact.

### **Biohazardous Materials**

As the project site includes veterinary medicine facilities, biohazardous materials are present on the project site, and would continue to be present following project implementation. 2003 LRDP EIR Mitigations 4.7-5(a), 4.7-5(b), 4.7-6(a), and 4.7-6(b) would reduce potential impacts related to biohazardous materials by requiring implementation of a biosafety program. These measures would further reduce this less-than-significant impact.

### **Laboratory Animals**

Laboratory animals are currently used within the project site, and would continue to be utilized following full build out of the VMC Vision project. Impact 4.7-7 of the 2003 LRDP EIR evaluated the hazards associated with the use of laboratory animals and determined that the impact would not be significant. Mitigations 4.7-7(a), 4.7-7(b), and 4.7-7(c) would further reduce the impact and would be applicable to the proposed project.

- b) For the project, the renovation activities would utilize hazardous materials such as fuel for construction equipment, paints and solvents during construction, and cleaners (primarily “Rescue,” a hydrogen peroxide-based mixture designed for use in animal care facilities) during operation of the building. These materials would be used in low quantities and would not be expected to pose a hazard because they are commonly utilized. The potential impact would be less than significant.

Additionally, Impact 4.7-9 of the 2003 LRDP EIR evaluated the potential for the 2003 LRDP to create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions. The 2003 LRDP EIR determined that the impact would be less than significant, but noted that Mitigation 4.7-9 requiring the implementation of Mitigations 4.7-1 through 4.7-8 would further reduce the impact. These mitigation measures are incorporated into the proposed project.

- c) Ralph Waldo Emerson Junior High School on Calaveras Avenue is the nearest school to the project site and is approximately 1.5 miles northwest of the project site. The proposed project would not emit hazardous materials or emit hazardous or acutely hazardous materials, substances, or waste within ¼ mile (1,320 feet) of a school site. No impact would occur.
- d) The Laboratory for Energy Related Research/South Campus Disposal site is the only campus site that is listed as a hazardous materials site pursuant to Government Code Section 65962.5. The proposed project would not disturb this site. No impact would occur.

The 2003 LRDP EIR found that construction activities under the 2003 LRDP would not expose construction workers and campus occupants to contaminated soil or groundwater (2003 LRDP EIR Impact 4.7-12). Campus policy requires that due diligence surveys be performed for all proposed project sites as part of the project planning process. Although the project site is not expected to contain contamination from prior uses, an evaluation of the site conditions will be conducted as part of further project coordination. Federal and state regulations require that workers who may be exposed to contaminants during the course of their jobs know of the presence of contamination and be properly trained. In addition, these regulations require that appropriate engineering and administrative controls and protective equipment be provided to reduce exposure to safe levels. Current campus due diligence policy and Cal/OSHA regulations minimize the exposure of construction workers to contaminants. In addition, if contaminants are identified on a project site, the campus would coordinate site remediation. Therefore, the impact would be less than significant.

Phase 1 environmental site assessments have been prepared for the project site and the utility corridor as part of the due diligence surveys required by Mitigation 4.7-12 (UC Davis 2016b). The assessments revealed no evidence of recognized environmental conditions, but recommended additional surveys for asbestos, lead, and hazardous materials for any buildings that would be demolished or renovated. Also, the assessments advised extra caution when renovating or removing existing laboratory equipment due to the potential for chemical, biological, and radiological contamination. Because of the potential for naturally-occurring asbestos to be found in the area, the assessments also recommended soil sampling prior to any earthmoving or grading activities greater than one acre. As the assessments did not find any evidence of environmental concerns, the recommendations made in the assessments represent standard studies and procedures.

- e) The 2003 LRDP EIR found that development of certain projects on the west campus under the 2003 LRDP could result in safety hazards associated with aircraft. However, the proposed project is located on the central campus, is not one of the west campus projects, and would not conflict with airport operations. No impact would occur under.
- f) The University Airport is a public use airport, not a private airstrip. No other airport facilities are within the immediate vicinity of the campus. No impact would occur. Refer to item e) above for a discussion of potential safety hazards associated with the University airport, a local public use airport. No impact would occur.
- g) The 2003 LRDP EIR found that implementation of the 2003 LRDP could interfere with the campus' Emergency Operations Plan through construction-related road closures that would render roads impassable by emergency response vehicles (2003 LRDP EIR Impact 4.7-17). Mitigation 4.7-17 of the 2003 LRDP EIR mitigates this impact by requiring at least one unobstructed lane in each direction remain open on campus roadways or appropriate traffic controls if only one lane is available. This mitigation measure was included to reduce this potentially significant impact to a less-than-significant level.
- h) Areas along Putah Creek are the only areas on campus that could be susceptible to wildland fires. Urbanization will not occur in close proximity to these areas under the 2003 LRDP because land along Putah Creek is designated for Open Space and Teaching and Research Fields, and land adjacent to these open areas is designated primarily for Teaching and Research Fields and low density development. The proposed project is within a developed area and would not be subject to wildland fire risk. Therefore, no impact would occur.

## 7.9 HYDROLOGY AND WATER QUALITY

### 7.9.1 Background

Section 4.8 of the 2003 LRDP EIR addresses the hydrology and water quality effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.8 of the 2003 LRDP EIR.

#### Campus

##### *Surface Water Resources*

The UC Davis campus is in the Lower Sacramento watershed. Putah Creek, the principal waterway in the Davis area, originates from springs in the Mayacamas Mountains northwest of the campus, and from there flows into Lake Berryessa, through Winters, along the southern boundary of Russell Ranch, along the southern boundary of UC Davis’ west and south campuses, and eventually into the Yolo Bypass, an overflow channel for the Sacramento River. The North Fork Cutoff and the Arboretum Waterway on campus follow the historic channel of Putah Creek, but no longer have natural flow. The North Fork Cutoff is a normally-dry stream channel on the west campus, which is currently occupied by sheep and cattle programs in the Department of Animal Science. The Arboretum Waterway serves as the stormwater detention basin for the central campus.

The quantity and quality of flows in Putah Creek are highly variable and depend on releases from Lake Berryessa, precipitation, stormwater runoff, and treated effluent discharge. The campus’ tertiary-treatment-level Wastewater Treatment Plant (WWTP) is the largest discharger of treated effluent to Putah Creek. The WWTP is regulated under a National Pollutant Discharge Elimination System (NPDES) Waste Discharge Requirement (WDR) permit issued by the Central Valley Regional Water Quality Control Board (RWQCB).

UC Davis is a project partner in a regional water supply project with the Cities of Woodland and Davis. In 2011, the State Water Resources Control Board (SWRCB) approved the diversion of up to 45,000 acre-feet (AF) per year from the Sacramento River for the Davis-Woodland Water Supply Project (DWWSP), to be operated by the Woodland-Davis Clean Water Agency (CWA). The CWA also has a secondary water right to surface water from the Sacramento River for 10,000 AF per year, which can be delivered during certain conditions (Term 91 conditions) (Reclamation 2013:1-8). The purpose behind the DWWSP is to provide additional/redundant water supplies for the Cities of Davis and Woodland and UC Davis and to address localized issues associated with providing water, including aging water systems, more stringent water quality regulations, and increasing water demands (Reclamation 2013). A surface water treatment plant, operated by CWA, was completed in 2016 to provide up to 30 million gallons per day (mgd) (WDCWA 2016). The CWA will supply up to 1.8 mgd of treated surface water to UC Davis (Nejedlo 2016). Initial supplies from the DWWSP began in June 2016 (Davis Enterprise 2016). UC Davis anticipates a sharp drop in groundwater use, coincident with the beginning of wholesale surface water deliveries (Brown and Caldwell 2015:4-3).

As a member of the Solano Project, UC Davis has rights to purchase 4,000 AF of Putah Creek water from Lake Berryessa per year, as well as rights to additional surface water directly from Putah and Cache Creeks, although the university has not exercised their rights to this water in many years. The tenant farmer at Russell Ranch uses approximately 3,750 AF of water per year from Putah and Cache Creeks via Willow Canal for irrigation of commercial crops.

##### *Groundwater Resources*

Regionally, the Sacramento Valley is a large, north-south trending basin filled with deep marine sediments overlain by shallow freshwater sediments eroded from the adjacent ranges to the west, north, and east. Locally, the campus is underlain by sand and gravel alluvial deposits that are host to deep and intermediate depth aquifers. The deep aquifer occupies sand and gravel deposits at depths ranging between 700 and 2,000 feet below ground surface (bgs), and has traditionally supplied the campus’ domestic and fire water systems. Six campus wells penetrate the deep aquifer, at depths that range from 857 to 1,580 feet bgs (Brown and Caldwell 2005:1-14). Despite the campus’ significant

growth in recent decades, the campus' deep aquifer demands have not significantly increased since the late 1960s, a trend that reflects the success of the campus' water conservation efforts. With implementation of the DWWSP that provides surface water, groundwater demands have been further reduced.

Shallow/intermediate depth sand and gravel aquifers underlie the campus at depths from 150 to 800 feet bgs and have historically supplied the campus utility water system, main campus agricultural water needs, cooling towers, and campus and tenant farmer irrigation needs at Russell Ranch. Water levels in the shallow/intermediate aquifer vary seasonally and strongly correlate to precipitation, indicating that surface water is a significant source of recharge.

The deep aquifer is characterized by water quality that is distinct from the quality of water in the intermediate-depth aquifer. Water drawn from wells extending into the deep aquifer is softer, less saline, and older than water drawn from intermediate-depth wells. In fact, water quality is the chief distinguishing characteristic between the deep aquifer the intermediate aquifer, and marks the transition between the two.

### ***Flooding and Drainage***

On campus, the South Fork of Putah Creek, the North Fork Cutoff, and the Arboretum Waterway channels are designated as Federal Emergency Management Agency 100-year floodplain areas (as shown on Figure 7.9-1). In addition, a portion of Russell Ranch along County Road 31 and a portion of the west campus along County Road 98 are also subject to flooding during a 100-year storm event.

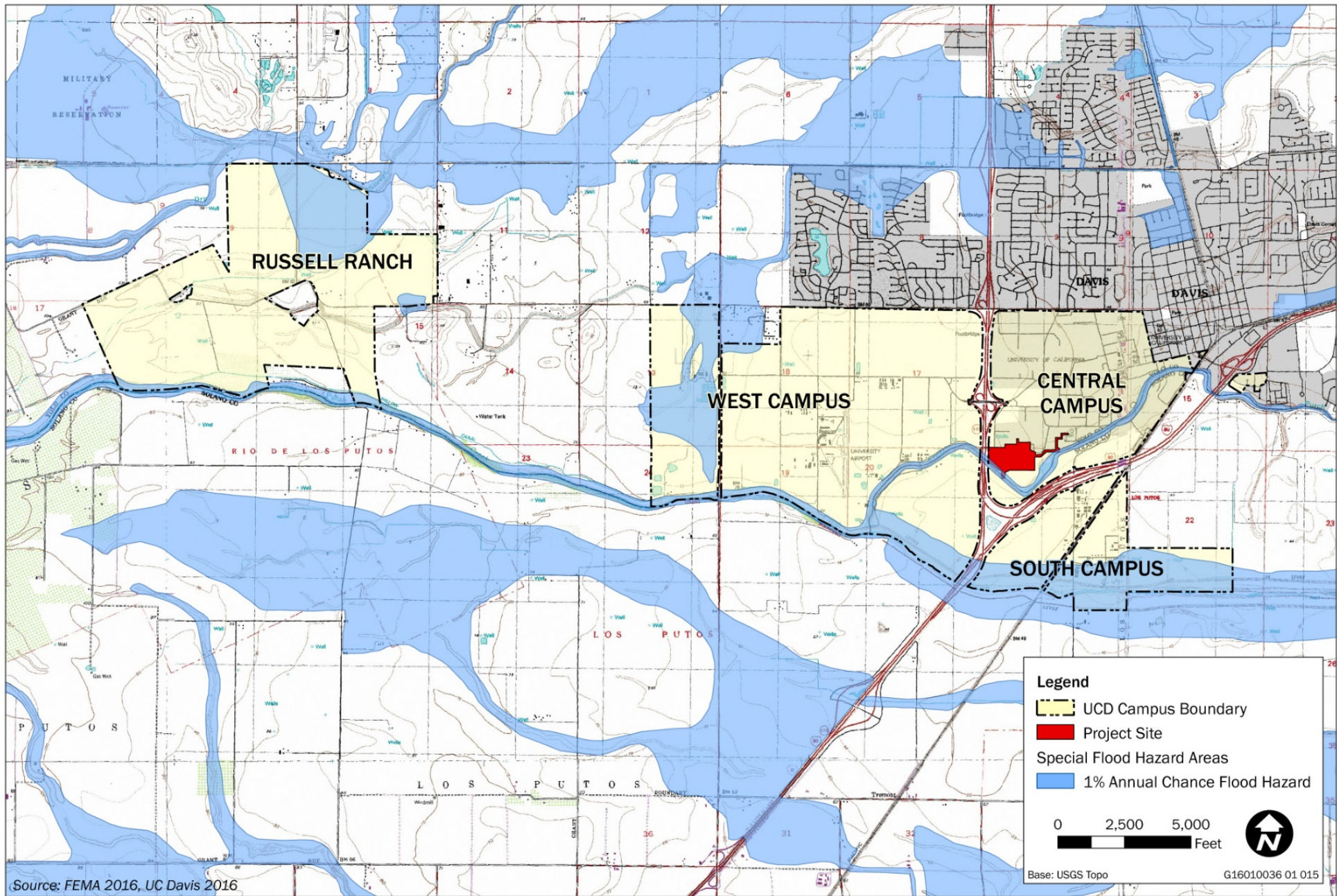
The central campus drainage system intercepts and collects runoff and directs this water via underground pipes to the Arboretum Waterway. During large storm events, water rises in the Arboretum Waterway, overtops the weir at the west end of the waterway, and flows into the pump pond located northwest of the weir. At the pump pond, water is pumped through an underground storm drain to the South Fork of Putah Creek. Most land in the west and south campuses and at Russell Ranch is used as teaching and research fields and is not drained by a storm drainage system. Irrigation practices on campus teaching and research fields typically do not generate surface runoff. However, large storm events may result in shallow overland flows that flow to temporary shallow ponds in places such as road and field edges. In addition, developed areas on the west and south campuses include stormwater conveyance systems that drain to Putah Creek.

To protect the quality of stormwater on campus that ultimately drains to Putah Creek, UC Davis construction and industrial activities are subject to the NPDES stormwater requirements. Routine maintenance and minor construction activities on campus are subject to the campus' Phase II Stormwater Management Plan (SWMP).

### **Project Site**

The project site is approximately 375 feet from the nearest bank of the Arboretum Waterway and approximately 700 feet from the Arboretum Waterway pump pond forebay and pumps. The site is developed; open spaces through the development are mainly covered in non-native grasses and forbs and are managed for weed control. Storm pipes run north-south under the center of the site, and east-west along the north and south portions of the site. There are 16 existing storm drain inlets on the site. Stormwater runoff from the site drains to these inlets or via sheet flow to roadway stormwater collection gutters, and from there to the Arboretum Waterway, which ultimately discharges to the south fork of Putah Creek





Source: FEMA 2016, UC Davis 2016

Figure 7.9-1

100-year Flood Zone



### 7.9.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers a hydrology and water quality impact significant if growth under the 2003 LRDP would:

- Violate any water quality standards or waste discharge requirements.
- 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.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on site or off site.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on site or off site.
- 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.
- Otherwise substantially degrade water quality.
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows.
- Expose people or structures to a significant risk of loss, injury, or death involving flooding.

Additional standards from the CEQA Guidelines’ Environmental Checklist (“g” and “j” in the checklist below) were found not applicable to campus growth under the 2003 LRDP.

### 7.9.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP on hydrology and water quality are evaluated in Section 4.8 of the 2003 LRDP EIR. The proposed project is within the scope of analysis in the 2003 LRDP EIR and significant and potentially significant hydrology and water quality impacts identified in the 2003 LRDP EIR that are relevant to the proposed project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR. In addition, Impact 4.8-1, presented below, is considered less than significant prior to mitigation, but mitigation measures were identified in the 2003 LRDP EIR to further reduce the significance of this impact. Other less-than-significant impacts that do not include mitigation measures are not presented here. Mitigation measures are included to reduce the magnitude of project-level impacts 4.8-5 and 4.8-6, but these impacts are identified as significant and unavoidable because they cannot be fully mitigated.

<b>2003 LRDP EIR Impacts</b>		<b>Level of Significance Prior to Mitigation</b>	<b>Level of Significance After Mitigation</b>
<b>HYDROLOGY &amp; WATER QUALITY</b>			
4.8-1	Campus construction activities associated with implementation of the 2003 LRDP would not contribute substantial loads of sediment or other pollutants in stormwater runoff that could degrade receiving water quality.	LS	LS
4.8-2	Development under the 2003 LRDP would increase impervious surface on the campus and could alter drainage patterns, thereby increasing runoff and loads of pollutants in stormwater, which could affect water quality.	PS	LS

<b>2003 LRDP EIR Impacts</b> HYDROLOGY & WATER QUALITY		<b>Level of Significance Prior to Mitigation</b>	<b>Level of Significance After Mitigation</b>
4.8-3	Implementation of the 2003 LRDP could alter drainage patterns in the project area and increase impervious surfaces, which could exceed the capacity of stormwater drainage systems and result in localized flooding and contribution to offsite flooding.	PS	LS
4.8-4	Campus growth under the 2003 LRDP would increase discharge of treated effluent from the campus wastewater treatment plant into the South Fork of Putah Creek, which could exceed waste discharge requirements and degrade receiving water quality.	PS	LS
4.8-5	Campus growth under the 2003 LRDP would increase the amount of water extracted from the deep aquifer and would increase impervious surfaces. This could result in a net deficit in the deep aquifer volume or a lowering of the local groundwater table but would not interfere substantially with recharge of the deep aquifer.	S	SU
4.8-6	Campus growth under the 2003 LRDP could increase the amount of water extracted from the shallow/intermediate aquifer and would increase impervious surfaces. Extraction from the shallow/intermediate aquifer could deplete groundwater levels and could contribute to local subsidence, and increased impervious coverage could interfere substantially with recharge. This could result in a net deficit in the intermediate aquifer volume or a lowering of the local groundwater table.	S	SU

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the proposed project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the project description and will not be readopted in this Initial Study or EIR. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

**2003 LRDP EIR Mitigation Measures**

HYDROLOGY & WATER QUALITY

- 4.8-1 The campus shall continue to comply with the NPDES state-wide General Permit for Discharge of Stormwater Associated with Construction Activity by implementing control measures and BMPs required by project-specific SWPPPs and with the Phase II SWMP to eliminate or reduce non-storm and stormwater discharges to receiving waters.
- 4.8-2 The campus shall comply with the measures in the Phase II SWMP to ensure that project design includes a combination of BMPs, or equally effective measures as they become available in the future, to minimize the contribution of pollutants to receiving waters.
- 4.8-3(a) Prior to approval of specific projects under the 2003 LRDP, the campus shall perform a drainage study to evaluate each specific development to determine whether project runoff would exceed the capacity of the existing storm drainage system, cause ponding to worsen, and/or increase the potential for property damage from flooding
- 4.8-3(b) If it is determined that existing drainage capacity would be exceeded, ponding could worsen, and/or risk of property damage from flooding could increase, the campus shall design and implement necessary and feasible improvements. Such improvements could include, but would not be limited to, the following:
  - (i) The expansion or modification of the existing storm drainage system.
  - (ii) Single-project detention or retention basins incorporated into project design with features including but not limited to: small onsite detention or retention basins; rooftop ponding; temporary flooding of parking areas, streets and gutters; landscaping designed to temporarily retain water; and gravel beds designed to collect and retain runoff.
  - (iii) Multi-project stormwater detention or retention basins.

## 2003 LRDP EIR Mitigation Measures

### HYDROLOGY & WATER QUALITY

- 4.8-4(a) The campus shall continue to monitor and modify its pretreatment program, WWTP operation, and/or treatment processes as necessary to comply with WDRs.
- 4.8-4(b) The campus shall implement a monitoring program specifically targeted at the following constituents: copper, cyanide, iron and nitrate + nitrite, and make appropriate modifications as necessary to the campus pretreatment program to avoid exceedance of permit limits for these constituents.
- 4.8-5(a) The campus shall continue to implement water conservation strategies to reduce demand for water from the deep aquifer. Domestic water conservation strategies shall include the following or equivalent measures:
- (i) Install water efficient shower heads and low-flow toilets that meet or exceed building code conservation requirements in all new campus buildings, and where feasible, retrofit existing buildings with these water efficient devices.
  - (ii) Continue the leak detection and repair program.
  - (iii) Continue converting existing single-pass cooling systems to cooling tower systems.
  - (iv) Use water-conservative landscaping on the west and south campuses where domestic water is used for irrigation.
  - (v) Replace domestic water irrigation systems on the west and south campuses with an alternate water source (shallow/intermediate or reclaimed water), where feasible.
  - (vi) Install water meters at the proposed neighborhood to encourage residential water conservation.
  - (vii) Identify and implement additional feasible water conservation strategies and programs including a water awareness program focused on water conservation.
- 4.8-5(b) The campus shall continue hydrogeologic monitoring and evaluation efforts to determine the long-term production and quality trends of the deep aquifer.
- 4.8-5(c) To the extent feasible, new water supply wells in the deep aquifer should be located on the west campus in sands and gravels that are not used by or available to the City of Davis for deep water extraction.
- 4.8-5(d) If continued hydrogeologic monitoring and evaluation efforts identify constraints in the deep aquifer's ability to provide for the campus' long-term water needs, the campus will treat shallow/intermediate aquifer and/or surface water from the Solano Project to serve domestic water demand.
- 4.8-6(a) The campus shall continue to implement water conservation strategies to reduce demand for water from the intermediate aquifer. Utility water conservation strategies shall include the following or equivalent measures:
- (i) Landscape, where appropriate, with native, drought resistant plants and use lawns only where needed for pedestrian traffic, activity areas, and recreation.
  - (ii) Install efficient irrigation systems including centrally controlled automatic irrigation systems and lowflow spray systems.
  - (iii) Apply heavy applications of mulch to landscaped areas to reduce evaporation
  - (iv) Use treated wastewater for landscape irrigation where feasible.
- 4.8-6(b) The campus shall continue to monitor shallow/intermediate aquifer water elevations at existing campus wells to ascertain whether there is any long-term decline in water levels.
- 4.8-6(c) The campus shall continue to participate in regional subsidence monitoring, including by installing an extensometer, to determine the vertical location of local subsidence.
- 4.8-6(d) If shallow/intermediate aquifer monitoring or subsidence monitoring indicate that campus water use from the intermediate aquifer is contributing to a net deficit in aquifer volume and/or significant subsidence, the campus will reduce use of water from the aquifer by using surface water and/or treated wastewater effluent to irrigate campus recreation fields.
- 4.8-6(e) The campus shall incorporate the following or equally effective measures into project designs under the 2003 LRDP where feasible, to increase percolation and infiltration of precipitation into the underlying shallow/intermediate aquifers:
- (i) Minimize paved surfaces.
  - (ii) Use grassy swales, infiltration trenches, or grass filter strips to intercept stormwater runoff.
  - (iii) Implement LRDP Mitigation 4.8-3(b), which specifies construction of detention and infiltration facilities in those areas that do not discharge stormwater to the Arboretum.

### 7.9.4 Environmental Checklist and Discussion

<b>HYDROLOGY &amp; WATER QUALITY</b>		Impact to be Analyzed in the EIR	No Additional EIR Analysis Required	Impact adequately addressed in 2003 LRDP EIR	Less-than-Significant Impact	No Impact
Would the project...						
a)	Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e)	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f)	Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g)	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h)	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j)	Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a,f) **Construction**

The 2003 LRDP EIR found that construction on campus under the 2003 LRDP would not contribute substantial loads of sediment or other pollutants to stormwater runoff (2003 LRDP Impact 4.8-1). Construction on campus is covered under the NPDES state-wide General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activity (General Permit). As part of the General Permit, campus construction projects managed by outside contractors and disturbing over one acre (including the proposed project) must implement Stormwater Pollution Prevention Plans (SWPPPs), which specify Best Management Practices (BMPs) to reduce the contribution of sediments, spilled and leaked liquids from construction equipment, and other construction-related pollutants to stormwater

runoff. All routine maintenance activities and any construction projects disturbing less than one acre that are not managed by outside contractors are covered under the campus' Phase II Municipal Stormwater Management Plan, which requires BMPs to reduce contribution of pollutants to stormwater runoff. Because the UC Davis campus is required to comply with the NPDES state-wide General Permit and Phase II requirements, the water quality effects associated with construction activities on campus, including the proposed project, are considered less than significant.

## Operation

The proposed project would not increase the campus student population but would provide for 57 new employees, and involve construction of additional wet labs and restrooms, which would allow for an increase in patient caseload by approximately 11 percent. The 2003 LRDP EIR found that campus growth under the 2003 LRDP would increase discharge of treated effluent from the campus WWTP into the South Fork of Putah Creek, which could exceed waste discharge requirements (WDRs) and degrade receiving water quality (2003 LRDP Impact 4.8-4).

### Existing Water Consumption

Domestic water consumption is driven by two different types of uses: occupant use and caseload use. Occupant use is limited to toilets, urinals, showers, and sinks. Caseload water consumption includes activities such as laboratory sinks, washing floors, cleaning cages, and laundry. Total domestic water consumption for the VMTH facilities has been metered at an average daily rate of approximately 17,956 gallons per day (gpd), of which approximately 7,987 gpd is consumed by occupants (LEED 2016<sup>7</sup>), and 9,969 gpd is consumed by caseload needs. The current occupancy rate at the site is 461 persons, and the average patient caseload is 128, which yields an average 17.2 gpd per occupant and 77.8 gpd per patient.

Current utility water consumption is driven chiefly by landscaping requirements, with a small fraction of utility water going to cooling system make-up water. The existing landscaping features and irrigation systems combine to consume an average of approximately 707,868 gallons per month.

### Projected Water Consumption

Renovations associated with the proposed project would include installation of more efficient plumbing fixtures, both in new buildings and to replace existing fixtures in renovated buildings. The replacement fixtures would account for an overall reduction in water consumption associated with occupants, even with the addition of 57 new staff members. Projected water consumption by occupant uses would total approximately 2,856 gpd after implementation of the project, which accounts for a net water savings of 5,131 gpd.

An 11 percent increase in patient caseload would equate to 14.5 additional cases per day in the proposed build out scenario, for a total of 142.5 cases. Improved water conservation measures, including installation of water-saving fixtures, would result in an overall decrease in the quantity of water consumed per patient. Conservatively applying a 10 percent water savings per patient, the new patient caseload would result in a projected consumption rate of 9,989 gpd, which would be a net increase of 19 gpd.

Overall, the savings in water in domestic water usage for occupants (5,131 gpd) offsets the increase from caseload (19 gpd).

Implementation of the project would alter the configuration and type of landscaping, as well as the type of irrigation supplying water to landscape features on the site. Micro-spray irrigation would be replaced with more efficient drip irrigation, resulting in lower flow rates and a reduction in the amount of water lost to evaporation. Landscape water consumption for the proposed project is estimated at an average 492,399

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<sup>7</sup> The current usage figures calculated by EPA's WaterSense calculator assumed a 60/40 split between female and male students to accurately reflect the gender composition of the staff and student body.

gallons per month, which would equate to a reduction in landscape water usage of 215,469 gallons per month, or approximately 7,079 gpd.

Overall, the proposed project would result in a reduction in domestic water usage. Consequently, operational impacts associated with domestic water consumption on water resources would be less than significant.

### **Wastewater Treatment**

The WWTP has a design capacity of 3.6 million gallons per day (mgd) for annual dry weather flow and a peak of 9.4 mgd. Under normal operating conditions the WWTP treats 1.6 mgd daily average flow, and as much as 8 mgd during storm events. Past trends in influent flow rate to the WWTP indicate that the WWTP will continue to have design capacity for many years, including with implementation of the project.

With current and future discharge control programs and possible operational changes, the increased effluent discharged from the WWTP associated with both the proposed project and other projects under the 2003 LRDP is expected to comply with NPDES regulations, and therefore would not cause degradation of receiving water quality. The campus will continue to monitor effluent discharge in compliance with the applicable WDRs for the WWTP, and if effluent limits are exceeded, the campus will modify its pretreatment program and WWTP operation as appropriate. These practices are confirmed in LRDP Mitigation 4.8-4(a), which is included as part of the project. In compliance with LRDP Mitigation 4.8-4(b), which would also be implemented as part of the project, the campus would target monitoring and pretreatment for the contaminants specifically identified as of potential concern by the Central Valley RWQCB. Because these measures would, at a minimum, maintain compliance with NPDES regulations and associated WDRs, the impact of the proposed project to water quality would be reduced to a less-than-significant level.

### **b) Deep Aquifer**

The 2003 LRDP EIR found that campus growth would result in an increase in impervious surfaces on campus as buildings and other facilities are constructed. However, the deep aquifer is confined with limited lateral and vertical recharge and is overlain by thick clay layers that are relatively impermeable. Because of these characteristics, increased impervious surfaces associated with development under the 2003 LRDP, including the proposed project, would not significantly affect the recharge capacity of the deep aquifer.

While the 2003 LRDP EIR found that campus growth under the 2003 LRDP would increase the amount of water extracted from the deep aquifer, and could result in a net deficit in the deep aquifer volume or a lowering of the local groundwater table (2003 LRDP Impact 4.8-5), implementation of the proposed project is projected to *decrease* the overall domestic water consumption (see the analysis under [a,f], above) from baseline conditions at the VMTH facilities.

The 2003 LRDP EIR found that if UC Davis' demand for water from the deep aquifer were to increase, groundwater levels in the deep aquifer could lower, contributing to a net deficit in the overall groundwater budget, regardless of the implementation of mitigation measures. LRDP Mitigation 4.8-5(a-c) requires continued water conservation efforts to determine the ability of the deep aquifer to provide for the campus' long-term water needs. If monitoring identifies that the aquifer is unable to meet the campus' long term needs, consistent with LRDP Mitigation 4.8-5(d), the campus would treat intermediate aquifer water and/or surface water to serve domestic water needs. The effects of increased demand on the volume of the deep aquifer are currently not well understood (although consistent with LRDP Mitigation 4.8-5(b), the campus will continue to study these effects). Therefore, at the time of the LRDP EIR certification this impact was considered significant and unavoidable, and was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP.

As stated above, the DWWSP now provides additional/redundant water supplies for UC Davis to address localized issues associated with aging water systems, more stringent water quality standards and regulations, and increasing water demands (Reclamation 2013). The recently completed surface water treatment plant in Woodland will provide up to 1.8 mgd of surface water supplies to UC Davis (Brown and Caldwell 2015:4-4). UC Davis therefore anticipates a reduction in groundwater use, coincident with the beginning of wholesale surface water deliveries (Brown and Caldwell 2015). Moreover, the proposed project is anticipated to result in an overall decrease in water consumption relative to existing conditions at the VMTH facilities. This new information has become available since certification of the 2003 LRDP EIR and alters the 2003 LRDP analysis. The analysis herein concludes that the project would have a less-than-significant impact on groundwater resources in the deep aquifer and would not contribute to the significant and unavoidable impact identified in the 2003 LRDP EIR.

### **Shallow/Intermediate Aquifer**

The 2003 LRDP EIR found that the campus' extraction from shallow/intermediate aquifers could deplete groundwater levels and could contribute to local subsidence. Additionally, increased impervious coverage could interfere with recharge of the shallow/intermediate aquifers. This could result in a net deficit in the intermediate aquifer volume or a lowering of the local groundwater table (2003 LRDP Impact 4.8-6).

Recent monitoring efforts indicate subsidence on campus. Due to the short history of subsidence monitoring in the area, the extent and cause of this subsidence is currently unknown; however, extraction from the shallow/intermediate aquifer could be a contributing factor.

Development under the 2003 LRDP, including the proposed project, would increase the amount of impervious surface on campus. However, because the soils underlying the campus generally have low permeability and provide limited recharge, new impervious surfaces are not likely to significantly reduce the amount and rate of groundwater recharge. Most recharge in the area is associated with streams and waterways, which would not be affected by the project.

LRDP Mitigation 4.8-6(a-c), included as part of the proposed project, would require continued utility water conservation efforts, monitoring of the intermediate aquifer, and subsidence monitoring efforts. Furthermore, implementation of LRDP Mitigation 4.8-6(e), included in the proposed project, would encourage project designs on campus that increase percolation and infiltration to the shallow/intermediate aquifer. The project proposes design measures, described below in item c) to slow down runoff and increase percolation and infiltration on the site. If the monitoring efforts required by LRDP Mitigation 4.8-6(b) or (c) identify that campus intermediate aquifer use is contributing to a net deficit in aquifer volume or significant subsidence, LRDP Mitigation 4.8-6(d) would be implemented to reduce campus utility water use by requiring use of Solano Project surface water and/or tertiary treated wastewater effluent from the campus WWTP for irrigation of campus recreation fields. Regardless of mitigation, the combination of effects from continued demand for water from the shallow/intermediate aquifer, local subsidence trends, and increased coverage could potentially result in a significant impact on intermediate aquifer groundwater levels. Therefore, Impact 4.8-6 is considered significant and unavoidable. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP.

As stated above, the DWWSP now provides additional/redundant water supplies for UC Davis to address localized issues associated with aging water systems, more stringent water quality standards and regulations, and increasing water demands (Reclamation 2013). The recently completed surface water treatment plant in Woodland will provide up to 1.8 mgd of surface water supplies to UC Davis (Brown and Caldwell 2015:4-4). UC Davis therefore anticipates a reduction in groundwater use, coincident with the beginning of wholesale surface water deliveries (Brown and Caldwell 2015). Moreover, the proposed project is anticipated to result in an overall decrease in water consumption relative to existing conditions at the VMTH facilities. This new information has become available since certification of the 2003 LRDP



EIR and alters the 2003 LRDP analysis. The analysis herein concludes that the project would have a less-than-significant impact on groundwater resources in the shallow/intermediate aquifer and the project would not contribute to the significant and unavoidable impact identified in the 2003 LRDP EIR.

- c,e) Project site runoff enters storm drain inlets that drain to the Arboretum Waterway. Some existing drain inlets would require relocation to accommodate proposed buildings. With respect to on-site stormwater runoff management, BMPs would be implemented to slow the runoff rate at the site and provide some pollutant filtration and soil percolation of runoff, before discharging remaining runoff water into the storm drain collection system.

The 2003 LRDP EIR found that development under the 2003 LRDP would increase impervious surfaces on the campus and could alter drainage patterns, thereby increasing runoff and loads of pollutants in stormwater, which could adversely affect surface water quality (2003 LRDP Impact 4.8-2). Discharge of stormwater to the Arboretum Waterway is covered under a NPDES Phase II permit for small municipal stormwater systems, which requires BMPs to reduce pollutants in stormwater discharge to the maximum extent practicable. LRDP Mitigation 4.8-2 requires the campus to comply with Phase II regulations. As described in item (a) above, both construction and operation activities are required to employ BMPs. With implementation of Phase II requirements, increases in stormwater runoff and levels of contaminants in runoff associated with implementation of the 2003 LRDP, including the proposed project, would have a less-than-significant impact on receiving waters.

The 2003 LRDP EIR found that implementation of the 2003 LRDP would alter drainage patterns in the project area and would increase impervious surfaces, which could exceed the capacity of stormwater drainage systems and result in localized flooding and contribution to offsite flooding (2003 LRDP Impact 4.8-3). Campus runoff is not expected to significantly increase peak flows in Putah Creek under the 2003 LRDP because anticipated development represents only a minor increase in the percentage of impervious area in the watersheds. Campus discharges from the Arboretum Waterway to Putah Creek are not expected to exceed the existing pumping capacity of approximately 80 cfs (the current NPDES permit has a maximum discharge limit of 130 cfs). Pursuant to the campus Stormwater Management Plan, the current campus standard for stormwater management is a 10-year storm event (Wengler 2005). However, under existing conditions, localized flooding on some portions of the campus occurs during a 2-year storm event. In most cases, this flooding consists of temporary water ponding at storm drain inlets and along roads that does not result in property damage or other serious consequences. Without any improvements, increased runoff associated with development under the 2003 LRDP, including the proposed project, would increase the likelihood of localized flooding (West Yost & Associates 2000). In accordance with LRDP Mitigation 4.8-3(a), included in the project, a drainage study has been performed for the proposed project to determine if capacity in the existing storm drainage system exists. The stormwater system has sufficient capacity to absorb additional runoff generated by the project. With the storm drainage system improvements proposed as part of the VMC Vision, the likelihood of localized flooding in the Health Sciences District watershed would be eliminated. To further reduce the impact, LRDP Mitigation 4.8-3(b) (necessary stormwater system and/or onsite detention facilities are constructed) would be implemented. Therefore, this impact would be less than significant.

Water quality impacts related to stormwater runoff are evaluated further in items (a, f) above.

- g,h) The proposed project would be constructed outside the 100-year flood zones on campus (see 2003 LRDP EIR, Figure 4.8-4, 100-Year Floodplain), and the project does not include housing. Therefore, no impact would occur.
- i) The campus is located approximately 23 miles downstream of the Monticello Dam (forming Lake Berryessa) and approximately 15 miles downstream of the Putah Diversion Dam. An inundation study prepared by the U.S. Bureau of Reclamation shows that, in the highly unlikely case of a dam reach, the campus (as well as the City of Davis) would be inundated under a maximum of 3 to 9 feet of water approximately 3.5 to 4 hours following the breach (USBR 1998). However, the probability of such a

release is far less than one in one million (USBR 2000). As of June 2000, Monticello Dam was determined to be in satisfactory condition, and the dam exhibited no unusual cracks, seeps, or deformations. In addition, the State Department of Dam Safety evaluates dams regularly, which would give adequate time to respond to any deterioration in the safety of the structure. Additionally, U.S. Bureau of Reclamation staff inspect the Monticello Dam daily for potential safety concerns. As recently as the earthquake in Napa in 2014, no concerns regarding dam stability were identified (Burns 2014). Therefore, the risk of flooding on campus because of a dam failure would be a less-than-significant impact.

- j) The campus is not subject to inundation by seiche, tsunami, or mudflow. The campus is generally flat and is not located in close proximity to any large water bodies. Therefore, no impact would occur.

## 7.10 LAND USE AND PLANNING

### 7.10.1 Background

Section 4.9 of the 2003 LRDP EIR addresses the land use and planning effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.9 of the 2003 LRDP EIR.

#### Campus

The approximately 5,300-acre UC Davis campus is located within Yolo and Solano counties. Local land use is predominantly agricultural, with small cities and towns. The campus is surrounded by extensive agricultural uses to the west and south and by residential, institutional, and commercial land uses in the City of Davis, to the north and east. The City of Davis is a university-oriented community with over 62,000 residents. The UC Davis campus consists of four general units: the central campus, the south campus, the west campus, and Russell Ranch. In addition, the University of California owns several properties in the City of Davis, including buildings in downtown Davis and buildings and vacant parcels in the South Davis Research Park, located south of I-80.

As a state entity, UC Davis is not subject to municipal policies such as the City of Davis General Plan. Nevertheless, such policies are of interest to the campus. The campus has a tradition of working cooperatively with the local communities and it is University policy to seek consistency with local plans and policies, where feasible.

The 2003 LRDP is the campus’ primary land use planning guide. It designates campus lands for the following uses: *Academic and Administrative (High and Low Density); Teaching and Research Fields; Teaching and Research Open Space; Parking; Physical Education, Intercollegiate Athletics, and Recreation (PE/ICA/Recreation); Research Park (High and Low Density); Formal Open Space; Community Gardens; Faculty/Staff Housing, Student Housing; Mixed Use Housing; and Elementary School.*

#### Project Site

The VMTH is located within the Health Sciences District on the UC Davis central campus area. The district is located on the southwest portion of the campus and is bound by SR 113 to the west and Interstate 80 to the south. This location allows for easy access for patients and for the provision of appropriate spaces to care for and house large animal patients. The district is also home to the Dean’s office for the SVM and a number of key teaching and research areas for the SVM and other divisions of the life sciences. The project site encompasses several existing buildings. In addition to the academic and clinical facilities, the site includes parking lots, outdoor animal pens, an equestrian arena, urban landscaping, ruderal grasslands, and valley-foothill riparian woodland.

The 2003 LRDP is the guiding land use planning document for the UC Davis campus. The majority of the VMC Vision project site is designated as *Academic and Administrative-High Density* under the 2003 LRDP, indicating that the intended long-term use of the project site is for large, multi-story facilities that facilitate the teaching, research, and public service mission of UC Davis. In addition, portions of the project site are identified in the 2003 LRDP as *Parking, Formal Open Space, and Teach and Research Open Space* (Figure 4-1).

North of the project site are additional academic buildings with classrooms and offices. West of the project site is a small sliver of open space that separates the project site from SR 113. South of the project site is an area designated as Teaching and Research Open Space (the Arboretum), which includes the historic Putah Creek corridor. East of the project site is the Arboretum Teaching Nursery and undeveloped open space substantially surrounded by campus buildings.

### 7.10.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers a land use and planning impact significant if growth under the 2003 LRDP would:

- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.
- Result in development of land uses that are substantially incompatible with existing adjacent land uses or with planned uses.
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

An additional standard from the CEQA Guidelines’ Environmental Checklist (“a” in the checklist below) was found not applicable to campus growth under the 2003 LRDP.

### 7.10.3 2003 LRDP EIR Impacts and Mitigation Measures

Land use and planning impacts of campus growth under the 2003 LRDP related to land use and planning are evaluated in Section 4.9 of the 2003 LRDP EIR. As analyzed in Section 4 of this Initial Study, the proposed project is within the scope of analysis in the 2003 LRDP EIR. The 2003 LRDP EIR did not identify any potentially significant or significant land use and planning impacts. The less than significant land use and planning impacts identified in the 2003 LRDP EIR do not require mitigation.

### 7.10.4 Environmental Checklist and Discussion

<b>LAND USE &amp; PLANNING</b>					
Would the project...	Impact to be Analyzed in the EIR	No Additional EIR Analysis Required	Impact adequately addressed in 2003 LRDP EIR	Less-than-Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in development of land uses that are substantially incompatible with existing adjacent land uses or with planned uses?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) The proposed project would redevelop existing buildings and add new structures within the existing VMTH site in the central campus, consistent with the 2003 LRDP land use designations. There is no housing on the project site and the project would have no potential to physically divide an established community. No impact would occur.
- b,d) The 2003 LRDP EIR identifies that an impact could result if land uses are developed under the 2003 LRDP EIR that are substantially incompatible with existing adjacent land uses or with planned uses. The proposed project would provide renovated and newly constructed academic and administrative space within the *Academic and Administrative-High Density* designation, consistent with this 2003 LRDP designation. The VMC Vision is intended to address the current space shortages and layouts that are limiting best practices in patient care and student learning while utilizing existing VMTH facilities to the

extent feasible and renovating and constructing new facilities as needed within the existing VMTH. In addition, the project's proposed parking lot renovations and utility connections would not alter the *Parking, Formal Open Space*, and *Teach and Research Open Space* land use designations; rather, construction disturbances in open space areas and parking lots would be temporary.

Furthermore, as explained in Section 3.6.7, "Sustainable Design Elements," above, the proposed project would comply with the UC Policy on Sustainable Practices and would meet the campus baseline as applicable to the project. The VMC Vision's goal for renovation of existing buildings is to be equal to or more efficient than Title 24 standards. The goal for new VMC buildings is to be 20 percent more efficient than Title 24 standards. In addition, UC Davis implements Green Building practices under the U.S. Green Building Council's Leadership in Energy and Environmental Design program (LEED). The VMC Vision is targeting to achieve LEED Gold Certification for both all renovated and new buildings. Therefore, no land use changes would occur and the project would be compatible with existing and planned uses.

- c) The campus does not fall within the boundaries of, nor is it adjacent to, an adopted regional HCP or NCCP. The campus has implemented two low effects HCPs for VELB at Russell Ranch. The project is located approximately 2 miles from the Russell Ranch. Therefore, the proposed project would not conflict with an adopted HCP or NCCP. No impact would occur.

## 7.11 MINERAL RESOURCES

### 7.11.1 Background

Section 4.6, “Geology, Soils, and Seismicity,” of the 2003 LRDP EIR briefly addresses mineral resources issues. The 2003 LRDP EIR concludes that development on campus would not impede extraction or result in the loss of availability of mineral resources.

Sand and gravel are important mineral resources in the region (UC Davis 2015:83). However, natural gas is the only known or potential mineral resource that has been identified on campus. Natural gas can be extracted at wells placed considerable distances from deposits. No other known or potential mineral resources have been identified on the UC Davis campus. Therefore, development on campus would not impede extraction or result in the loss of availability of mineral resources.

### 7.11.2 2003 LRDP EIR

Because development on campus would not impede extraction or result in the loss of availability of mineral resources, the 2003 LRDP EIR did not identify any standards of significance, impacts, or mitigation measures associated with mineral resources. As analyzed in Section 4 of this Initial Study, the proposed project is within the scope of analysis in the 2003 LRDP EIR.

### 7.11.3 Environmental Checklist and Discussion

<b>MINERAL RESOURCES</b>		Impact to be Analyzed in the EIR	No Additional EIR Analysis Required	Impact adequately addressed in 2003 LRDP EIR	Less-than-Significant Impact	No Impact
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a,b) Natural gas is the only known or potential mineral resource that has been identified on campus. Natural gas can be extracted at wells placed considerable distances from deposits. Therefore, development of the VMC Vision on the central campus would not impede extraction or result in the loss of availability of a known mineral resource. No impact would occur.

## 7.12 NOISE

### 7.12.1 Background

Section 4.10 of the 2003 LRDP EIR addresses the noise effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.10 of the 2003 LRDP EIR.

#### Campus

The primary noise source in the vicinity of the campus is vehicular traffic using I-80, SR 113, and local roads. Other sources of noise include occasional aircraft over-flights associated with the University Airport located on the west campus and another small airport in the vicinity, agricultural activities, railroads, and landscaping activities. Land use surrounding the campus is primarily agricultural, with residential, commercial, and other uses concentrated along the northern and eastern boundaries of the main campus.

Sound is technically described in terms of amplitude (loudness) and frequency (pitch). The standard unit of sound amplitude measurement is the decibel (dB), and the decibel scale adjusted for A-weighting (dBA) is a special frequency-dependent rating scale that relates to the frequency sensitivity of the human ear. Community noise usually consists of a base of steady “ambient” noise that is the sum of many distant and indistinguishable noise sources, as well as more distinct sounds from individual local sources. A number of noise descriptors are used to analyze the effects of community noise on people, including the following:

- $L_{eq}$ , the equivalent energy noise level, is the average acoustic energy content of noise, measured during a prescribed period, typically one hour.
- $L_{dn}$ , the Day-Night Average Sound Level, is a 24-hour-average  $L_{eq}$  with a 10 dBA “penalty” added to noise occurring during the hours of 10:00 PM to 7:00 AM to account for greater nocturnal noise sensitivity.
- CNEL, the Community Noise Equivalent Level, is a 24-hour-average  $L_{eq}$  with a “penalty” of 5 dB added to evening noise occurring between 7:00 PM and 10:00 PM, and a “penalty” of 10 dB added to nighttime noise occurring between 10:00 PM and 7:00 AM.

Noise monitoring over a 24-hour period in 2003 at sites located in urban areas on and adjacent to the campus (including areas next to freeways, roads, residences, and academic buildings) reflected CNEL levels ranging from 63 to 65 dBA CNEL. Ambient noise levels measured over a short period at various urban sites on campus varied from 49 to 63 dBA  $L_{eq}$ .

#### Project Site

The project site is in a developed and highly active portion of the UC Davis core campus. Noise conditions during the day are moderate with noise generated from vehicles in and around the VMTH complex. Additional daytime noises include passing pedestrians, bicyclists, and low-levels of bus traffic. Roads near the project site are generally traveled only by vehicles conducting business at the VMTH as the site is not on a major through route. There is limited nighttime activity on the project site, and major sources of nighttime noise include building mechanical equipment (e.g., HVAC systems) and vehicles.

### 7.12.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers a noise impact significant if growth under the 2003 LRDP would result in the following:

- Exposure of persons to or generation of noise levels in excess of levels set forth in Table 7.12-1.

**Table 7.12-1: Thresholds of Significance for Noise Evaluations**

Noise Source <sup>a</sup>	Criterion Noise Level <sup>b</sup>	Substantial Increase in Noise Level <sup>b</sup>
Road Traffic and Other Long-Term Sources	65 dBA CNEL	>=3 dBA if CNEL w/project is >= 65 dBA >=5 dBA if CNEL w/project is 50–64 dBA >=10 dBA if CNEL w/project is < 50 dBA
Aircraft	65 dBA CNEL	>=1.5 dBA if CNEL w/project is >= 65 dBA >=3 dBA if CNEL w/project is 60–64 dBA >=5 dBA if CNEL w/project is < 60 dBA
Railroad	Within 750 feet of railroad line <sup>d</sup>	
Construction (temporary)	80 dBA $L_{eq(8h)}$ <sup>e</sup> daytime (7:00 a-7:00 p) 80 dBA $L_{eq(8h)}$ evening (7:00 p-11:00 p) 70 dBA $L_{eq(8h)}$ nighttime (11:00 p-7:00 a)	Not Applicable

Source: 2003 LRDP EIR, Table 4.10-3

<sup>a</sup> The 2003 LRDP would not substantially increase rail activity; therefore, a threshold of significance for rail noise is not included in this table.

<sup>b</sup> At noise-sensitive land use unless otherwise noted. Noise-sensitive land uses include residential and institutional land uses.

<sup>c</sup>  $L_{eq(h)}$  is an average measurement over a one-hour period.

<sup>d</sup> Screening analysis distance criterion from FTA 1995.

<sup>e</sup>  $L_{eq(8h)}$  is an average measurement over an eight-hour period.

- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- For a project 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, exposure of people residing or working in the project area to excessive noise levels.

**7.12.3 2003 LRDP EIR Impacts and Mitigation Measures**

Impacts of campus growth under the 2003 LRDP related to noise are evaluated in Section 4.10 of the 2003 LRDP EIR. As analyzed in Section 4 of this Initial Study, the proposed project is within the scope of analysis in the 2003 LRDP EIR. Significant and potentially significant noise impacts identified in the 2003 LRDP EIR that are relevant to the proposed project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR.

2003 LRDP EIR Impacts		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
NOISE			
4.10-1	Construction of campus facilities pursuant to the 2003 LRDP could expose nearby receptors to excessive groundborne vibration and airborne or groundborne noise.	PS	LS

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the proposed project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the project description and will not be readopted in this Initial Study. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.



## 2003 LRDP EIR Mitigation Measures

### NOISE

- 4.10-1 Prior to initiation of construction, the campus shall approve a construction noise mitigation program including but not limited to the following:
- Construction equipment shall be properly outfitted and maintained with feasible noise-reduction devices to minimize construction-generated noise.
  - Stationary noise sources such as generators or pumps shall be located 100 feet away from noise-sensitive land uses as feasible.
  - Laydown and construction vehicle staging areas shall be located 100 feet away from noise-sensitive land uses as feasible.
  - Whenever possible, academic, administrative, and residential areas that will be subject to construction noise shall be informed a week before the start of each construction project.
  - Loud construction activity (i.e., construction activity such as jackhammering, concrete sawing, asphalt removal, and large-scale grading operations) within 100 feet of a residential or academic building shall not be scheduled during finals week.
  - Loud construction activity as described above within 100 feet of an academic or residential use shall, to the extent feasible, be scheduled during holidays, Thanksgiving breaks, Christmas break, Spring break, or Summer break.
  - Loud construction activity within 100 feet of a residential or academic building shall be restricted to occur between 7:30 AM and 7:30 PM.

### 7.12.4 Environmental Checklist and Discussion

NOISE	Impact to be Analyzed in the EIR	No Additional EIR Analysis Required	Impact adequately addressed in 2003 LRDP EIR	Less-than-Significant Impact	No Impact
Would the project...					
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a,c) Generation of noise on or adjacent to the project site is not expected to expose persons to noise levels in excess of campus noise standards. Noise levels in the vicinity of the project site are typical of the noise levels found throughout the campus and are below 65 dBA CNEL significance threshold found in the 2003 LRDP EIR. New construction with energy efficient windows normally provides at least 25 dBA outdoor-to-indoor noise reduction with the windows closed. Daytime noise levels from existing sources would therefore be satisfactory for the proposed uses.

The proposed project would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. Noise sources associated with the proposed building would include the increased number of people at the site and roof-mounted mechanical equipment. The increased number of employee would not likely be noticeable as the employees would work inside the buildings. The roof-mounted equipment would be enclosed to ensure that ambient noise levels are not raised in the project vicinity. As a result, off-site sensitive receptors would not be affected by an increase in noise generated by project traffic. The impact would be less than significant.

- b,d) Construction of the proposed project is anticipated to occur periodically over 10 years. The proposed project site is located adjacent to academic buildings, which are considered sensitive receptors. The 2003 LRDP EIR found that construction of campus facilities could expose nearby receptors to excessive groundborne vibration and airborne or groundborne noise (2003 LRDP Impact 4.10-1). Construction under the 2003 LRDP, including the proposed project, would require temporary construction activities using conventional construction techniques and equipment that would not generate substantial levels of vibration or groundborne noise. Construction of the proposed project would not require unusual construction techniques such as pile driving or blasting. Routine noise levels from conventional construction activities (with the normal number of equipment operating on the site) range from 75 to 86 dBA Leq at a distance of 50 feet, from 69 to 80 dBA Leq at a distance of 100 feet, from 55 to 66 dBA Leq at a distance of 500 feet, and 48 to 60 dBA Leq at a distance of 1,000 feet (although noise levels would likely be lower due to additional attenuation from ground effects, air absorption, and shielding from intervening structures). Noise from project construction is predicted to be below the significance criteria of 80 dBA Leq daytime and evening and 70 dBA Leq nighttime at a distance of 100 feet or more from the construction activity. However, noise from construction would be audible and would temporarily elevate the local ambient noise level to some degree at distances greater than 100 feet from construction. The academic buildings located within 100 feet of the project site would be exposed to project construction noise levels ranging from 69 to 80 dBA Leq. As these noise levels would not exceed the 2003 LRDP EIR thresholds for construction noise, the project's construction noise impact would be less than significant. LRDP Mitigation 4.10-1, included in the proposed project, would also be implemented which would further reduce construction noise. LRDP Mitigation 4.10-1 would require that loud construction activity within 100 feet of an academic building occur only between 7:30 AM and 7:30 PM and not occur during finals week. When feasible, loud construction activity would be scheduled during holidays when students will not be studying or will not be on the campus. Therefore, construction noise impact would be less than significant.
- e) The project site is approximately one mile east of the University Airport. The 2003 LRDP, including the proposed project, does not propose changes to University Airport operations, nor does it propose occupied uses within the airport's 65 CNEL noise contour. Therefore, the project would not expose people to excessive noise levels associated with this public use airport. There would be no impact.
- f) The University Airport is a public use airport, not a private airstrip. No other private airport facilities are within the immediate vicinity of the campus. No impact would occur. Refer to item (e) above for discussion of potential noise impacts associated with the campus' public use airports.

## 7.13 POPULATION AND HOUSING

### 7.13.1 Background

Section 4.11 of the 2003 LRDP EIR addresses the population and housing effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.11 of the 2003 LRDP EIR.

The on-campus population at UC Davis includes students, faculty/staff, and non-UC Davis affiliates working on campus. The current and projected campus population figures are presented in Table 3-2 of this Tiered Initial Study. As of 2015, approximately 90 percent of the student population and 50 percent of the employee population lived on campus or in the Davis area, and approximately 94 percent of students and 90 percent of employees lived within the three-county area of Yolo, Solano, and Sacramento counties.

Vacancy rates in the City of Davis are considered very low, and housing costs in the City are generally higher than those elsewhere in the region. The 2003 LRDP focused on providing additional on-campus student housing that will accommodate a total of approximately 7,800 students on the core campus and an additional 3,000 students in a West Village neighborhood. The campus currently offers one faculty and staff housing area (Aggie Village), which includes 21 single-family units (17 of which have cottages) and 16 duplexes. The 2003 LRDP plans are on-going to provide an additional 500 faculty and staff housing units within the West Village neighborhood.

#### Project Site

The project site consists of multiple academic and clinical buildings and facilities. There are no housing units located on the project site.

### 7.13.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers an impact related to population and housing significant if growth under the 2003 LRDP would:

- Directly induce substantial population growth in the area by proposing new housing and employment.
- Create a demand for housing that could not be accommodated by local jurisdictions.
- Induce substantial population growth in an area indirectly (for example, through extension of roads or other infrastructure).

Additional standards from the CEQA Guidelines’ Environmental Checklist (“b” and “c” in the checklist below) was found not applicable to campus growth under the 2003 LRDP.

### 7.13.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP related to population and housing are evaluated in Section 4.11 of the 2003 LRDP EIR. As analyzed in Section 4 of this Initial Study, the proposed project is within the scope of analysis in the 2003 LRDP EIR. The 2003 LRDP EIR population impact that is relevant to the proposed project is presented below with the corresponding level of significance. No mitigation is feasible; therefore, this 2003 LRDP impact was identified as significant and unavoidable.

<b>2003 LRDP EIR Impacts</b>		<b>Level of Significance Prior to Mitigation</b>	<b>Level of Significance After Mitigation</b>
4.11-1	Population & Housing Implementation of the 2003 LRDP would directly induce substantial population growth in the area by proposing increased enrollment and additional employment.	S	SU

### 7.13.4 Environmental Checklist and Discussion

<b>POPULATION &amp; HOUSING</b>		Impact to be Analyzed in the EIR	No Additional EIR Analysis Required	Impact adequately addressed in 2003 LRDP EIR	Less-than-Significant Impact	No Impact
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)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b)	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c)	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d)	Create a demand for housing that cannot be accommodated by local jurisdictions?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a) The proposed project could increase the UC Davis population by approximately 57 new employees. Employment population increases were evaluated in the 2003 LRDP and were determined in Impact 4.11-1 to potentially result in a significant and unavoidable impact. No feasible mitigation measures were identified for this impact and this impact remains significant and unavoidable. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP.
- b,c) The proposed project would not displace any existing housing units and would not displace substantial numbers of people. Therefore, no housing impacts would occur.
- d) The proposed project would not increase student population, and the increase of 57 faculty and staff is within the scope of the 2003 LRDP. The 2003 LRDP EIR found that future housing in the region is anticipated to adequately accommodate population growth associated with the 2003 LRDP as well as other population growth in the region. Therefore, the 2003 LRDP EIR found that campus growth would not create a demand for housing that could not be accommodated by local jurisdictions and the impact would be less than significant.

## 7.14 PUBLIC SERVICES

### 7.14.1 Background

Section 4.12 of the 2003 LRDP EIR addresses the public services effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.13 of the 2003 LRDP EIR.

In accordance with the CEQA Guidelines, this Public Services analysis evaluates the environmental effects associated with any physical changes required to meet increases in demand for public services, including police, fire protection, schools, and libraries. Project-level public services impacts are addressed by evaluating the effects of on-campus population growth on public services that directly serve the on-campus population (primarily UC Davis services). Cumulative public services impacts are addressed by evaluating the effects of off-campus population growth on the public services in the Cities of Davis, Dixon, Winters, and Woodland.

UC Davis provides most public services needed on campus, including fire protection, police protection, and library services. The Davis Joint Unified School District (DJUSD) serves the City of Davis and portions of Yolo and Solano counties. These services are discussed further below:

- **Fire Protection:** The UC Davis Fire Department provides primary fire response and prevention, natural disaster response, hazardous materials incident response, and emergency medical service to the main campus. The fire department’s goal is to respond to 90 percent of campus emergency calls within 6 minutes (UC Davis 2015:91). As of 2010, the UC Davis Fire Department achieves its stated standard of response (UC Davis 2015:91).
- **Police:** In 2009-2010, the UC Davis Police Department employed 38 sworn officers to provide 24-hour service to the Davis and Sacramento campuses and facilities owned and leased by UC Davis. 19 officers provide law enforcement services at the Davis Campus with an estimated daytime population of 40,185 (including UC and non-UC employees, students, and dependents living in on-campus housing). Although the campus does not currently rely on any level-of-service standards, the Police Department has indicated that it would like to reach and maintain 1 sworn officer per 1,000 population on the Davis Campus. The Police Department is currently staffed at a level of approximately 0.5 officers per 1,000 on the Davis Campus (UC Davis 2015:91).
- **Schools:** In 2001-02 prior to adoption of the 2003 LRDP EIR, a total of approximately 8,677 students were enrolled in the DJUSD’s nine elementary schools, two junior high schools, two high schools, one continuation high school, and one independent study program. The DJUSD estimates student enrollment based on a rate of 0.69 student per single-family residential unit and 0.44 student per multi-family residential unit in its service area. Since 2003, enrollment has decreased slightly with the 2008-09 academic year containing a total enrollment of 8,573 students. Because the project would not result in a notable increase in DJUSD students, this data was not updated.
- **Libraries:** UC Davis currently has four main libraries, distributed among the academic centers of the central campus, which serve students, faculty, staff, and the general public, including: Shields Library (the main campus library located centrally on the core campus), the Carlson Health Sciences Library, the Law Library, and the Physical Sciences and Engineering Library.

#### Project Site

The project site consists of academic and clinical buildings and facilities. There are no existing or planned public service facilities (fire, police, schools or libraries) on or adjacent to the project site.

### 7.14.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers a public services impact significant if growth under the 2003 LRDP would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services.

Effects associated with recreation services are evaluated in Section 7.15, “Recreation,” and effects associated with the capacity of the domestic fire water system to provide adequate fire protection are evaluated in Section 7.17, Utilities.

**7.14.3 2003 LRDP EIR Impacts and Mitigation Measures**

The 2003 LRDP EIR considers a public services impact significant if growth under the 2003 LRDP would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services.

Effects associated with recreation services are evaluated in Section 7.14, Recreation, and effects associated with the capacity of the domestic fire water system to provide adequate fire protection are evaluated in Section 7.16, “Utilities.”

**7.14.4 2003 LRDP EIR Impacts and Mitigation Measures**

Impacts of campus growth under the 2003 LRDP on public services are evaluated in Section 4.12 of the 2003 LRDP EIR. The 2003 LRDP EIR public services impacts that are relevant to the proposed project are presented below with the corresponding level of significance. As less-than-significant impacts, no mitigation is necessary.

<b>2003 LRDP EIR Impacts</b>		<b>Level of Significance Prior to Mitigation</b>	<b>Level of Significance After Mitigation</b>
<b>Population &amp; Housing</b>			
4.12-1	Implementation of the 2003 LRDP would not result in significant environmental impacts associated with the provision of new or altered facilities for the UC Davis Police Department or the City of Davis’ Police Department in order to maintain each department’s applicable service objective.	LS	LS
4.12-2	Implementation of the 2003 LRDP would not result in significant environmental impacts associated with the provision of new or altered facilities for the UC Davis Fire Department or the West Plainfield Volunteer Fire Department in order to maintain each department’s preferred response standard.	LS	LS

### 7.14.5 Environmental Checklist and Discussion

<b>PUBLIC SERVICES</b>					
Would the project...	Impact to be Analyzed in the EIR	No Additional EIR Analysis Required	Impact adequately addressed in 2003 LRDP EIR	Less-than-Significant Impact	No Impact
<p>a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:</p>					
i) Fire protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) **UC Davis Fire and Police Protection**

The proposed project involves the redevelopment of academic and clinical buildings in the core campus. The renovated VMC is expected to require approximately the same level of police and fire protection services as the existing VMTH. No impact would occur.

**Regional Fire and Police Protection, Schools, Libraries**

The proposed project would increase the campus population by approximately 57 employees (no increase in student population) and would slightly contribute to the regional impact on fire and police services due to regional population growth. However, the project-related increase in employees is within the scope of the 2003 LRDP. This impact was analyzed in Impacts 4.12-1 and 4.12-2 of the 2003 LRDP EIR and determined to result in a less-than-significant impact.

## **7.15 RECREATION**

### **7.15.1 Background**

Section 4.13 of the 2003 LRDP EIR addresses the environmental effects associated with modifying recreational resources to meet campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.13 of the 2003 LRDP EIR.

UC Davis contains many park-like areas and recreation facilities. Park facilities at UC Davis range in size from small picnic and landscaped areas within campus housing areas to extensively landscaped areas in the academic core of the central campus, such as the Arboretum. Areas such as the Quad, the landscaped areas along A Street and Russell Boulevard, the Putah Creek Riparian Reserve in the west campus, and many areas within the Arboretum are used regularly by members of the UC Davis campus and visitors to the campus.

Recreation facilities on the campus include structures, bike paths, and fields used for physical education, intercollegiate athletics, intramural sports, sports clubs, and general recreation. Recreation structures include Hickey Gym, Recreation Hall, the Recreation Swimming Pool, and Recreation Lodge. In addition, two major campus recreation facilities have been completed since the adoption of the 2003 LRDP: the Activities and Recreation Center and the Schaal Aquatic Center. The general public may purchase privilege cards to use some campus recreation facilities, or may join community or campus organizations that have access to some facilities.

#### **Project Site**

The project site is currently developed with various academic and clinical buildings that are associated with the VMTH. There are no existing or planned recreation facilities on or adjacent to the site.

### **7.15.2 2003 LRDP EIR Standards of Significance**

The 2003 LRDP EIR considers a recreation impact significant if growth under the 2003 LRDP would:

- Increase the use of existing neighborhood and regional parks or other recreation facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- Propose the construction of recreation facilities or require the expansion of recreation facilities, which might have an adverse physical effect on the environment.

### **7.15.3 2003 LRDP EIR Impacts and Mitigation Measures**

Impacts of campus growth under the 2003 LRDP on recreation resources are evaluated in Section 4.13 of the 2003 LRDP EIR. As discussed in Section 7.15.4, below, the proposed project would not impact recreation resources. For this reason, mitigation measures identified in the 2003 LRDP EIR are not relevant to the project.



### 7.15.4 Environmental Checklist and Discussion

<b>RECREATION</b>					
Would the project...	Impact to be Analyzed in the EIR	No Additional EIR Analysis Required	Impact Adequately Addressed in 2003 LRDP EIR	Less-than-Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) The proposed project would increase the campus population by approximately 57 employees, consistent with 2003 LRDP growth assumptions, which would contribute to demand and use for parks and recreation facilities on and off campus. The additional employees are expected to choose residential locations in Davis and throughout the regional area with associated recreational facility use distributed throughout the region. This impact would be less than significant.
- b) The proposed project would not demolish existing recreational facilities and would not construct new recreational facilities. No impact would occur.

## 7.16 TRANSPORTATION, CIRCULATION, AND PARKING

### 7.16.1 Background

Section 4.14 of the 2003 LRDP EIR addresses the transportation, circulation, and parking effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.14 of the 2003 LRDP EIR.

#### Campus

UC Davis is served by six main campus roadways or “gateways” that connect the campus to residential and downtown areas in the City of Davis, and two gateways that provide direct access to regional freeways (I-80 and SR 113). Circulation within the central campus is accommodated primarily by the campus “loop” roadway system, which includes Russell Boulevard, A Street, New and Old Davis Roads, California Avenue, and La Rue Road. Other roadways within the core campus area are restricted to transit and emergency vehicles, bicyclists, and pedestrians. Primary vehicular access to the south campus is provided by Old Davis Road, to the west campus by Hutchison Drive, and to Russell Ranch by Russell Boulevard.

Level of service (LOS) is a general measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned to roadway intersections. These grades represent the comfort and convenience associated with driving from the driver’s perspective. To assess the worst-case traffic conditions, LOS is measured during morning (7 to 9 AM) and afternoon (4 to 6 PM) peak commute times. The LOS of campus roadways varies. Monitoring of campus intersections during peak hours in Fall 2001 and Fall 2002 found that the Hutchison Drive/Health Sciences Drive intersection (with LOS E during the PM peak hour) was the only study intersection to operate below the campus’ operation standard (standards are identified in the following section). The campus installed a traffic signal at this intersection in fall 2006. In addition, the campus completed a roundabout at the intersection of Old Davis Road and South La Rue Road in 2011 to improve LOS. An update of the UC Davis Long Range Development Plan Traffic and Circulation Mitigation Monitoring Program was completed in 2012. The program is a requirement of Mitigation Measure 4.14-2(b) of the UC Davis 2003 Long Range Development Plan Final Environmental Impact Report (2003 LRDP FEIR), and this report serves as the third monitoring update since the completion of the 2003 LRDP FEIR. The Fall 2011 peak hour traffic volumes were compared to volumes from the previous mitigation update in Fall 2008 as well as previous counts from Winter 2005, Fall 2001, and Fall 1997. Overall, compared to Fall 2008, peak hour intersection volumes were down one percent in the AM peak hour and less than one percent in the PM peak hour. Monitoring found that the intersections of Russell Boulevard/Arlington Boulevard and Hutchison Drive/SR-113 Northbound Ramps operate at Level of Service E or F. Both intersections are off-campus facilities; however, traffic signals have been identified as measures that would improve operations at these two intersections (UC Davis 2012).

Bicycles are a major component of the transportation system at UC Davis and in the City of Davis. UC Davis has an extensive system of bicycle paths, which makes bicycles a popular form of travel on campus. The UC Davis Bicycle Plan (UC Davis 2011:2) estimates that 15,000 to 20,000 bicycles are in use on the campus on a typical weekday during the Fall and Spring sessions when the weather is good.

Parking at UC Davis is provided by a combination of surface lots and parking structures. UC Davis Transportation and Parking Services oversees parking services on campus including selling parking passes, providing traffic control at special events, ticketing violators, and measuring parking utilization throughout campus on a quarterly basis. Approximately 11,500 parking spaces are provided on campus.

#### Project Site

The project site is located within the Health Sciences District within the central campus at UC Davis. Primary access to the project site is provided from either I-5 or I-80 to SR 113. Vehicles then exit at Hutchison Drive and take either Health Science Drive to Garrod Drive or La Rue Road to Garrod Drive (see Figures 3-2 and 3-3 in the Project Description). Parking is provided in Lot 50, Lot 55, and Lot 51, which is the Large Animal Clinic parking

that includes trailer parking. Surrounding parking lots serving the larger Health Sciences District include Lot 52, Lot 53, Lot 54, Lot 56, and Lot 57.

The project site has direct access to existing campus bicycle and pedestrian facilities and transit services. A bicycle undercrossing near Schaal Aquatic Center serves cyclists traveling from core campus and enables them to travel to the Health Sciences District, including to the project site. Additionally, bike lanes are provided along both sides of Hutchinson Boulevard from County Road 98 to Kleiber Hall Drive.

The Unitrans O line serves the central campus, including the Health Sciences District with a stop on La Rue Road at the eastern edge of the District. The Unitrans D, K, V, and O lines run along Hutchinson Drive on the northern edge of the Health Sciences District. The UC Davis/UC Davis Medical Center Shuttle provides transit service from the UC Davis Medical Center in Sacramento to UC Davis, with a stop in the Health Sciences District, and runs once per hour. The shuttle is used as a commuter resources by staff, faculty, and students in the UC Davis system. Yolobus and Fairfield and Suisun Transit also provided service to the UC Davis Health Sciences District.

### 7.16.2 2003 LRDP EIR Standards of Significance

The following significance criteria were used to identify significant transportation and circulation impacts. For the purpose of this analysis, potentially significant traffic impacts are defined when the project causes any of the following:

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

For intersections at UC Davis; pursuant to the 2003 LRDP EIR, LOS D is the minimum acceptable LOS.

- For signalized intersections, deteriorated peak hour intersection operations from an acceptable level (LOS D) to an unacceptable level (LOS E or worse).
- For unsignalized intersections, deterioration of the average of all movements from an acceptable level (LOS D) to an unacceptable level and meet the California Manual on Uniform Traffic Control Devices (MUTCD) peak hour signal warrant.
- For signalized and unsignalized intersections that operate unacceptably without the project, the addition of 10 or more vehicles to the intersection's volume.

For intersections in the City of Davis, pursuant to the City of Davis General Plan, LOS E is the minimum acceptable LOS for the City of Davis, LOS F is acceptable for the City for the Davis Core Area (LOS F is acceptable and considered a "congested condition" for Core Area intersections); all City of Davis intersections considered in this analysis are Core Area intersections.

- For signalized intersections, exacerbated unacceptable (LOS F in the weekday AM or PM peak hour; LOS E or F in the Saturday peak hour) operations by increasing an intersection's average delay by five seconds or more.
- For intersections that operate at congested conditions (LOS F in the weekday AM or PM peak hour or the Saturday peak hour), exacerbate operations by increasing an intersection's average delay by five seconds or more.
- For unsignalized intersections that operate unacceptably (LOS F in the weekday AM or PM peak hour; LOS E or F in the Saturday peak hour; and meet MUTCD's peak hour signal warrant without the project), exacerbate operations by increasing the overall intersection's volume by more than one percent.

- For unsignalized intersections that operate unacceptably but do not meet MUTCD’s peak hour signal warrant without the project, add sufficient volume to meet the peak hour signal warrant.

These significance criteria for City of Davis intersections are consistent with those applied in the Second Street Crossing (Target Store) Project Draft EIR (SCH# 2005062142), the Covell Village Project Draft Program Level EIR (SCH# 2004062089), and the Niche Gateway Project Draft EIR (SCH# 2015012066).

- A conflict with an applicable congestion management program, including, but not limited to level of service standards established by the county congestion management agency for designated roads and highways.
- A change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
- Substantially increased hazards due to a design feature (e.g., sharp curves or dangerous intersections) incompatible uses (e.g., farm equipment).
- Inadequate emergency access.
- Conflicts with applicable adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

**7.16.3 2003 LRDP EIR Impacts and Mitigation Measures**

Impacts of campus growth under the 2003 LRDP on traffic, circulation, and parking are evaluated in Section 4.14 of the 2003 LRDP EIR. The proposed project is within the scope of analysis in the 2003 LRDP EIR and significant and potentially significant traffic, circulation, and parking impacts identified in the 2003 LRDP EIR that are relevant to the proposed project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR. Mitigation measures are included to reduce the magnitude of Impact 4.14-2, but this LRDP impact is identified as significant and unavoidable because mitigation falls within other jurisdictions to enforce and monitor and therefore cannot be guaranteed by the University of California.

<b>2003 LRDP EIR Impacts</b>		<b>Level of Significance Prior to Mitigation</b>	<b>Level of Significance After Mitigation</b>
<b>TRANSPORTATION, CIRCULATION, &amp; PARKING</b>			
4.14-1	Implementation of the 2003 LRDP would cause unacceptable intersection operations at on-campus intersections.	S	LS
4.14-2	Implementation of the 2003 LRDP would cause unacceptable intersection and freeway LOS operations at off-campus facilities, including facilities contained in the Yolo County and Solano County Congestion Management Plans.	S	SU
4.14-3	Implementation of the 2003 LRDP would create additional parking demand.	PS	LS
4.14-4	Implementation of the 2003 LRDP would increase demand for transit services.	PS	LS
4.14-5	Growth in population levels in the core area of the central campus would result in increased conflicts between bicyclists, pedestrians, and transit vehicles, causing increased congestion and safety problems.	PS	LS

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the proposed project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the project description and will not be readopted in this Initial Study or EIR. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

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## 2003 LRDP EIR Mitigation Measures

### TRANSPORTATION, CIRCULATION, & PARKING

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- 4.14-1(a) UC Davis shall continue to actively pursue Transportation Demand Management strategies to reduce vehicle-trips to and from campus.
  - 4.14-1(b) UC Davis shall continue to monitor AM and PM peak hour traffic operations at critical intersections and roadways on campus.
  - 4.14-1(c) UC Davis shall review individual projects proposed under the 2003 LRDP as they advance through the environmental clearance phase of development to determine if intersection or roadway improvements are needed with the additional traffic generated by the proposed project. If intersection operations are found to degrade to unacceptable levels, UC Davis shall construct physical improvements such as adding traffic signals or roundabouts at affected study intersections.
  - 4.14-2(a) UC Davis shall continue to actively pursue Transportation Demand Management strategies to reduce vehicle-trips to and from campus.
  - 4.14-2(b) UC Davis shall continue to monitor AM and PM peak hour traffic operations at critical intersections and roadways in the campus vicinity at least every three years to identify locations operating below UC Davis, City of Davis, Yolo County, Solano County, or Caltrans LOS thresholds and to identify improvements to restore operations to an acceptable level.
  - 4.14-2(c) UC Davis shall review individual projects proposed under the 2003 LRDP as they advance through the environmental clearance phase of development to determine if intersection or roadway improvements are needed with the additional traffic generated by the proposed project. If intersection operations are found to degrade to unacceptable levels, UC Davis shall contribute its fair share towards roadway improvements at affected study intersections.
  - 4.14-3(a) UC Davis shall continue to actively pursue Transportation Demand Management strategies to reduce parking demand.
  - 4.14-3(b) UC Davis shall continue to monitor parking demand on a quarterly basis to identify campus parking areas with a parking utilization over 90 percent. UC Davis shall provide additional parking if a proposed project is expected to increase the winter utilization rate to over 90 percent on the central campus, Health Sciences District, and/or major facilities of the west and south campus.
  - 4.14-4 UC Davis shall monitor transit ridership to identify routes operating over capacity with increased campus growth. UC Davis shall work with transit providers to identify additional service required with campus growth or new transit routes needed to serve future development areas
  - 4.14-5 UC Davis shall monitor core area pedestrian and bike activity and accidents. UC Davis shall improve bike and pedestrian facilities or alter transit operations to avoid increased bicycle accident rates or safety problems.
-

### 7.16.4 Environmental Checklist and Discussion

<b>TRANSPORTATION &amp; TRAFFIC</b>					
Would the project...	Impact to be Analyzed in the EIR	No Additional EIR Analysis Required	Impact adequately addressed in 2003 LRDP EIR	Less-than-Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards established by the county congestion management agency for designated roads and highways?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

a,b) Construction of the proposed project would generate vehicle trips on adjacent roadways, entailing periodic deliveries of building materials, construction equipment trips, and construction labor commute trips. At the peak of construction, the project could contribute an estimated 46 additional daily construction laborer vehicle trips. Construction haul and truck trips are estimated to contribute approximately 8 additional trips, thus resulting in a total of 54 daily vehicle trips during the peak construction period. Conservatively assuming that all trips would occur during the peak commute hours, traffic volumes would increase by up to 27 vehicle trips during each peak period. Construction equipment would be staged within the designated staging areas on the project site shown in Figure 3-4 of Chapter 3, “Project Description.” The most direct access to the project site for trucks would be from SR 113 and Hutchison Drive.

The project would not increase the student population at UC Davis, but would add 57 faculty/staff to the campus. The increase of approximately 57 employees is expected to increase morning and afternoon peak traffic volumes by up to 57 vehicles during each peak period and to result in a distribution of these vehicles to the currently available parking lots in the vicinity of the VMTH. The most direct access to the project site would be from SR 113 and Hutchison Drive east of SR 113.

Upgrades to existing VMTH facilities are intended to accommodate the existing patient load, not increase patient intake. Nonetheless, it is recognized that the increased facility space could result in additional patient intake in the future. Therefore, to be conservative it is estimated that the project could potentially

accommodate an additional 3,000 patients annually. If patient enrollment were to increase by this amount, project operations could introduce up to approximately 25 trips per day to the project area. However, these daily patient trips would be spread over the work day, thus only contributing a minor amount of traffic to the peak periods. Furthermore, page 4.14-42 of the 2003 LRDP EIR explained in the methodology of the traffic analysis that visitor trips (such as patient-related trips) were included in the baseline and post project conditions evaluated in the 2003 LRDP EIR. As discussed in Section 4 of this document, the development and population associated with the VMC Vision is consistent with that anticipated in the 2003 LRDP for the Health Sciences District and evaluated in the 2003 LRDP EIR.

The 2003 LRDP EIR found that implementation of the 2003 LRDP would cause unacceptable intersection operations at on-campus intersections (2003 LRDP EIR Impact 4.14-1). The project could result in changes to intersection operations based on different on-campus travel patterns, and overall trips would increase. To ensure that any possible changes in travel behavior have minimal impact, 2003 LRDP EIR Mitigation 4.14-1(a-c) is being implemented, which requires that the campus continue to pursue Transportation Demand Management strategies to reduce vehicle trips, monitor peak hour traffic operations at critical locations, review individual project to determine if intersection operations degrade to unacceptable levels, and implement physical improvements when intersection operations degrade. The 2003 LRDP EIR found that additional vehicle trips under the 2003 LRDP would cause the LOS at ten on-campus intersections to drop below acceptable levels. With implementation of measures identified in the 2003 LRDP EIR, and the minimal amount of traffic added by the project during the discrete construction and operational phases, the project's possible contribution to degraded on-campus intersection operations would be less than significant.

The 2003 LRDP EIR determined that implementation of the 2003 LRDP would cause unacceptable intersection and freeway operations off-campus (2003 LRDP EIR Impact 4.14-2). Although the project would not increase the campus student population, the project would introduce new off-campus traffic from 57 new employees. Although contribution to freeway trips would be minimal due to construction trips and the operational trips associated with 57 new employees, and potentially 25 trips per day if patient load increases, the impact to off-campus freeway operations was considered significant in the 2003 LRDP EIR. Mitigation Measure 4.14-2(a-c) is being implemented to reduce the magnitude of Impact 4.14-2, which requires that the campus continue to pursue Transportation Demand Management strategies to reduce vehicle trips, monitor peak hour traffic operations at critical locations, review individual project to determine if intersection operations will degrade to unacceptable levels, and make a fair-share contribution to construct physical improvements when intersection operations degrade. However, this LRDP impact is identified as significant and unavoidable because mitigation falls within other jurisdictions to enforce and monitor and therefore cannot be guaranteed by the University of California. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP.

- c) The proposed project would result in no change to air traffic patterns. The UC Davis airport is the closest airport and the proposed project would have no effect on the number of flights or the operation of the airport. The 2003 LRDP EIR found that development of certain projects on the west campus under the 2003 LRDP could result in safety hazards associated with aircraft. However, the proposed project is located on the central campus, is not one of the west campus projects, and would not conflict with airport operations. No impact would occur.
- d) The proposed project is located in the Health Sciences District of UC Davis. New and remodeled buildings will provide adequate ingress and egress, and would be designed and constructed according to adopted UC Davis standards. Appropriate safety controls would be designed into both elements to minimize traffic hazards.

- e) As addressed in Section 7.7, “Hazards and Hazardous Materials,” the 2003 LRDP EIR found that implementation of the 2003 LRDP could interfere with the campus’ Emergency Operations Plan through construction-related road closures that would render roads impassable by emergency response vehicles (2003 LRDP EIR Impact 4.7-17). Mitigation 4.7-17 of the 2003 LRDP EIR mitigates this impact by requiring at least one unobstructed lane in each direction remain open on campus roadways or appropriate traffic controls if only one lane is available. This mitigation measure was included to reduce this potentially significant impact to a less-than-significant level.
- f) The proposed project would not add to the student population, but would result in the introduction of 57 new employees, which would contribute to use of the parking, streets, bike paths, and sidewalks in the project vicinity.

The East Parking Lot and West Parking Lots would be reconfigured, and a new South Parking Lot would be added. However, the project would retain the existing parking capacity at the project site. There would be no net change in the number of on-site parking spaces. Currently, Health Sciences District parking utilization rates are low enough to absorb the maximum increase in parking demand of 57 spaces in the District. The 2003 LRDP EIR identified that implementation of the 2003 LRDP would create additional parking demand (2003 LRDP EIR Impact 4.14-3). In compliance with LRDP Mitigation 4.14-3(a-b), Transportation Demand Management strategies to reduce parking demand continue to be pursued; parking demand is to be monitored on a quarterly basis; and additional parking will be provided if a proposed project is expected to increase winter parking utilization rates over 90 percent on the central campus, at the Health Sciences District, and/or at major facilities on the west or south campuses. With implementation of measures identified in the 2003 LRDP EIR, this impact would be less than significant.

The proposed project would contribute to an overall demand for commuting transit services associated with the 57 new employees. The 2003 LRDP EIR identified that growth under the 2003 LRDP would increase demand for transit services (2003 LRDP EIR Impact 4.14-4), and that an impact could result if development under the 2003 LRDP causes conflicts with applicable adopted policies, plans, and programs supporting alternative transportation. LRDP Mitigation 4.14-4 is being implemented to monitor transit ridership to identify routes that operate over capacity and work with transit providers to identify additional service needed to serve future growth. Therefore, the impact to transit would be less than significant.

Although the proposed project does would not alter circulation patterns, the additional 57 staff could result in more bicyclists and pedestrian activity. LRDP Mitigation 4.14-5 is being implemented, which includes monitoring core area pedestrian activity, bike activity, and accidents and improving bike and pedestrian facilities or altering transit operations to avoid increased bicycle accident rates or safety problems. Therefore, the impact to bicycle and pedestrians would be less than significant.



## 7.17 UTILITIES AND SERVICE SYSTEMS

### 7.17.1 Background

Section 4.15 of the 2003 LRDP EIR addresses the effects of campus growth on utility systems under the 2003 LRDP. The campus provides the following utility and service systems to campus projects:

- Domestic/Fire Water
- Utility Water
- Agricultural Water
- Storm Drainage
- Wastewater
- Solid Waste
- Chilled Water
- Steam
- Electricity
- Natural Gas
- Telecommunications
- 

### Project Site

As discussed in Chapter 3, Project Description, the proposed project would require connections to campus utilities and infrastructure. Details of the utility connections are described below.

- **Domestic Water:** The campus' domestic/fire water system has historically obtained water from six deep aquifer wells to serve the needs of campus. However, UC Davis is a project partner in the regional Davis-Woodland Water Supply Project (DWWSP), operated by the Woodland-Davis Clean Water Agency (CWA). Initial surface water deliveries from the DWWSP began in June 2016; UC Davis anticipates a sharp drop in groundwater use due to these surface water deliveries. The proposed project would connect to the campus domestic water system through the installation of approximately 4,282 linear feet of new 12-inch, 10-inch, 8-inch, 6-inch, and 2-inch pipes.
- **Utility Water:** Shallow/intermediate depth sand and gravel aquifers have historically supplied the campus utility water system, main campus agricultural water needs, cooling towers, and campus and tenant farmer irrigation needs at Russell Ranch. However, as described above, UC Davis is now receiving surface water supplies, which will result in a drop in groundwater use. The proposed project would add 867 linear feet of 6-inch and 4-inch utility water pipes within the VMC Vision area.
- **Chilled Water:** A new chilled water line would be installed from the Chiller Plant located approximately one-quarter mile northeast of the VMTH. Approximately 13,690 linear feet of new chilled water lines would be installed beneath previously-disturbed land from the Chiller Plant to the project site.
- **Building Fire Water:** Campus buildings include water lines that carry water to the buildings in the event of a fire. The proposed project would include the addition of approximately 46 linear feet of building fire water lines.
- **Sanitary Sewer:** UC Davis operates a campus wastewater conveyance and treatment system that is independent from regional facilities. The WWTP is located in the south campus, and treated effluent from the plant discharges to Putah Creek. The existing buildings are currently served by sanitary sewer pipes, and the proposed project would add approximately 2,436 linear feet of sanitary sewer pipes for the new structures.
- **Storm Drainage:** The central campus drainage system involves a system of underground pipes that drain to the Arboretum Waterway (which provides the only major detention storage in the system), from which stormwater is pumped to the South Fork of Putah Creek during large storm events. Approximately 2,345 linear feet of new storm drain pipes would be added to accommodate the new buildings, with new pipes ranging from 8-inches to 36-inches in diameter. In addition, bio-swales and small stormwater infiltration basins would be installed adjacent parking areas and in landscape areas of the project site to infiltrate and offset project-related increases in stormwater runoff.

- **Electricity:** The main campus currently receives electricity from WAPA through PG&E transmission lines at the campus substation located south of I-80. The proposed project would utilize electricity from the campus distribution system and would install approximately 4,425 linear feet of new underground electric utility lines that would connect with the existing lines.
- **Steam:** The proposed project would utilize the existing steam pipe that provides steam service to the VMTH, but would add approximately 3,749 linear feet of steam lines, primarily within the existing alignment of Garrod Drive.
- **Natural Gas:** Some buildings within the VMC would utilize natural gas. The proposed project would add approximately 1,841 linear feet of natural gas lines.
- **Telecommunications:** The majority of all telephone, data, video, and wireless infrastructure and facilities on the campus are owned by the campus and operated by the UC Davis Communications Resources Department. The proposed project would add approximately 800 linear feet of telecom utility lines to serve the new buildings.

### 7.17.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers a utilities and service systems impact significant if growth under the 2003 LRDP would:

- Exceed the Central Valley Regional Water Quality Control Board's wastewater treatment requirements.
- Require or result in the construction or expansion of water or wastewater treatment facilities, which would cause significant environmental effects.
- Require or result in the construction or expansion of stormwater drainage facilities, which could cause significant environmental effects.
- Result in the need for new or expanded water supply entitlements.
- Exceed available wastewater treatment capacity.
- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.
- Fail to comply with applicable federal, state, and local statutes and regulations related to solid waste.
- Require or result in the construction or expansion of electrical, natural gas, chilled water, or steam facilities, which would cause significant environmental impacts.
- Require or result in the construction or expansion of telecommunication facilities, which would cause significant environmental impacts.

### 7.17.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP on utilities and service systems are evaluated in Section 4.15 of the 2003 LRDP EIR. As analyzed in Section 4 of this Initial Study, the proposed project is within the scope of analysis in the 2003 LRDP EIR. Significant and potentially significant utilities and service systems impacts identified in the 2003 LRDP EIR that are relevant to the proposed project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR. In addition, LRDP Impacts 4.15-1, 4.15-2, 4.15-3, 4.15-6, 4.15-7 are considered less than significant

prior to mitigation, but mitigation measures were identified in the 2003 LRDP EIR to further reduce the significance of these impacts.

<b>2003 LRDP EIR Impacts</b>		<b>Level of Significance Prior to Mitigation</b>	<b>Level of Significance After Mitigation</b>
<b>UTILITIES &amp; SERVICE SYSTEMS</b>			
4.15-1	Implementation of the 2003 LRDP would require the expansion of campus domestic/fire water extraction and conveyance systems, which would not cause significant environmental impacts.	LS	LS
4.15-2	Implementation of the 2003 LRDP would require the expansion of campus utility water extraction and conveyance systems, which would not cause significant environmental impacts.	LS	LS
4.15-3	Implementation of the 2003 LRDP would require the expansion of wastewater treatment and conveyance facilities, the construction and operation of which would not result in significant environmental impacts.	LS	LS
4.15-4	Implementation of the 2003 LRDP would require the expansion of campus storm drainage conveyance and detention facilities, which would not result in significant environmental impacts.	LS	LS
4.15-5	Implementation of the 2003 LRDP would increase the volume of municipal solid waste that would require disposal, but would not require an expansion of the campus or county landfills.	LS	LS
4.15-6	Implementation of the 2003 LRDP would require the expansion of the campus electrical system, which would not result in significant adverse environmental impacts.	LS	LS
4.16-7	Implementation of the 2003 LRDP would require the expansion of natural gas transmission systems, which would result in environmental impacts.	PS	SU
4.15-8	Implementation of the 2003 LRDP would require the expansion of campus chilled water and steam generation and conveyance facilities, which would not result in significant environmental impacts.	LS	LS
4.15-9	Implementation of the 2003 LRDP would require expansion of campus communication facilities, which would not result in significant environmental impacts.	LS	LS

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the proposed project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the project description and will not be readopted in this Initial Study. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

### **2003 LRDP EIR Mitigation Measures**

#### **UTILITIES & SERVICE SYSTEMS**

- |           |   |
|-----------|---|
| 4.15-1(a) | Once preliminary project design is developed, the campus shall review each project to determine if existing domestic/fire water supply is adequate at the point of connection. If domestic/fire water is determined inadequate, the campus will upgrade the system to provide adequate water flow and pressure to the project site before constructing the project. |
| 4.15-1(b) | Implement domestic water conservation strategies as indicated in LRDP Mitigation 4.8-5(a) (see Section 7.9, "Hydrology & Water Quality," of this Tiered Initial Study).   |
| 4.15-2(a) | Once preliminary project design is developed, the campus shall review each project to determine whether existing utility water supply is adequate at the point of connection. If the utility water supply is determined to be   |

## 2003 LRDP EIR Mitigation Measures

### UTILITIES & SERVICE SYSTEMS

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	inadequate, the campus will upgrade the system to provide adequate water flow to the project site prior to occupation or operation.
4.15-2(b)	Implement utility water conservation strategies as indicated in LRDP Mitigation 4.8-6(a) (see Section 7.9, "Hydrology & Water Quality," of this Tiered Initial Study).
4.15-3	Once preliminary project design is developed, the campus shall review each project to determine whether existing capacity of the sanitary sewer line at the point of connection is adequate. If the capacity of the sewer line is determined inadequate, the campus will upgrade the system to provide adequate service to the project site prior to occupation or operation.
4.15-4	Once preliminary project design is developed, the campus shall review each project to determine whether existing storm drainage system is adequate at the point of connection. If the storm drainage system is determined inadequate, the campus will upgrade the system to provide adequate stormwater drainage and/or detention prior to occupation or operation.
4.15-6(a)	Once preliminary project design is developed, the campus shall review each project to determine whether the existing electrical system is adequate at the point of connection. If the electrical system is determined inadequate, the campus will upgrade the system to provide adequate service to the project prior to occupation or operation.
4.15-6(b)	The campus would continue to meet or exceed Title 24 energy conservation requirements for new buildings, and it would continue to incorporate energy efficient design elements outlined in the <i>UC Davis Campus Standards &amp; Design Guide</i> in new construction and retrofit projects. These energy conservation standards may be subject to modification as more stringent standards are developed.
4.15-7(a)	Once preliminary project design is developed, the campus shall review each project to determine whether existing capacity of the natural gas supply pipeline at the point of connection is adequate. If capacity of the pipeline is determined inadequate, the system will be updated to provide adequate service to the project site prior to occupation or operation.
4.15-7(b)	To minimize disturbance to archaeological resources associated with CA-Yol-118, PG&E can and should implement directional drilling or other alternative means to trenching, or should have a qualified archaeologist monitor present and provide a representative of the local Native American community an opportunity to monitor during construction.
4.15-8	Once preliminary project design is developed, the campus shall review each project to determine whether existing capacity of the chilled water and/or steam system at the point of connection is adequate. If the capacity of the pipelines is determined inadequate, the campus will upgrade the system to provide adequate service to the project site prior to occupation or operation.
4.15-9	Once preliminary project design is developed, the campus shall review each project to determine whether existing capacity of the telecommunications system is adequate. If the capacity is determined to be inadequate, the campus will upgrade the system to provide adequate service to the project site prior to occupation or operation.

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### 7.17.4 Environmental Checklist and Discussion

UTILITIES & SERVICE SYSTEMS		Impact to be Analyzed in the EIR	No Additional EIR Analysis Required	Impact adequately addressed in 2003 LRDP EIR	Less-than-Significant Impact	No Impact
Would the project...						
a)	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b)	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c)	Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e)	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the providers existing commitments?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g)	Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h)	Require or result in the construction or expansion of electrical, natural gas, chilled water, or steam facilities, which would cause significant environmental impacts?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i)	Require or result in the construction or expansion of telecommunication facilities, which would cause significant environmental impacts?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) The project would contribute an increased amount of effluent to the campus wastewater treatment. The permitted peak monthly average capacity of the campus WWTP is currently 3.85 mgd, which can accommodate the projected growth under the 2003 LRDP, including the proposed project. As discussed further in item “a, f” in Section 7.9, “Hydrology and Water Quality,” with continuation of current practices and implementation of 2003 LRDP EIR mitigation measures, the campus anticipates meeting the WWTP’s permit requirements. Therefore, the impact associated with possible exceedances of WWTP requirements would be less than significant.

b) **Domestic Water Facilities**

The proposed project would connect to the campus domestic water system through the installation of approximately 4,282 linear feet of new 12-inch, 10-inch, 8-inch, 6-inch, and 2-inch pipes. The 2003 LRDP EIR identified that campus development under the 2003 LRDP would require the expansion of campus domestic/fire water extraction and conveyance systems, the construction of which would not cause significant environmental impacts (LRDP Impact 4.15-1). As evaluated throughout this Initial

Study, construction of the VMC Vision project would not result in significant impacts beyond those identified and mitigated in the 2003 LRDP EIR. Therefore, the effects associated with installing domestic water utility pipelines would be less than significant. LRDP Mitigation 4.15-1(a-b), included in the proposed project, would further reduce the significance of this impact by requiring the water conservation strategies outlined in LRDP Mitigation 4.8-5(a) (see Section 7.9, “Hydrology and Water Quality”) and by requiring the campus to review the project to determine if the domestic/fire water supply is adequate at the point of connection and if any upgrades to the system are required.

### Utility Water Facilities

The proposed project would add 867 linear feet of 6-inch and 4-inch pipes to connect to the campus utility water system for landscape irrigation. In addition, the proposed project would include 46 linear feet of building fire water lines. Approximately 13,690 linear feet of new chilled water lines would also be installed from the Chiller Plant located approximately one-quarter mile northeast of the VMTH. The 2003 LRDP EIR identified that campus development under the 2003 LRDP would require the expansion of campus utility water extraction and conveyance systems, the construction of which would not cause significant environmental impacts (LRDP Impact 4.15-2). This impact would be less than significant. LRDP Mitigation 4.15-2(a-b), included in the proposed project, would further reduce the significance of this impact by requiring the water conservation strategies outlined in LRDP Mitigation 4.8-6(a) (see Section 7.9, “Hydrology and Water Quality”) and by requiring the campus to review the project to determine if the domestic/fire water supply is adequate at the point of connection and if any upgrades to the system are required.

### Wastewater

The project would add 2,436 linear feet of sanitary sewer pipes for the new structures to connect to sewer mains within the project site. The 2003 LRDP EIR identified that implementation of the 2003 LRDP, including the proposed project, would require the expansion of campus wastewater treatment and conveyance facilities, the construction and operation of which would not result in significant environmental impacts (LRDP Impact 4.15-3). Future expansion of the existing WWTP and installation of new sanitary sewer conveyance lines would primarily occur on previously disturbed ground. In addition, the campus would survey the site before construction and perform monitoring during construction (in compliance with 2003 LRDP Mitigations 4.4-1 and 4.5-1) to avoid inadvertent biological and cultural resource impacts. Therefore, this impact would be less than significant. LRDP Mitigation 4.15-3, included in the proposed project, would further reduce the significance of this impact by ensuring that the campus review projects to determine if there is adequate capacity to provide sanitary sewer service, and to upgrade the system as necessary.

- c) The proposed project would include additional stormwater drainage pipelines and a new outfall south of the VMTH, parallel to the existing outfall. The 2003 LRDP EIR identified that campus development under the 2003 LRDP would require the expansion of campus storm drainage conveyance and detention facilities, the construction of which would not cause significant environmental impacts (LRDP Impact 4.15-4). Therefore, effects associated with the additional stormwater pipelines would be less than significant. However, LRDP Mitigation 4.15-4, included in the proposed project, would further reduce the significance of this impact by requiring the campus to review project plans for storm drainage adequacy. The renovation, demolition, and construction of buildings within the project site could result in a small increase in the amount of impervious surfaces, which would be accommodated by the proposed new storm drainage infrastructure. This impact is less than significant.
- d) As addressed in Section 7.9, “Hydrology and Water Quality,” see checklist item a,f), the project would result in a reduction in domestic water demand. The project’s water efficiency measures would result in a water savings of 5,131 gpd, while the increase in patient caseload would increase water use by 19 mgd. Overall, the water savings in domestic water usage (5,131 gpd) offsets the increase from caseload (19 gpd). In addition, implementation of the project would include replacing micro-spray irrigation with more

efficient drip irrigation, resulting in lower flow rates and a reduction in the amount of water lost to evaporation. Landscape water consumption for the proposed project is estimated at an average 492,399 gallons per month, which would equate to a reduction in landscape water usage of 215,469 gallons per month, or approximately 7,079 gpd. Overall, the proposed project would result in a reduction in domestic water usage. Consequently, operational impacts associated with domestic water consumption on water resources would be less than significant.

The 2003 LRDP EIR found that campus growth under the 2003 LRDP would increase the amount of water extracted from both the deep and shallow aquifers, which could result in a net deficit in the aquifer volumes or a lowering of the local groundwater table (2003 LRDP Impacts 4.8-5 and 4.8-6). Although LRDP Mitigation Measures 4.8-5 (a-d), 4.8-6 (a-e), and 4.15-1(a-b) are required to reduce the significance of this impact through water conservation, monitoring, reduction of use of water from the aquifers if needed, and increasing percolation and infiltration of precipitation. Nonetheless, the lowering of the deep or shallow aquifers were determined to be significant and unavoidable impacts of the 2003 LRDP. These impacts were adequately analyzed in the 2003 LRDP EIR and were fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP.

However, as stated above in Section 7.9, "Hydrology and Water Quality," the DWWSP now provides additional/redundant water supplies for UC Davis to address localized issues associated with aging water systems, more stringent water quality standards and regulations, and increasing water demands (Reclamation 2013). The recently completed surface water treatment plant in Woodland will provide up to 1.8 mgd of surface water supplies to UC Davis (Brown and Caldwell 2015:4-4). There are sufficient water supplies available to serve the project from existing entitlements and UC Davis anticipates a reduction in groundwater use, coincident with the beginning of wholesale surface water deliveries (Brown and Caldwell 2015). Moreover, the proposed project is anticipated to result in an overall decrease in water consumption relative to existing conditions at the VMTH facilities. Because this new information has become available since certification of the 2003 LRDP EIR and alters the 2003 LRDP analysis, the analysis herein concludes that the project would have a less-than-significant impact on groundwater resources in the deep aquifer and would not contribute to the significant and unavoidable impact identified in the 2003 LRDP EIR.

- e) The campus' WWTP would provide wastewater treatment for the proposed project. The WWTP has a design capacity of 3.6 million gallons per day (mgd) for annual dry weather flow and a peak of 9.4 mgd. Under normal operating conditions the WWTP treats 1.6 mgd daily average flow, and as much as 8 mgd during storm events. Past trends in influent flow rate to the WWTP indicate that the WWTP will continue to have design capacity for many years, including with implementation of the project. As addressed in Section 7.9, "Hydrology and Water Quality," see checklist item a,f), the project would result in a reduction in domestic water demand. The project's water savings in domestic water usage (5,131 gpd) offsets the increase from caseload (19 gpd). Therefore, related wastewater flows are not expected to increase over current conditions at the VMTH facilities and no additional treatment capacity would be required to serve project-related flows. The 2003 LRDP EIR identified that implementation of the 2003 LRDP would require the expansion of campus wastewater treatment and conveyance facilities, the construction and operation of which would not result in significant environmental impacts (2003 LRDP Impact 4.15-3). Nonetheless, as discussed in item (b) above, LRDP Mitigation 4.15-3, included in the proposed project, would ensure the implementation of the campus practice of reviewing projects to determine if there is adequate capacity to provide sanitary sewer service, and to upgrade the system as necessary. The proposed project was evaluated and determined to be within the available wastewater treatment capacity and would, therefore, not require an upgrade to the campus WWTP. This impact would be less than significant.
- f) The waste disposal needs of the proposed project would be served by the county landfill. The Yolo County Landfill has a permitted capacity of 1,800 tons per day and is anticipated to have adequate capacity for continued operation through the year 2081 (UC Davis 2015:106). Therefore, the Yolo County

Landfill would have adequate capacity to serve the proposed project and the impact would be less than significant.

- g) Materials generated during demolition phase of the project would be separated into different categories for reuse, recycling or landfill disposal. Most of the furnishings, fixtures, and equipment from the buildings would be reused in other campus buildings. As the buildings are demolished, some materials such as copper from pipes and wiring and other metals will be gathered for recycling. Demolition of the buildings would be preceded by abatement of any high concentrations of lead and asbestos. Low concentration of asbestos can be sent to certain landfills that are certified to accept low levels of asbestos. The closest landfill that accepts asbestos contaminated material is Recology Hay Road Landfill in Vacaville which is approximately 15 miles to the south of the project site. The proposed project would comply with all applicable statutes and regulations related to solid waste. Therefore, the impact would be less than significant.
- h) The proposed project would increase demand for electricity and natural gas, and would add new underground electricity lines (4,425 linear feet) and natural gas lines (1,841 linear feet) that would connect to the campus system within the project site. The 2003 LRDP EIR identified that campus development under the 2003 LRDP would require the expansion of campus electrical and natural gas conveyance lines, the construction of which would not cause significant environmental impacts (LRDP Impacts 4.15-6 and 4.15-7). Therefore, effects associated with the electricity and natural gas extensions would be less than significant. However, LRDP Mitigations 4.15-6(a-b) and 4.15-7(a-b), included in the proposed project, would further reduce the significance of this impact by requiring adequate service and energy efficiency. Although the proposed project would result in a minor increase the daily electricity use and consumption of natural gas, it would not exceed the amount anticipated for buildout of the 2003 LRDP. The existing utility providers have adequate capacity to serve the project and no off-site improvements or increases to utility capacity would be required by the project. The impact would be less than significant.
- i) The proposed project would add approximately 800 feet of telecommunications lines that would connect to the campus telecommunications system. No additional capacity would be needed to serve the proposed project and no off-site construction would be required. The impact would be less than significant.



## 7.18 MANDATORY FINDINGS OF SIGNIFICANCE

MANDATORY FINDINGS OF SIGNIFICANCE	Impact to be Analyzed in the EIR	No Additional EIR Analysis Required	Impact adequately addressed in 2003 LRDP EIR	Less-than-Significant Impact	No Impact
Would the project...					
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a) The proposed project would not significantly affect fish or wildlife habitat or species, nor would it significantly affect archaeological resources, because the site has been previously developed and all applicable 2003 LRDP mitigation measures shall be implemented as part of the project, mitigating potential biological or cultural resource impacts to less-than-significant levels. Furthermore, the survey of structures and buildings on the project site indicates that they are not eligible for listing on the NRHP.
- b) The VMC Vision is within the scope of campus development and population evaluated in the 2003 LRDP EIR. Although the proposed VMC Vision would be implemented post-2016, which is beyond the timeframe considered in the cumulative analysis for the 2003 LRDP EIR (2015-2016), as presented in Section 4.5 of this Initial Study, population growth in the region has been lower than anticipated in the 2003 LRDP EIR for all jurisdictions except the City of Davis, which grew by 1,074 persons (or 0.016 percent) more than anticipated (see Table 4.5-1). Cumulative development, in aggregate, has been less than projected. As addressed in Section 4.5 of this Initial Study, the proposed project would not contribute to the significant and unavoidable cumulative agricultural resources, hydrology (groundwater), public services, recreation, and utilities and service systems (groundwater) impacts identified in the 2003 LRDP EIR. The project would incrementally contribute to, but would be within the scope of the 2003 LRDP EIR’s significant and unavoidable cumulative impacts related to: aesthetics, air quality, biological resources, cultural resources, and transportation/circulation, and utilities and service systems.
- c) As documented throughout the environmental checklist in this Initial Study, the proposed project would not contribute to significant unavoidable agricultural resource impacts, hydrology (groundwater), or utilities and service systems (groundwater) identified in the 2003 LRDP EIR. It would incrementally contribute to, but would not exceed, significant and unavoidable impacts related to: aesthetics, air quality, biological resources, cultural resources, water quality, population and housing, and transportation/circulation. These impacts were adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information has

become available since certification of the 2003 LRDP EIR that would alter this previous analysis. Furthermore, the project's greenhouse gas emissions were determined to be less than significant with implementation of project-specific mitigation measures (Mitigation Measures 7.7-1 and 7.7-2).

## 8 FISH AND GAME DETERMINATION

Based on the information presented in this Tiered Initial Study, the project has a potential to adversely affect wildlife or the habitat upon which wildlife depend. Therefore, a filing fee will be paid.

Certificate of Fee Exemption

Pay Fee

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