

Sacramento Municipal Utility District Headquarters Building and Site Rehabilitation Project

Final Initial Study and Mitigated Negative Declaration • March 2015

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**Sacramento Municipal Utility District
Headquarters Building
and Site Rehabilitation Project**

**Final
Initial Study and Mitigated Negative Declaration**

Lead Agency:

Sacramento Municipal Utility District
6201 S Street, MS B203
Sacramento, CA 95817-1899

or

P.O. Box 15830 MS B203
Sacramento, CA 95852-1830
Attn: Rob Ferrera, Environmental Specialist
(916) 732-6676 or rob.ferrera@smud.org

SCH# 2015012028



Sacramento Municipal Utility District Headquarters Building and Site Rehabilitation Project

March, 2015

Introduction

This final initial study (IS) and mitigated negative declaration (MND) have been prepared to evaluate the Sacramento Municipal Utility District's (SMUD) proposed project for compliance under the California Environmental Quality Act (CEQA). SMUD is the lead agency responsible for complying with the provisions of CEQA. SMUD proposes the Sacramento Municipal Utility District Headquarters Building and Site Rehabilitation Project (also referred to as "the proposed project").

Project Description

SMUD proposes to undertake a rehabilitation of its Headquarters Building and a 13.66-acre portion of the headquarters site located at 6201 S Street in Sacramento, California. The Headquarters Building and site have served as SMUD's district headquarters since construction was completed in 1960. The Headquarters Building was listed in the National Register of Historic Places in 2010 as an excellent example of Modern International Style design. SMUD considers the Headquarters Building and site to be a necessary facility to meet current and future business needs and provide a more functional facility, and as significant to its brand and image. Therefore, SMUD desires to rehabilitate the Headquarters Building and a 13.66-acre portion of the headquarters site to support continued use for the foreseeable future. A more detailed description of the project can be found in Chapter 2.

Findings

As the CEQA lead agency, SMUD finds that the proposed project would be implemented without causing a significant adverse impact to the environment. Mitigation measures would be implemented to reduce potentially significant impacts to a less-than-significant level.

Cumulative Impacts

CEQA requires that SMUD assess whether its proposed project's incremental effects are significant when viewed in connection with the effects of other projects. Based on the analysis presented in this IS/MND, the proposed project would not contribute incrementally to considerable environmental changes when considered in combination with existing operations and other forecasted projects in the area. Therefore, the potential environmental effects of the proposed project were determined to be less than significant. All identified potentially significant impacts would be mitigated to a less-than-significant level.

Other projects currently proposed in the vicinity of the project site were determined in coordination with the City of Sacramento. The reasonably foreseeable projects included in the MND's cumulative context were limited to those that were in process by the City of Sacramento when the notice of availability was released on January 15, 2015. Based on this methodology, one other project is currently proposed in the vicinity of the SMUD Headquarters Building and Site Rehabilitation Project. This project proposes a new development at 1817 65th Street, across from the SMUD campus and adjacent to the 65th Street light rail station. The project site is bounded by 65th Street to the west, the light rail tracks and Q Street to the north, Redding Avenue to the east, and U.S. Highway 50 (U.S. 50) to the south. The project would involve construction of one or two new four-story hotels



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and approximately 10,000 square feet of retail space on 5.67 acres. A 117-room Hampton Inn and Suites would be built on the east end of the site, and either a second hotel or an office building would be built on the west side of the site. The retail space would be a separate, third building fronting 65th Street. In addition to the proposed structures, the development would include tree removal, new fencing, new signs, plantings along U.S. 50 and near the 65th Street light rail station, installation of a 48-inch water main, transit area improvements, widening of the off-ramp at 65th Street, a tie-in to the Redding Street combined-sewer line, new transformers for existing power lines, and construction of 124 new parking spaces on the project site. The project is currently under review with the City of Sacramento, but a CEQA document has not been released to date.

Growth-Inducing Impacts

The proposed project is the rehabilitation of an existing building and the surrounding property. It would not implicate the provision of any service or planning effort that could affect future growth.

Determination

On the basis of this evaluation, SMUD concludes:

- The proposed project does not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered species, or eliminate important examples of the major periods of California history or prehistory.
- The proposed project would not achieve short-term environmental goals to the disadvantage of long-term environmental goals.
- The proposed project would not have impacts that are individually limited, but cumulatively considerable.
- The proposed project would not have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly.
- No substantial evidence exists to demonstrate that the proposed project would have a substantive negative effect on the environment.

This IS/MND has been prepared to provide the opportunity for interested agencies and the public to provide comment. Pending public review and SMUD Board of Directors approval, this MND will be filed pursuant to State CEQA Guidelines Section 15075.

Signature
Rob Ferrera
Environmental Specialist

Date



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- Appendix B Sacramento Municipal Utility District Headquarters Building and Site
Rehabilitation Project Final Initial Study and Mitigated Negative
Declaration (with Text Edits)
(on CD)



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1.0 INTRODUCTION

1.1 Review of the Draft IS/MND

Copies of the Draft IS/MND were distributed to the Governor’s Office of Planning and Research, State Clearinghouse; local libraries; Sacramento County; and the appropriate resource agencies. A notice of intent (NOI) was distributed to property owners and occupants of record identified by the Sacramento County Assessor’s office within 500 feet of the project boundaries. The 30-day public review period began on January 15, 2015, and ended on February 16, 2015. SMUD held a public meeting on January 27, 2015, and held seven additional meetings with interested community groups and neighborhood associations. Three comment letters were received. These letters are presented in Section 2.0, below. The comments did not change the conclusions presented in the Draft IS/MND.

1.2 Preparation of the Final IS/MND

Comment letters were reviewed and the responses were prepared (see Section 2.0). Based on the comments and recommendations received, minor edits have been made to the text of the IS/MND. One change refers to the potential need for a transportation permit from the California Department of Transportation (Caltrans) for the movement of oversized or excessive loads on state highways. It has been added to Section 2.6.2 as a permit potentially required for the project. Some additional information has been added to Section 2.2.5, “Relocation of SMUD Employees,” of the IS/MND for clarification purposes and very minor edits have been made in other sections for clarification only. All text changes are shown in track changes mode in the IS/MND, which is provided in Appendix B (in PDF format on CD in the envelope at the back of this document).

These minor edits to the Draft IS/MND do not identify any new environmental effects or provide substantial project changes needed to reduce effects to below the level of significance, and therefore do not require recirculation per State CEQA Guidelines Section 15073.5.

1.3 State CEQA Guidelines

State CEQA Guidelines Section 15073.5 provides for recirculation of a negative declaration prior to adoption. Section 15073.5(a) states:

A lead agency is required to recirculate a negative declaration when the document must be substantially revised after public notice of its availability has previously been given pursuant to §15072, but prior to adoption.

According to Section 15073.5(b) a substantial revision is defined as:

(1) A new, avoidable significant effect is identified and mitigation measures or project revisions must be added in order to reduce the effect to insignificance, or



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(2) The lead agency determines that the proposed mitigation measures or project revisions will not reduce potential effects to less than significance and new measures or revisions must be required.

Staff has determined that none of the aforementioned conditions requiring recirculation have been met, and as a result, recirculation of the Draft IS/MND is not required. Therefore, SMUD as the lead agency may approve the Final IS/MND with the incorporated revisions

Circumstances under which recirculation is not required include:

(1) Mitigation measures are replaced with equal or more effective measures pursuant to §15074.1.

(2) New project revisions are added in response to written or verbal comments on the project's effects identified in the proposed negative declaration which are not new avoidable significant effects.

(3) Measures or conditions of project approval are added after circulation of the negative declaration which are not required by CEQA, which do not create new significant environmental effects and are not necessary to mitigate an avoidable significant effect.

(4) New information is added to the negative declaration which merely clarifies, amplifies, or makes insignificant modifications to the negative declaration." (Section 15073.5[c])

1.4 Analysis

The Final IS/MND does not include changes to the proposed project description, just minor edits for clarification. The minor edits to the text in the IS/MND do not contain changes and/or additional details that warrant the recirculation of the Draft IS/MND because the changes do not result in any new impact not previously described and analyzed. These revisions do not meet the criteria for recirculation under State CEQA Guidelines Section 15073.5.

SMUD has made the determination that the minor changes to the text of the IS/MND do not constitute a substantial revision as defined by Section 15073.5(b).

None of the provisions of Section 15073.5 apply to the proposed changes; therefore, recirculation of the Draft IS/MND is not required. The changes to the "Relocation of SMUD Employees" section were made for clarification purposes only and are not considered "substantial revisions." They would not result in new, avoidable significant effects, and new mitigation measures or project revisions are not required to reduce any new effect to less than significant. Therefore, none of the situations described in State CEQA Guidelines Section 15073.5 apply and the IS/MND will not be recirculated.



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2.0 COMMENTS AND RESPONSES

Table 1. List of Commenters

Commenter	Letter Number	Comment Numbers
Trevor Cleak Central Valley Regional Water Quality Control Board 2/6/15	1	1-1
Eric Fredericks Caltrans 2/13/15	2	2-1 through 2-3
Adelita Espinoza Tahoe Park Association 2/17/15	3	3-1 through 3-9



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**2.1 Letter 1, Trevor Cleak, Central Valley Regional Water Quality Control
Board (Central Valley RWQCB), February 6, 2015**



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March, 2015



SMUD HQ LETTER 1



Central Valley Regional Water Quality Control Board

6 February 2015

Rob Ferrera
Sacramento Municipal Utility District
6201 S Street
Sacramento, CA 95817

CERTIFIED MAIL
7014 2120 0001 3978 0742

COMMENTS TO REQUEST FOR REVIEW FOR THE MITIGATED NEGATIVE DECLARATION, SMUD HEADQUARTERS BUILDING AND SITE REHABILITATION PROJECT, SCH# 2015012028, SACRAMENTO COUNTY

Pursuant to the State Clearinghouse's 15 January 2015 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Mitigated Negative Declaration* for the SMUD Headquarters Building and Site Rehabilitation Project, located in Sacramento County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

1-1
↓

KARL E. LONGLEY SCD, P.E., CHAIR | PAMELA C. CREEDON P.E., BCES, EXECUTIVE OFFICER

11020 Sisk Center Drive #200, Rancho Cordova, CA 95670 | www.waterboards.ca.gov/cvtr/wqcb/



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Phase I and II Municipal Separate Storm Sewer System (MS4) Permits¹

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 97-03-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

¹ Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.



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Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

Waste Discharge Requirements

If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project will require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

Regulatory Compliance for Commercially Irrigated Agriculture

If the property will be used for commercial irrigated agricultural, the discharger will be required to obtain regulatory coverage under the Irrigated Lands Regulatory Program. There are two options to comply:

1. **Obtain Coverage Under a Coalition Group.** Join the local Coalition Group that supports land owners with the implementation of the Irrigated Lands Regulatory Program. The Coalition Group conducts water quality monitoring and reporting to the Central Valley Water Board on behalf of its growers. The Coalition Groups charge an annual membership fee, which varies by Coalition Group. To find the Coalition Group in your area, visit the Central Valley Water Board's website at: http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/app_approval/index.shtml, or contact water board staff at (916) 464-4611 or via email at IrrLands@waterboards.ca.gov.
2. **Obtain Coverage Under the General Waste Discharge Requirements for Individual Growers, General Order R5-2013-0100.** Dischargers not participating in a third-party group (Coalition) are regulated individually. Depending on the specific site conditions, growers may be required to monitor runoff from their property, install monitoring wells, and submit a notice of intent, farm plan, and other action plans regarding their actions to comply with their General Order. Yearly costs would include State administrative fees (for example, annual fees for farm sizes from 10-100 acres are currently \$1,084 + \$6.70/Acre); the cost to prepare annual monitoring reports; and water quality monitoring costs. To enroll as an Individual Discharger under the Irrigated Lands Regulatory

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Program, call the Central Valley Water Board phone line at (916) 464-4611 or e-mail board staff at IrrLands@waterboards.ca.gov.

Low or Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Dewatering and Other Low Threat Discharges to Surface Waters* (Low Threat General Order) or the General Order for *Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water* (Limited Threat General Order). A complete application must be submitted to the Central Valley Water Board to obtain coverage under these General NPDES permits.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0074.pdf

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0073.pdf

If you have questions regarding these comments, please contact me at (916) 464-4684 or tcleak@waterboards.ca.gov.

Trevor Cleak
Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

1-1

Comment Letter 1—Trevor Cleak, Central Valley RWQCB

Comment Letter 2—Eric Fredericks, Caltrans

2.1.1 Comment 1-1—List of Permits Related to Water Quality

The commenter provides a list of the permits related to water quality that his agency gets involved with and provides links to additional information related to each permit. Permits discussed include the following:

- Construction Stormwater General Permit
- Phase I and II Municipal Storm Sewer System (MS4) permits
- Industrial Storm Water General Permit
- Clean Water Act Section 404 permit
- Clean Water Act Section 401 permit—water quality certification
- Waste discharge requirements
- Regulatory compliance for commercially irrigated agriculture
- Low or Limited Threat General National Pollutant Discharge Elimination System Permit

2.1.2 Response 1-1

SMUD thanks the Central Valley RWQCB for its review of the proposed project. SMUD will obtain all necessary permits related to water quality, as discussed in Section 3.9, “Hydrology and Water Quality,” of the IS/MND. SMUD anticipates the need for a Construction Stormwater General Permit, as discussed in Mitigation Measure HYDRO-1. Mitigation Measure HYDRO-2 states that if dewatering was required, SMUD would also obtain the necessary permit, either under a General Dewatering Permit or under a project-specific dewatering discharge permit. Based on the project description, SMUD does not anticipate the need for the other permits.




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2.2 Letter 2, Eric Fredericks, Caltrans, February 13, 2015

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY

DEPARTMENT OF TRANSPORTATION
DISTRICT 3 – SACRAMENTO AREA OFFICE
2379 GATEWAY OAKS DRIVE, STE 150 - MS 19
SACRAMENTO, CA 95833
PHONE (916) 274-0635
FAX (916) 263-1796
TTY 711

SMUD HQ LETTER 2

EDMUND G. BROWN Jr., Governor

*Flex your power!
Be energy efficient!*

February 13, 2015

032015-SAC-0012
03-SAC-50 / PM R 2.389
SCH#2015012028

Mr. Rob Ferrara
Sacramento Municipal Utilities District (SMUD)
6201 S Street
Sacramento, CA 95817

SMUD Headquarters Building and Site Rehabilitation Project – Mitigated Negative Declaration (MND)


Dear Mr. Ferrara:

Thank you for including the California Department of Transportation (Caltrans) in the MND environmental review process for the project referenced above. The proposed project consists of rehabilitating the SMUD Headquarters Building (HQ) and site, and establishing two separate trailer locations on SMUD’s campus. The project is located at 6201 S Street, north of US Highway 50 (US 50) at the 65th Street / US 50 interchange. The following comments are based on the MND.

Transportation Management Plan (TMP)

On page 164 of the MND, the Transportation and Circulation Section indicates that the project will cause inadequate emergency access without mitigation, because S Street could be affected intermittently during construction of proposed improvements to the 15-inch storm drain pipeline located within the S Street right-of-way (ROW). Mitigation Measure (MM) TRA-1 is MM HAZ 3, Prepare and Implement a Traffic Control Plan, which states, “SMUD and/or its construction contractors shall prepare and implement a traffic control plan for construction activities that may affect road rights-of-way, to facilitate travel of emergency vehicles on affected roadways. The traffic control plan shall follow applicable City of Sacramento standards and shall be approved and signed by a professional engineer. Measures typically used in traffic control plans include advertising of planned lane closures, warning signage, a flag person to direct traffic flows when needed, and methods to ensure continued access to the existing surrounding land uses shall be maintained at all times, with detours used as necessary during road closures. The traffic control plan shall be submitted to the City of Sacramento Public Works department for review and approval before the approval of improvement plans.”

2-1



“Provide a safe, sustainable, integrated, and efficient, transportation system to enhance California’s economy and livability.”



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Mr. Rob Ferrera / SMUD
February 13, 2015
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Due to the proximity of the HQ building, on S Street, to the westbound US 50 onramp at 65th Street, the Traffic Control Plan or TMP should also be circulated in draft to the Caltrans District 3 Traffic Manager, Bob McNew, Caltrans, District 3, Regional Traffic Management Center, 3165 Gold Valley Drive, Rancho Cordova, CA 95742. The TMP should be prepared in accordance with Caltrans' *Manual on Uniform Traffic Control Devices*. Further information is available for download at the following web address: http://www.dot.ca.gov/hq/traffops/engineering/muted/ca_muted2014.htm.

↑
2-1

Transportation Permit

Project work that requires movement of oversized or excessive load vehicles on State highways requires a transportation permit that is issued by Caltrans. To apply, a completed transportation permit application with the determined specific route(s) for the shipper to follow from origin to destination must be submitted to Caltrans, HQ, Transportation Permits Office, 1823 14th Street Sacramento, CA 95811-7119.

↑
2-2

See the following website for more information: <http://www.dot.ca.gov/hq/traffops/permits/>.

Encroachment Permit

Please be advised that any work or traffic control that would encroach onto the State ROW requires an encroachment permit that is issued by Caltrans. To apply, a completed encroachment permit application, environmental documentation, and five sets of plans clearly indicating State ROW must be submitted to Sergio Aceves, Caltrans, District 3, Office of Permits, 703 B Street, Marysville, CA 95901.

↑
2-3

Traffic-related mitigation measures should be incorporated into the construction plans prior to the encroachment permit process. See the website at the following URL for more information: <http://www.dot.ca.gov/hq/traffops/developserv/permits/>.

Please provide our office with copies of any further actions regarding this project. We would appreciate the opportunity to review and comment on any changes related to this development.

If you have any questions regarding these comments or require additional information, please contact Arthur Murray, Intergovernmental Review Coordinator at (916) 274-0616 or by email at: arthur.murray@dot.ca.gov.

Sincerely,

ERIC FREDERICKS, Chief
Office of Transportation Planning –South

c: Scott Morgan, State Clearinghouse

"Provide a safe, sustainable, integrated, and efficient, transportation system to enhance California's economy and livability"

2.2.1 Comment 2-1

The commenter asks for Caltrans to be included in the review of the traffic control plan (TCP) that will be prepared for the project under Mitigation Measure TRA-1, which is also Mitigation Measure HAZ-1. Caltrans would like to be included in the review because of the proximity of the project site to the westbound U.S. 50 on-ramp. The commenter also states that the TMP should be prepared in accordance with Caltrans's *Manual on Uniform Traffic Control Devices* (MUTCD).

2.2.2 Response 2-1

The MND addresses the need for a TCP under Mitigation Measure TRA-1. The TCP will be prepared to industry standards such as those outlined in the MUTCD and will be circulated to Caltrans for review.

2.2.3 Comment 2-2

The commenter states that project work that requires movements of oversized or excessive load vehicles on state highways requires a transportation permit from Caltrans. Information on how to prepare and submit a permit application is also provided.

2.2.4 Response 2-2

SMUD does not anticipate the need for an excessive-load permit. If the need for an oversized- or excessive-load permit is determined, SMUD's construction contractor would obtain the appropriate permit, as needed. This permit has been added to the list of potential permits needed for the project in Section 2.6.2.

2.2.5 Comment 2-3


The commenter states that any work or traffic control that would encroach onto the State right-of-way of U.S. 50 would require an encroachment permit from Caltrans. Information on how to prepare and submit a permit application is also provided.

2.2.6 Response 2-3

SMUD does not anticipate the need for encroachment into the right-of-way of U.S. 50. Therefore, the encroachment permit would not be needed for the project, and it was not discussed in the IS/MND.

2.3 Letter 3, Adelita Espinoza, Tahoe Park Association (TPA), February 17, 2015

SMUD HQ LETTER 3



TPA
February 17, 2015 tpacomm@gmail.com

SMUD Negative Declaration

There are several issues that TPA has identified with the negative declaration report for SMUD . SMUD's negative declaration is citing that the proposed development would have no effect on the environment. However what SMUD is failing to take into account in their negative declaration is cumulative effect amongst other CEQA omissions and non-disclosures of the following:

- The lot located at the west side of 59th Street has ongoing issues currently with limited outlet access causing congestion.
- The area is currently impacted with traffic and the accident injury report confirms the issues with impacted traffic.
- It does not discuss efficiently or analyze additional impacts the traffic increase will have to surrounding neighborhoods, schools, bikes/ pedestrians that use
- 59th St. to/from facilities which are currently impacted without the 498 people at SMUD HQ and temp units. **ANY** increase to an impacted condition **MUST** be considered significant according to CEQA.
- Nor does it disclose any mitigation to reduce or mitigate those impacts their project will have possible to make 59th street and the 59th street Bridge safer for children, seniors and
- the disabled crossing. Pedestrian access is currently blocked without the addition of the 498 people at SMUD HQ and temp units and they made no mention of improving conditions they will be impacting on the bridge. With the addition this will make the situation more dire. ADA Wheelchair access is not standard on the bridge the width of the sidewalk is not wide enough on the bridge.
- SMUD did not disclose the removal of mature trees heritage trees at the 59th street site whose athletic value is intrinsic to keeping the community canopy.
- Currently they have been cutting down mature trees of historical value and not replacing them with trees of equal maturity and canopy on 59th street. Their is no mention of disclosure of this in their negative declaration for 59th Street.
- They did not disclose how they would mitigate traffic in their revised pattern to keep traffic from entering adjacent neighborhoods on 59th Street which is currently impacted. 250 more cars potentially would be coming from their parking lot. It was detailed in their ND that 250 parking spaces would be made available.
- They did not disclose in what way they were in conflict with the general plan i.e. adopted policies for bikes and pedestrians that would otherwise decrease the performance of such facilities.
- The city General plan clearly states making streets multi-modal streets for pedestrians and bike. They are in conflict with the general plan. There are no plans for the surface streets of

8-1

8-2

8-3

8-4



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S st. where people commute to increase on street bike path usage or pedestrian usage. S st. lacks pedestrian sidewalks and is in violation of ADA. There is no structural enforcement of the speed limit.

- They did not disclose the circulation pattern which they would be using for exits to and from their parking lots and how that would affect 59th street which is impacted.

PROBLEMS IN DEPTH:

1. **The possible permanent increase of 498 cars on the west side of 59th will increase current impacted levels of 59th street.**

"2.5.5 Relocation of SMUD Employees

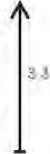
The Headquarters Building would be completely vacated before rehabilitation activities. Employees currently located in the Headquarters Building would be relocated on a temporary or permanent basis. Relocation sites include the following SMUD facilities:

- Field Reporting Facility
- Customer Service Center
- Corporate Yard at 59th Street
- Field Reporting Facility temporary trailer location
- 59th Street temporary trailer location
- East Campus Operations Center (EC-OC)" ~ SMUD

The breakdown of staff is as follows: SMUD

- "93 employees from the Headquarters Building to the Customer Service Center
- 75 employees from the Headquarters Building to the Field Reporting Facility
- 109 employees from the Headquarters Building to Field Reporting Facility temporary trailers
- 91 employees from the Headquarters Building to the existing 59th Street Corporate Yard buildings 35 employees from the
- Headquarters Building to 59th Street temporary trailers
- 95 employees from the Customer Service Center to the existing 59th Street Corporate Yard building" ~ SMUD

Currently there are already 100 employees at an impacted area on the west side of 59th street. 498 return total to all facilities will only increase the total currently there now. The people at the temporary buildings are possibly be staying there permanently and will therefore effect traffic on 59th during the buildout and after the buildout at HQ. "2.5.5 Relocation of SMUD Employees Employees currently located in the Headquarters Building would be relocated on a temporary or





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permanent basis." SMUD

2. Parking Problem:


"Site rehabilitation would add up to 250 employee spaces." ~ SMUD This potential increase would encourage more cars on impacted streets.

The lack of accounting for CEQA mandates : **ANY** increase to an impacted condition **MUST** be considered significant. There is no disclosure what the circulation pattern would be so as to not affect 59th street which is a 2 lane neighborhood adjacent street.

- **CEQA (Section15355) "The cumulative impacts from several projects are the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects"**


There are no references made regarding how these increases to parking will be prevent those increase of cars wether incremental and what their impact would be to the neighborhood. Also it was not disclosed wether the increased plan of 250 car per spaces would be prevented from entering neighborhoods and impacting neighborhood streets. No mitigation was found in the document however mitigation **IS** required according to CEQA law **CEQA (Section15355)**.





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There are no side walks no crosswalks to major shopping centers ie traffic generators on , on/off ramps. There are no bike lanes on bridge yet the space is available for one to connect to traffic generators. Children commute to school here daily. Light rail stop is here too . HIGH pedestrian zone. These generators serve over 3 neighborhoods.

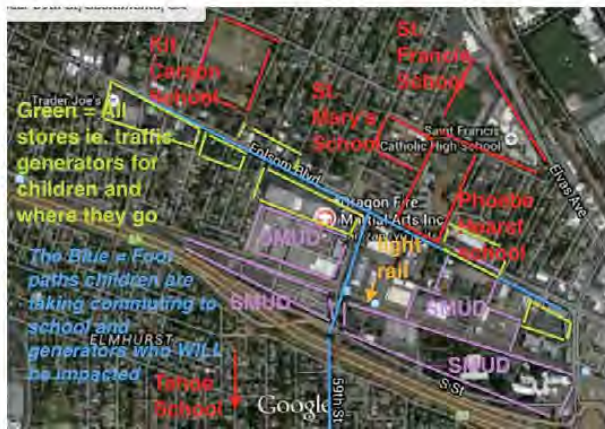


Pedestrian scale light the length of 59th street in keeping with the area's historical aesthetic in material color and type of shade is required by CEQA. Increased undisclosed foot traffic by SMUD will require lighting in keeping with current historical lighting aesthetic for the neighborhood. Lighting that will not take away from the historical lights in place both Tahoe Park and East Sacramento residential streets thereby impacting the areas historical value.



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4. **SCHOOLS IMPACTED** : "Schools No Impact. The proposed project would not provide any new housing that would generate new students in the community. Therefore, the proposed project would have no impact on school services and facilities." ~SMUD



This is insufficient analysis and disclosure of schools routes impacted. There are over 4 schools in the area with children that commute on Folsom Blvd. and on 59th street everyday. Children are also attracted to stores in the area located on the map directly in the path of SMUD potential new growth in traffic. Here this document only refers to "generating new students in the community."

- Current conditions **MUST** be taken into account according to CEQA regarding "**Section 15355** of the State CEQA Guidelines defines "cumulative impacts" as two or more individual effects that, when considered together, are either considerable or compound other environmental impacts. State CEQA Guidelines (14 CCR 15130) require a reasonable analysis of the significant cumulative impacts of a Proposed Project. Cumulative impacts are defined by CEQA as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (State CEQA Section 15355). Cumulative impacts are further described as follows: The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impacts from several projects are the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (State CEQA Guidelines, Section 15355[b])."



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- **The fact that** ANY addition of cars to an already impacted situation must be mitigated to the fullest extent feasible according to CEQA.
- They also included in their negative declaration the building of 2 hotels off of 65th in the area. This according to CEQA / SMUD would be in violation of Section 15130 therefore SMUD must complete an EIR . While their build-out will be incremental there are other possible buildings that could compound issues ie. traffic in future from these hotels hence CEQA law is automatically in acted. via the sections below.

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(CEQA) Guidelines requires that:

Environmental Impact Report (EIR) discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable, as defined in section 15065(c). Section 15355 of the State CEQA Guidelines defines "cumulative impacts" as two or more individual effects that, when considered together, are either considerable or compound other environmental impacts.

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State CEQA Guidelines (14 CCR 15130) require a reasonable analysis of the significant cumulative impacts of a Proposed Project. Cumulative impacts are defined by CEQA as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (State CEQA Section 15355). Cumulative impacts are further described as follows: The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impacts from several projects are the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects.

Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (State CEQA Guidelines, Section 15355[b]).

Furthermore, according to State CEQA Guidelines Section 15130(a)(1):

As defined in Section 15355, a "cumulative impact" consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts.



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The permanent move of 498 additional people though incremental adding to the 100 people already at SMUD near west 59th St. will affect 59th S St. access more than currently hence in violation of CEQA. According to their negative declaration they are proposing to use a 2 lane road with only these 2 outlets with increased regularity. These totals do not include the future amount coming from the build-out and 65th street traffic using S st. to go west as a short cut to facilities from hotels that are planned as well. The increase of traffic, the potential for more infill in future, traffic on 59th will increase and travel into Tahoe Park and other neighborhoods. While TPA understands the building on 65th as it is a big expressway, it still does not mitigate against traffic coming into S st. or onto Folsom Blvd. from 59th which bottle necks.

- The danger on 59th St. is well documented and according to the accident injury report dating from 2003 -2012. According to CEQA any contribution to and already impacted situation must be considered significant.

Because of all of these reasons TPA views the project in conflict with CEQA under the following Section 15130, section 15065 (c) ,Section 15355,State CEQA Guidelines (14 CCR 15130), 15355[b]), Section 15130(a)(1), As defined in Section 15355, SMUD *must* complete an EIR.

3-8

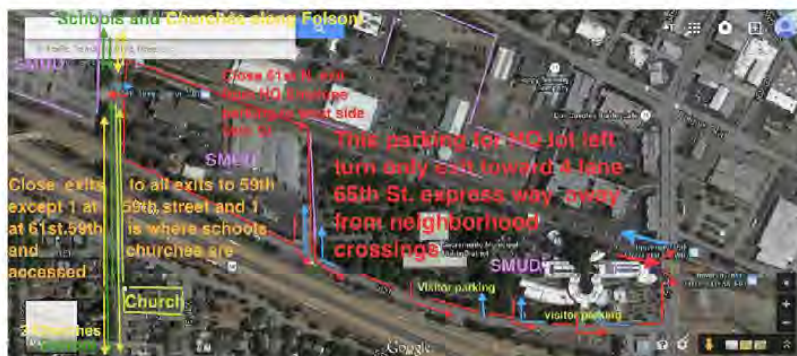


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TPA in turn is making the following requests if fulfilled will see traffic as mitigated to the fullest extent possible under CEQA and no further action is needed.

- A MUST ADA access and a crosswalk also be put at the South Western side & South Eastern of the on/off ramp nearest Tahoe Park. Another at the Northwest end of the Bridge.
- A MUST Protected bike lanes on Bridge with buffer need to be installed on the bridge leading into Tahoe Park. A dropped turn lane will be needed. TPA can help with creating approved residential friendly buffers.
- A MUST Pedestrian lights on bridge in keeping with both neighborhoods historic lamps in color , material and acorn shade. Both East Sacramento and Tahoe Park's neighborhood posts are light green steel or light green caste iron. All glass shades are acorn shaped. Warm LED's to fight light blight on neighboring homes or non-LED bulb. TPA suggestion is Dark Sky acorn shades.
- A MUST Mitigation on S st. from 65th to slow traffic and make unattractive to cut through traffic from 65th.
- At the intersection of S st. 59th a wide high visibility pedestrian median should be installed with a tree or other like foliage through the crosswalk.
- A MUST The Parking lot facing S St. limited entrance **only** no exit to 59th street from West side employee parking lot. Main Exits to be placed at the 65th St expressway leading directly to 2 on off freeway ramps to keep traffic off of impacted neighborhood street connectors and on freeways and larger 4 lane expressway.

3-10



- A MUST In addition TPA would also like to request a high visibility bulb-out be put in on 59th/T on the north west side with the southern end being the largest creating a green parklet on entry to the neighborhood most of the property is already present a bulb-out is all that is required to narrow entry to Tahoe Park.. TPA can work with SMUD on the enhancement and removing existing encumbrances.
- A MUST Signal at 59th/T intersection MUST be removed in place of Traffic circle with high visibility foliage and a 4 way stop sign which is more effective than current signals for



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pedestrians and bikes.

- At the intersection of 59th and Tst. on the entry to Tahoe Park a wide high visibility foliage oriented pedestrian median to be put in the cross walk with a tree or like foliage .
- A **MUST** nice, neighborhood sign to be put in the median/ or traffic circle to let drivers know they are entering a neighborhood. TPA can help with sign design in keeping with a residential neighborhood and historic value.
- A **MUST** Also due to the increased traffic of a potential 498+ additional cars on 59th, a road diet should be put into place to allow for curb extensions to be installed on the Westside 59th Street and Eastside of 59th Street into Tahoe Park to Broadway where children are crossing and committing.
- High visibility foliage oriented Traffic Circles to be installed on 2nd ave and on Tahoe Way. Children are reported to have been injured on these intersections due to traffic. The possibility of 250 more cars traveling down out roads everyday WILL impact Tahoe Park.
- Protected bike lanes from bridge leading into Tahoe Park on 59th down to the Broadway intersection. Children are commuting to and from school in Tahoe Park on 59th Street to at least 4 different schools and 59th St. dead ends at yet another Elementary school on Broadway.



- If pedestrian scale acorn style lights are not all ready in place put in pedestrian lights keeping with the material color i.e. historical aesthetic of the residential streets they it should be put in place from 59th and T to 59th and Broadway. **MUST** be acorn style light green and same historic materials currently on the majority of the residential streets in Tahoe Park proper and in curb extenders.
- Intersection of 59th St. and Broadway. **MUST BE NON-LED** lights which can be dimmed or LED warm lights which can be dimmed whichever is warmer and more energy efficient.
- A **MUST**, Greenbelt curb extenders with multi-modal pedestrian and bike from the 59th Street intersection at T st. to 59th and Broadway to 59th Street and Broadway intersection
- to prevent collisions from increased vehicles and provide structural support of the speed limit of the already impacted area. A **MUST** Larger mature fast growing trees in keeping with the

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habitat species to increase the tree canopy for shade for sidewalks and streets inside all greenbelts in Tahoe Park to be installed.

TPA's additional requests are in deference to East Sacramento wants however the following was observed and in need if impacts are increased as per the proposed build-out:

- A corridor of larger older trees that are fast growing on 59th /St. to Folsom Blvd. within green curb extenders on the East and West side of 59th .
- A continuation of protected bike lanes i.e. multimodal bike/ foot path in keeping with historical aesthetic from both Tahoe Park and East Sacramento from Broadway and 59th St. into East Sacramento on 59th/ Folsom Blvd connecting entrances of schools on the access street of Folsom Blvd. Raise all curbs to vertical no rounded curbs.
- Pedestrian style lamps from Bridge to 59th/ Folsom Blvd. in keeping with East Sacramento historic lamp, color ,material and glass shade. TPA Suggestion a Dark Sky Acorn lamp shade using only warm LED or regular NON-LED to fight light blight to adjoining residences. whichever is warmer and more energy efficient.
- Intersection at 59th and Folsom raise all curbs to vertical green belts if not already in place / w multimodal bike and pedestrian path.



3-10

Comment Letter 3—Adelita Espinoza, TPA

Several comments in this letter describe ongoing issues related to traffic congestion and public safety in the Tahoe Park neighborhood and vicinity of the SMUD campus. The comments ask SMUD to implement measures to improve these ongoing issues. The IS/MND analyzes the impacts resulting from the specific SMUD Headquarters Building and Site Rehabilitation Project on the environment. Where potentially significant impacts are identified, as based on specific impact thresholds provided in Appendix G of the State CEQA guidelines, mitigation measures to mitigate these project-specific impacts to a less-than-significant level are identified, as required by CEQA. The project does not include mitigation for ongoing issues not related to the project or for unrelated but reasonably foreseeable projects, such as the hotel project on 65th Street. Because the SMUD Headquarters and Site Rehabilitation Project mitigates all impacts to a less-than-significant level, no additional mitigation beyond what is proposed in the IS/MND is required. Project planning and permitting is conducted by SMUD in close coordination with the City of Sacramento.

2.3.1 Comment 3-1—Traffic

The commenter states that SMUD fails to take into account several issues related to existing traffic, circulation, and safety concerns in the project area that should be considered in the “cumulative impact” analysis:

- Congestion issues at the outlet of the 59th Street lot
- General traffic and injury issues in the area
- Impacts of project traffic on surrounding neighborhoods, schools, bikes/pedestrians, etc.
- Existing traffic to/from 59th Street
- Safety issues on 59th Street bridge
- Americans with Disabilities Act (ADA) issues at the 59th Street bridge

2.3.2 Response 3-1

Although the commenter refers to “cumulative effects,” the comments reflect a concern that the IS/MND does not appropriately address existing conditions and problems in the vicinity of the project site relating to traffic and circulation, and the project’s impact on these conditions. As discussed in Section 3.16, “Transportation and Circulation,” of the IS/MND, the proposed project was found to have less-than-significant impacts, or to have no impact, with regard to the specific questions from Appendix G of the State CEQA Guidelines related to traffic or transportation, with the exception of potential effects on emergency access during potential improvements to pipe infrastructure in S Street.

As referenced from the draft environmental impact report (EIR) for the California State University, Sacramento (CSU) Campus Master Plan 2015 (CSU 2015), major intersections in the project area generally operate at acceptable conditions during the weekday a.m. and p.m. peak hours, defined as Level of Service (LOS) D or better. In particular, intersections along 65th Street and Folsom Boulevard, both of which serve as key access routes to and from the project site, currently operate at LOS D or better during both peak hours (CSU 2015).



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As discussed in the IS/MND, the project would represent a renovation and rehabilitation of existing on-site uses and would not increase the amount of traffic generated at the site. Although access routes within the site may change slightly after completion of the project, the project would not fundamentally change vehicular access to and from the site. Construction-related activities may result in a slight increase in traffic to and from the site, but the increased traffic levels would be temporary and would be spread throughout the day, thus minimizing the effect during the peak hours. Thus, general traffic operations surrounding the project site are not expected to change as a result of the project.

The IS/MND acknowledges that there may be a slight increase in traffic to and from the site as a result of construction-related activities, but these effects would be temporary, and would occur throughout the day, as opposed to during the a.m. and p.m. peak hours. Furthermore, these trips would be partially offset by a reduced number of trips. Specifically, project implementation would result in the permanent reassignment of 65 current headquarters employees to the East Campus-Operations Center (EC-OC), 5 miles to the east on Bradshaw Road, and the relocation would reduce trips to the headquarters site by current employees (as discussed in Section 2.5.5, "Relocation of SMUD Employees").

Furthermore, once construction is complete, entrances, gates, and internal roadways at the headquarters site would be modified to provide improved traffic circulation within the site and to reduce congestion on public streets caused by queuing at entrances. Specifically, the gates off of S Street would be moved north and the access to the west parking lot would be relocated to the north once construction is complete. During construction, employees would have access to the site from S Street, except for temporary closures. The gates would not be closed off for the duration of construction. As discussed in the IS/MND in Impact e) of Section 3.16, "Transportation and Circulation," and Section 3.8, "Hazards and Hazardous Materials," traffic on S Street could be affected intermittently during construction of proposed improvements to the 15-inch storm drain pipeline or connections to the 12-inch water line located within the S Street right-of-way, if these upgrades are required. Because construction activities related to S Street pipe improvements could result in temporary lane closures, increased truck traffic, and other roadway effects that could interfere with or slow down emergency vehicles, temporarily increasing response times and impeding existing services, this impact was found to be potentially significant. The IS/MND includes Mitigation Measure TRA-1, which calls for implementation of Hazards and Hazardous Materials Mitigation Measure HAZ-3. Mitigation Measure HAZ-3 calls for the preparation and implementation of a construction traffic control plan.

The commenter expresses specific concern regarding ongoing congestion issues on 59th Street. As discussed in Section 2.5.5, "Relocation of SMUD Employees," approximately 200 employees would be temporarily relocated to the 59th Street Corporation Yard Building, and approximately 35 employees would report to the 59th Street temporary trailer location. The Corporation Yard has approximately 675 parking spots available, and thus, has ample space to accommodate the parking needs of these temporary relocated employees. Therefore, the relocation of these employees is not expected to worsen parking or congestion on 59th Street.

The commenter's references to existing pedestrian traffic issues on the 59th Street bridge are not related to the project. The project will have no effect on the current level of pedestrian traffic on the bridge.

Based on the analysis in the IS/MND and the overall trip estimates for the area, the impacts related to local traffic flow were found to be less than significant and no further traffic-related mitigation beyond Mitigation Measure TRA-1 is required.

2.3.3 Comment 3-2—Trees

The commenter states that SMUD did not disclose the removal of mature Heritage Trees at the 59th Street site and that tree removal at this site was ongoing.

2.3.4 Response 3-2

The impact of potential Heritage Tree removal and mitigation is addressed in the IS/MND in Section 3.4, "Biological Resources," under Impact e). SMUD conducted a full inventory of all trees and shrubs (landscape inventory) in the project area, including the temporary trailer sites at the Field Reporting Facility and the 59th Street site, and used the detailed data from this inventory to determine impacts on protected trees resulting from the project.

The project site contains 453 ornamental trees and shrubs, and 38 of these trees meet the size criteria for Heritage Trees as defined in the City of Sacramento's tree ordinance. The IS/MND acknowledges that construction of the project could result in the removal of some of the potential Heritage Trees within the project site and that removal or pruning of these trees requires a permit from the city, and states that removal or pruning of Heritage Trees regulated by the City of Sacramento would be a potentially significant impact.

The IS/MND contains Mitigation Measure BIO-2, which calls for the avoidance and minimization of impacts on protected trees and states that SMUD would obtain a permit from the city for impacts on these trees and implement any mitigation required for such permits consistent with the replacement ratio required by the City's tree ordinance. It also calls for protection of trees to be retained during construction. These measures were developed in coordination with the City of Sacramento's Urban Forester.

In addition, the landscape at the headquarters site is an important part of the historic character of the site, as determined in the cultural landscape report (CLR) included in Appendix C of the IS/MND. The goal of the project is to provide for SMUD's needs and bring the headquarters site up to current code, utilizing the California Historical Building Code and protecting and enhancing the historically significant landscape features and characteristics. Heritage Trees and other significant plant material as indicated in the landscape inventory are evaluated for their significance and contribution to the character of the site. Those that need to be retained to maintain the site's character have been incorporated into the site design and would be preserved. Improvements include the removal of elements that are noncontributing or incompatible, and replacement of missing items as described in the CLR where appropriate and feasible. Site design carefully takes the presence of significant landscaping elements into consideration.

Finally, it is SMUD's current policy to replace trees removed as part of routine landscape maintenance, to maintain the character of the site. Trees or shrubs are removed only if necessary due to their health and for the safety of employees and visitors to the headquarters site.

2.3.5 Comment 3-3—Traffic

The commenter raises additional concerns related to traffic, specifically related to the following issues:

- Potential for traffic to move from the site into adjacent neighborhoods
- Conflict with adopted plans
- Parking lot exit patterns
- Potential new impacts from the up to 250 parking spaces described in the IS/MND

2.3.6 Response 3-3

It is one of the stated project objectives to update parking, roadways, and pathways at the headquarters site to meet existing parking needs and facilitate access and circulation flow between buildings and to public transit. Parking would be reconfigured to make use of the existing space more efficiently. Parking spaces would also be provided with electric conduit to enable future charging of electric vehicles. The up to 250 parking spots at the site are meant to improve on-site circulation and convenience for employees, not to enable additional capacity. The occupancy at the headquarters site would be about the same after construction, but improved parking and circulation at the site would more efficiently accommodate employees and visitors and therefore would tend to reduce traffic flow into existing neighborhoods. Traffic flow improvements within the site would help eliminate queuing when entering and exiting the site.

As discussed in Impacts a), b), and f) of Section 3.16, "Transportation and Circulation," of the IS/MND, the project was found to have no significant impact or conflict with local policies related to traffic and transportation. SMUD also coordinated closely with the City of Sacramento during preparation of this analysis.

2.3.7 Comment 3-4—Employee Relocation

The commenter states concern about the impacts of temporary relocation of employees during construction, their potential permanent relocation, and the impact of the additional parking spaces. Specifically, the commenter is concerned about the "permanent increase of 498 cars on the west side of 59th Street with regard to the current state of 59th Street traffic and additional trips."

2.3.8 Response 3-4

As stated previously in Response 3-3, the purpose of the additional parking spaces at the headquarters site is to better accommodate the current number of employees, not to grow the capacity of the site.

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There would be no permanent increase in the number of cars at the facility on the west side of 59th Street. As stated in Section 2.5.5, “Relocation of SMUD Employees,” the ultimate long-term building occupancy at the Headquarters Building is expected to be similar to current numbers (approximately 498 employees), and relocations within the SMUD campus would be temporary during construction. Although there would be approximately 235 more employees at the 59th Street Corporate Yard Buildings and trailer during construction, the 59th Street site has approximately 675 parking spaces available to accommodate existing and additional temporary employees, so no adverse effects on parking on the street and in adjacent neighborhoods would result. Furthermore, their relocation is not expected to significantly change traffic flow and overall parking patterns in the SMUD campus vicinity and the impact was found to be less than significant. After construction, temporarily relocated employees would report back to their assigned locations.

SMUD employees and visitors to SMUD facilities currently park wherever they can find space, and parking is not assigned on a “by facility” basis. Furthermore, vehicle turnover at the campus site throughout the day is high, as employees and visitors come and go from the campus. Thus, local parking patterns are driven more by the total number of visitors and employees on campus at any given time than by the employees’ assigned work location. Therefore, the temporary reassignment of employees to the 59th Street facilities is not expected to change overall parking and traffic patterns in the SMUD campus vicinity, as discussed in detail in the IS/MND.

2.3.9 Comment 3-5—Pedestrian Access

The commenter expresses concerns regarding existing pedestrian access issues and safety concerns in the vicinity of the Headquarters Building and regarding cumulative effects related to this topic. The commenter also provides a map of facilities of concern in the general project area.

2.3.10 Response 3-5

Please note that the paragraph cited in the comment letter is from the environmental setting section of the “Transportation and Circulation” section of the IS/MND and does not represent part of the impact discussion.

The existing traffic and pedestrian conditions are part of the baseline against which the effects of the project are to be measured. It is one of the stated objectives of the project to enhance safety, and to improve vehicular and pedestrian access to the site and circulation within the site. Therefore, the project is not expected to have a negative effect on existing pedestrian access and safety in the area—either on a project basis or cumulatively.

2.3.11 Comment 3-6—Schools

The commenter states that the impact related to schools provided in the IS/MND is insufficient and states that school routes in the area could be affected, and that students are attracted to local stores and their safety could be compromised by project-generated traffic. A map is also provided.

2.3.12 Response 3-6

The impact statement cited by the commenter is directly from Appendix G of the State CEQA Guidelines, and the impact conclusion with regard to the finding is correct. School impacts addressed in this question refer to physical impacts on the environment, but no physical impacts affecting schools would occur as a result of this project. This section is not supposed to analyze regional circulation impacts related to pedestrian safety. Those impacts are analyzed in the “Transportation and Circulation” section of the IS/MND. As stated in Response 3-5 above, off-site issues related to pedestrian safety and general pedestrian access to shopping centers and other facilities in the area are not the result of, and are not affected by, the proposed project.

2.3.13 Comment 3-7—Addition of Cars

The commenter states that “ANY addition of cars to an already impacted situation must be mitigated to the fullest extent feasible according to CEQA.”

2.3.14 Response 3-7

CEQA requires mitigation only for impacts found to be significant as measured against standards in the significance threshold of Appendix G of the State CEQA guidelines. The IS/MND did not identify such impacts of the proposed project related to the number of cars in the project area; therefore, no mitigation for the number of cars is required.

2.3.15 Comment 3-8—Hotels

The commenter states that SMUD included the building of two hotels in its negative declaration and should complete an EIR because of cumulative related traffic impacts in the future.

2.3.16 Response 3-8

The proposed hotels are discussed in the “Cumulative Impacts” section on page 1 of the IS/MND. CEQA requires that SMUD assess whether its proposed project’s incremental effects are significant when viewed in connection with the effects of other projects. The proposed hotels are the only other project currently proposed in the vicinity. While the project proponents have had preliminary discussions with the City of Sacramento, and have determined what kind of impacts are expected, a CEQA document determining the specific impacts of the project had not been released. Therefore, it is not possible at the time to determine the cumulative impacts of the hotels project. The information on the hotels is provided for informational and disclosure purposes only. The hotels are not part of the proposed project; the discussion of thresholds for CEQA analysis is based on the proposed project, not on reasonably foreseeable projects.

2.3.17 Comment 3-9—Regional Traffic Related to Temporary Relocation of Employees

The commenter expresses concern regarding a traffic and safety issue on 59th Street related to temporary employee relocation and the planned hotels in the vicinity.



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2.3.18 Response 3-9

Effects of the temporary relocation of employees on local traffic were found to be less than significant, as discussed in detail in Response 3-4 above.

Based on the current project schedule, construction of the SMUD Headquarters and Site Rehabilitation Project is not expected to overlap with the construction of the hotels planned for 65th Street. Therefore, because the project is not expected to contribute to any long-term increase in traffic, no mutual impacts on traffic are expected.

2.3.19 Comment 3-10—Requests

The commenter concludes the letter with an extensive list of design-related requests for local and regional improvements related to traffic and pedestrian safety, lighting, signals, signs, bike lanes, and trees.

2.3.20 Response 3-10

The listed requests are for improvements/mitigation in the Tahoe Park neighborhood, which is on the other side of U.S. 50 from the headquarters site, and the project is not expected to have any effect on pedestrian or road traffic in Tahoe Park. SMUD strives to be a good neighbor and allows local residents access to portions of its campus. However, SMUD is not responsible for regional traffic and safety patterns beyond those linked directly to its headquarters operations. SMUD encourages TPA to work with the City of Sacramento on desired neighborhood improvements, as appropriate. Mitigation is required only where impacts are considered significant in the CEQA document. The proposed mitigation in the comment letter would not meet that CEQA standard.

2.4 References

California State University (CSU). 2015 (January). *Campus Master Plan Draft Environmental Impact Report*. Sacramento, CA. Prepared by Parsons Brinckerhoff.

INTRODUCTION

This mitigation monitoring and reporting plan summarizes identified mitigation measures, implementation schedule, and responsible parties for the Proposed Project. SMUD will use this mitigation monitoring and reporting plan to ensure that identified mitigation measures, adopted as a condition of project approval, are implemented appropriately. This monitoring plan meets the requirements of CEQA Guidelines Section 14074(d), which mandates preparation of monitoring provisions for the implementation of mitigation assigned as part of project approval or adoption.

Mitigation Implementation and Monitoring

SMUD will be responsible for monitoring the implementation of mitigation measures designed to minimize impacts associated with the Proposed Project. While SMUD has ultimate responsibility for ensuring implementation, others may be assigned the responsibility of actually implementing the mitigation. SMUD will retain the primary responsibility for ensuring that the Proposed Project meets the requirements of this mitigation plan and other permit conditions imposed by participating regulatory agencies.

SMUD will designate specific personnel who will be responsible for monitoring implementation of the mitigation that will occur during project construction. The designated personnel will be responsible for submitting documentation and reports to SMUD on a schedule consistent with the mitigation measure and in a manner necessary for demonstrating compliance with mitigation requirements. SMUD will ensure that the designated personnel have authority to require implementation of mitigation requirements and will be capable of terminating project construction activities found to be inconsistent with mitigation objectives or project approval conditions.

SMUD will be responsible for demonstrating compliance with any agency permit conditions to the appropriate regulatory agency. SMUD will also be responsible for ensuring that its construction personnel understand their responsibilities for adhering to the performance requirements of the mitigation plan and other contractual requirements related to the implementation of mitigation as part of project construction.

In addition to the prescribed mitigation measures, Table A-1 lists each identified environmental resource being affected, the corresponding monitoring and reporting requirement, and the party responsible for ensuring implementation of the mitigation measure and monitoring effort.

Mitigation Enforcement

SMUD will be responsible for enforcing mitigation measures. If alternative measures are identified that would be equally effective in mitigating the identified impacts, implementation of these alternative measures will not occur until agreed upon by SMUD.

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Table A-1: Mitigation Measures

Checklist Section	Environmental Criteria	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
					Implementation	Monitoring
Air Quality	b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? — Less than Significant with Mitigation	<p>Mitigation Measure AQ-1. Implement Applicable SMAQMD Basic Construction Emission Control Practices.</p> <p>SMUD or its designated construction contractors shall comply with the following measures to reduce fugitive dust and construction equipment exhaust emissions:</p> <ul style="list-style-type: none"> • Water all exposed surfaces two times daily. Exposed surfaces include but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads. • Cover or maintain at least 2 feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Cover any haul trucks that will be traveling along freeways or major roadways. • Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited. • Limit vehicle speed on unpaved roads to 15 miles per hour. • Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (required by California Code of Regulations [CCR] Title 13, Sections 2449[d][3] and 2485). Provide clear signage that posts this requirement for workers at the entrances to the site. • Maintain all construction equipment in proper working condition according to manufacturer's specifications. Equipment shall be checked by a certified mechanic and determined to be running in proper condition before it is operated. 	Construction	Construction	SMUD	SMUD
Biological Resources	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 CDFW or USFWS? — Less Than Significant with Mitigation	<p>Mitigation Measure BIO-1. Avoid and Minimize Impacts on Nesting Birds Protected by the Migratory Bird Treaty Act and California Fish and Game Code.</p> <p>SMUD shall schedule construction activity including tree removal and tree pruning or trimming required during construction outside of the typical nesting season (February 15–September 15) to the extent feasible. A preconstruction survey for nesting birds shall be conducted no more than 10 days before any tree removal or tree trimming or other construction activity that occurs between February 15 and September 15. The nesting bird survey shall include the designated construction area and a 500-foot buffer. If no active nests are found, no further mitigation is required. If an active nest is found in the construction area or within a tree subject to removal or pruning, a 500-foot nest buffer shall be established around the active nest. No construction activity shall occur within the buffer area of a particular nest until the qualified biologist confirms that the chicks have fledged or until it is determined that the nest is no longer active. An alternative nest buffer distance may be authorized in conversations with CDFW if it is determined that the alternative buffer is sufficient to ensure the nest is not adversely affected by construction activity. A qualified biologist shall monitor the status of any active nests within 500 feet of the construction area at least weekly during the nesting season.</p>	Prior to and during construction	Prior to and during construction	SMUD	SMUD

Table A-1: Mitigation Measures

Checklist Section	Environmental Criteria	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
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Biological Resources	e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? — Less Than Significant with Mitigation	<p>Mitigation Measure BIO-2. Avoid and Minimize Impacts on Protected Trees.</p> <p><i>SMUD shall submit a tree permit application to the City Department of Transportation (Urban Forestry Services Division). The tree permit application shall identify all tree removals or tree impacts that are expected to occur as a result of project construction. The application shall also identify mitigation to be implemented for these impacts. Mitigation for impacts on or removal of any Heritage Trees shall be consistent with the replacement ratio required by the City of Sacramento Tree Ordinance (City of Sacramento 1999, or subsequent version if adopted prior to project implementation) and Sacramento 2030 General Plan. Replacement trees shall be planted on-site and incorporated into the landscape plan for the project. Tree planting shall comply with the City's landscaping requirements (Sacramento City Code Sections 17.612.010 and 17.612.040).</i></p> <p><i>Protective fencing with tree protection signs shall be erected around all trees (or tree groups) to be preserved during construction activities. The protective fence should be installed at the limits of the tree protection zone as defined in consultation with the City arborist during the permit application process. This will delineate the tree protection area and prevent unwanted activity in and around the trees and will reduce soil compaction in the root zones of the trees and other damage from heavy equipment. The contractor shall maintain the fence to keep it upright, taut, and aligned at all times. Fencing shall be removed only after all construction activities are complete. Canopy or root pruning of any retained Heritage Trees to accommodate construction and/or fire lane access shall conform to the techniques and standards in the current edition of ANSI A300 (Tree, Shrub and Other Woody Plant Maintenance—Standard Practices) or International Society of Arboriculture Best Management Practices. Heritage Trees to be retained on-site shall be protected from construction-related impacts pursuant to Sacramento City Code Section 12.64.040 (Heritage Trees)</i></p>	Prior to and during construction	Prior to and during construction	SMUD	SMUD
Cultural Resources	a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5? — Less Than Significant with Mitigation	<p>Mitigation Measure CUL-1. Ensure Appropriate Protection Measures for SMUD Headquarters and Site.</p> <p><i>To ensure the protection and maintenance of the historic integrity of the historically significant Headquarters Building and associated landscape throughout the construction period, specific protection measures and recommendations developed by the staff of Wiss, Janney, Elstner Associates, Inc. (HSR) and AECOM (CLR) shall be implemented and/or followed during project design, as appropriate. The Headquarters Building treatment measures include those outlined in the HSR (Appendix B), as appropriate given the proposed project components and goals (Wiss, Janney, Elstner Associates, Inc. 2014). The landscape treatment measures include those outlined in the CLR (Appendix C), as appropriate given the proposed project components and goals (AECOM 2014a). Protection measures for the proposed project include but are not limited to, the following:</i></p> <p><i>(1) Qualified conservators shall be consulted to develop protection measures for the Wayne Thiebaud mural and other artwork. Appropriate preservation staff</i></p>	Prior to and during construction	Prior to and during construction	SMUD	SMUD

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		<p><i>shall be made available to review all phases of work for consistency with resource protection.</i></p> <p><i>(2) Appropriate contributing historic light or other contributing fixtures or features shall be cataloged, salvaged, and taken off-site for refurbishment as necessary.</i></p> <p><i>(3) Historic finishes and materials shall be protected with appropriate methods.</i></p> <p><i>(4) Where no work will take place, areas of the building and landscape shall be barricaded to maintain a physical space between active construction work and protected features.</i></p> <p><i>(5) Contractor activities shall require preparation of "means and methods" procedures ensuring that no protected features are disturbed.</i></p> <p><i>(6) Training on protection of historical features shall be provided for all construction workers before the beginning of work on-site.</i></p> <p><i>(7) Infrastructure upgrades (e.g., conduit in walls) shall be installed where they will not affect significant historic fabric.</i></p> <p><i>(8) In addition to the protective measures, above, cleaning of historic finishes using "the gentlest means possible" as directed by the Standards for Rehabilitation shall be used.</i></p> <p><i>(9) When features are to be removed for restoration or repair, all items designated to be retained and reinstalled shall be recorded, labeled, and stored.</i></p> <p><i>(10) Active site protection administration shall be available from the staff of Wiss, Janney, Elstner Associates, Inc. and AECOM, as needed to ensure that protective measures have been satisfactorily implemented.</i></p>				
		<p>Mitigation Measure CUL-2. Conduct Peer Review of Design Plans.</p> <p><i>A qualified historic preservation specialist shall conduct a third-party review of the proposed design plans (at least 60% design) for both the building and site before the start of construction to ensure that the plans meet the Secretary of the Interior's Rehabilitation Standards. Reviewers shall meet The Secretary of the Interior's Professional Qualifications Standards for Historic Architects [Headquarters Building] and Historic Landscape Architects [the site]. If the review results in a finding that the proposed plans do not meet the standards, design plans for those elements found to be noncompliant shall be updated before the start of construction on those specific elements.</i></p>	Prior to construction	Prior to construction	SMUD	SMUD

Table A-1: Mitigation Measures

Checklist Section	Environmental Criteria	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
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Cultural Resources	b) Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5? — Less Than Significant with Mitigation	<p>Mitigation Measure CUL-3. Halt Ground-Disturbing Construction Activities if Cultural Materials Are Discovered.</p> <p><i>The following measures shall be implemented to avoid or minimize potential impacts on cultural materials:</i></p> <ul style="list-style-type: none"> <i>In the event that any unanticipated buried cultural deposits are encountered during any phase of project construction, SMUD shall be contacted, all construction work shall be halted within 100 feet of the discovery, and the cultural deposits shall be assessed for significance by a qualified archaeologist. If, through consultation, the discovery is determined to not be significant, work shall be allowed to continue.</i> <i>If a discovery is determined to be significant, a mitigation plan shall be prepared and carried out in accordance with state guidelines. If the resource cannot be avoided, a data recovery plan shall be developed to ensure collection of sufficient information to address archaeological and historical research questions, and the results shall be presented in a technical report that describes field methods, materials collected, and conclusions. Any cultural material collected as part of an assessment or data recovery effort shall be curated at a qualified facility. Field notes and other pertinent materials shall be curated along with the archaeological collection.</i> 	Construction	Construction	SMUD	SMUD
Cultural Resources	c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? — Less Than Significant with Mitigation	<p>Mitigation Measure PALEO-1. Conduct Construction Personnel Education, Stop Work If Paleontological Resources Are Discovered, Assess the Significance of the Find, and Prepare and Implement a Recovery Plan, as Required.</p> <p><i>To minimize the potential for destruction of or damage to previously unknown potentially unique, scientifically important paleontological resources during earthmoving activities at the project site, SMUD shall do the following:</i></p> <ul style="list-style-type: none"> <i>Before the start of any earthmoving activities, SMUD shall retain a qualified paleontologist to train all construction personnel involved with earthmoving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and proper notification procedures should fossils be encountered.</i> <i>If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work in the vicinity of the find and notify SMUD. SMUD shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with Society of Vertebrate Paleontology guidelines (SVP 1996). The recovery plan may include but is not limited to a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. The recovery plan shall be submitted to the City of Sacramento for review. Recommendations in the recovery plan that are determined by the City of Sacramento to be necessary and feasible shall be</i> 	Construction	Construction	SMUD	SMUD

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Checklist Section	Environmental Criteria	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
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		<i>implemented by SMUD or its contractors before construction activities can resume at the site where the paleontological resources were discovered</i>				
Cultural Resources	d) Disturb any human remains, including those interred outside of formal cemeteries? — Less than Significant with Mitigation	<p>Mitigation Measure CUL-4. Stop Potentially Damaging Work If Human Remains Are Uncovered during Construction, Assess the Significance of the Find, and Pursue Appropriate Management.</p> <p><i>To minimize the potential for destruction of or damage to previously unknown human remains during earthmoving activities at the project site, SMUD shall implement the following measures:</i></p> <ul style="list-style-type: none"> <i>In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, the contractor(s) shall immediately halt potentially damaging excavation in the area of the burial and notify the Sacramento County Coroner and a professional archaeologist to determine the nature of the remains. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the NAHC by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). After the coroner's findings have been made, the archaeologist and the NAHC-designated Most Likely Descendant (MLD) shall determine the ultimate treatment and disposition of the remains. The responsibilities of SMUD and the City for acting upon notification of a discovery of Native American human remains are identified in PRC Section 5097.9 et seq.</i> <i>Upon the discovery of Native American remains, SMUD shall ensure that the all construction work will stop within 100 feet of the discovery until consultation with the MLD has taken place. The MLD shall have 48 hours to complete a site inspection and make recommendations after being granted access to the site. A range of possible treatments for the remains, including nondestructive removal and analysis, preservation in place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment may be discussed. PRC Section 5097.98(b)(2) suggests that the concerned parties may mutually agree to extend discussions beyond the initial 48 hours to allow for the discovery of additional remains. The following is a list of site protection measures that SMUD shall employ:</i> <ol style="list-style-type: none"> <i>Record the site with the NAHC or the appropriate Information Center.</i> <i>Use an open-space or conservation zoning designation or easement.</i> <i>Record a document with the county in which the property is located.</i> <i>SMUD or SMUD's authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance if the NAHC is unable to identify an MLD, or if the MLD fails to make a recommendation within 48 hours after being granted access to the site. SMUD or SMUD's</i> 	Construction	Construction	SMUD	SMUD

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Checklist Section	Environmental Criteria	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
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		<p><i>authorized representative may also reinter the remains in a location not subject to further disturbance if he or she rejects the recommendation of the MLD and mediation by the NAHC fails to provide measures acceptable to the landowner. SMUD shall implement mitigation for the protection of the burial remains. Construction work in the vicinity of the burials shall not resume until the mitigation is completed</i></p>				
Hazards and Hazardous Materials	b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? — Less than Significant with Mitigation.	<p>Mitigation Measure HAZ-1. Retain a Licensed Professional to Investigate Known or Unknown Hazards and Hazardous Materials and Implement Required Measures, as Necessary.</p> <p><i>To reduce health hazards associated with potential exposure to hazardous substances, SMUD and/or its construction contractors shall implement the following measures before the start of exterior and interior rehabilitation of the Headquarters Building and construction of building additions and alterations:</i></p> <ul style="list-style-type: none"> <i>SMUD shall retain a licensed contractor to remove the UST, oil-water skimmer, and other equipment associated with the hydraulic lift located in the basement of the SMUD Headquarters Building. Such removal shall occur in accordance with Sacramento County Environmental Management Department and RWQCB regulations, including SWRCB regulations outlined in CCR Title 23, Division 3, Chapter 16. These regulations establish separate monitoring requirements for existing USTs; establish uniform requirements for unauthorized release reporting and for repair, upgrade, and closure of USTs; and specify variance request procedures. The appropriate federal, state, and local agencies shall be notified if evidence of previously undiscovered soil or groundwater contamination (e.g., stained soil, odorous groundwater) is encountered during construction activities. SMUD shall retain a qualified environmental professional to conduct follow-up sampling to characterize the contamination and to identify any required remediation that shall be conducted consistent with applicable regulations. The environmental professional shall prepare a report that includes but is not limited to activities performed for the assessment, a summary of anticipated contaminants and contaminant concentrations at the project site, and recommendations for appropriate handling of any contaminated materials during construction. Any contaminated areas shall be remediated in accordance with recommendations made by the Sacramento County Environmental Management Department, Central Valley RWQCB, DTSC, or other appropriate federal, state, or local regulatory agencies.</i> <i>SMUD shall conduct an assessment to identify the contents of the existing electrical transformer located in the basement of the SMUD Headquarters Building. The assessment shall determine whether the existing on-site electrical transformer contains PCBs and whether there are any records of spills from such equipment. If PCBs are identified, the maintenance and/or disposal of the electrical transformer shall be subject to the regulations of the Toxic Substances Control Act under the authority of the Sacramento County</i> 	Prior to and during construction	Prior to and during construction	SMUD	SMUD

Table A-1: Mitigation Measures

Checklist Section	Environmental Criteria	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
					Implementation	Monitoring
		<p><i>Environmental Management Department.</i></p>				
		<p>Mitigation Measure HAZ-2: Remove and Dispose of On-Site Asbestos-Containing Materials.</p> <p><i>Before and during exterior and interior rehabilitation of the Headquarters Building, SMUD shall ensure that asbestos-containing materials are properly removed by a licensed abatement contractor in accordance with EPA and Cal/OSHA standards and ARB Asbestos Rule 902. The licensed abatement contractor shall develop and implement a worker protection program in accordance with OSHA's regulations pertaining to asbestos to minimize worker risk of asbestos exposure. The plan may include but is not limited to the following components:</i></p> <ul style="list-style-type: none"> • <i>the use of engineering controls and work practices, where feasible, designed to reduce exposure (for example, washing hands before eating and providing shower facilities for use before employees leave the work site);</i> • <i>the provision of protective clothing and, where necessary, respiratory protection in accordance with 29 CFR 1910.134; and</i> • <i>disposal of wastes from abatement and demolition activities at a landfill(s) licensed to accept such waste.</i> <p><i>Once all abatement measures have been implemented, a Certified Asbestos Consultant shall conduct a clearance examination and provide written documentation to the Sacramento County Environmental Management Department and SMAQMD that testing and abatement have been completed in accordance with all federal, state, and local laws and regulations.</i></p>	Prior to and during construction	Prior to and during construction	SMUD	SMUD
Hazards and Hazardous Materials	g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? — Less than Significant with Mitigation.	<p>Mitigation Measure HAZ-3. Prepare and Implement a Construction Traffic Control Plan.</p> <p><i>SMUD and/or its construction contractors shall prepare and implement a traffic control plan for construction activities that may affect road rights-of-way, to facilitate travel of emergency vehicles on affected roadways. The traffic control plan shall follow applicable City of Sacramento standards and shall be approved and signed by a professional engineer. Measures typically used in traffic control plans include advertising of planned lane closures, warning signage, a flag person to direct traffic flows when needed, and methods to ensure continued access by emergency vehicles. During project construction, access to the existing surrounding land uses shall be maintained at all times, with detours used as necessary during road closures. The traffic control plan shall be submitted to the City of Sacramento Public Works Department for review and approval before the approval of improvement plans.</i></p>	Prior to and during construction	Prior to and during construction	SMUD	SMUD

Table A-1: Mitigation Measures

Checklist Section	Environmental Criteria	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
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Hydrology and Water Quality	a) Violate any water quality standards or waste discharge requirements? f) Otherwise substantially degrade water quality? Less Than Significant with Mitigation	<p>Mitigation Measure HYDRO-1. Prepare and Implement a Storm Water Pollution Prevention Plan and an Erosion and Sediment Control Plan, and Implement Best Management Practices.</p> <p><i>The proposed project shall comply with applicable regulations designed to reduce or eliminate construction-related water quality effects, including the NPDES Construction General Permit, stormwater quality improvement plan, and Grading, Erosion, and Sediment Control Ordinance. Before development and issuance of the grading permits, an application for coverage under the Construction General Permit (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-006-DWQ) and an erosion and sediment control plan shall be submitted to the City. Before construction may begin, a NOI shall be filed with the Central Valley RWQCB and a project-specific SWPPP shall be developed to minimize erosion and transport of sediment, meet water quality objectives identified in the Water Quality Control Plan for the Sacramento and San Joaquin River Basins, and protect beneficial uses. BMPs included in the SWPPP shall include measures such as installing silt fences, covering stockpiled soils, and locating stockpiled soils away from storm drain inlets. Through the stormwater quality improvement plan, City staff will provide guidance on BMPs to reduce sediment in construction site runoff and reduce other pollutants such as litter and concrete wastes through good-housekeeping procedures and proper waste management. The City's process includes having City staff complete inspections to verify that the erosion and sediment control plan and SWPPP are implemented correctly.</i></p> <p><i>An erosion and sediment control plan shall be developed that includes a site map and a description of BMPs designed to control dust and stabilize the construction site road and entrance, and a description of the methods of storage and disposal of construction materials. Appropriate BMPs for the erosion and sediment control plan may include but are not limited to the following:</i></p> <ul style="list-style-type: none"> • <i>Schedule work to minimize soil-disturbing activities during the rainy season and schedule major grading operations for the dry season when practical.</i> • <i>Cover exposed soil to reduce its exposure to rainfall, reserve existing vegetation where feasible, and apply mulch or hydroseed areas until permanent stabilization is established.</i> • <i>Apply water or other dust palliatives to prevent dust nuisance; prevent overwatering that can cause erosion. Alternatively, cover small stockpiles.</i> • <i>Install silt fences, sediment basins, sediment traps, check dams, fiber rolls, sand or gravel bag barriers, straw bale barriers, vegetated swales, approved chemical treatment, storm drain inlet protection, or other low impact development measures to minimize the discharge of sediment. Cover all stockpiled soil until it is needed. Cover all soil in haul trucks.</i> • <i>Stabilize the construction site entrance to prevent tracking of sediment onto public roads by construction vehicles. Stabilize on-site vehicle transportation routes immediately after grading to prevent erosion and control dust.</i> 	Prior to and during construction	Prior to and during construction	SMUD	SMUD

Table A-1: Mitigation Measures

Checklist Section	Environmental Criteria	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
					Implementation	Monitoring
		<ul style="list-style-type: none"> Remove litter from the construction site at least once daily. Dispose of packing materials immediately in an enclosed container. 				
		<p>Mitigation Measure HYDRO-2. Obtain Coverage under the General Dewatering Permit or Obtain a Project-Specific Dewatering Discharge Permit and Implement Associated Requirements to Meet Discharge Limits.</p> <p><i>If dewatering is required as part of project construction, SMUD shall obtain coverage for the proposed project under the General Dewatering Permit (Order No. 5-00-175) or obtain a project-specific dewatering discharge permit from the Central Valley RWQCB before construction, depending on the discharge volume and duration of dewatering activities. Discharges may be covered by the General Dewatering Permit provided that either (1) they are 4 months or less in duration or (2) the average dry-weather discharge does not exceed 0.25 million gallons per day. The General Dewatering Permit specifies standards for testing, monitoring, and reporting; receiving-water limitations; and discharge prohibitions. If a project-specific dewatering discharge permit is required from the Central Valley RWQCB, it shall include specific requirements and establish discharge limits.</i></p>	Prior to and during dewatering activities	Prior to and during dewatering activities	SMUD	SMUD
		<p>Mitigation Measure HYDRO-3. Establish a Memorandum of Understanding or Permit for Groundwater Discharges with the City's Department of Utilities.</p> <p><i>If dewatering is required during construction, the proposed project shall receive approval from the City of Sacramento Department of Utilities before construction. Any long-term discharges of greater than 7 days must be approved by the City Department of Utilities and the Director of the Department of Utilities through an MOU process. The MOU will specify the type of groundwater discharge, flow rates, and discharge system design, and will include a City-approved contaminant assessment of the proposed groundwater discharge indicating tested levels of constituents and a City-approved effluent monitoring plan to ensure that contaminant levels remain in compliance with state standards or Central Valley RWQCB-approved levels.</i></p>	Prior to dewatering activities	Prior to dewatering activities	SMUD	SMUD
Hydrology and Water Quality	<p>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?</p> <p>d) Substantially alter the existing drainage pattern of a 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?</p> <p>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?</p>	<p>Mitigation Measure HYDRO-4. Prepare, Submit, and Implement a Final Drainage Plan.</p> <p><i>Before the approval of the grading plan and building permit, SMUD shall submit a final drainage plan to the City demonstrating that project-related on-site runoff will be appropriately contained in detention basins or managed through other improvements (e.g., source controls using low impact development techniques such as vegetated swales) to reduce flooding. The plans shall include but not be limited to the following items:</i></p> <ul style="list-style-type: none"> <i>an accurate calculation of preproject and postproject runoff for the final design scenario, obtained using appropriate engineering methods, that accurately evaluate potential changes to runoff, including increased surface runoff;</i> <i>runoff calculations for the 100-year (0.01-AEP) storm event (and other, smaller storm events as required) and the drainage pipeline sizes based on alignments</i> 	Prior to approval of the grading plan and building permit	Prior to approval of the grading plan and building permit	City of Sacramento Department of Utilities	City of Sacramento Department of Utilities

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	Less Than Significant with Mitigation	<p>and finalized detention facility locations;</p> <ul style="list-style-type: none"> a description of the proposed maintenance program for the on-site drainage system; a detailed description of the pipe improvements on S Street and required coordination with the City; and project-specific standards for installing drainage systems. <p>Source control BMPs may include the use of low impact development techniques such as surface swales; replacement of conventional impervious surfaces with pervious surfaces (e.g., porous pavement); disconnection of impervious surfaces; green roofs; and trees planted to intercept stormwater.</p> <p>The final drainage plan shall demonstrate to the satisfaction of the City of Sacramento Department of Utilities that 100-year (0.01-AEP) flood flows would be appropriately channeled and contained, such that the risk to people or damage to structures within or downgradient of the project site would not occur and the capacity of the stormwater drainage system would not be exceeded or require expansion.</p>				
		<p>Mitigation Measure HYDRO-5: Incorporate Stormwater Quality Control Measures to Satisfy the Requirements of the Sacramento MS4 Permit, Including Long-Term Maintenance Requirements.</p> <p>Before the approval of the grading plan and building permit, SMUD shall utilize the Sacramento Region Stormwater Quality Design Manual (May 2014) to identify source-control measures, low impact development development measures, and treatment control measures to satisfy the regulatory requirements of the Sacramento MS4 Permit and thereby reduce runoff pollution associated with the proposed project to the maximum extent practicable. A long-term maintenance agreement or covenant for selected control measures shall be established to ensure ongoing maintenance of facilities.</p>	Prior to approval of the grading plan and building permit	Prior to Construction, During Operation	SMUD	SMUD
Noise	<p>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?</p> <p>c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?</p> <p>d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?</p> <p>Less Than Significant with Mitigation</p>	<p>Mitigation Measure NOISE-1. Implement Best Management Practices to Control Construction Noise.</p> <p>SMUD and its construction contractor shall implement the following BMPs to control noise associated with project construction equipment:</p> <ul style="list-style-type: none"> Fixed/stationary equipment (e.g., generators, compressors, cement mixers) shall be operated in locations that are as far away as possible from existing noise-sensitive receptors. All impact tools shall be shrouded or shielded, and all intake and exhaust ports on powered construction equipment shall be muffled or shielded. All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. 	Construction	Construction	SMUD	SMUD

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Checklist Section	Environmental Criteria	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
					Implementation	Monitoring
		<ul style="list-style-type: none"> • <i>Equipment engine shrouds will be closed during equipment operation.</i> • <i>All motorized construction equipment shall be shut down when not in use.</i> • <i>Written notification of heavy construction activities (i.e., heavy earthmoving, building demolition) shall be provided to all noise-sensitive receptor properties located within 500 feet of the project site. Notification shall include the dates and hours during which construction activities are anticipated to occur and contact information, including a daytime telephone number, for the project representative to be contacted in the event that noise levels are deemed excessive. Recommendations to assist noise-sensitive land uses in reducing interior noise levels (e.g., closing windows and doors) shall be included in the notification.</i> • <i>Major construction activities (grading, paving, and any other use of heavy equipment) shall be limited to the hours between 7:00 a.m. and 6:00 p.m., Monday through Saturday, and 9:00 a.m. and 6:00 p.m. on Sundays.</i> 				
Transportation and Circulation	g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? — Less than Significant with Mitigation.	<p>Mitigation Measure TRA-1. Prepare and Implement a Construction Traffic Control Plan.</p> <p><i>SMUD and/or its construction contractors shall prepare and implement a traffic control plan for construction activities that may affect road rights-of-way, to facilitate travel of emergency vehicles on affected roadways. The traffic control plan shall follow applicable City of Sacramento standards and shall be approved and signed by a professional engineer. Measures typically used in traffic control plans include advertising of planned lane closures, warning signage, a flag person to direct traffic flows when needed, and methods to ensure continued access by emergency vehicles. During project construction, access to the existing surrounding land uses shall be maintained at all times, with detours used as necessary during road closures. The traffic control plan shall be submitted to the City of Sacramento Public Works Department for review and approval before the approval of improvement plans.</i></p>	Prior to and during construction	Prior to and during construction	SMUD	SMUD

**APPENDIX B
SACRAMENTO MUNICIPAL UTILITY DISTRICT
HEADQUARTERS BUILDING AND SITE
REHABILITATION PROJECT FINAL INITIAL STUDY AND
MITIGATED NEGATIVE DECLARATION
(WITH TEXT EDITS)**

Sacramento Municipal Utility District Headquarters Building and Site Rehabilitation Project

Final Initial Study and Mitigated Negative Declaration • March 2015

Powering forward. Together.





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Introduction

This draft initial study (IS) and mitigated negative declaration (MND) have been prepared to evaluate Sacramento Municipal Utility District's (SMUD's) proposed project for compliance under the California Environmental Quality Act (CEQA). SMUD is the lead agency responsible for complying with the provisions of CEQA. SMUD proposes the Sacramento Municipal Utility District Headquarters Building and Site Rehabilitation Project (also referred to as "the proposed project").

Project Description

SMUD proposes to undertake a rehabilitation of its Headquarters Building and a 13.66-acre portion of the headquarters site located at 6201 S Street in Sacramento, California. The Headquarters Building and site have served as SMUD's district headquarters since construction was completed in 1960. The Headquarters Building was listed in the National Register of Historic Places in 2010 as an excellent example of Modern International Style design. SMUD considers the Headquarters Building and site to be a necessary facility to meet current and future business needs and provide a more functional facility, and as significant to its brand and image. Therefore, SMUD desires to rehabilitate the Headquarters Building and a 13.66-acre portion of the headquarters site to support continued use for the foreseeable future. A more detailed description of the project can be found in Chapter 2.

Findings

As the CEQA lead agency, SMUD finds that the proposed project would be implemented without causing a significant adverse impact on the environment. Mitigation measures would be implemented to reduce potentially significant impacts to a less-than-significant level.

Cumulative Impacts

CEQA requires that SMUD assess whether its proposed project's incremental effects are significant when viewed in connection with the effects of other projects. Based on the analysis presented in this IS/MND, the proposed project would not contribute incrementally to considerable environmental changes when considered in combination with other projects in the area. Therefore, the potential environmental effects of the proposed project were determined to be less than significant. All identified potentially significant impacts would be mitigated to a less-than-significant level.

One other project is currently proposed in the vicinity of the SMUD Headquarters rehabilitation project. This project proposes a new development at 1817 65th Street, across from the SMUD campus and adjacent to the 65th Street light rail station. The project site is bounded by 65th Street to the west, the light rail tracks and Q Street to the north, Redding Avenue to the east, and U.S. Highway 50 (U.S. 50) to the south. The project would involve construction of one or two new four-story hotels and approximately 10,000 square feet of retail space on 5.67 acres. A 117-room Hampton Inn and Suites would be built on the east end of the site, and either a second hotel or an office building would be built on the west side of the site. The retail space would be a separate, third building fronting 65th Street. In addition to the proposed structures,



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the development would include tree removal, new fencing, new signs, plantings along U.S. 50 and near the 65th Street light rail station, installation of a 48-inch water main, transit area improvements, widening of the off-ramp at 65th Street, a tie-in to the Redding Street combined-sewer line, new transformers for existing power lines, and construction of 124 new parking spaces on the project site. The project is currently under review with the City of Sacramento, but a CEQA document has not been released to date.

Growth-Inducing Impacts

The proposed project is the rehabilitation of an existing building and the surrounding property. It would not implicate the provision of any service or planning effort that could affect future growth.

Determination

On the basis of this evaluation, SMUD concludes:

- The proposed project does not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered species, or eliminate important examples of the major periods of California history or prehistory.
- The proposed project would not achieve short-term environmental goals to the disadvantage of long-term environmental goals.
- The proposed project would not have impacts that are individually limited, but cumulatively considerable.
- The proposed project would not have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly.
- No substantial evidence exists to demonstrate that the proposed project would have a substantive negative effect on the environment.

This IS/MND has been prepared to provide the opportunity for interested agencies and the public to provide comment. Pending public review and SMUD Board of Directors approval, this MND ~~will be~~was filed pursuant to State CEQA Guidelines Section 15075. Written comments ~~should were requested to~~ be submitted to SMUD at the address previously identified by 5:00 p.m. on February 16, 2015.

3/15/15

Signature
Rob Ferrera
Environmental Specialist

Date



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ACRONYMS AND OTHER ABBREVIATIONS

AB	Assembly Bill
ACM	asbestos-containing materials
ADA	Americans with Disabilities Act
afy	acre-feet per year
Alquist-Priolo Act	Alquist-Priolo Earthquake Fault Zoning Act
ARB	California Air Resources Board
BMP	best management practice
Board	Board of Directors
B.P.	Before Present
ca.	circa
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen Code	California Green Building Standards Code
Cal/OSHA	California Department of Industrial Relations, Division of Occupational Safety and Health
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAP	climate action plan
CBC	California Building Standards Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CHBC	California Historical Building Code
CHRIS	California Historical Resources Information System
City	City of Sacramento
CIWMA	California Integrated Waste Management Act
CLR	cultural landscape report
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CO ₂ e	carbon dioxide equivalents



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CRHR	California Register of Historical Resources
CSUS	California State University, Sacramento
dB	decibel(s)
dBA	A-weighted decibel(s)
Delta	Sacramento–San Joaquin Delta
DTSC	California Department of Toxic Substances Control
Ebasco	Ebasco Services, Inc.
EC-OC	East Campus-Operations Center
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FTA	Federal Transit Administration
FWTP	E. A. Fairbairn Water Treatment Plant
GHG	greenhouse gas
HSR	historic structure report
IS/MND	initial study/mitigated negative declaration
kV	kilovolt
lb/day	pounds per day
LED	light-emitting diode
L _{eq}	energy-equivalent noise level
LIR	landscape inventory report
MBTA	Migratory Bird Treaty Act
mgd	million gallons per day
MLD	Most Likely Descendant
MT	metric ton(s)
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
ND	negative declaration
NEHRPA	National Earthquake Hazards Reduction Program Act
NOI	notice of intent
NO _x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	U.S. Natural Resources Conservation Service
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
PCE	tetrachloroethylene



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PG&E	Pacific Gas and Electric Company
PM	particulate matter
PM _{2.5}	particulate matter equal to or less than 2.5 micrometers in aerodynamic diameter
PM ₁₀	particulate matter equal to or less than 10 micrometers in aerodynamic diameter
PRC	California Public Resources Code
RCRA	Resource Conservation and Recovery Act of 1976
ROG	reactive organic gases
RT	Sacramento Regional Transit District
RWQCB	regional water quality control board
Scoping Plan	<i>Climate Change Scoping Plan</i>
Secretary of the Interior's Rehabilitation Standards	<i>The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings</i>
SFD	Sacramento Fire Department
SIP	state implementation plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
SPD	Sacramento Police Department
SRCS	Sacramento Regional County Sanitation District
SRWTP	Sacramento River Water Treatment Plant
SRWWTP	Sacramento Regional Wastewater Treatment Plant
SVP	Society of Vertebrate Paleontology
SWA	Sacramento Regional Solid Waste Authority
SWPPP	storm water pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCE	trichloroethylene
the site	13.66-acre property surrounding the SMUD Headquarters Building
tpd	tons per day
UCMP	University of California Museum of Paleontology
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
VdB	vibration decibel(s)



1.0 INTRODUCTION

1.1 Project Overview

The proposed project is Sacramento Municipal Utility District's (SMUD's) rehabilitation of its Headquarters Building on 13.66 acres of the surrounding property (the site) at 6201 S Street in Sacramento, California. The Headquarters Building and site have served as SMUD's district headquarters since construction was completed in 1960. The Headquarters Building and site were listed in the National Register of Historic Places in 2010 as an excellent example of Modern International Style design.

1.2 Purpose of This Document

The purpose of this initial study/mitigated negative declaration (IS/MND) is to disclose environmental impacts that may result from the proposed project. This IS/MND assesses the environmental effects of the proposed project, as required by the California Environmental Quality Act (CEQA). The IS/MND has been prepared in compliance with the State CEQA Guidelines (14 California Code of Regulations Section 15000 et seq.), which require that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects.

As CEQA lead agency for the proposed project, SMUD has prepared this IS/MND to determine if the proposed project may have a significant impact on the environment. In accordance with State CEQA Guidelines Sections 15063 and 15074, an environmental impact report (EIR) must be prepared if there is substantial evidence supporting a fair argument that the proposed project under review may have a potentially significant impact on the environment. A negative declaration (ND) or MND is a written statement prepared by the lead agency describing the reasons why the proposed project would not have a significant impact on the environment, and therefore, would not require preparation of an EIR (State CEQA Guidelines Section 15371). According to State CEQA Guidelines Section 15070, an ND or MND for a project subject to CEQA should be prepared when either:

- the IS shows that there is no substantial evidence, in light of the whole record before the lead agency, that the project may have a significant impact on the environment; or
- the IS identifies potentially significant impacts, but:
 - revisions in the project plans or proposals made by or agreed to by the applicant [in this case, SMUD] before the proposed MND and IS are released for public review would avoid the impacts or mitigate the impacts to a point where clearly no significant impacts would occur; and
 - there is no substantial evidence, in light of the whole record before the agency, that the proposed project as revised may have a significant impact on the environment.

As stated below, SMUD has analyzed the potential environmental impacts created by the proposed project, determined that proposed project impacts are less than significant or can be



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reduced to a less-than-significant level with the implementation of mitigation measures, and has prepared this MND.

1.3 Public Review Process

This draft IS/MND ~~is being~~was circulated for a 30-day public review period to all individuals who have requested a copy, local libraries, and appropriate agencies. A notice of intent (NOI) ~~is was~~ also ~~being~~ distributed to all property owners on record identified by the Sacramento County Assessor's office as having property within 500 feet of the project boundaries. The NOI identified~~s~~ where the document ~~is was~~ available for public review and invited~~s~~ interested parties to provide written comments for incorporation into the final IS/MND. The NOI also invited~~s~~ interested parties to attend a public meeting on the proposed project, which ~~has been~~was scheduled for January 27, 2015. A copy of the NOI is included as Appendix A of this document.

A final IS/MND, including written responses to comments received on significant environmental issues, ~~will be~~has been prepared. Before SMUD's Board of Directors (Board) makes a decision on the proposed project, the final IS/MND will be provided to all parties commenting on the IS/MND.

1.4 SMUD Board Approval Process

The SMUD Board must adopt the IS/MND and approve the mitigation monitoring plan before it can approve the proposed project. The project and environmental documentation pertaining thereto will be formally presented to the SMUD Board for information and discussion at an Energy Resources and Customer Services Committee meeting. The SMUD Board will then consider adopting the final IS/MND at the next regular Board meeting. Meetings of the Energy Resources and Customer Services Committee and Board of Directors are held at SMUD's headquarters (6201 S Street, Sacramento, CA 95817-1899) and are open to the public. The public may comment at both meetings.

Once the IS/MND has been adopted, the SMUD Board typically renders a decision on project approval on the same date.

1.5 Organization of the Initial Study and Mitigated Negative Declaration

This IS/MND is organized into the following chapters:

Chapter 1, "Introduction," provides summary information about the proposed project, describes the public review process for the IS/MND, and includes the CEQA determination for the proposed project.

Chapter 2, "Project Description," contains a detailed description of the proposed project.

Chapter 3, "Environmental Checklist," provides an assessment of proposed project impacts by resource topic. The Environmental Checklist form, from Appendix G of the State CEQA



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Guidelines, is used to make one of the following conclusions for impacts from the proposed project:

- A conclusion of *no impact* is used when it is determined that the proposed project would have no impact on the resource area under evaluation.
- A conclusion of *less-than-significant impact* is used when it is determined that the proposed project’s adverse impacts on a resource area would not exceed established thresholds of significance.
- A conclusion of *less-than-significant impact with mitigation* is used when it is determined that proposed mitigation measures would reduce the proposed project’s adverse impacts to below established thresholds of significance.

Mitigation measures, as appropriate, are noted following each impact discussion.

Chapter 4, “List of Preparers,” identifies the individuals who contributed to the environmental document.

Chapter 5, “References,” identifies the information sources used in preparing this document.

Appendices contain technical reports and other information to supplement the IS/MND.

1.6 Environmental Factors Potentially Affected

Impacts on the environmental factors below are evaluated using the checklist included in Chapter 3. SMUD determined that the environmental factors checked below would be less than significant with implementation of mitigation measures. It was determined that the unchecked factors would have a less-than-significant impact or no impact.

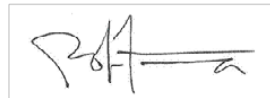
- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources | <input checked="" type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input checked="" type="checkbox"/> Hazards & Hazardous Materials | <input checked="" type="checkbox"/> Hydrology/Water Quality |
| <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources | <input checked="" type="checkbox"/> Noise |
| <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation |
| <input checked="" type="checkbox"/> Transportation/Traffic | <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Mandatory Findings of Significance |



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DETERMINATION: On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because proposed mitigation measures would reduce the proposed project's adverse impacts to below established thresholds of significance. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Signature

3/15/15

Date

Rob Ferrera
Printed Name

Sacramento Municipal Utility District
Lead Agency

2.0 PROJECT DESCRIPTION

2.1 Introduction

The proposed project includes the rehabilitation of the SMUD Headquarters Building and 13.66 acres of the surrounding property (the site). SMUD has occupied the building and site since 1960, and the proposed project would rehabilitate the building and site for continued use over the next 50 years. Because the Headquarters Building and site are listed in the National Register of Historic Places, the rehabilitation would be performed in accordance with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*.

2.2 Project Location

The project building and the 13.66 acres of the site are located in Sacramento, California within the approximately 50-acre SMUD campus (Figure 2-1). The project site is bordered by 61st Street to the west, light rail tracks to the north, SMUD's Customer Service Center to the east, and S Street to the south. The project also includes two temporary trailer location sites where SMUD employees would be housed in approximately 54 modules during project construction. Restroom trailers would be provided at each trailer location. These modules would be located to the north of the light rail tracks and would be equipped with electricity and phone service from existing on-site lines. The project site and surrounding uses are shown in Figure 2-2.

2.3 Existing Conditions

The Headquarters Building is divided into three sections: south wing, central core, and north wing. The south wing comprises four levels above grade and a full floor below grade; the central core comprises five levels above grade and one floor below grade. The north wing has three parking levels and a two-story office portion above the parking garage. The building includes 120,000 square feet of office space and 45,000 square feet of parking.

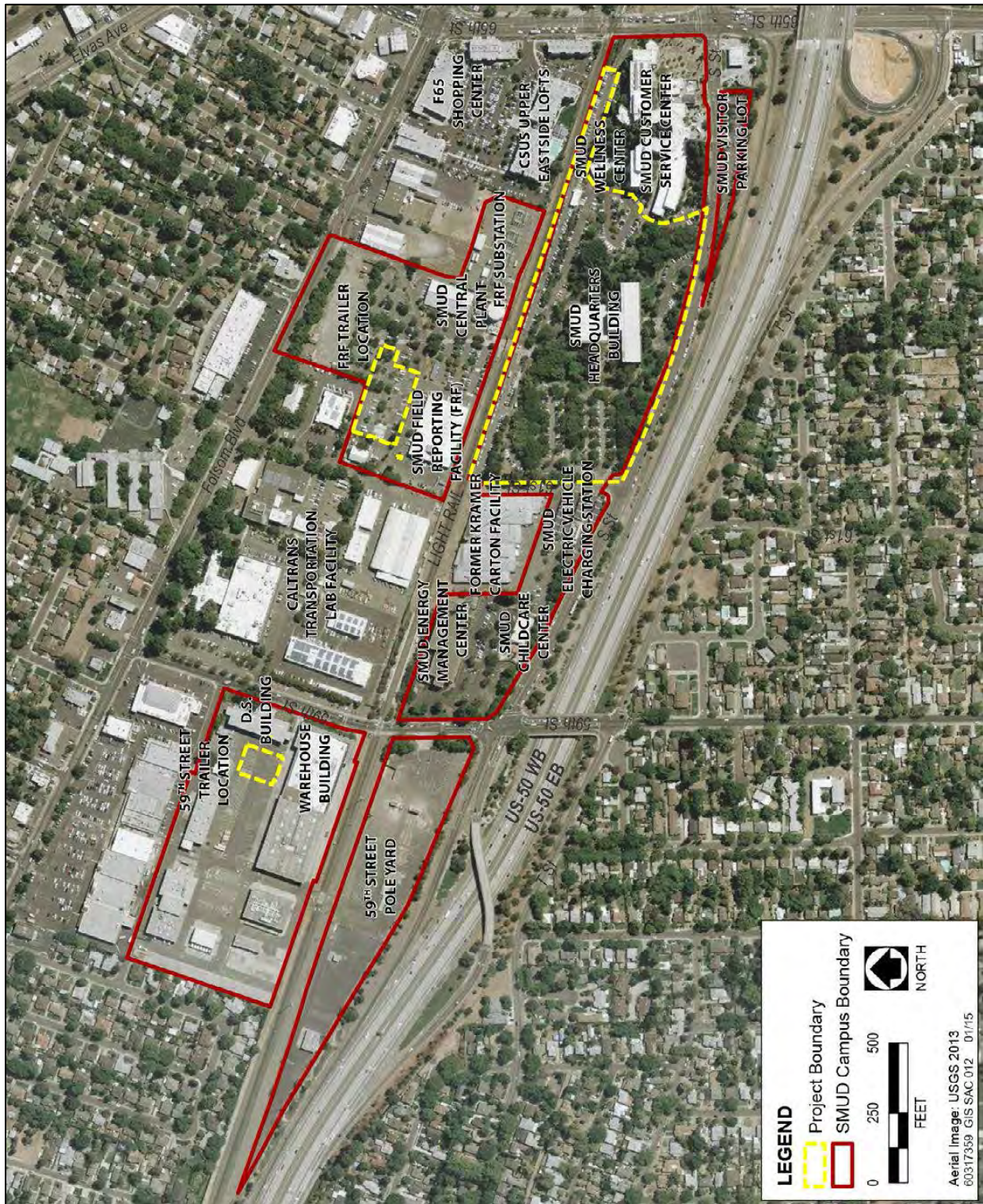
The Headquarters Building houses SMUD's headquarters and supports SMUD operations. Because the building is more than 50 years old, it is not up to Americans with Disabilities Act (ADA) and current code standards with regard to access and safety, and the building is currently energy inefficient. It contains some materials that are considered hazardous and are no longer used in building construction and need to be remediated. Additional meeting space and more collaborative work spaces are required to meet SMUD's current business operation needs. The site is characterized by an aging landscape comprising many mature trees and shrubs, interspersed with lawns with relatively high water consumption. Travel and access paths throughout the site do not meet current ADA and fire standards, and the site experiences localized flooding during rain events. Existing parking and access to the garage are inefficiently configured and additional parking is needed to allow the site to function more effectively. The two trailer location sites are currently used as SMUD parking lots.



Source: Data provided by Sacramento County in 2013 and compiled by AECOM in 2014

Figure 2-1. Regional Location

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Source: Data provided by Sacramento County in 2013 and compiled by AECOM in 2014

Figure 2-2. Project Site and Vicinity

2.3.1 Growth and Expansion

SMUD currently provides workstation sizes that are consistent and competitive with industry standards (220 square feet per person). As the workforce has grown, valuable conference and support spaces have been replaced with more workstations. This change has resulted in a densely populated building with insufficient teamwork space (less than 25 square feet per person) and a noisy office environment. Although the number of employees at SMUD has not increased significantly in the last 10 years, there has been steady growth (5%) in some departments, especially Information Technology, Customer Services, and Strategic Operations. Slow growth will continue as SMUD strategically focuses on becoming a more customer service-oriented company that seeks innovative solutions to providing sustainable, energy-efficient, reliable power.

There is currently not enough area in the existing Headquarters Building to expand departments for future growth. The rehabilitated Headquarters Building would use the existing space more effectively by optimizing underutilized areas (like the auditorium) and providing more convenient, smaller meeting spaces closer to the open offices. Use of private offices would be very limited. Expanding the building's central core would more conveniently locate larger conference/meeting areas between the north and south wings. This would have several benefits: it would minimize disruptions to the work environment, improve departmental collaboration, create better flow through the building, and provide greater flexibility for workstation configurations in the open office areas. Incorporating these meeting spaces and other support spaces in addition to department growth would exceed the current building footprint. Moving departments out of the existing Headquarters Building in lieu of expansion is not operationally efficient or feasible because of critical adjacency requirements and frequent interactions that would be impaired by being in separate or remote locations.

Because of the historic significance of the auditorium, modification of this space would be limited. It is currently used for public meetings of the SMUD Board of Directors (Board), but lacks proper security access and separation from other publicly accessible areas for board members. The Board also needs additional support space to facilitate its duties such as a private conference room, private restrooms, an office, and a small break/coffee area. There is not enough space behind the existing stage to provide these spaces adjacent to the auditorium. As described below under "Auditorium Reconfiguration," the area behind the dais would be reconfigured to provide conference space, ADA-compliant toilets, and small private one- to two-person office spaces for use by Board members.

2.3.2 Generational Shift

SMUD is acutely aware that as the Baby Boomer generation retires from the workforce, it will need to respond to the work style of the Millennials. Figure 2-3 shows the number of SMUD employees eligible for retirement over the next 5 years. Open, collaborative space combined with quiet areas and varied work station opportunities will be necessary to maintain a healthy and productive environment for the Millennial generation. They will still need work spaces to focus and be intensely productive, but their day will also include short, strategic meetings with colleagues to resolve problems, clarify direction, make decisions, and move projects forward. These meetings cannot take place in the open office environment where they are disruptive to

others. The rehabilitation and expansion of the Headquarters Building would pull most of the “hard-walled” or permanent spaces toward the central core, leaving flexible, quiet open office areas where people can work with minimal visual and acoustical distractions. Noisy areas near conference rooms, coffee lounges, and vertical circulation areas would be designed to be separate from the active working areas such as the offices and cubicles, much like a main street in a small town. This is where conversations, spontaneous and planned, happen without disrupting others. People can huddle, laugh, and banter in lively and creative conversations without concern. Pulling these areas into an expanded central core forms a creative hub to the building that generates innovative ideas and inspired employees.

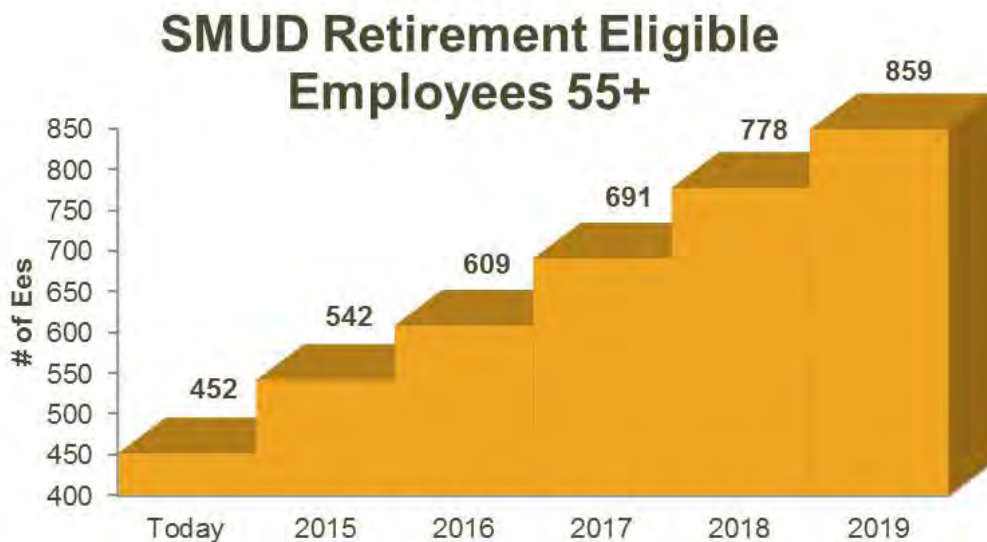


Figure 2-3. SMUD Employees Eligible for Retirement within 5 Years

2.4 Project Objectives

The overall objective of the proposed project is to address building and site efficiency issues and to rehabilitate the Headquarters Building and site to support their continued use as SMUD’s headquarters. Specific project objectives include:

- Rehabilitate the Headquarters Building and site for continued use and future business needs.
- Reallocate existing and provide additional functional spaces for improved conferencing capabilities, to allow for more meeting and work spaces for employees and to meet current and future space needs. This objective would be accomplished by adding on to and altering the central core of the building and redesigning the internal work spaces.



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- Provide secure and nonpublic pathways for use by the Board and staff members to access the auditorium by enclosing the existing northeast walkway and connecting through the central core addition to the parking garage. This will be achieved by enclosing the existing northwest walkway to provide an internal pathway from the offices on the west side of the south wing to the main lobby that does not require passing through the Headquarters Building's conference center.
- Clean, repair, and preserve the historical features of the Headquarters Building and site.
- Remediate hazardous materials (e.g., asbestos, lead paint, polychlorinated biphenyls [PCBs]).
- Upgrade the Headquarters Building to current seismic standards, including utilization of the California Historical Building Code (CHBC).
- Meet current fire and life safety codes and standards, including utilization of the CHBC.
- Meet ADA requirements, including utilization of the CHBC.
- Upgrade building mechanical, electrical, and plumbing systems to allow efficient use into the future.
- Increase building performance and energy efficiency of electrical and mechanical systems.
- Upgrade the existing stormwater drainage system and provide stormwater quality measures. Update parking, roadways, and pathways to meet parking needs and facilitate access and circulation flow between buildings and to public transit.
- Replace site lighting and provide vehicle charging stations.
- Update landscaping to replace aging plants and reduce water consumption while maintaining historical landscape elements and meeting safety and aesthetic needs.
- Maintain connectivity between the Headquarters Building, the Customer Service Center, and the Field Reporting Facility.
- Improve site and building security.
- Meet SMUD's strategic directive for environmental leadership. (See Policy Number SD-7 on SMUD's Web site, <https://www.smud.org/en/about-smud/company-information/board-of-directors/strategic-direction.htm>.)

2.5 Proposed Project

2.5.1 Headquarters Building Rehabilitation

Because the building and site are listed in the National Register of Historic Places, “rehabilitation,” as defined by the *Secretary of the Interior’s Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (Secretary of the Interior’s Rehabilitation Standards), was chosen as the process for upgrades. The proposed building rehabilitation includes the elements described below.

Exterior Rehabilitation

The objective of the exterior rehabilitation is to clean, repair, and preserve the historically significant features of the Headquarters Building. Specific activities would include:

- assessment of the existing exterior wall and exterior glazing system to determine whether repair or reglazing is necessary;
- replacement of existing glazing that is broken or otherwise damaged;
- cleaning and repair as necessary of the existing exterior wall;
- cleaning and repair of the existing window louver system;
- cleaning and repair of the existing metal spandrel panels;
- cleaning of precast exposed-aggregate concrete panels;
- cleaning, restoration, and replacement (where missing) of the glazed mosaic tiles on exterior columns;
- cleaning and restoration, based on the Secretary of the Interior’s Rehabilitation Standards, of the tiled Wayne Thiebaud mural on the exterior of the first floor of the Headquarters Building;
- repair of the exterior wall and glass entry doors and upgrade of these elements to comply with ADA and safety and security requirements;
- replacement of existing roof materials to meet drainage, remediation, mechanical, and environmental sustainability objectives while maintaining the historic flat roof design, including replacement of the existing built-up roof with cap sheet with insulation board and sheet membrane roofing (no tar);
- compliance with ADA accessibility standards for features such as travel paths and handrails; and



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- restoration, repair, or replacement of window glazing to meet safety glazing requirements while restoring the natural lighting intended by the original design.

Interior Rehabilitation: General

Interior rehabilitation includes remediation of hazardous materials (e.g., asbestos, lead paint, PCBs) and renewal of interior space configurations and finishes incorporating historically significant features consistent with the Secretary of the Interior's Rehabilitation Standards. Altering the central core would also allow more light into the building and create more, and more flexible, meeting spaces with the addition of conference rooms/meeting space. Following selective interior deconstruction/salvage and demolition, the building shell would remain with exposed structural columns, beams, decking, exterior wall systems, and those select building elements identified to be protected in place and free of hazardous materials. Items determined to be historically significant as described in the HSR (Appendix B) would be cataloged, deconstructed, and stored for reinstallation or repurposing as required to meet the Secretary of the Interior's Rehabilitation Standards.

Structural Improvements: South-Wing First-Floor Alterations

An evaluation, completed in 1999 by Buehler & Buehler Structural Engineers in conjunction with Vitello & Associates, found two areas of significant hazard for the SMUD Headquarters Building. The most significant hazard was in the north wing, with a potential for shear failure in the existing concrete columns at the lower floors of the garage areas; this hazard was addressed in the early 2000s with the addition of concrete shear walls. The second area of significant hazard is in the south wing, where existing steel moment frames in both the north-south and east-west directions have deficient connections that require seismic retrofitting. In addition, the frames in the north-south direction have the potential to exhibit excessive seismic drift, which could jeopardize the stability of the structure. The Headquarters Building rehabilitation would address the stability of the south wing by retrofitting the building to meet the substantial life-safety performance objectives proposed by the American Society of Civil Engineers.

The proposed strengthening scheme for stabilization of the south wing would involve adding four viscous damping devices in the north-south direction connected to chevron braces between the first and second floors. These structures would all be concealed within existing walls. In some cases, walls would be relocated to better serve structural upgrades. New steel columns at the basement and new grouted pin pile foundations would be provided to support the damper braces. Also, steel drag ties at the second floor would be added just below the floor level to attach the dampers to the structure. For the east-west direction, existing moment frames would require localized retrofitting at all beam/column connections. All new structural elements would be concealed within the walls to maintain the clear span open feel of the existing lobby.

Mechanical System

The existing mechanical system consists of a dual duct (hot and cold) forced-air system with built-up air-handling units located on each floor and a fan system located in the mechanical penthouse. The air-handling units are supplied with chilled and heated water via a distribution system originating from SMUD's central plant, which is located north of the light rail tracks that



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run along the north side of the Headquarters Building. The mechanical system within the building would be demolished. A new mechanical system would be installed and would continue to utilize the central plant to heat and cool the building. The new mechanical system would incorporate a combination of forced-air, radiant, and induction systems (ceiling-mounted chilled beams). New controls and a new chilled and hot water distribution piping system would be installed within the building.

Plumbing System

Plumbing fixtures and supporting water, waste, and vent piping would be demolished for central core-section restrooms, single-occupancy restrooms, break rooms, and drinking fountains. Upgrades would include new piping and new low-flow fixtures.

Fire Suppression

The existing fire sprinkler system and chemical fire suppression system would be replaced by a new wet sprinkler system throughout the building.

Electrical System

The existing electrical system would be demolished. The project would include replacement of the two main transformers fed from overhead power lines running parallel to the light rail tracks on the north side of the building. New electrical distribution and low-voltage systems would be installed and would incorporate energy-efficient technologies for lighting and controls.

Natural Gas

The Headquarters Building has no existing natural gas service and no gas facilities are proposed for the project.

Building Additions and Alterations

The rehabilitation would include the additions and alterations described below.

South-Wing First-Floor Alterations

Access Compliance

The floor of the existing auditorium is sloped with fixed theater-style seating. The aisles along the outside walls, used to enter and exit the space, are sloped at approximately 11.2% and the slope at the center of the seating area is approximately 13.2%. There is currently no accessible route, as defined by the California Building Code or ADA, to the seating area or from the auditorium seating to the dais or stage. The slope of the floor in the auditorium would be leveled to bring it into compliance with current accessibility standards, and utilizing the CHBC.

Auditorium Reconfiguration

A new entrance to the auditorium would be created through the north wall near the existing stairway. The northeast walkway entrance to the lobby would be enclosed with glass and connected to the parking garage through the central core addition to create secure nonpublic access to the auditorium for members of the Board and staff members. The framing/facades of the glass enclosure would be compatible with the historic appearance of the existing building.

The area behind the dais would be reconfigured to provide conference space, ADA-compliant toilets, and small private one- to two-person office spaces for use by Board members. The location of the existing projector booth would be reconfigured to create a new conference space that can easily open to the auditorium when needed for larger audiences. The new walls behind the dais and between the new conference space and the lobby would conceal the new structural brace frame dampers for the east end of the south wing.

Public Restrooms

No restrooms are currently available to the public in the main lobby, the auditorium, or the Headquarters Building's conference center. Members of the public must be allowed past the security desk and turnstiles to use the existing restrooms in the core. To correct this condition, new public restrooms would be created to serve the auditorium and the Headquarters Building's conference center without requiring members of the public to cross into the secured space intended only for SMUD staff members. The walls of the new restrooms and the new western wall of the Headquarters Building's conference center would contain the new structural brace frame dampers for the west end of the south wing. The northwest walkway entrance to the lobby would be enclosed with glass in the same manner as the northeast walkway, thus forming an indoor passageway from the offices at the west end to the lobby without affecting the Headquarters Building's conference center.

Central Core Alteration

To enhance the connection between the north and south wings, a proposed open core alteration would remove partition walls between the core stairwell and the elevators. Adjacent mechanical spaces would be converted to open space, and a new open stairway would open the core from floor to floor as an atrium. The stairway would be open from the first floor to the fourth floor. The existing elevator, mechanical shafts, and restrooms would remain in their current locations.

The existing air handling systems would be removed from the core and penthouse mechanical rooms. A new built-up air handling system would be constructed in the existing penthouse structure, utilizing the existing air intake and exhaust openings to the greatest extent possible. The existing return and exhaust shafts through the core would be reused as pathways for ducted return and exhaust air back to the roof. New supply air shaft(s) would be provided along the interior west side of the central core to supply primary cooled and dehumidified air out to the individual floor distribution systems, feeding a combination of forced air and induction systems (chilled beams).

Central Core Addition

Two additions in the form of conference rooms would be constructed on the east and west facades of the central core, respectively, to address programmatic needs for more office space within the footprint of the north and south wings, and to keep disruptive conference functions separate from the open offices. The additions on the east and west sides of the central core would extend 20 feet and connect to both the north and south wings. The height of the central core additions would match the overall height of the existing central core. The transparent and solar shaded facades of the additions would be compatible with the historic appearance of the existing building, yet they would be differentiated through the types of materials used.

Figure 2-4 provides a visual simulation of the proposed core additions.

North Wing Exit Stairway

A new exit stairway would be created from the third floor of the north wing down to the upper level of the parking garage to comply with code requirements for exiting. People would be able to exit from the upper level of the parking garage via a new site stairway down to grade level between the upper and mid-level parking ramps.

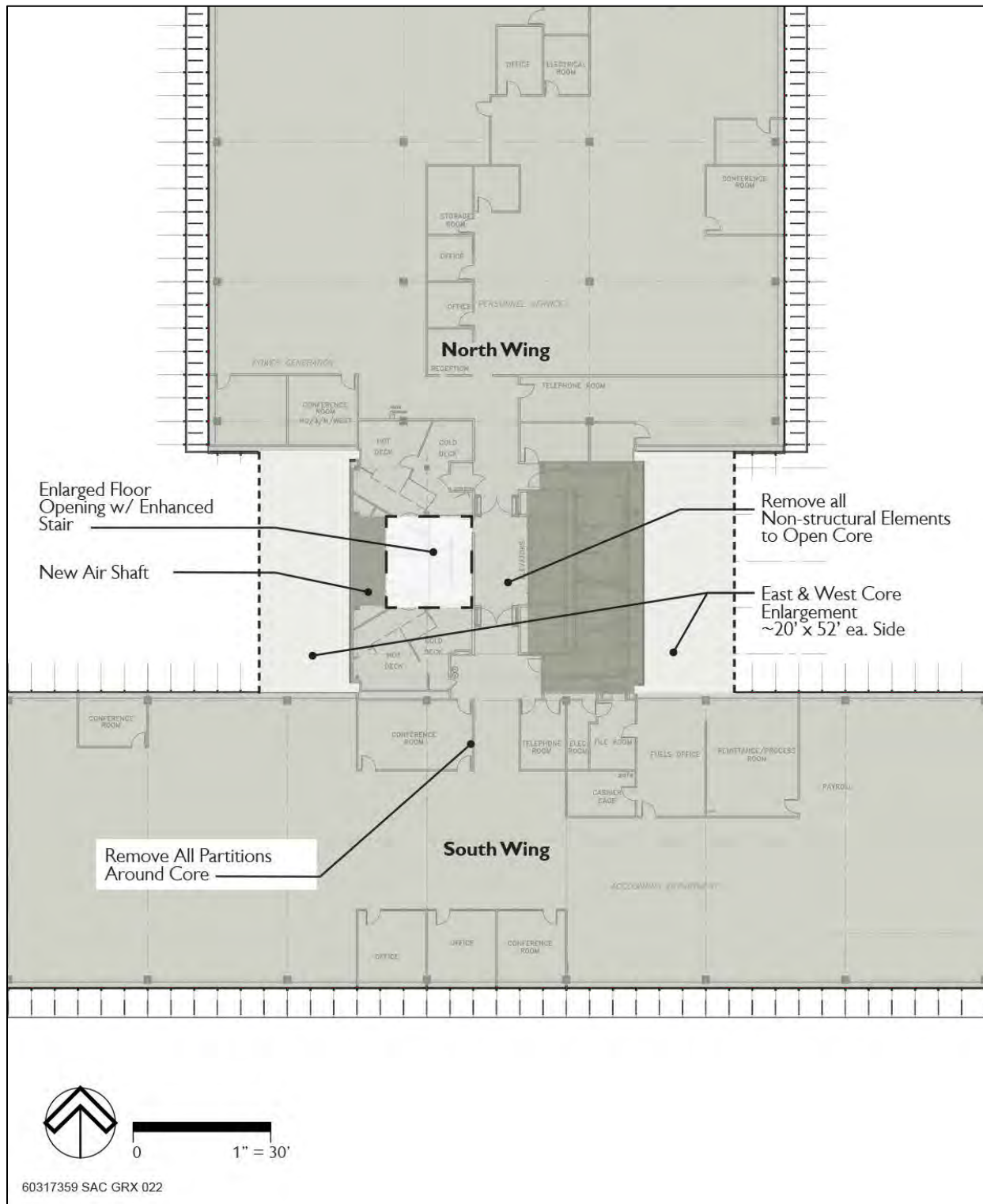
Figure 2-5 provides a plan depicting the proposed new exit stairway.

2.5.2 Headquarters Site Rehabilitation

Rehabilitation activities would upgrade the site for continued use by SMUD. Site features to be rehabilitated include paths of travel, utilities, landscaping and irrigation, site lighting, security, and parking areas. Parking would be reconfigured to make use of the space more efficiently and include site circulation and access. Parking spaces would also be provided with electric conduit to enable future charging of electric vehicles. In addition, the underground storm drain pipes underneath affected pavement areas would be replaced and upsized per current City of Sacramento (City) standards. Because of existing pipe capacity issues along S Street, on-site detention may be required by the City. Aging landscape elements would be replaced, and the irrigation system would be upgraded to improve efficiency and decrease water use. All paths would be brought up to ADA code. Rehabilitation of some of the non-accessible pedestrian walks that cross existing berms could include small retaining walls or curbs, which could bring those walks into compliance.

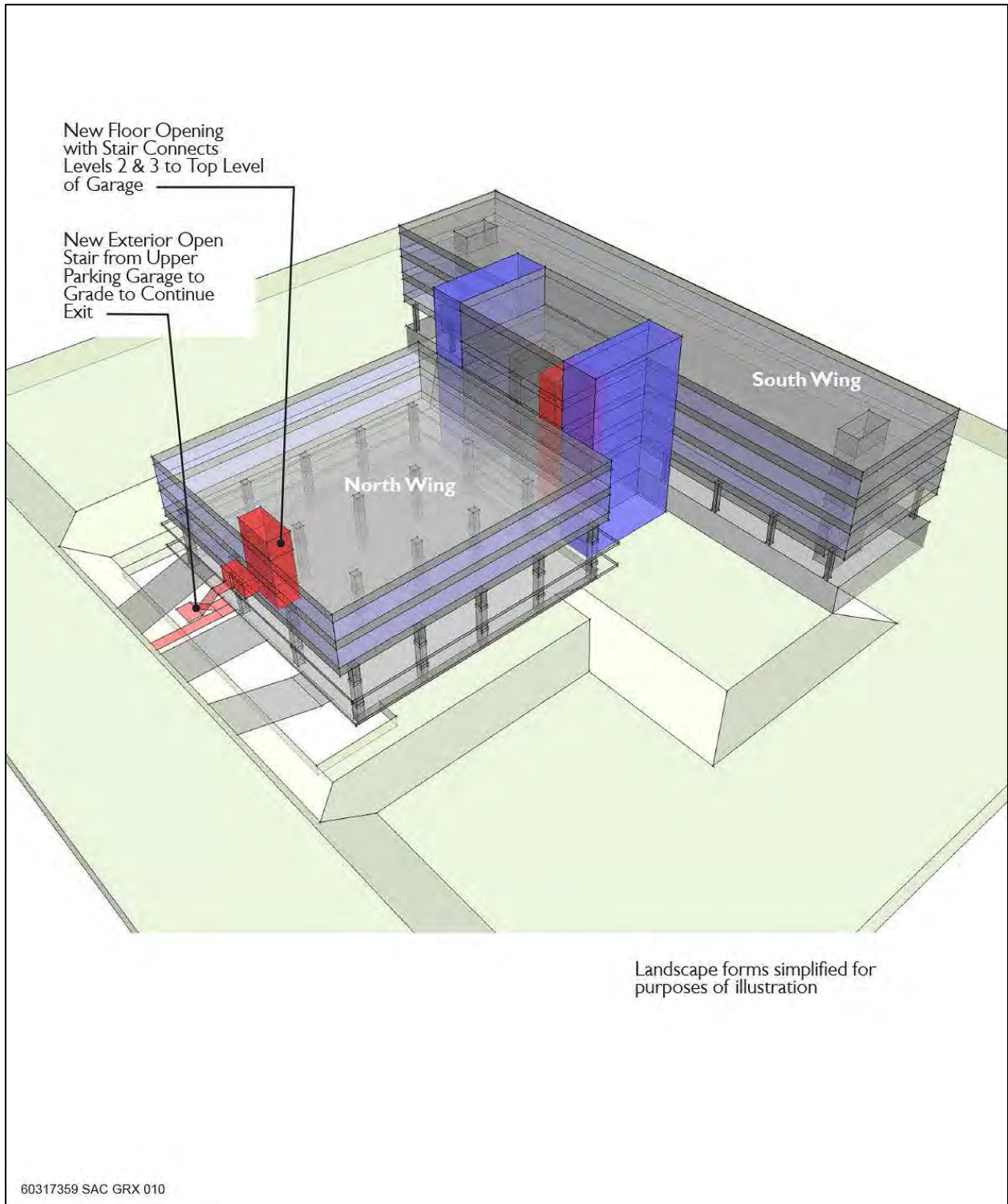
Paths of Travel

The project would include replacement of existing noncompliant sidewalks and introduction of new sidewalks with ADA-compliant pathways and ramps (as required) between buildings, parking, and access points, utilizing the CHBC. New sidewalks and bicycle and pedestrian pathways would be designed to promote exercise and interconnectivity of buildings and spaces and to facilitate improved access to nearby transit facilities, including the University/65th Street light rail station adjacent to the project site. New pathways in the historic portion of the site would be designed and constructed to be compatible with the historic design and system of paths. Figure 2-6 shows existing paths on the site at the west side of the Headquarters Building.



Source: Diagram provided by Dreyfuss & Blackford in 2014

Figure 2-4. Proposed Plan Depicting Proposed Central Core Additions



Source: Diagram provided by Dreyfuss & Blackford in 2014

Figure 2-5. Overview Diagram—Proposed New Stairway Plan



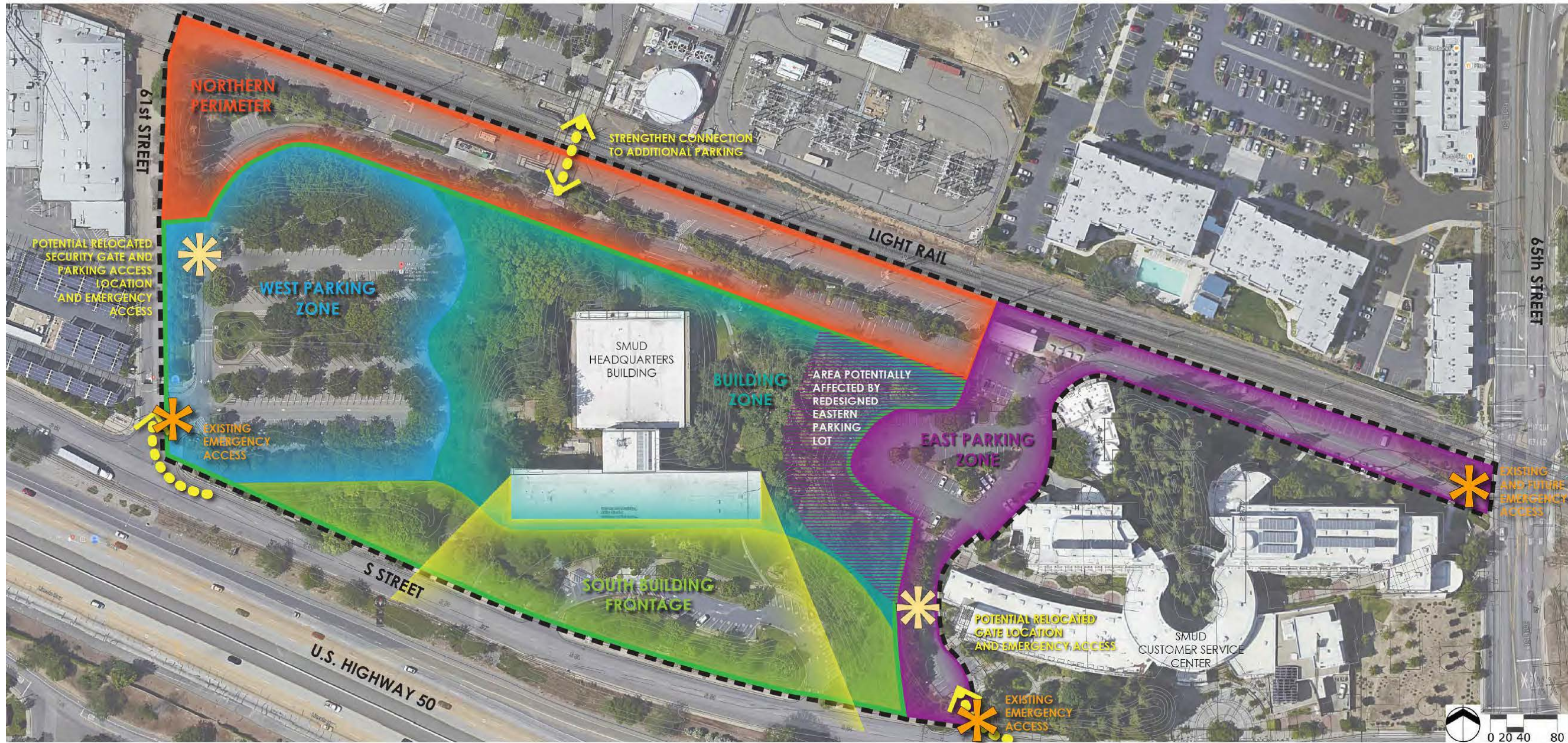
Source: Photo taken by AECOM in 2014

Figure 2-6. Existing Paths on the Project Site

Transportation and Circulation

Entrances, gates, and internal roadways would be modified to provide improved traffic circulation within the site and to reduce congestion on public streets caused by queuing at entrances. Specifically, the gates off of S Street would be moved north and the access to the west parking lot would be relocated to the north. Access roads and parking lots would be modified to facilitate improved fire department access to the Headquarters Building. The fire truck access path and turning radii on-site would be improved, balancing the current Sacramento Fire Department code and CHBC and the need to meet the Secretary of the Interior's Rehabilitation Standards. Figure 2-7 is a conceptual drawing of the site and its relocated entrances; it also shows current and proposed emergency access points.

The parking lot drive aisles west and east of the Headquarters Building and the parking stalls, including new ADA handicap parking stalls, would also be analyzed and brought up to current City standards, utilizing the CHBC or guidance offered in the cultural landscape report (CLR) (Appendix C).



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Source: Drawing completed by Callander and Associates in 2014

Figure 2-7. Drawing of Site Concepts and Relocated Entrances



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Site Plan, Landscape Plan, and Irrigation Improvements

General

The project would include site and landscape improvements designed to maintain historically significant site/landscape features.

SMUD commissioned a cultural landscape report for use by the SMUD Headquarters Building and Site Rehabilitation Project design teams. The CLR is included in Appendix C. A detailed landscape inventory report (LIR) was also prepared in support of the project. See the CLR for a description of the historical landscape architecture. The goal of the project is to provide for SMUD's needs and bring the site up to current code, utilizing the CHBC and protecting and enhancing the historically significant landscape features and characteristics. Heritage Trees and other significant plant material as indicated in the LIR would be evaluated and responded to in the site design. Improvements include the removal of elements that are noncontributing or incompatible, and replacement of missing items as described in the CLR (Appendix C) where appropriate and feasible. The site has been broken down into different zones to describe the various landscape area treatments (Figure 2-7). Proposed general landscape improvements are as follows:

- Protect the trees and planting areas that are to remain. Establish a tree preservation plan to protect trees during project implementation.
- Remove trees, shrubs, and ground cover determined to be of poor health or structure or in conflict with new site improvements. The improvements are intended to restore the appearance and health of the trees, shrubs, and ground cover remaining with completion of the project. Some improvements may trigger the need to remove Heritage Trees and significant landscape elements. The impact of potential Heritage Tree removal and mitigation is addressed in Section 3.4, "Biological Resources."
- To open historic sight lines to the building, remove more recently planted trees that are not historically significant.
- Install new trees and other plantings where appropriate for rehabilitation of the historic site/landscape plan.
- Restore the landscape to its historic design; remove plantings that are past their useful life or in irreparable poor health or have been damaged by invasive species, and replace them with plants that meet Sacramento City Code recommendations and are compatible with the original landscape design.
- Promote the use of native and acclimated low-water-use plant species, where appropriate.
- Reduce water consumption by limiting turf areas and strategically integrating low-water-use plantings that maintain the site's character using low, tight ground cover that emulates grass, in compliance with historic Rehabilitation Standards.



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- Complete irrigation improvements that include rehabilitating existing water wells and replacing the existing irrigation system to improve water efficiency. Install a weather-based irrigation controller and weather station. Also remove the asbestos cement transite pipe to make sure that hazardous materials are removed from the site.

Small-Scale Features

The historic boulders, perimeter fencing, site furnishings, freestanding wall, memorial monuments, and lights would be retained and rehabilitated where appropriate. Noncontributing items like fencing and furnishings would be considered for removal and replacement with historically compatible elements.

Historic Plants

The plants listed in Table 2-1 were identified on the as-built drawings (circa 1961), and then compared to the plant list in the University of California Cooperative Extension’s *Water Use Classification of Landscape Species*, Fourth Edition, 2014 (i.e., WUCOLS IV) for low-water-use requirements. This list is an example of some of the species that may be incorporated into the project’s potential planting list. Care would be taken to ensure that plants are used in the proper locations to both meet goals for historic landscape appearance and comply with applicable Sacramento City Code requirements, including parking lot tree-shading design and maintenance guidelines.

Table 2-1. Compatible Historic Plants on the Project Site	
Botanical Name in 1959	Common Name
<i>Albizia julibrissin</i>	Silk tree
<i>Arbutus unedo</i>	Strawberry tree
<i>Eucalyptus polyanthemos</i>	Silver dollar gum
<i>Eucalyptus viminalis</i>	Ribbon gum
<i>Gleditsia triacanthos inermis</i>	Thornless honey locust
<i>Juniperus horizontalis</i>	Creeping juniper
<i>Lagerstroemia indica</i>	Crape myrtle
<i>Lugustrum lucidum</i>	Glossy privet
<i>Olea europea</i>	Olive tree
<i>Pinus mugo mughus</i>	Mugo pine
<i>Pinus pinea</i>	Italian stone pine
<i>Pistacia chinensis</i>	Chinese pistache
<i>Quercus suber</i>	Cork oak
<i>Robinia pseudoacacia</i>	Black locust
Source: Data provided by SMUD in 2014	

Historic Site Portion

The historic portion of the site area is broken down into three areas: the South Building Frontage, the West Parking Zone, and the Building Zone. Landscape improvements in each of these areas are described separately below.

South Building Frontage

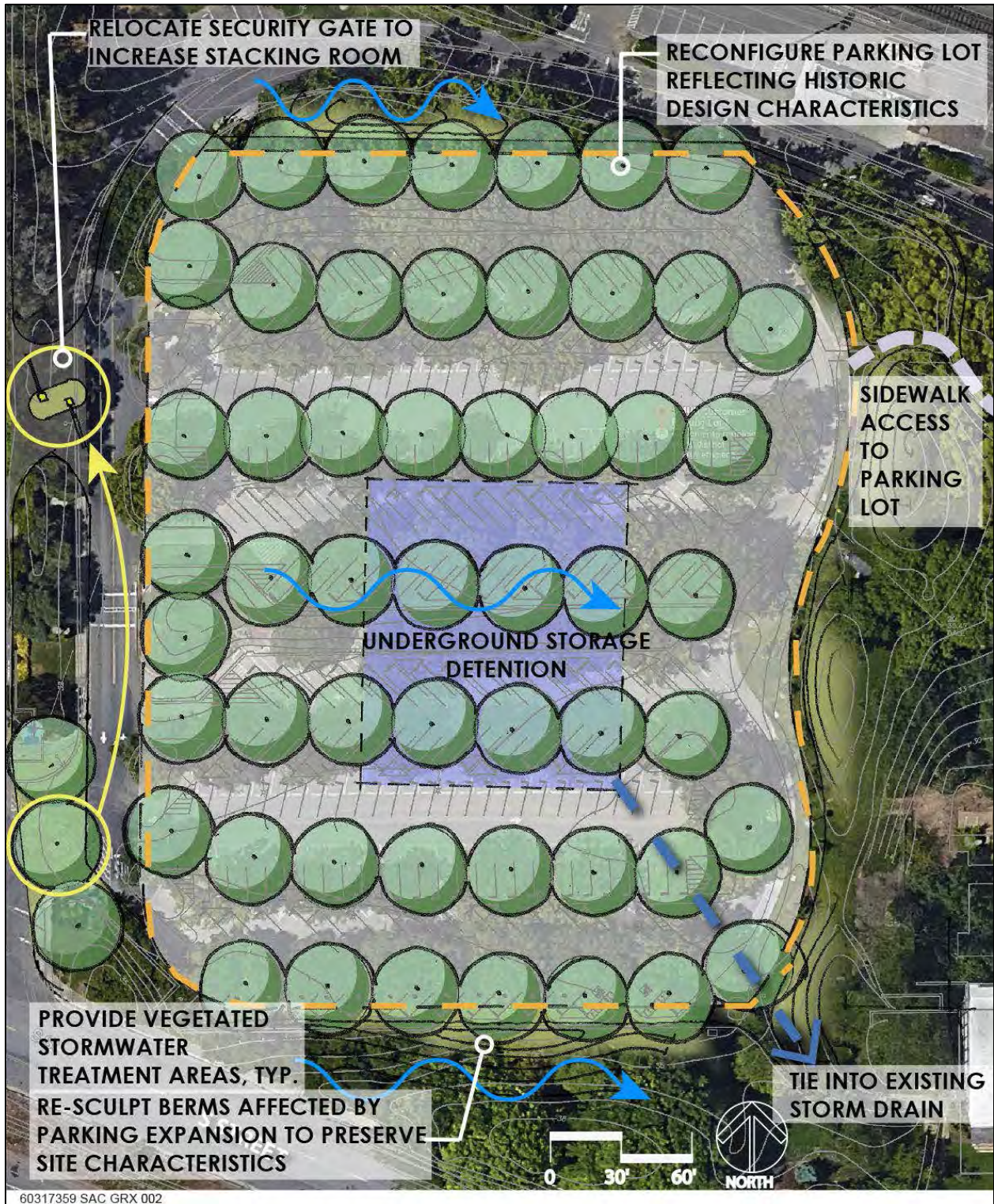
Site and landscape improvements in this area would maintain the rolling lawn at the front of the Headquarters Building and remove nonhistoric trees and shrubs to open views to the south façade, restoring the designers' intended effect. This zone is envisioned to retain and enhance historic integrity through rehabilitation. Other proposed site/landscape improvements along the south building frontage are as follows:

- Establish appropriate vegetation on eroded, exposed, and heavily shaded slopes.
- Remove irrigation that sprays onto historic tile on the building frontage.
- Remove inappropriate, nonhistoric shrubs and install low-water-use, compact ground covers.
- Select site and landscape improvements to establish more consistency to the landscape frontage of the SMUD campus along S Street.
- Remove the noncontributing low wall and replace it with a berm or new wall matching the older wall hidden by shrubs farther to the west.

West Parking Zone

Site and landscape improvements in this area (see conceptual treatment shown in Figure 2-8) would include the complete demolition and rehabilitation of the parking area to meet programming needs and maintain the historic character. Trees in this zone that are in poor health, or have poor structure, would be removed and would be replaced with appropriate trees that maintain the historic character and alignment. Other proposed site and landscape improvements in the west parking zone are as follows;

- Create vegetated stormwater treatment swales within appropriate portions of the site.
- Remove portions of turf and replace with appropriate low water-use ground cover.
- Establish appropriate vegetation in areas of exposed soil.



Source: Drawing completed by Callander and Associates in 2014

Figure 2-8. Conceptual Treatment of West Parking Zone

Building Zone

Site and landscape improvements in this area would include rehabilitating the plantings around the building, improving accessibility, and opening views. Other proposed site and landscape improvements in the building zone are as follows:

- Maintain the sunken terrace off the existing cafeteria at the northwest side of the south wing.
- Remove noncontributing invasive plant species
- Adjust or replace irrigation such that it does not spray onto the building façade.

East Parking Zone

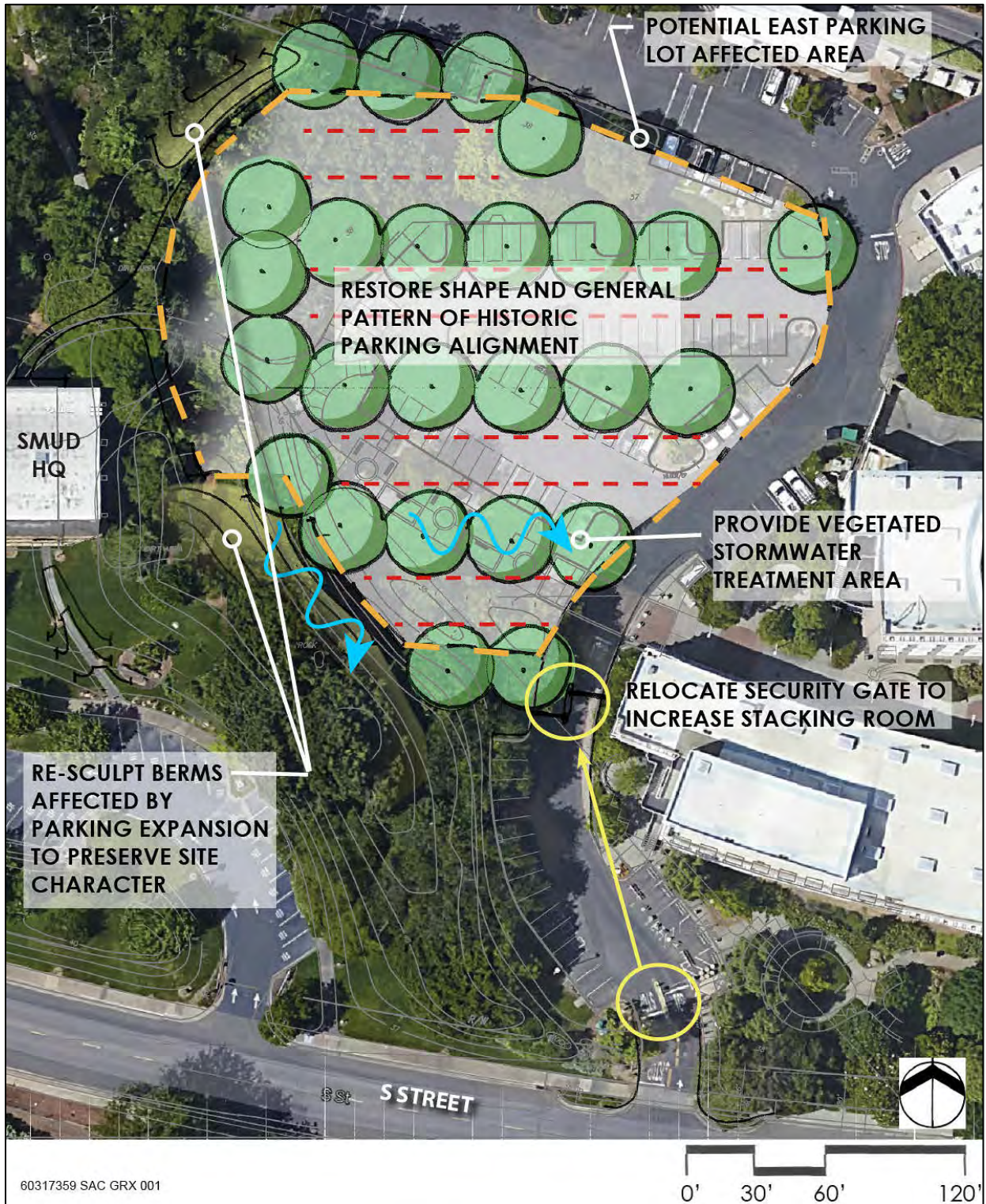
Site and landscape improvements in this area (see conceptual treatment shown in Figure 2-9) would include the complete demolition and rehabilitation of the parking area to meet the needs of SMUD and to reconstruct a lot with compatible design and character to the historic parking lot removed during construction of the Customer Service Center. The affected topography, hardscape, and plantings near the historic site area would require further modification to reestablish a new parking area that is larger and consistent with the alignment of the historic condition. Proposed site and landscape improvements in the east parking zone are as follows:

- Establish historically compatible site and landscape treatments.
- Create vegetated stormwater treatment swales within appropriate portions of the site.
- Remove turf and install appropriate low-water-use ground covers that emulate grass.

Northern Perimeter

The northern perimeter road would be modified and rehabilitated and would maintain the historic character. Extra soil generated during construction would be incorporated as fill along this edge, as appropriate. Proposed site and landscape improvements along the northern perimeter are as follows;

- Maintain plantings and topography that visually buffer the site from the adjacent light rail line.
- Strengthen the functional connection to the northern parking lot.
- Remove noncontributing shrubs and large shrubs that require heavy maintenance and replace them with appropriate low-water-use shrubs and, where appropriate, ground covers.



Source: Drawing completed by Callander and Associates in 2014

Figure 2-9. Conceptual Treatment of East Parking Zone

Topography

The character-defining sculpted landforms would be protected and enhanced throughout the site. Some of the paths have slopes exceeding 5%, are not accessible, and require regrading and reconstruction to bring them into compliance. Grading would be accomplished utilizing the CHBC to retain the significant character of the site.

Security Improvements

Security improvements would include replacement of existing noncontributing security gates at main entry points to the headquarters site and installation of new security cameras throughout the site. Sight lines would be opened up and trees trimmed up, where appropriate, to increase visibility across the site. Barriers such as bollards and boulders would be maintained along the building frontage.

To address the need for increased on-site security and SMUD employee safety, fencing would be added between the Customer Service Center and the Headquarters Building and between the Headquarters Building and the western site boundary (Figure 2-10). Fencing would be sited behind existing landscape berms where possible, or would be screened with compatible landscaping, to minimize visibility from the S Street frontage. Sections of existing chain-link fencing along the western and northern site boundaries would also be replaced and amended to better serve site safety and security needs. Fencing design (type, aesthetics, and materials) would be compatible with the historic character of the SMUD Headquarters Building and site.

Lighting and Signage

Existing parking lot lighting and path-of-travel lighting would be replaced with new light-emitting diode (LED) light sources. Lighting fixtures would complement the existing historic appearance of the landscape in accordance with other site improvements, where appropriate. The project would include replacement of existing signage for traffic control, way finding, and safety.

Parking

Existing parking for the entire SMUD campus, excluding the Corporate Yard at 59th Street, consists of approximately 1,515 spaces (Table 2-2). Parking areas include the Headquarters Building parking structure and surface parking lots (Figure 2-11 and Figure 2-12). Additional parking is available at the Corporate Yard at 59th Street ([approximately 675 spaces total](#)), and along S Street. Site rehabilitation would add up to 250 employee spaces on the 13.66-acre headquarters site by enlarging and/or reconfiguring the west and east parking lots. The parking layouts, if reconfigured, would retain or restore the historical appearance. Additional parking at the headquarters site is needed to provide more flexibility in parking scenarios, enable better circulation throughout the site, and enable employees and customers to park within reasonable distances of their destinations on the SMUD campus. Landscape berm areas that would be affected by the parking expansion and are part of the character-defining features of the site as described in the CLR (Appendix C) would be rehabilitated to preserve the historic appearance of the site. During construction, sufficient parking for employees and visitors would be available on the SMUD campus ([especially the 59th Street Corporation Yard for employees temporarily](#)



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[relocating there](#)) and adjacent streets and would be accessed from Folsom Boulevard, [59th Street](#) or S Street, as under existing conditions.

Table 2-2. Existing Parking Space Count at the SMUD Campus, Excluding the Corporate Yard at 59th Street

Facility	Employee	Customers/ Visitors	District Vehicle	Carpool	Vanpool	ADA	Limited Term	Electric Vehicle	Employee/ Visitors	Subtotal	
Headquarters	267	25	86	41	2	9				430	15 along fence
Customer Service Center	179	69	27	22	7	16	4	15		339	19 along fence/4 motorcycle
Energy Management Center	230	8	11	16	2	3		19		289	3 motorcycle
Field Reporting Facility	229		218			1	3	6		457	3 motorcycle
Total All Parking	905	102	342	79	11	29	7	40	0	1,515	

Source: Data provided by SMUD in 2014

Headquarters Building Parking Structure Entry/Exit Ramp (Basement Level)

The project would include improvements to the existing parking structure’s basement-level entry/exit ramp, which in its current configuration is a safety concern because of its steep slope.

Design considerations include reducing the slope of the entry/exit ramp by providing a more gradual transition to the basement-level parking area. This ramp is intended for use primarily by industrial trucks (i.e., forklifts) and other vehicles, but pedestrian access to the basement-level parking area also would be analyzed to see how overall safety and circulation by pedestrians may also be improved.

Because the elevation of the existing entry/exit ramp is already fixed at the parking basement level, the project would involve analyzing several ramp-pavement configurations to ensure that the final geometric alignment would meet requirements for both vehicular traffic and sight distance.

Reconfiguring the entry/exit ramp has the potential to affect adjacent trees and planting areas. If the ramp is lowered to reduce the pavement’s slope, low retaining walls may be needed on both sides of the ramp to conform to existing adjacent grades. Any reconfiguration needed would be implemented consistent with the Secretary of the Interior’s Rehabilitation Standards.



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Source: Drawing completed by Callander and Associates in 2014
Figure 2-10. Site Fencing Concept



Source: Photo taken by AECOM in 2014

Figure 2-11. Existing Headquarters Building Parking Structure



Source: Photo taken by AECOM in 2014

Figure 2-12. Existing Parking on the West Side of the Headquarters Building



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Utilities Improvements

Water

Domestic water supply service to the headquarters site is provided via a direct tap to the existing 12-inch water main in S Street. The existing water service line size would need to be field verified. Note that there is also a water line that enters the east side of the building and that is fed from two on-site water wells. This also must be field verified. The existing domestic water service line would be replaced in kind if it is determined during rehabilitation activities to be incapable of supporting reliable service for the next 50 years.

An existing 4-inch fire suppression line feeds the Headquarters Building from a separate connection to the same 12-inch water line along S Street. This line would likely be abandoned because it would be of insufficient size to provide the necessary full-building fire service. Fire suppression water would be provided by fire sprinkler line and connection to the City water main on S Street or a connection to a 12-inch fire suppression water loop that was installed around the Headquarters Building in the 2008–2009 timeframe, where both ends of the loop connect to the 12-inch main along S Street. SMUD would work closely with the City of Sacramento to coordinate on these upgrades and obtain the necessary permits. The existing fire suppression water system that serves fire hydrants on the headquarters site is anticipated to remain largely unchanged. The system would be evaluated for continued reliable service and replaced in kind if necessary. Slight modifications would occur to accommodate configuration changes in parking lots and paths.

Stormwater

Stormwater for the project site is collected via an existing on-site underground storm drain system with three separate connections to the existing 15-inch storm drain main line along S Street. Unless otherwise instructed by the City Department of Utilities, the project does not intend to modify its already existing storm drain connection points to the City drainage system. Stormwater is then conveyed in the 15-inch pipe easterly to 65th Street where it connects to a 60-inch pipe and flows northerly to Sump Pump Station #31. Stormwater is then pumped across the California State University, Sacramento campus and into the American River.

The on-site pipe network has relatively flat slopes, which limits pipe capacity. Under existing conditions and using City standards, the site has a 10-year peak discharge of 12 cubic feet per second (cfs). The capacity of the 15-inch pipe in S Street with a slope of 0.2% is 2.9 cfs under full-flow conditions. Given the relatively flat slopes (close to 0.30%), on-site pipes also have very little capacity when compared to the peak discharge on even a portion of the site. Localized flooding is an issue after large storm events.

As a result, the City may require implementation of on-site detention so that stormwater flows entering the City system would not exceed its existing capacity. The proposed project could include surface and subsurface detention basin options to help mitigate existing deficiencies in the storm drain pipe system by increasing the storage volume of the basin and metering the outflow to the capacity of the downstream system. This could include underground pipe storage within the rehabilitated parking areas. This concept can also be used in combination with

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improving the 15-inch pipe in S Street that is owned by the City. In areas where the site and landscape design has been deemed historical and designated to be retained, other treatment methods could be incorporated including infiltration trenches, sand filters, stormwater planters, and/or vegetative swales. In addition, reconstruction of the 15-inch pipe in S Street could be considered as part of the downstream design solution, as acceptable to the City.

Because of the reconfiguration of access roads and the anticipated increase in surface parking areas, some existing landscaped areas would be converted to impervious pavement areas. Any increases in stormwater runoff that would result from project site improvements would need to be managed on-site via on-site detention or flood control, vegetative swales, and/or other water quality treatment measures to ensure that no net increase in storm flows would result.

Sewer

Wastewater service for the headquarters site is provided by the City via an existing 8-inch sewer service line at the southwest corner of the existing Headquarters Building. The 8-inch line currently runs west underneath the landscape berm and eventually ties into the City's existing 12-inch sewer main on S Street at the southwest corner of the site. Existing on-site site sewer infrastructure would be evaluated for capacity and replaced in kind if found to be damaged or incapable of supporting projected sewer demands.

Heating and Cooling Piping

Heating and cooling for the Headquarters Building (and other facilities on-site) are provided from a central utility plant located north of the light rail tracks. The utility plant is outside of the project scope, but it provides chilled and heated water to the campus via underground piping. New branch heating and chilled water lines would be extended to the west border of the project boundary and capped for possible future expansions of the campus westward. Sizing of these lines would be based on anticipated future load values yet to be determined.

Electrical

Power for the Headquarters Building and site is provided by SMUD from 21-kilovolt (kV) overhead lines running parallel to the light rail tracks to the north side of the Headquarters Building with a riser and continued underground feed to the Headquarters Building utility vault. The entire headquarters electrical system would be replaced. New transformers, switchgear, and distribution would be designed and installed incorporating energy-efficient technologies, including LED lighting, which would reduce the current overall building load. New transformers would be located in an underground vault or located at grade and screened from existing views.

Electrical improvements would include a new feed from the existing 21 kV overhead power lines to a dedicated transformer serving vehicle charging stations in the parking lots. The transformer and distribution would be sized to support electric vehicle charging stations at each parking stall within the project boundary. The project would outfit 50 parking spaces with active electric vehicle charging, with all remaining parking spaces containing the infrastructure necessary to establish electric vehicle charging in the future without damaging existing improvements.



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Telecommunications

Voice and data services are provided throughout the SMUD campus via copper and fiber cables within underground conduit originating from SMUD's Energy Management Center located at 6001 S Street. Copper, cable, and other telecommunications equipment within the project site would be replaced as necessary.

2.5.3 Removal and Remediation of Hazardous Materials

The project includes removal and remediation of hazardous materials within the Headquarters Building and on the site. Existing hazardous materials include but are not limited to sprayed fireproofing, cement plaster finishes, floor tiles and adhesives, pipe insulation, and roofing materials, all of which contain asbestos; lead-based paints; PCBs in window case sealants, oil-type transformers; an underground hydraulic oil tank from an abandoned vehicle lift; and asbestos concrete transite pipe used for the existing irrigation system.

Demolition and abatement of hazardous materials would leave the building shell (e.g., structural columns, beams, decking, exterior wall systems) and selected building elements identified for deconstruction and storage for reuse in the building, or for protection in place, and free of hazardous materials. Lead-based paints and asbestos in some nonoccupied areas may be left in place, if determined to not pose a threat to employees and customers. All existing hazardous materials (with the exception of the aforementioned lead-based paint, ~~and~~ asbestos and PCBs) that are detected would be removed and disposed of in accordance with applicable federal, state, and local laws and regulations.

2.5.4 Historic Preservation

Because the Headquarters Building and site are listed in the National Register of Historic Places, the rehabilitation would be performed in accordance with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. Performing the work in accordance with these standards would ensure that the proposed project would not compromise the listing status of the building and site, and ensure that the project would not involve significant impacts on the historic resource. Historically significant architectural elements, features, and characteristics involving the exterior of the building would be retained and repaired, or replaced in-kind in accordance with the Secretary of the Interior's Rehabilitation Standards as recommended in the project's HSR (Appendix B). Interior architectural elements, features, and characteristics determined to be contributing elements to the historic significance of the property that cannot be preserved in place would be cataloged, salvaged, and preserved for possible reinstallation or repurposing in the rehabilitated building in accordance with the Secretary of the Interior's Rehabilitation Standards. Similarly, character-defining features of the historic landscape would be treated in accordance with the Secretary of the Interior's Rehabilitation Standards as recommended in the project's CLR (Appendix C). The historic preservation program is described in more detail in Section 3.5, "Cultural Resources," of this IS/MND.



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2.5.5 Relocation of SMUD Employees

The Headquarters Building would be completely vacated before rehabilitation activities. Employees currently located in the Headquarters Building would be relocated on a temporary or permanent basis. Relocation sites include the following SMUD facilities:

- Field Reporting Facility
- Customer Service Center
- Corporate Yard at 59th Street
- Field Reporting Facility temporary trailer location
- 59th Street temporary trailer location
- East Campus-Operations Center (EC-OC)

With the exception of the EC-OC, the above relocation sites are shown in Figure 2-2. The EC-OC is located at 4401 Bradshaw Road, Sacramento, approximately 11 miles east of the project site and has ample capacity to house additional employees.

Temporary water, power, and sewer utilities would be installed to support the temporary trailers from existing on-site services. Domestic water, fire water, and sanitary sewer would be provided via provision of underground laterals from trailer connection points to existing underground services. The trailer locations would include separate restroom trailers. The FRF temporary trailer location will be serviced by two restroom trailers while the 59th Street temporary trailer will be serviced by one restroom trailer. Temporary power and telecom would likewise be provided from existing services to trailer connection points via underground conduit. The parking area to the north of the FRF trailer location adjacent to Folsom Boulevard will serve as a temporary staging area and access path for the trailers during the trailer construction process. Once construction of the trailers has been completed the staging area will be returned to its previous use as parking and the area adjacent to Folsom Boulevard as an equipment laydown area.

A breakdown of anticipated employee relocations is provided below.

Relocations:

There are currently 498 employees in the Headquarter Building. To allow SMUD staff to work efficiently during project construction, temporary relocations also involved some staff from the Customer Service Center. The exact numbers at each location are still to be determined, but are expected to be approximately as follows: }

- 93 approximately 90 employees from the Headquarters Building to the Customer Service Center



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- approximately 75 employees from the Headquarters Building to the Field Reporting Facility
- approximately 130409 employees from the Headquarters Building to Field Reporting Facility temporary trailers
- approximately 25 employees from the Field Reporting Facility to the Field Reporting Facility Temporary Trailers
- 91-approximately 100 employees from the Headquarters Building to the existing 59th Street Corporate Yard buildings
- approximately 35 employees from the Headquarters Building to 59th Street temporary trailers
- approximately 95-100 employees from the Customer Service Center to the existing 59th Street Corporate Yard buildings
- 65-approximately 20 employees from the Headquarters Building to the EC-OC

While the employees relocated to the EC-OC are expected to stay there permanently, ultimate long-term building occupancy at the Headquarters Building is expected to be similar to current numbers (approximately 498 employees) as staff grows over time. The 59th Street Corporate Yard has approximately 675 parking spaces, and therefore has ample capacity to accommodate existing employees reporting there and temporarily relocated employees.

2.5.6 Project Schedule and Construction

The project is anticipated to take approximately 27 months to complete and would be phased generally as illustrated in Table 2-3.

Phase	Activity	Duration
1	Employee relocations	March 2015 through August 2015
2	Headquarters Building demolition component	December 2015 through April 2016
3	Headquarters Building and site rehabilitation	January 2016 through May 2017
4	Employees' move-in to the Headquarters Building	May 2017 through September 2017

Source: Data compiled by AECOM in 2014

Headquarters Building demolition work and hazardous-material abatement (Phase 2) would proceed following completion of Phase 1. SMUD would provide containers for hazardous materials generated during demolition and abatement activities and would be responsible for transporting and properly disposing hazardous materials at a SMUD-approved facility that is legally permitted to receive such waste. The construction contractor's waste management plan would be required to address hazardous materials packaging and labeling, contractor and



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subcontractor training, spill notification, containment, and cleanup. For nonhazardous construction waste, the waste management plan would address the City's 50% recycling criterion. The waste management plan would specify how construction waste would be segregated, stored, and containerized; list the names of recyclers and landfills where the waste would be disposed; include a program for tracking materials that are recycled and disposed of at landfill for submittal to the City; and provide for construction contractor and subcontractor training.

The Headquarters Building rehabilitation and site rehabilitation would occur concurrently during Phase 3. Portions of the project area within the site boundary may be stripped to grade; exceptions include the existing building and those landscape elements identified for retention in the completed project to comply with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. To identify the elements of the landscape that should be retained to comply with the Secretary of the Interior's Standards, a cultural landscape report was prepared for the SMUD Headquarters site (AECOM 2014a). Site rehabilitation design is being developed consistent with the CLR (Appendix C).

Up to 50,000 cubic yards of earthen material could be moved as part of the project and a number of mature trees and other landscape elements such as lawns and shrubs may also be affected. Attempts would be made to reuse earthen material on-site to minimize off-haul. Soil requiring off-haul from the site would be limited to a destination radius of 25 miles.

During rehabilitation activities, the project site would be regraded and new utilities and site improvements would be introduced. All equipment and construction vehicles would be staged within the rehabilitation project footprint. Anticipated construction equipment includes front loaders, backhoes, graders, scrapers, dump trucks, water trucks, asphalt pavers, aerial lifts, scissor lifts, truck-mounted cranes, welders, and cutting torches.

It is anticipated that an average of 150 construction workers would be on-site each day during project construction.

Construction intensity and hours would be in accordance with the City's Noise Ordinance contained in Title 8, Chapter 8.68 of the Sacramento City Code. Construction would be limited to the hours of 7 a.m. and 6 p.m. Monday through Saturday, and between the hours of 9 a.m. and 6 p.m. on Sunday.

2.5.7 Project Operation

Operation of the rehabilitated Headquarters Building and site would be largely the same as existing operation. The completed project would result in more efficient use of energy and resources, enhanced safety, and vehicular and pedestrian access to the site and circulation within the site would be improved. Using a 2017 opening date, SMUD anticipates that approximately 375 employees would be located at the Headquarters Building at the time of reoccupation. With a slight increases in headquarters employees anticipated over the ensuing 10-year period, the ultimate number of employees at the building over a 10-year period following move-in would be expected to be about the same number currently housed there (approximately 498).

2.6 Permits and Approvals

2.6.1 Federal

No federal permits or approvals are required for the project.

2.6.2 State

The State Water Resources Control Board/Central Valley Regional Water Quality Control Board issues Construction Storm Water Discharge Permits.

This permit would be obtained before project initiation, and the project would be executed in compliance with all permit conditions.

[The California Department of Transportation issues permits for movement of oversized or excessive loads on State Highways.](#)

[If this permit would be required, the construction contractor would obtain it prior to project implementation.](#)

2.6.3 Local

SMUD is the lead agency for the proposed project and its Board would adopt an MND and the mitigation monitoring and reporting program before making a project approval.

The Sacramento Metropolitan Air Quality Management District (SMAQMD) issues the Authority to Construct/Permit to Operate pursuant to SMAQMD Regulation 2 (Rule 201 et seq.).

City of Sacramento approvals and entitlements needed to implement the project would include the following:

Temporary Site Improvements (trailers):

- Planning entitlements: site plan and design review
- Building permits for temporary trailers

Headquarters Building and Site Renovation:

- Planning entitlements: site plan and design review—to comply with various City codes and ordinances including the Planning and Development Code, Title 17 of the Sacramento City Code
- Tree removal permit—to comply with the City Tree Ordinance
- Building permits—to comply with Sacramento City Code requirements



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- Encroachment permit (potentially S Street pipe improvement)
- Off-site improvement plans (potentially S Street pipe improvement, curb cuts, and entrances)
- Potential need for variances

The exact actions triggering the need for all permits are discussed in the various technical resources sections of the environmental analysis in Chapter 3 of this IS/MND.



3.0 ENVIRONMENTAL CHECKLIST

Pursuant to State CEQA Guidelines Section 15063, an initial study (IS) should provide the lead agency with sufficient information to determine whether to prepare an environmental impact report (EIR), a mitigated negative declaration (MND), or negative declaration (ND) for a proposed project. The State CEQA Guidelines state that an IS may identify environmental impacts by use of a checklist, matrix, or other method, provided that conclusions are briefly explained and supported by relevant evidence. If it is determined that a particular physical impact on the environment could occur, then the checklist must indicate whether the impact is Potentially Significant, Less than Significant with Mitigation, or Less than Significant. Findings of No Impact for issues that can be demonstrated not to apply to a proposed project do not require further discussion.

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporation	Less-Than- Significant Impact	No Impact
3.1 AESTHETICS				
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input 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 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

The project site and vicinity are generally flat. Elevations on the project site range from approximately 30 to 44 feet above mean sea level. The project site includes the SMUD Headquarters Building (Figure 3.1-1) and a 13.66-acre portion of the headquarters site. The project site is bordered by 61st Street to the west, light rail tracks to the north, SMUD's Customer Service Center to the east, and S Street to the south. The project site also includes two temporary trailer location sites where SMUD employees would be temporarily relocated during project construction. Primary views of the building and site to passers-by are from the south, from either S Street or U.S. Highway 50 (U.S. 50). The building and site are not visible to passers-by from the north and west.

The visual character of the project site and the surrounding area is typical of the Sacramento metropolitan area, which includes commercial and industrial buildings, residences, roads, utility lines, trees, and landscaping. Distant views consist of the Sierra Nevada foothills, but buildings, trees, and other city infrastructure obstruct these views in many locations.

The Headquarters Building dominates the center of the property and faces due south onto S Street. However, views are obscured from raised and undulating berms of lawn, trees, boulders, and other landscaping elements. A substantial portion of the building façade is obscured by mature trees and shrubs, or by sheltered parking areas. The dense and mature vegetation surrounding the SMUD property creates an insular landscape, limiting views from the ground level into the surrounding area. The upper stories of the building are visible above the dense canopy of trees.



Source: Photo taken by AECOM in 2014

Figure 3.1-1. Existing View of Headquarters Building from the South

U.S. 50 separates the SMUD Headquarters Building from the other low-lying buildings to the south; therefore, its main exposure of the building is to high-speed traffic passing by on U.S. 50. U.S. 50 is not classified as a scenic highway by the California Department of Transportation (Caltrans).

Regulatory Setting

Federal

No federal regulations related to aesthetics are applicable to the proposed project.

State

No state regulations related to aesthetics are applicable to the proposed project.

Local

The following goal and policies from the Environmental Resources Element of the *Sacramento 2030 General Plan* (City of Sacramento 2009) are applicable to the proposed project.

Goal ER 7.1. Visual Resource Preservation. Maintain and protect significant visual resources and aesthetics that define Sacramento.

- **Policy ER 7.1.5 Lighting.** The City shall minimize obtrusive light by limiting outdoor lighting that is misdirected, excessive, or unnecessary.
- **Policy ER 7.1.6 Glare.** The City shall require that new development avoid the creation of incompatible glare through development design features.

Impacts and Mitigation Measures

a) **Have a substantial adverse effect on a scenic vista?**

No Impact. A scenic vista is generally defined as a distant public view along or through an opening or corridor that is recognized and valued for its scenic quality, or a natural or cultural resource that is indigenous to the area. The *Sacramento 2030 General Plan* designates the Sacramento and American Rivers and adjacent greenways, downtown skyline, and the State Capitol along Capitol Mall as scenic resources (City of Sacramento 2009). Views of and from the project area include commercial, industrial, and residential development many miles from the State Capitol building or waterways, and thus, these views are not considered scenic vistas. Therefore, the proposed project would have **no impact** related to a substantial adverse effect on a scenic vista.

b) **Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?**

No Impact. The project site is not located on or near a state scenic highway; therefore, the proposed project would have **no impact** on resources within a state scenic highway (Caltrans 2010).

c) **Substantially degrade the existing visual character or quality of the site and its surroundings?**

Less-than-Significant Impact. The presence of temporary trailers and heavy equipment during construction activities and the reconstruction activities for the Headquarters Building would temporarily change the visual character of the site. However, these activities would be temporary, and the site's mature vegetation would partially shield visibility of the activities from neighbors and passers-by. The proposed project could change the long-term visual character of the project site through removal of a limited number of trees and other mature vegetation, and through the addition of a security fence.

Slight alteration to the outside appearance of the Headquarters Building may also occur with the core expansion and installation of the security fence. As discussed in Chapter 2, "Project Description," because the Headquarters Building and site are listed in the National Register of Historic Places (NRHP), the proposed project would be designed and implemented to comply with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. These standards would ensure that historically significant architectural and site elements, features, and

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characteristics are not significantly affected by the project. See Section 3.5, “Cultural Resources,” for the list of standards with which the proposed project would comply. With adherence to these standards, the Headquarters Building and site would be rehabilitated to avoid significant impacts on their historical features and characteristics. These standards also apply to the design and installation of the security fence. Although the fence would slightly change the site’s existing visual character by its presence, it is not expected to substantially degrade the visual character of the site. Thus, the proposed project would not substantially degrade the existing visual character of the site or its surroundings. This impact would be **less than significant**.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less-than-Significant Impact. Construction activities would occur during daylight hours and would not require lighting. The indoor-lighting plan for the proposed project would comply with the *Sacramento 2030 General Plan* policy for lighting. The exterior outdoor-lighting plan would be similar to existing conditions, while using modern energy-efficient light fixtures and shield coverings. All proposed street, security, and landscape lighting would also be installed according to City of Sacramento standards. No new elevated lighted signage would be a part of the proposed project.

The Headquarters Building in its current state does not feature reflective glass windows that cause substantial glare. Because the proposed project would comply with the Secretary of the Interior’s Rehabilitation Standards, new windows that are proposed to be installed (if replacement is deemed necessary) would be visually similar to the existing ones. In addition, where new glazing is proposed, the proposed project would incorporate low-emission glass to reduce glare and reflection impacts. The proposed project would also comply with the *Sacramento 2030 General Plan* policy for glare.

Because the project would comply with *Sacramento 2030 General Plan* policies regarding light and glare and with *The Secretary of the Interior’s Standards for the Treatment of Historic Properties*, the proposed project would not create temporary or permanent sources of substantial light or glare that would adversely affect day or nighttime views in the area. This impact would be **less than significant**.



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	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporation	Less-Than- Significant Impact	No Impact
3.2 AGRICULTURE AND FORESTRY RESOURCES				
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses?	<input 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input 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 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project site consists of the SMUD Headquarters Building, a 13.66-acre portion of the headquarters site, and two temporary trailer locations that would house employees during construction. The project site is developed with SMUD infrastructure that includes the Headquarters Building, various roads and parking lots, pedestrian paths, and extensive landscaped areas. The landscape includes many mature trees and a variety of other medium and large trees, shrubs, and lawn areas. It is located in an urban area of Sacramento. Additional information about land uses within and adjacent to the project site is provided in Section 3.10, "Land Use and Planning," and additional information about the vegetation can be found in Section 3.4, "Biological Resources."

The California Department of Conservation's (DOC's) Important Farmland classifications (see below) recognize the land's suitability for agricultural production by considering physical and chemical characteristics of the soil, such as soil temperature range, depth of the groundwater table, flooding potential, rock fragment content, and rooting depth. The classifications also consider location, growing season, and moisture available to sustain high-yield crops. Together,



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Important Farmland and Grazing Land are defined by DOC as “Agricultural Land” (California Public Resources Code [PRC] Sections 21060.1 and 21095).

According to the Sacramento County Important Farmland map, published by DOC’s Division of Land Resource Protection, the project site is designated as Urban Built-Up Land, which is defined as land that generally includes residential, industrial, commercial, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatments, and water control structures (DOC 2012).

Under the California Land Conservation Act of 1965, also known as the Williamson Act, local governments can enter into contracts with private property owners to protect land (within agricultural preserves) for agricultural and open space purposes. No portions of the project site or adjacent parcels are held under Williamson Act contracts (DOC 2013). The nearest property currently under an active Williamson Act contract is located east of the intersection of Power Line Road and Garden Highway, approximately 10 miles northwest of the project site (DOC 2013).

Regulatory Setting

Federal

No federal regulations related to agriculture and forestry resources are applicable to the proposed project.

State Regulations

Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program was established by the State of California in 1982 to continue the Important Farmland mapping efforts begun in 1975 by the U.S. Soil Conservation Service (now called the U.S. Natural Resources Conservation Service, under the U.S. Department of Agriculture). The intent of the U.S. Soil Conservation Service was to produce agricultural resource maps based on soil quality and land use across the nation. DOC sponsors the Farmland Mapping and Monitoring Program and also is responsible for establishing agricultural easements in accordance with PRC Sections 10250–10255.

Important Farmland is classified by DOC as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance. As stated previously, Important Farmland and Grazing Land are defined by DOC as “Agricultural Land.” The following list provides a comprehensive description of these categories mapped by DOC.

- **Prime Farmland**—Land that has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. This land must have been used for irrigated agricultural production at some time during the 4 years before the mapping date.

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- **Farmland of Statewide Importance**—Land that is similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. This land must have been used for irrigated agricultural production at some time during the 4 years before the mapping date.
- **Unique Farmland**—Land of lesser quality soils used for the production of the state’s leading agricultural cash crops. This land is usually irrigated, but may include nonirrigated orchards or vineyards, such as those found in some climatic zones in California. This land must have been used for the production of specific high-value crops at some time during the 4 years before the mapping date.
- **Farmland of Local Importance**—Land that is of importance to the local agricultural economy, as defined by each county’s local advisory committee and adopted by its Board of Supervisors. Farmland of Local Importance either currently is producing or has the capability to produce, but does not meet the definition of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland.
- **Grazing Land**—Land with existing vegetation that is suitable for grazing.

CEQA defines Prime Farmland, Farmland of Statewide Importance, and Unique Farmland together under the term “Agricultural Land” (PRC Sections 21060.1 and 21095; State CEQA Guidelines, Appendix G). The conversion of these types of farmland can be considered an environmental impact.

Local

No local regulations related to agriculture and forestry resources are applicable to the proposed project.

Impacts and Mitigation Measures

- a, b, c, **Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses; conflict with existing zoning for agricultural use, or a Williamson Act contract; conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)); result in the loss of forest land or conversion of forest land to non-forest use; or involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?**

No Impact. The project site does not contain any lands designated as Important Farmland (i.e., Prime Farmland, Unique Farmland, or Farmland of Statewide Importance). The project site is not zoned for agricultural uses, and there are no Williamson Act contracts associated with the



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project site. No existing agricultural or timber-harvest uses are located on or near the project site. Therefore, the proposed project would have ***no impact*** on agriculture or forest land.



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	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporation	Less-Than- Significant Impact	No Impact
3.3 AIR QUALITY				
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

Air quality is defined by the concentration of pollutants related to human health. Concentrations of air pollutants are determined by the rate and location of pollutant emissions released by pollution sources, and by the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, and sunlight. Therefore, ambient air quality conditions in the local air basin are influenced by such natural factors as topography, meteorology, and climate, in addition to the amount of air pollutant emissions released by existing air pollutant sources.

The project site is located in the city of Sacramento, which is in the Sacramento Valley Air Basin. The Sacramento Valley Air Basin encompasses Butte, Colusa, Glenn, Tehama, Shasta, Yolo, Sacramento, Yuba, and Sutter Counties and parts of Placer, El Dorado, and Solano Counties. The Sacramento Valley Air Basin is bounded on the north and west by the Coast Ranges, on the east by the southern portion of the Cascade Range and the northern portion of the Sierra Nevada, and on the south by the San Joaquin Valley Air Basin. Summer conditions are typically characterized by high temperatures and low humidity. Rainstorms occur occasionally during winter, and are interspersed by stagnant and sometimes foggy weather. Rain falls mainly from late October to early May, in amounts that vary substantially each year.

Regulatory Setting

Federal

The Clean Air Act (CAA) requires the adoption of the National Ambient Air Quality Standards (NAAQS) to protect the public health and welfare from the effects of air pollution. The U.S. Environmental Protection Agency (EPA) has identified six air pollutants as being of nationwide concern: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, and particulate matter (PM). PM is subdivided into two classes based on particle size: PM equal to or less than 10 micrometers in aerodynamic diameter (PM₁₀) and PM equal to or less than 2.5 micrometers in aerodynamic diameter (PM_{2.5}). EPA established primary and secondary NAAQS that specify allowable ambient concentrations for criteria pollutants. Primary NAAQS are established at levels necessary, with an adequate margin of safety, to protect the public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Similarly, secondary NAAQS specify the levels of air quality determined appropriate to protect the public welfare from any known or anticipated adverse effects associated with air contaminants.

EPA, under the provisions of the CAA, requires each state with regions that have not attained the NAAQS to prepare a state implementation plan (SIP), detailing how these standards are to be met in each local area. The SIP is a legal agreement between each state and the federal government to commit resources to improving air quality. It serves as the template for conducting regional and project-level air quality analyses. The SIP is not a single document, but a compilation of new and previously submitted attainment plans, emissions reduction programs, district rules, state regulations, and federal controls. The California Air Resources Board (ARB) is the lead agency for developing the SIP in California. Local air districts and other agencies prepare air quality attainment plans or air quality management plans and submit them to ARB for review, approval, and incorporation into the applicable SIP.

State

ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act. The California Clean Air Act was adopted in 1988 and required ARB to establish the California Ambient Air Quality Standards (CAAQS). The CAAQS are, in general, more restrictive than the NAAQS. California has also established standards for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. The California Clean Air Act requires that all local air districts in the state endeavor to achieve and maintain the CAAQS by the earliest practical date. California's adopted 2007 State Strategy was submitted to EPA as a revision to the SIP in November 2007. The 2007 State Strategy was designed to attain federal ozone and PM_{2.5} air quality standards through a combination of technically feasible, cost-effective measures, and new technologies. ARB adopted revisions to the 2007 State Strategy in 2012.

Local

The Sacramento Metropolitan Air Quality Management District (SMAQMD) is the local agency responsible for air quality planning and development of the air quality plan in the project area. The air quality plan establishes the strategies used to achieve compliance with the NAAQS and



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CAAQS in all areas within SMAQMD's jurisdiction. SMAQMD develops rules and regulations and emission reduction programs to control emissions of criteria air pollutants, ozone precursors, toxic air contaminants (TACs), and odors within its jurisdiction.

SMAQMD regulates air quality through its planning and review activities. All projects within SMAQMD's jurisdictional area are also subject to adopted rules and regulations in effect at the time of construction and operation. The analysis of the proposed project's air quality impacts is consistent with SMAQMD's *CEQA Guide to Air Quality Assessment in Sacramento County* (SMAQMD 2014a).

Impacts and Mitigation Measures

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less-than-Significant Impact. Air quality plans describe air pollution control strategies to be implemented by an air district, city, county, or region. The primary purpose of an air quality plan is to maintain and/or achieve attainment of a NAAQS or CAAQS. The *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (known as the 2013 SIP Revisions) and the *2009 Triennial Report and Plan Revision* are the latest plans issued by SMAQMD. These plans address attainment of the federal 8-hour ozone standard and the state ozone standard, respectively.

Two criteria are applicable to determine whether the proposed project would conflict with or obstruct implementation of the air quality plan. The first criterion is whether the project would exceed the estimated air basin emissions used as the basis of the air quality plans, which are based in part on projections of population and vehicle miles traveled. The second criterion is whether the project would increase the frequency or severity of existing air quality violations, contribute to new violations, or delay the timely attainment of air quality standards.

Construction of the proposed project would involve the use of off-road equipment, haul trucks, and worker commute trips. The use of construction equipment in the air quality plan is estimated for the region on an annual basis, and the proposed project would not increase the assumptions for off-road equipment use.

Because the proposed project is consistent with the zoning designation and no increase in employees is anticipated beyond what would have occurred with SMUD's existing facilities, the intensity of operational emissions would have been accounted for in the air quality plan. In addition, the rehabilitated building would be more energy efficient than the existing building on the project site than under current conditions. Therefore, long-term operational emissions associated with the proposed project are not anticipated to exceed the emissions budgeted for the project site in the air quality plan. Some of the reallocated employees would commute to the East Campus-Operations Center (EC-OC). The EC-OC has capacity to house these additional employees. The EIR prepared for the EC-OC (SMUD 2010a) analyzed impacts on air quality at full occupancy of the building. Therefore, the additional trips to the EC-OC by the relocated employees would not result in new impacts on air quality and are not analyzed further.

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SMAQMD has established thresholds of significance that are designed to identify significant levels of air pollution. As shown in Table 3.3-1 below and discussed in more detail under Question b), construction and operational emissions associated with the proposed project are not anticipated to exceed the emissions budgeted for the project site in the air quality plan. Accordingly, implementation of the proposed project would not exceed the assumptions used to develop the current plan and would not obstruct or conflict with the air quality plan. Therefore, this impact would be ***less than significant***.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less-than-Significant Impact with Mitigation Incorporated. Construction emissions are described as “short-term” or temporary in duration, but have the potential to represent a significant impact with respect to air quality. Construction of the proposed project would result in the temporary generation of reactive organic gases (ROG), oxides of nitrogen (NO_x), PM₁₀, and PM_{2.5} emissions from construction work associated with the building and site rehabilitation. Construction-related emissions of ozone precursors, ROG and NO_x, are associated primarily with exhaust from heavy-duty construction equipment, material delivery/haul trucks, and construction worker vehicles. Fugitive dust emissions (PM₁₀ and PM_{2.5}) are associated primarily with site preparation and vary as a function of such parameters as soil silt content, soil moisture, wind speed, acreage of disturbance area, and vehicle miles traveled by construction vehicles on- and off-site.

Project construction would begin in 2015 and continue through 2017. The estimated construction workforce would be a maximum of approximately 150 workers per day during building construction, resulting in a total of 300 one-way commute trips per day. The proposed project’s construction emissions were modeled based on a worst-case scenario representing an intensive day of construction to conservatively estimate the maximum daily emissions.

Emissions generated by typical construction activities were modeled using the California Emissions Estimator Model (CalEEMod), Version 2013.2.2. CalEEMod allows the user to enter project-specific construction information, such as the types, number, and horsepower of construction equipment, and the number and length of off-site motor vehicle trips. Project construction emissions were estimated for construction worker commutes, haul trucks, and the use of off-road equipment.

As shown in Table 3.3-1, construction emissions for the proposed project would result in maximum daily emissions of approximately 68 pounds of ROG, 72 pounds of NO_x, 7 pounds of PM₁₀ (combined exhaust and fugitive dust), and 4 pounds of PM_{2.5}. Additional modeling assumptions and details are provided in Appendix D.

As shown in Table 3.3-1, although SMAQMD has not established a construction-related threshold of significance for ROG emissions, the table includes the estimated ROG emissions for the proposed project. The listed ROG emissions are in line with and based on the emissions of approved projects with a similar scope and size (see Appendix D). Moreover, NO_x and ROG interact with each other to produce regional ozone, and because the Sacramento Valley Air Basin is a NO_x limited area, minimizing emissions of NO_x is the most critical step to reducing ozone generation in the region. Therefore, given the fact that estimated NO_x emissions are



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below the SMAQMD-established threshold of significance, the proposed project would not generate a significant amount of ozone precursors that would substantially contribute to the region’s ozone nonattainment status.

As shown in Table 3.3-1, the estimate of maximum daily construction-related NO_x emissions for the proposed project would not exceed any of SMAQMD’s construction thresholds of significance. However, all projects that would involve construction activities, regardless of the significance determination, are required to implement SMAQMD’s Basic Construction Emission Control Practices. Lead agencies may add these emission control practices as a condition of approval for the proposed project or include the practices as a mitigation measure (SMAQMD 2013). Without implementation of SMAQMD’s Basic Construction Emission Control Practices, the construction-related impact of the proposed project would be **potentially significant**.

Construction Phase	Pollutant Emissions (lb/day)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
2015	31.54	55.31	6.18	3.72
2016	30.74	51.62	5.80	3.51
2017	67.76	71.77	6.78	4.33
Maximum Daily Emissions	67.76	71.77	6.78	4.33
SMAQMD Significance Threshold ¹	-	85	-	-

Notes: lb/day = pounds per day; NO_x = oxides of nitrogen; PM₁₀ = particulate matter with aerodynamic diameter less than 10 microns; PM_{2.5} = particulate matter with aerodynamic diameter less than 2.5 microns; ROG = reactive organic gases; SMAQMD = Sacramento Metropolitan Air Quality Management District.

¹ SMAQMD has developed a significance threshold only for NO_x. Other ozone precursors (i.e., ROG), PM_{2.5}, and PM₁₀ are shown for informational purposes and because the region is currently designated as nonattainment for the pollutants.

Source: Data compiled by AECOM in 2014

As discussed in Chapter 2, “Project Description,” operation of the rehabilitated Headquarters Building and site would be very similar to existing operations. The completed project would result in more efficient use of energy and resources, and vehicular and pedestrian access to the site and circulation within the site would be improved. The number of employees at the building over a 10-year period following move-in would be 3/16 similar to the number of employees currently housed at the headquarters site. As a result, the air quality analysis assumed the same level of on-road vehicle activity for existing conditions and the proposed project. In addition, criteria pollutant emissions would decrease in future years based on improvements to vehicle emission standards resulting from the phase-out of older, higher emitting vehicles and the penetration of electric vehicles into the marketplace. Therefore, operation of the proposed project would not violate an air quality standard or contribute substantially to an existing or projected air quality violation, and the operational impact of the proposed project would be **less than significant**.

SMAQMD recommends that lead agencies model the PM₁₀ emission concentrations generated by construction activity for all projects except those that meet the following conditions: (1) the project will implement all Basic Construction Emission Control Practices, and (2) the maximum daily disturbed area (i.e., grading, excavation, cut and fill) will not exceed 15 acres. Projects that meet the above two conditions are considered by SMAQMD to not have the potential to exceed

or contribute to SMAQMD's concentration-based threshold of significance for PM₁₀ at an off-site location. The total disturbed acreage for all phases and project components would be approximately 13 acres. It is anticipated that the proposed project, even assuming overlapping construction within each phase, would disturb less than 3 acres per day. SMUD would implement the following mitigation measure to address the potential for construction-related emissions of PM₁₀ and PM_{2.5} to exceed or contribute to SMAQMD's concentration-based thresholds of significance.

Mitigation Measure AQ-1. Implement Applicable SMAQMD Basic Construction Emission Control Practices.

SMUD or its designated construction contractors shall comply with the following measures to reduce fugitive dust and construction equipment exhaust emissions:

- *Water all exposed surfaces two times daily. Exposed surfaces include but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.*
- *Cover or maintain at least 2 feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Cover any haul trucks that will be traveling along freeways or major roadways.*
- *Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.*
- *Limit vehicle speed on unpaved roads to 15 miles per hour.*
- *Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (required by California Code of Regulations [CCR] Title 13, Sections 2449[d][3] and 2485). Provide clear signage that posts this requirement for workers at the entrances to the site.*
- *Maintain all construction equipment in proper working condition according to manufacturer's specifications. Equipment shall be checked by a certified mechanic and determined to be running in proper condition before it is operated.*

Implementation of this mitigation measure would ensure that construction activities would not exceed or contribute to SMAQMD's concentration-based thresholds of significance for PM₁₀ and PM_{2.5}, and thus would not violate air quality standards or contribute substantially to an existing or projected air quality violation. Therefore, implementation of Mitigation Measure AQ-1 would reduce this construction-related impact to a ***less-than-significant*** level.

- c) **Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?**



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Less-than-Significant Impact with Mitigation Incorporated. The cumulative analysis focuses on whether a specific project would result in a cumulatively considerable incremental contribution in pollutant emissions to an existing significant cumulative impact. By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development within the air basin, and this regional impact is cumulative rather than being attributable to any one source. A project's emissions may be individually limited but cumulatively considerable when taken in combination with past, present, and future development projects.

SMAQMD's thresholds of significance are relevant to whether a project's individual emissions would result in a cumulatively considerable incremental contribution to existing cumulatively significant air quality conditions. As discussed earlier, the proposed project would result in the generation of criteria air pollutant emissions, but at levels that do not exceed any of the SMAQMD thresholds for construction activities. These thresholds are designed to identify those projects that would result in significant levels of air pollution on a project level, and to assist the region in attaining the applicable CAAQS and NAAQS. Projects that would exceed these thresholds would be considered significant on a project level and would also be considered to contribute a cumulatively considerable amount of pollutants to regional emissions.

Because the proposed project would not exceed the SMAQMD significance thresholds, the proposed project's emissions would also not have a cumulatively considerable contribution to the region's air quality. Implementation of Mitigation Measure AQ-1 would ensure that the construction activities do not exceed or contribute to SMAQMD's concentration-based thresholds of significance for PM₁₀ and PM_{2.5}. Therefore, the impact of the proposed project associated with a cumulatively considerable net increase of criteria pollutants would be ***less than significant with mitigation incorporated***.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less-than-Significant Impact. Some members of the population are especially sensitive to emissions of air pollutants and should be given special consideration during the evaluation of a project's air quality impacts. These people include children, older adults, persons with preexisting respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. Sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

The nearest sensitive receptors to the project site are the California State University, Sacramento (CSUS) Upper Eastside Lofts located approximately 100 feet to the north of the proposed construction site. The Lighthouse Childhood Development Center is also located 500 feet west of the project site. The residential units and childcare center represent the nearest off-site land uses with the potential to be affected by the proposed project.

The greatest potential for TAC emissions would be related to diesel PM emissions associated with activity by heavy-duty construction equipment. Construction of the proposed project would generate diesel exhaust PM emissions from the use of off-road diesel construction equipment. Most diesel exhaust PM emissions associated with material delivery trucks would occur off-site.



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ARB has developed the *Air Quality and Land Use Handbook: A Community Health Perspective* to provide guidance on land use compatibility with sources of TACs (ARB 2005). The handbook is not a law or adopted policy, but offers advisory recommendations for the siting of sensitive receptors near uses associated with TACs. ARB states that PM levels drop by 70% at a distance of 500 feet from a roadway (ARB 2005). Because construction activity would occur at various locations around the project site, TAC emissions from project construction would be less concentrated than those from a typical roadway. Construction emissions would also occur intermittently throughout the day and would not occur as a constant plume of emissions from the project site. Although construction activities could include generator sets that could operate throughout the day, these types of sources generate relatively low TAC emissions compared with heavy-duty construction equipment. In addition, the majority of construction activity would occur at the SMUD Headquarters Building, which is located approximately 400 feet from the lofts and 1,000 feet from the childcare center. Therefore, it is anticipated that diesel PM concentrations would decrease substantially before reaching, and therefore affecting, the nearest sensitive receptor.

The dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent to which a person is exposed to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the maximally exposed individual. Thus, the risks estimated for such an individual are higher if a fixed exposure occurs over a longer period of time. Health effects from carcinogenic TACs are usually described in terms of individual cancer risk, which is based on a 70-year lifetime exposure to TACs.

The most intense levels of construction activities for the proposed project are anticipated to last approximately 19 months and would cease following completion of the proposed project. It is not anticipated that individual receptors would be exposed to substantial TAC emissions from the proposed project for longer than 19 months. If the duration of potentially harmful construction activities near a sensitive receptor was 19 months, then the exposure would be approximately 2% of the total exposure period used for typical health risk calculations (i.e., 70 years). Thus, it is not anticipated that short-term construction activities would expose sensitive receptors to prolonged TAC concentrations.

Operation of the proposed project would involve primarily gasoline-fueled vehicles associated with worker commutes. The project would not substantially affect these commutes; therefore, it is not anticipated that individual receptors would be exposed to TAC emissions as a result of project operation.

Because of the temporary and intermittent use of off-road construction equipment, the distance between construction activities and the nearest sensitive receptor, the dispersive properties of diesel PM, and the relatively low exposure period, the proposed project would not expose sensitive receptors to substantial pollutant concentrations. Therefore, this impact would be ***less than significant***.

e) Create objectionable odors affecting a substantial number of people?

Less-than-Significant Impact. The occurrence and severity of odor impacts depend on numerous factors such as the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptors. Offensive odors rarely cause any physical harm, but they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies.

Construction of the proposed project is not anticipated to expose nearby off-site receptors to objectionable odors. Sources that may emit odors during construction activities include exhaust from diesel construction equipment and heavy-duty trucks, which could be considered offensive to some individuals. Odors from these sources would be localized and generally confined to the immediate area surrounding the project site. The proposed project would use typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. After construction of the proposed project, all construction-related odors would cease.

Operation of the proposed project would not add any new odor sources. The land use associated with the proposed project is primarily commercial, and does not include the use of large generators or other odor emissions. As a result, the proposed project would not create objectionable odors affecting a substantial number of people. This impact would be ***less than significant***.



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	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporation	Less-Than- Significant Impact	No Impact
3.4 BIOLOGICAL RESOURCES				
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the DFG or USFWS?	<input 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, and regulations or by the DFG or USFWS?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally-protected wetlands as defined by Section 404 of the federal 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 corridors, or impede the use of native wildlife nursery sites?	<input 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 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project site includes the existing Headquarters Building and a 13.66-acre portion of the headquarters site. The project site is bordered by 61st Street to the west, light rail tracks to the north, SMUD's Customer Service Center to the east, and S Street to the south. The project site also includes two temporary trailer location sites where SMUD employees would be temporarily relocated during project construction.

The project site is composed of developed areas including the existing Headquarters Building, the surrounding site, and parking lots. The surrounding site's plant materials consist of ornamental trees, shrubs, and turf grass areas. A detailed landscape inventory report (LIR) was

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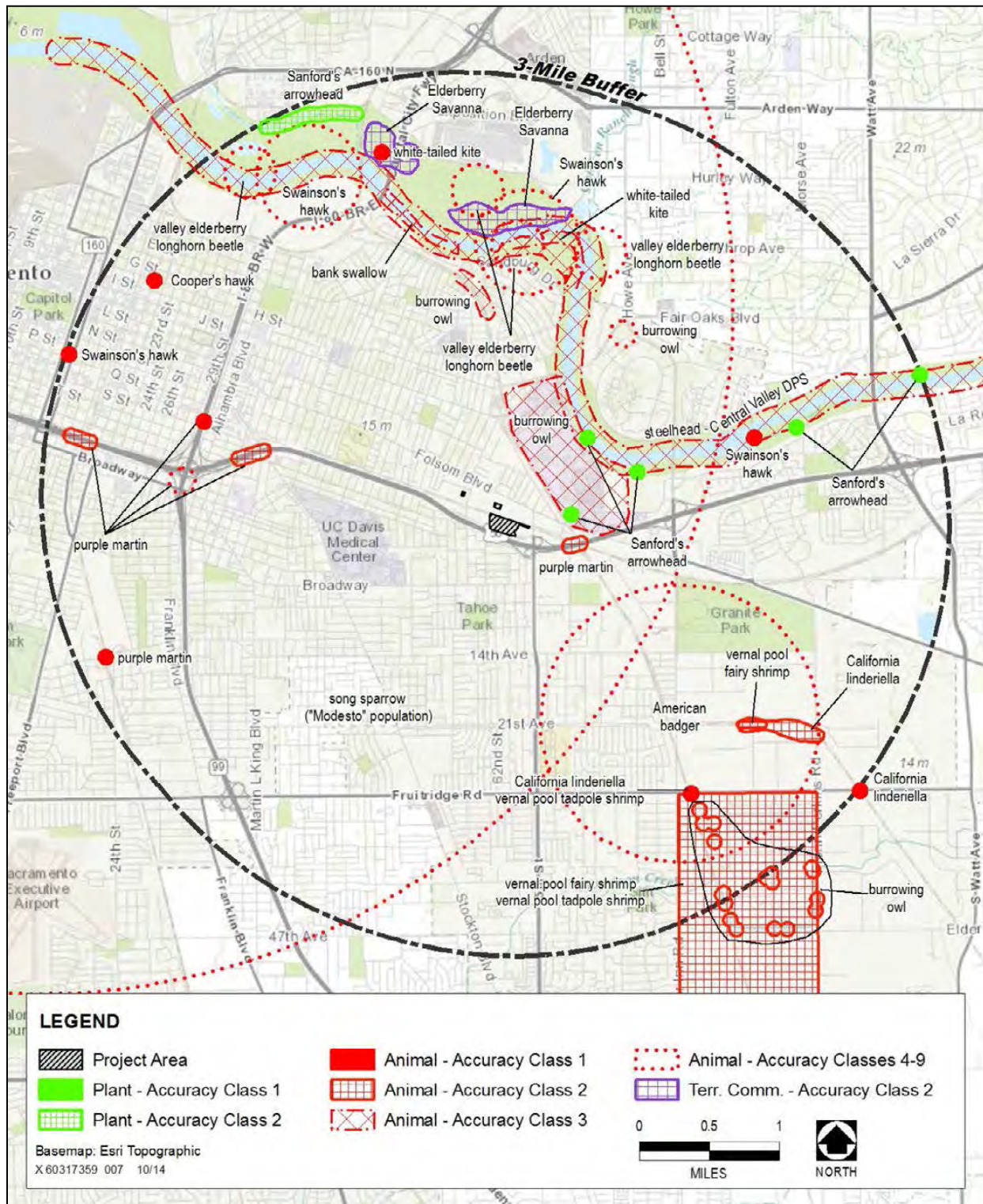
prepared in support of the project and all trees inventoried were tagged in the field (SMUD 2014). As documented in the LIR, there are 453 trees and mature shrubs in the project area, including 38 trees that meet the size criteria to be classified as Heritage Trees by the City of Sacramento according to the current Tree Ordinance (City of Sacramento 1999).

To assess the potential of the proposed project to affect special-status plant or wildlife species or sensitive natural communities, the California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CNDDDB) (2014), the U.S. Fish and Wildlife Service (USFWS) species list for the Sacramento East U.S. Geological Survey quadrangle (USFWS 2014), and the California Native Plant Society's Inventory of Rare and Endangered Plants of California for the Sacramento East U.S. Geological Survey quadrangle (CNPS 2014) were consulted regarding special-status plant and wildlife species known to occur in the vicinity of the project site. An AECOM biologist also performed a reconnaissance-level survey of the project site and surrounding areas on August 13, 2014, and an AECOM certified arborist prepared a detailed LIR of the project site, as described above.

Figure 3.4-1 shows CNDDDB records previously documented within 3 miles of the project site. Table 3.4-1 lists special-status plant and wildlife species known or expected to occur in the vicinity of the project site. No aquatic habitat is present on or adjacent to the project site. Because they lack the potential to occur within the project site, fish species are not included or analyzed in Table 3.4-1. Most of the species listed in Table 3.4-1 are not expected to occur on the project site because of the lack of suitable habitat.

The urban tree landscape within the project site provides potential nesting habitat for a variety of bird species covered by the federal Migratory Bird Treaty Act (MBTA), and the potential exists for raptor species protected by the California Fish and Game Code and other regulations to nest on-site. Special-status species with the potential to occur on the project site include Swainson's hawk (*Buteo swainsonii*) and white-tailed kite (*Elanus leucurus*). These species could be affected during project construction and project operation.

Species observed during the reconnaissance survey included house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), American robin (*Turdus migratorius*), rock pigeon (*Columba livia*), northern mockingbird (*Mimus polyglottos*), American goldfinch (*Carduelis tristis*), and gray squirrel (*Sciurus griseus*).



Source: CNDDDB 2014

Figure 3.4-1. CNDDDB Records within 3 Miles of the Project Site

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Table 3.4-1. Special-Status Plant and Wildlife Species with Potential to Occur in the Vicinity of the Project Site				
Species	Federal Status	State Status	Habitat	Potential to Occur On-site
Sanford's arrowhead <i>Sagittaria sanfordii</i>	–	CRPR 1B.2	Marshes, canals, and ditches with reliable water sources.	None. No suitable habitat for this species on-site.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	T	–	Inhabits primarily vernal pools, but also occurs in other seasonal wetlands such as alkaline rain pools, ephemeral drainages, rock outcrop pools, ditches, stream oxbows, stock ponds, and vernal swales.	None. No suitable habitat for this species on-site.
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	E	–	Occurs in a variety of seasonal habitats: vernal pools, ponded clay flats, alkaline pools, ephemeral stock tanks, and roadside ditches.	None. No suitable habitat for this species on-site.
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	T	–	Associated with elderberry shrubs for completion of life cycle. Elderberry shrubs often, but not always, associated with riparian habitats.	None. No suitable habitat for this species on-site.
California tiger salamander <i>Ambystoma californiense</i>	T	T	Breeds within vernal pools and other seasonal wetlands. Spends most of life cycle within burrows in annual grassland and potentially some agricultural habitats.	None. No suitable aquatic habitat on-site. Known populations of this species cannot reach the project site due to existing development and dispersal barriers.
California red-legged frog <i>Rana draytonii</i>	T	CSC	Breeds in ponds and slow-moving channels with permanent or semipermanent water sources. Can disperse through upland habitats up to 1 mile from aquatic habitats.	None. No suitable aquatic habitat on-site. Known populations of this species cannot reach the project site due to existing development and dispersal barriers.
Burrowing owl <i>Athene cunicularia</i>	–	CSC	Open dry grasslands and desert habitat; nests and dens in underground burrows, especially those of ground squirrels.	None. No suitable habitat for this species on-site.
Cooper's hawk <i>Accipiter cooperii</i>	–	WL	Inhabits oak savanna, woodlands, and open grassland habitats, especially near water.	Possible. Trees on-site provide suitable nesting habitat for this species.
Swainson's hawk <i>Buteo swainsoni</i>	–	T	Nests in oak savanna, woodlands, and riparian habitats. Will nest in large trees in urban landscapes. Forages in open grassland and agricultural habitats.	Possible. Trees on-site provide suitable nesting habitat for this species.



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Table 3.4-1. Special-Status Plant and Wildlife Species with Potential to Occur in the Vicinity of the Project Site				
Species	Federal Status	State Status	Habitat	Potential to Occur On-site
White-tailed kite <i>Elanus leucurus</i>	–	FP (nesting)	Prefers coastal and lowland valleys; often associated with farmlands, meadows with emergent vegetation, grasslands.	Possible. Trees on-site provide suitable nesting habitat for this species.
Purple martin <i>Progne subis</i>	–	CSC	Nests in caves or other overhanging structures such as freeway overpasses.	None. No suitable habitat for this species on-site.
American badger <i>Taxidea taxus</i>	-	CSC		None. No suitable habitat for this species on-site.
<p>Key:</p> <p>Federal Status:</p> <p>E: Endangered</p> <p>T: Threatened</p> <p>State Status:</p> <p>CSC: California Species of Special Concern</p> <p>E: Endangered</p> <p>FP: Fully Protected</p> <p>T: Threatened</p> <p>WL: Watch list</p> <p>California Rare Plant Rank (CRPR):</p> <p>1B.2 Rare or Endangered in California and elsewhere</p> <p>Sources: CNDDB 2014; CNPS 2014; USFWS 2014</p>				

Regulatory Setting

Federal

The Migratory Bird Treaty Act enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the then–Soviet Union and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs. Most actions that result in a taking or in permanent or temporary possession of a protected species constitute violations of the MBTA. Examples of permitted actions that do not violate the MBTA are the possession of a hunting license to pursue specific game birds, legitimate research activities, display in zoological gardens, bird banding, and other similar activities. USFWS is responsible for overseeing compliance with the MBTA.



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State

California Endangered Species Act

Under the California Endangered Species Act (CESA), CDFW is responsible for maintaining a list of endangered and threatened species (California Fish and Game Code Section 2070). Sections 2050–2098 of the California Fish and Game Code outline the protection provided to California’s rare, endangered, and threatened species. Section 2080 prohibits the taking of plants and animals listed under the CESA. Section 2081 establishes an incidental take permit program for state-listed species. CDFW maintains a list of “candidate species,” which are species that CDFW formally notices as being under review for addition to the list of endangered or threatened species.

Pursuant to CESA requirements, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project study area and whether the proposed project would have a potentially significant impact on such species. In addition, CDFW encourages informal consultation on any proposed project that may affect a candidate species.

Project-related impacts on species on the CESA endangered or threatened list would be considered significant. State-listed species are fully protected under the mandates of the CESA. “Take” of protected species incidental to otherwise lawful management activities may be authorized under California Fish and Game Code Section 206.591. Authorization from CDFW would be in the form of an incidental take permit.

California Fish and Game Code

Fully Protected Species

Certain species are considered *fully protected*, meaning that the California Fish and Game Code explicitly prohibits all take of individuals of these species except take permitted for scientific research. Section 5050 lists fully protected amphibians and reptiles, Section 5515 lists fully protected fish, Section 3511 lists fully protected birds, and Section 4700 lists fully protected mammals.

Protection of Birds and Their Nests

Under Section 3503 of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the California Fish and Game Code or any regulation made pursuant thereto. Section 3503.5 prohibits take, possession, or destruction of any birds in the orders Falconiformes (hawks) or Strigiformes (owls), or of their nests and eggs. Migratory nongame birds are protected under Section 3800, while other specified birds are protected under Section 3505.



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Local

The following goal and policy from the Environmental Resources Element of the *Sacramento 2030 General Plan* (City of Sacramento 2009) are applicable to the proposed project.

Goal ER 3.1. Urban Forest. Manage the city's urban forest as an environmental, economic, and aesthetic resource to improve Sacramento residents' quality of life.

- **Policy ER 3.1.3 Trees of Significance.** The City shall require the retention of trees of significance (such as heritage trees) by promoting stewardship of such trees and ensuring that the design of development projects provides for the retention of these trees wherever possible. Where removal cannot be avoided, the City shall require tree replacement or suitable mitigation.

Sacramento City Code

The City of Sacramento requires a permit for the removal of City Street Trees or trees designated as Heritage Trees, based on Chapters 12.56 and 12.64 of the Sacramento City Code (City of Sacramento 1999). (Note: The City is revising the tree ordinance; existing definitions and the jurisdiction the City exercises are subject to change, and new definitions and requirements may be created. At this time the nature and extent of any changes are not available to the public and it is unknown when the new ordinance may be adopted.)

Definitions of these tree types are provided below.

City Street Trees

The City recognizes that the planting and preservation of trees enhances the natural scenic beauty; increases life-giving oxygen; promotes ecological balance; provides natural ventilation, air filtration, and temperature, erosion, and acoustical controls; increases property values; improves the lifestyle of residents; and enhances the identity of the city. Title 12, Chapter 12.56 of the Sacramento City Code includes provisions to protect City Street Trees. All removal, trimming, pruning, cutting, or other maintenance activities on any City Street Tree requires a permit from the director of the Department of Transportation pursuant to Section 12.56.070 of the City Code. A City Street Tree is defined as any tree growing on a public street right-of-way that is maintained by the City. Where appropriate, the director may require the replacement of City Street Trees proposed for removal. The project site does not contain any trees planted in a public street right-of-way.

Heritage Trees

Heritage Trees promote scenic beauty, enhance property values, reduce soil erosion, improve air quality, abate noise, and provide shade to reduce energy consumption. Title 12, Chapter 12.64 of the Sacramento City Code sets forth provisions to protect significant specimen trees existing in the city known as "Heritage Trees." The City Code defines "Heritage Trees" as follows:

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- Any tree of any species with a trunk circumference of one hundred (100) inches or more, which is of good quality in terms of health, vigor of growth and conformity to generally accepted horticultural standards of shape and location for its species.
- Any native oak, sycamore, or buckeye or riparian tree, having a circumference of thirty-six (36) inches or greater when a single trunk, or a cumulative circumference of thirty-six (36) inches or greater when a multi-trunk, which is of good quality in terms of health, vigor of growth, and conformity to generally accepted horticultural standards of shape and location for its species.
- Any tree thirty-six (36) inches in circumference or greater in a riparian zone. The riparian zone is measured from the centerline of the water course to thirty (30) feet beyond the high water line.
- Any tree, grove of trees, or woodland trees designated by resolution of the city council to be of special historical or environmental value or of significant community benefit.

The project site contains a total of 38 trees of Heritage Tree size. Notes on the health and structure of each of these trees may be found in the detailed LIR prepared in support of the project (SMUD 2015).

Impacts and Mitigation Measures

- a) **Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the DFG or USFWS?**

Less-than-Significant Impact with Mitigation Incorporated. The trees within the project area provide potential nesting habitat for a variety of bird species, including some special-status bird species. Most nesting birds are protected by the MBTA and Section 3503 of the California Fish and Game Code. Construction activities could result in removal of trees that contain active bird nests. Construction noise and increased human activity may also result in nest abandonment if such activity occurs near active nests. Because of the potential for loss of or other impacts on active bird nests during construction, this impact would be **potentially significant**.

Mitigation Measure BIO-1. Avoid and Minimize Impacts on Nesting Birds Protected by the Migratory Bird Treaty Act and California Fish and Game Code.

SMUD shall schedule construction activity including tree removal and tree pruning or trimming required during construction outside of the typical nesting season (February 15–September 15) to the extent feasible. A preconstruction survey for nesting birds shall be conducted no more than 10 days before any tree removal or tree trimming or other construction activity that occurs between February 15 and September 15. The nesting bird survey shall include the designated construction area and a 500-foot buffer. If no active nests are found, no further mitigation is required. If an active nest is found in the construction area or within a tree subject to removal or pruning, a 500-foot nest buffer

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shall be established around the active nest. No construction activity shall occur within the buffer area of a particular nest until the qualified biologist confirms that the chicks have fledged or until it is determined that the nest is no longer active. An alternative nest buffer distance may be authorized in conversations with CDFW if it is determined that the alternative buffer is sufficient to ensure the nest is not adversely affected by construction activity. A qualified biologist shall monitor the status of any active nests within 500 feet of the construction area at least weekly during the nesting season.

Mitigation Measure BIO-1 requires SMUD to remove trees outside of the nesting season to the extent feasible. For tree removals that cannot be performed outside of the nesting season, a nesting bird survey would be required and a nest buffer would be implemented for any active nests found within or directly adjacent to the project area. This measure would avoid impacts on active bird nests. Therefore, implementation of Mitigation Measure BIO-1 would reduce impacts on nesting bird species on the project site to a **less-than-significant** level.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the DFG or USFWS?

No Impact. The project area does not contain any riparian habitat or other sensitive natural communities because it is located within a developed urban landscape characterized by ornamental plantings. Therefore, the proposed project would have **no impact** on riparian habitat or other sensitive natural communities.

c) Would the project have a substantial adverse effect on federally-protected wetlands as defined by Section 404 of the federal Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption or other means?

No Impact. The project area does not contain any federally protected wetlands including marsh, vernal pool, or other wetland habitats as defined by Section 404 of the Clean Water Act. Therefore, the proposed project would have **no impact** on federally protected wetlands.

d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory corridors, or impede the use of native wildlife nursery sites?

No Impact. The project area does not contain any movement corridors or nursery sites for native resident or migratory fish or wildlife species. The project site is located within an urban landscape that provides limited opportunities for local wildlife movement through the landscape and does not provide significant nursery site opportunities. There is no aquatic habitat within the project site that could be utilized by migratory fish species. Some wildlife species adapted to urban environments may occasionally utilize the project site for localized movements. The proposed project would have **no impact** on the movement of wildlife species, wildlife corridors, or native wildlife nursery sites.

- e) **Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

Less-than-Significant Impact with Mitigation Incorporated. The project site contains 453 ornamental trees and shrubs (SMUD 2014). Thirty-eight of these trees meet the size criteria for Heritage Trees. Construction of the project could result in the removal of some of the potential Heritage Trees within the project site. Removal or pruning of these trees requires a permit from the City. Removal or pruning of Heritage Trees regulated by the City of Sacramento would be a **potentially significant** impact.

Mitigation Measure BIO-2. Avoid and Minimize Impacts on Protected Trees.

SMUD shall submit a tree permit application to the City Department of Transportation (Urban Forestry Services Division). The tree permit application shall identify all tree removals or tree impacts that are expected to occur as a result of project construction. The application shall also identify mitigation to be implemented for these impacts. Mitigation for impacts on or removal of any Heritage Trees shall be consistent with the replacement ratio required by the City of Sacramento Tree Ordinance (City of Sacramento 1999, or subsequent version if adopted prior to project implementation) and Sacramento 2030 General Plan. Replacement trees shall be planted on-site and incorporated into the landscape plan for the project. Tree planting shall comply with the City's landscaping requirements (Sacramento City Code Sections 17.612.010 and 17.612.040).

Protective fencing with tree protection signs shall be erected around all trees (or tree groups) to be preserved during construction activities. The protective fence should be installed at the limits of the tree protection zone as defined in consultation with the City arborist during the permit application process. This will delineate the tree protection area and prevent unwanted activity in and around the trees and will reduce soil compaction in the root zones of the trees and other damage from heavy equipment. The contractor shall maintain the fence to keep it upright, taut, and aligned at all times. Fencing shall be removed only after all construction activities are complete. Canopy or root pruning of any retained Heritage Trees to accommodate construction and/or fire lane access shall conform to the techniques and standards in the current edition of ANSI A300 (Tree, Shrub and Other Woody Plant Maintenance—Standard Practices) or International Society of Arboriculture Best Management Practices. Heritage Trees to be retained on-site shall be protected from construction-related impacts pursuant to Sacramento City Code Section 12.64.040 (Heritage Trees).

Implementation of this mitigation measure would require SMUD to mitigate all impacts on Heritage Trees according to existing guidelines within the City of Sacramento Tree Ordinance and to protect regulated trees to be retained during construction. Therefore, implementation of Mitigation Measure BIO-2 would reduce project-related impacts on Heritage Trees to a **less-than-significant** level.



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- f) **Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**

No Impact. The project area is not within an area designated under a habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. Therefore, the proposed project would have ***no impact*** on adopted habitat conservation plans.

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporation	Less-Than- Significant Impact	No Impact
3.5 CULTURAL RESOURCES				
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	<input 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"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

Prehistoric

The prehistory of the Sacramento region is divided into three periods: the Windmill Pattern between approximately 5000 and 2500 years Before Present (B.P.), the Berkeley Pattern between approximately 2500 and 1500–1000 B.P., and the Augustine Pattern between 1500–1000 B.P. and the historic period. The Windmill Pattern (Early Period; circa [ca.] 5000–2500 B.P.) represents the oldest permanent, known occupation in the Sacramento–San Joaquin Delta (Delta) region. Sites were located on knolls near or within riverine floodplains.

The Berkeley Pattern (Middle Period; ca. 2500 to 1500 or 1000 B.P.) varies greatly from the preceding Windmill Pattern. People supplemented the stone tool kit with a variety of bone tools. Shell beads were commonly imported from the coast and made into a variety of elaborate forms. People lived at one location for a greater amount of time, a practice known as sedentism. The Augustine Pattern (Late Period; ca. 1500 or 1000 B.P. to the historic era) is marked by what archaeologists believe to be an influx of new groups into the Central Valley from the north. Changes occurred in artifact assemblages, trade networks, and ceremonial affiliations. One of the most important changes was a shift in technology from dart and atlatl to the bow and arrow.

The project site is located in the traditional Native American territory of the Nisenan. Nisenan territory once extended from the city of Oroville to south of the American River and from a few miles west of Lake Tahoe to the Sacramento River (Kroeber 1976; Shipley 1978; Wilson and Towne 1978). Most Valley Nisenan lived in villages comprising several hundred individuals along the Sacramento River. The Nisenan were organized into “tribelets,” which were made up of politically independent primary villages with one or more surrounding subordinate, smaller villages (Kroeber 1976; Wilson and Towne 1978). Villages usually contained family dwellings,

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acorn granaries, a sweathouse, and a dance house that was owned by the chief (Wilson and Towne 1978). Subsistence activities focused on gathering acorns, seeds, and other plant resources (Wilson and Towne 1978). Berries and other fruits and nuts were also gathered. Deer, rabbit, and large predators such as mountain lion and wildcat were among the animals that were hunted. The Nisenan also fished for a variety of fish species (Wilson and Towne 1978). Nisenan were involved in a trade network that extended from the coast to the east side of the Sierra Nevada (Wilson and Towne 1978).

By 1808 Gabriel Moraga crossed into Nisenan territory. The Nisenan were greatly affected by introduced diseases. An epidemic, likely malaria, entered the Sacramento Valley in 1833 and killed approximately 75% of the Native American population. The discovery of gold at Sutter's Mill near the Nisenan village of Colluma, modern-day Coloma, brought thousands of Europeans to the area, which led to widespread killing and massive disruption of traditional Nisenan culture (Wilson and Towne 1978).

Historic

In 1849, Sacramento, named after the river that ran beside it, incorporated and served as an important gateway to California's gold fields. The Central Pacific Railroad of California was formed in 1861, and groundbreaking commenced in 1863 at Front and K Streets. The railroad had a tremendous impact on Sacramento and enabled easier transport of materials and goods in and out of the growing city (McGowan and Willis 1983:59). Outside the city, agriculture eventually supplanted gold mining as the main industry in the area. Fruit became a major cash crop and a land boom drew immigrants in large numbers in the late 19th century. Large Mexican land grants around the city were eventually sold to the public for county developments and new areas around the city were annexed in the early 1900s (Sandul 2013:166).

Sacramento continued to grow and prosper in the 20th century. Sacramento's population increased dramatically after World War II. Developers enacted large building programs in the north and east areas outside the city limits and subdivisions, shopping centers, and grocery stores were constructed. By 1963, Sacramento could be approached from every direction by a freeway (McGowan and Willis 1983:88–89).

As the suburban areas of Sacramento expanded, the west end of the city's downtown was rapidly declining. In 1950, the city established the Sacramento Redevelopment Agency, which started proposing redevelopment plans for the west end of Sacramento's downtown. By 1961, 15 blocks of buildings were demolished. Government office buildings were constructed on Capitol Mall in downtown in the early 1950s. State government buildings continued to be built in downtown and on Capitol Mall through the late 1970s (McGowan and Willis 1983:94–101).

Sacramento grew again in the 21st century, attracting new residents and businesses. By 2010, Sacramento encompassed more than 92 square miles and had more than 466,000 residents (U.S. Census Bureau 2014).

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SMUD Corporate History

SMUD was formed in 1923. At that time its service area encompassed an area of approximately 75 square miles. The cost to build a new distribution system was deemed to be too expensive, so SMUD proceeded with efforts to purchase Pacific Gas and Electric Company's (PG&E's) local system through condemnation. This sparked 23 years of lawsuits between SMUD and PG&E (Ward 1973:37). During that period, SMUD was forced to purchase electricity from other companies and agencies because it did not produce any power on its own (SMUD 2012a). Litigation between the two companies ended in 1946 when the courts ruled against PG&E, forcing PG&E to finally sell its distribution system to SMUD (Ward 1973:44–47).

The tremendous population boom in the Sacramento region after World War II strained SMUD's system and SMUD needed to expand its programs. In 1955, voters approved a revenue bond needed to finance the Upper American River Project. When the Upper American River Project was completed, it generated power for 250,000 customers (Miller 1971:A1).

Also in 1955, SMUD hired the New York consulting firm Ebasco Services, Inc. (Ebasco) to conduct an extensive study of SMUD's space requirements for its present use and future growth. SMUD had the operations yard at 59th and R Streets and an office at 21st and K Streets, but Ebasco recommended consolidating SMUD's facilities into one location. Ebasco estimated that 35 acres of land would be needed for both the operations yard and an office building (*The Sacramento Bee* 1957; Shaad, pers. comm., 1960).

In 1956, SMUD hired the local architectural firm Dreyfuss & Blackford to design its Headquarters Building. SMUD directed the architects to visit new corporate campuses constructed in the Midwest and East Coast, particularly works by Mies Van der Rohe, Victor Gruen, and Skidmore, Owings & Merrill (Dreyfuss, pers. comm., 1956). In December 1956, SMUD purchased the land for the site of the new campus. The first concrete footings were laid on June 5, 1958 (SMUD 1960).

The Headquarters Building was designed in the International/Miesian style of post-World War II Modernism (Roland 2009:8-5). The building is centered on a large, heavily planted site with winding pedestrian paths and heavily landscaped parking. The building is roughly T-shaped in plan, with a long wing facing south and connected to a square-shaped north wing in the back, connected by a central core. It has a clear-span steel frame, a flat roof, and precast concrete and glass exterior walls that extend from the second through fourth floors (Roland 2009:7-1). The entry is centered on a recessed plinth, which is clad in a mosaic tile mural designed by renowned artist Wayne Thiebaud. The mural, entitled *Water City*, is an abstract mural alluding to Sacramento's two major rivers. This mural is the only piece of public art and only ceramic work created by Thiebaud and is one of the few surviving examples of his experimentation with Abstract Expressionism (Roland 2009:8-11; McGuigan 2011).

The building is sited on a landscaped campus and set well back from the public street. The building is approached via a curving circular drive. Groupings of trees, shrubs, and rock outcrops are scattered around the rolling lawn, with strolling paths and benches laid out for use by employees or the public. A large sunken patio is located near the central core of the building on its western side. The patio is heavily landscaped and large low wooden slab benches are



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scattered around the terrace. The patio extends from the employee cafeteria and provides relatively unobstructed views from the interior and an outdoor space for eating. Large landscaped parking lots are located on either side of the Headquarters Building at the edge of campus. The eastern parking lot was modified in the 1980s to accommodate a new SMUD office building that now sits on the lot next to the 1959 administrative headquarters (Roland 2009:7-4). The site and landscape plan, completed as part of the headquarters project development, was designed by Ralph Jones as the landscape architect working for Dreyfuss & Blackford (Roland 2009:8-13).

The Headquarters Building is an exceptional example of the International/Miesian style of architecture, and with its iconic aluminum louvers, exhibits significant innovations in energy-efficient design. It was listed in the NRHP in 2010 under Criterion C, as an exceptional example of an architectural style. The boundary of the listed property was delineated to include the original plot plan, which included the building, designed landscape, and parking lots as they existed in 1959 (Roland 2009:10-1). Figure 3.5-1 and Figure 3.5-2 show the SMUD Headquarters Building and campus.

By the early 1960s, SMUD was serving 170,000 customers in Sacramento County (SMUD 2012b). In 1969, SMUD started construction of its first nuclear power plant, Rancho Seco, in southeastern Sacramento County (Ward 1973:78–79). The plant became operational in 1974, but it suffered from continual challenges. In 1989, voters voted to close the plant and SMUD formally shut down the facility. SMUD diversified its power sources in the 1990s and was serving more than 500,000 customers by the end of the 20th century (SMUD 2012b). SMUD continues to enhance its services and explores new options for energy sources for the greater Sacramento region.

Paleontological Resources

Geologic Setting

The project site is located within the Riverbank Formation (Helley and Harwood 1985; Wagner et al. 1987). This formation is Pleistocene in age; estimates place the age between 130,000 and 450,000 B.P. (Marchand and Allwardt 1981). In the project vicinity, the Riverbank Formation forms higher alluvial fans and terraces of major rivers and can be divided into upper and lower members. Sediments in the Riverbank Formation consist of weathered reddish gravel, sand, and silt that form alluvial terraces and fans. In the Sacramento Valley, this formation contains more mafic rock fragments than the San Joaquin Valley and thus tends toward stronger soil-profile developments that are more easily distinguishable from the younger Modesto Formation (Helley and Harwood 1985).

Paleontological Resources Inventory

To develop a baseline paleontological resource inventory of the study area and establish the paleontological sensitivity of each geologic unit present in the study area, background research was conducted. Each geologic formation exposed within the study area was assigned a paleontological sensitivity based on the number of previously recorded fossil sites from that unit and the scientific importance of the fossil remains recorded. These methods are consistent with



Source: Photos provided by SMUD in 2014 (Taken circa 1959)

Figure 3.5-1. Historic Images of the SMUD Headquarters Building and SMUD Campus



Source: Photo provided by SMUD in 2014 (Taken 2009)

Figure 3.5-2. SMUD Headquarters Building, 2009, as Shown in the National Register of Historic Places Nomination

Society of Vertebrate Paleontology (SVP) 1995 guidelines for assessing the importance of paleontological resources.

Geologic maps and available published and unpublished geological and paleontological literature covering the bedrock and surficial geology of the study area were reviewed to determine the exposed and subsurface rock units, to assess the potential paleontological productivity of each rock unit, and to delineate their respective areal distribution in the study area. The number and location of previously recorded fossil sites from rock units exposed within the study area and the types of fossil remains each rock unit has produced were evaluated based on published and unpublished geological and paleontological literature.

The literature review was supplemented by a records search from the University of California, Berkeley Museum of Paleontology (UCMP) on August 8, 2014.

Because the project site has been developed with commercial uses and associated landscaping since 1960, most of the ground surface is not visible. Therefore, a field survey was not conducted.

*Paleontological Resources Assessment by Rock Unit***Riverbank Formation**

Pleistocene-age alluvial deposits are sedimentary in nature; sedimentary alluvial deposits frequently contain fossils. The Pleistocene epoch, known as the “great ice age,” began approximately 1.8 million years ago. Based on his survey of vertebrate fauna from the nonmarine late Cenozoic deposits of the San Francisco Bay region, Savage (1951) concluded that two major divisions of Pleistocene-age fossils could be recognized: the Irvingtonian (older Pleistocene fauna) and the Rancholabrean (younger Pleistocene fauna).

These two divisions of Quaternary Cenozoic vertebrate fossils are widely recognized today in the field of paleontology. The age of the Rancholabrean fauna was based on the presence of bison and of many mammalian species that inhabit the same area today. In addition to bison, larger land mammals identified as part of the Rancholabrean fauna include mammoths, mastodons, camels, horses, and ground sloths. The Irvingtonian fauna is more scarce, and is represented by *Borophagus* (bone-crushing dogs), hyenas, saber-toothed cats, rabbits, giant marmots, horses, mammoths, and mastodons.

Remains of land mammals have been found at several localities in alluvial deposits referable to the Riverbank Formation. Jefferson (1991a, 1991b) compiled a database of California Late Pleistocene vertebrate fossils from published records, technical reports, unpublished manuscripts, information from colleagues, and inspection of paleontological collections at more than 40 public and private museums. Jefferson lists six different localities in Sacramento, all referable to the Riverbank Formation. For example, the Teichert Gravel Pit, approximately 2.5 miles southeast of the project site along State Route 16, yielded specimens of broad-footed mole, Harlan’s ground sloth, rabbit, California ground squirrel, Botta’s pocket gopher, pocket mouse, groove-toothed harvest mouse, woodrat, vole, coyote, dire wolf, mammoth, horse, western camel, deer, antique bison, fish (carps and minnows), frog, snake, Pacific pond turtle, and the family Anatidae (ducks, geese, and swans).

There are at least nine recorded Rancholabrean-age vertebrate fossil sites from the Riverbank Formation in Sacramento County. Most recently, Pleistocene-age mammoth remains were discovered on July 2, 2004, during excavation of a SMUD trench in Elk Grove (Kolber 2004). Mammoth remains recovered from that site consisted of a tusk, ribs, teeth, and portions of a shoulder blade. UCMP locality V-74086, located in south Sacramento at Ehrhardt Avenue, also contained fossilized Rancholabrean-age mammoth remains. The other UCMP sites in Sacramento—localities V-6747, V-6846, V-68141, V-69129, and V-75126—contained remains of Rancholabrean-age bison, camel, coyote, horse, Harlan’s ground sloth, mammoth, woodrat, fish, mole, snake, and gopher. Pleistocene-age fossils were recovered from the Riverbank Formation at the Arco Arena site (Hilton et al. 2000); those fossils included remains of Harlan’s ground sloth, bison, coyote, horse, camel, squirrel, antelope or deer, and mammoth. Finally, San Diego Society of Natural History locality 0663 (Jefferson 1991a, 1991b) included fossil specimens of Rancholabrean-age horse and camel recovered from sediments in Sacramento.

Several localities near the cities of Davis and Woodland have yielded the remains of Rancholabrean-age rodents, snakes, horses, antelope, Harlan’s ground sloth, mammoth, and

saber-toothed tiger from sediments referable to the Riverbank Formation (Hay 1927; UCMP 2014). Three sites in Sutter County have yielded Rancholabrean vertebrate fossils recovered from Pleistocene-age sediments (UCMP 2014). UCMP locality V-4043 in the Sutter Buttes yielded remains from a Pleistocene-age horse in sediments referable to the Riverbank Formation.

Fossil specimens from the Riverbank Formation have been reported by Marchand and Allwardt (1981) near the type locality in the city of Riverbank. Fossil specimens from sediments referable to the Riverbank Formation have been reported at numerous other locations throughout the Central Valley (UCMP 2014), including Lathrop, Modesto, Stockton, Tracy (along the Delta-Mendota Canal), Manteca, and Merced.

The results of the UCMP paleontological records search (UCMP 2014) indicated that no fossil remains have been recovered from the project site. However, the occurrence of Pleistocene vertebrate fossil remains in sediments referable to the Riverbank Formation in Sacramento and throughout the Central Valley indicates that this rock formation is paleontologically sensitive.

Regulatory Setting

Federal

National Historic Preservation Act

The National Historic Preservation Act of 1966 (as amended) requires federal agencies to take into consideration the potential effects of a project and to allow the Advisory Council on Historic Preservation the opportunity to comment on the project. The Secretary of the Interior promulgated the regulations implementing Section 106, as codified in Title 36, Part 800 of the Code of Federal Regulations (CFR). The proposed project does not require any federal funding, approvals, or licensing; therefore, Section 106 of the National Historic Preservation Act does not apply.

The Secretary of the Interior's Standards for the Treatment of Historic Properties

The Secretary of the Interior's Standards for the Treatment of Historic Properties provide guidelines for preserving, rehabilitating, restoring, and reconstructing historic buildings. Four treatment approaches are identified in the standards: preservation, rehabilitation, restoration, and reconstruction. For architectural resources such as the proposed project, maintenance, repair, stabilization, restoration, preservation, conservation, or reconstruction in a manner consistent with the Secretary's Standards and Guidelines generally will constitute mitigation of impacts to a less-than-significant level.

The Secretary's Standards identify four distinct approaches to the treatment of historic properties—preservation, rehabilitation, restoration, and reconstruction:

- *Preservation* focuses on the maintenance and repair of existing historic materials and retention of a property's form as it has evolved over time.



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- *Rehabilitation* acknowledges the need to alter or add to a historic property to meet continuing or changing uses while retaining the property's historic character.
- *Restoration* depicts a property at a particular period of time in its history, while removing evidence of other periods.
- *Reconstruction* recreates vanished or nonsurviving portions of a property for interpretive purposes.

The Secretary's Standards, revised in 1992, were codified as 36 CFR Part 68 in the July 12, 1995 *Federal Register* (Vol. 60, No. 133). They pertain to all historic resource types included in the NRHP—buildings, sites, structures, districts, and objects.

State

Public Resources Code, Section 21084.1

Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, or scientific importance. A cultural resource may be eligible for inclusion in the California Register of Historical Resources (CRHR) if it:

- (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, represents the work of an important creative individual, or possesses high artistic values; or
- (4) has yielded, or may be likely to yield, information important in prehistory or history.

Properties that are listed in or eligible for listing in the NRHP are automatically listed in the CRHR, and thus are significant historical resources for the purpose of CEQA (PRC Section 5024.1[d][1]).

California Environmental Quality Act

For the purpose of this analysis, the following applicable thresholds of significance have been used to determine whether implementing the SMUD Headquarters Building and Site Rehabilitation Project would result in a significant impact. The State CEQA Guidelines identify significance criteria that establish whether a particular impact would have a significant effect on a resource. For cultural resources, these criteria are that an impact of the project would be significant if the project would:



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- cause a substantial adverse change in the significance of a unique archaeological resource or a historical resource as defined in PRC Section 21083.2 and Section 15064.5 of the State CEQA Guidelines, respectively;
- directly or indirectly destroy a unique paleontological resource or site or unique geological feature; or
- disturb any human remains, including those interred outside of formal cemeteries.

Section 15064.5 of the State CEQA Guidelines defines “substantial adverse change” as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings. Actions that would materially impair the significance of a historic resource are any actions that would demolish or adversely alter those physical characteristics that convey its historical significance and qualify it for inclusion in the CRHR or in a local register or survey that meet the requirements of PRC Sections 5020.1(k) and 5024.1(g).

Impact indicators would be any aspect of the project that results in any of the aforementioned impacts.

However, Section 15064.5(b)(3) of the State CEQA Guidelines states:

Generally, a project that follows *The Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitation, Restoring, and Reconstructing Historic Buildings* or *The Secretary of the Interior’s Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (1995), Weeks and Grimmer, shall be considered as mitigated to a level of less-than-significant impact on the historical resource. It should also be noted that the Secretary of the Interior has developed guidelines for the rehabilitation of cultural landscapes as well (National Park Service 1996).

According to the State CEQA Guidelines, effects on important or unique archaeological resources must be addressed as well. To be considered important or unique, an archaeological resource must meet one of the following criteria:

- association with an event or person of recognized significance in California or American history, or recognized scientific importance in prehistory;
- ability to provide information that is of demonstrable public interest and is useful in addressing scientifically consequential and reasonable research questions;
- possession of a special or particular quality, such as oldest, best example, largest, or last surviving example of its kind;
- age of at least 100 years, and possession of substantial stratigraphic integrity; or
- ability to address important research questions that historical research has shown can be answered only with archaeological methods.

Sacramento 2030 General Plan

The following goal and policies from the Historic and Cultural Resources Element of the *Sacramento 2030 General Plan* (City of Sacramento 2009) are applicable to the proposed project.

Goal HCR 2.1. Identification and Preservation of Historic and Cultural Resources. Identify and preserve the city's historic and cultural resources to enrich our sense of place and our understanding of the City's prehistory and history.

- **Policy HCR 2.1.1 Identification.** The City shall identify historic and cultural resources including individual properties, districts, and sites (e.g., archaeological sites) to provide adequate protection of these resources.
- **Policy HCR 2.1.3 Consultation.** The City shall consult with the appropriate organizations and individuals (e.g., Information Centers of the California Historical Resources Information System [CHRIS], the Native American Heritage Commission [NAHC], and Native American groups and individuals) to minimize potential impacts to historic and cultural resources.
- **Policy HCR 2.1.12 Contextual Elements.** The City shall promote the preservation, rehabilitation, restoration, and/or reconstruction, as appropriate, of contextual elements (e.g., structures, landscapes, street lamps, signs) related to the historic resource.
- **Policy HCR 2.1.15 Archaeological Resources.** The City shall develop or ensure compliance with protocols that protect or mitigate impacts to archaeological, historic, and cultural resources including prehistoric resources.
- **Policy HCR 2.1.14 Demolition.** The City shall consider demolition of historic resources as a last resort, to be permitted only if rehabilitation of the resource is not feasible, demolition is necessary to protect the health, safety, and welfare of its residents, or the public benefits outweigh the loss of the historic resource.
- **Policy HCR 2.1.15 Archaeological Resources.** The City shall develop or ensure compliance with protocols that protect or mitigate impacts to archaeological, historic, and cultural resources including prehistoric resources.

City of Sacramento Historic Preservation Program

The City's historic preservation program began in 1975 with the enactment of the City's first historic preservation ordinance. Amendments to the original preservation ordinance, under Ordinance No. 2006-063, were enacted in October 2006, amending Historic Preservation Chapter 17.134 of Title 17 of the Sacramento City Code. On September 30, 2013, these sections of the code, under Chapter 17.134 related to historic preservation, were included in a comprehensive update of Title 17 under its new name "Planning & Development Code," formerly known as the Zoning Code. Under the new Title 17, the Historic Preservation Chapter

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was generally relocated to Chapter 17.604; however, the substance of the preservation sections was generally not materially changed. Changes related to procedure were also relatively minor.

The Sacramento City Code provides for the compilation of the ordinances adopting designations and deletions of Landmarks, Contributing Resources, and Historic Districts into the Sacramento Register (Landmark Eligibility Criteria [17.604.210(A)]).

Professional Paleontological Standards

The Society of Vertebrate Paleontology (SVP 1995, 1996), a national scientific organization of professional vertebrate paleontologists, has established standard guidelines that outline acceptable professional practices in the conduct of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, specimen preparation, analysis, and curation. Most practicing professional paleontologists in the nation adhere to the SVP assessment, mitigation, and monitoring requirements, as specifically spelled out in its standard guidelines.

Methods

Cultural Resources

Cultural resources staff conducted a records search at the North Central Information Center of the CHRIS on July 17, 2014. The results of the records search are discussed below. An architectural historian conducted a visit of the project site to record the Headquarters Building and site.

A contact letter was sent on October 1, 2014, to the NAHC and on January 15, 2015, to currently known Native American groups that may have information pertaining to the project area, and local historical societies and preservation groups. Meetings with representatives from the City of Sacramento's Preservation Department were also conducted and the results are discussed below.

SMUD also commissioned a CLR (Appendix C) and a HSR (Appendix B) for use by the SMUD Headquarters Building and Site Rehabilitation Project design teams. Information from the CLR and HSR was used to complete this analysis.

Meetings with the City of Sacramento Preservation Director

SMUD held several meetings between the City of Sacramento preservation staff, representatives of the State Office of Historic Preservation, the Dreyfuss & Blackford design team (including a Historic Architect from Wiss, Janney, Elstner Associates, Inc.), an AECOM Historic Landscape Architect, and the AECOM CEQA compliance team to allow for comments on protection methods for the SMUD Headquarters Building and Site Rehabilitation Project. Highlights from those meetings are described below.

The State Office of Historic Preservation representatives noted the importance of adhering to the Secretary of the Interior's Standards. The design team noted its inclusion of Alan Dreyfuss



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(Wiss, Janney, Elstner Associates, Inc.) to assist with all plans to be sure that design plans were in keeping with the Secretary's Standards. It was noted that these standards would be reiterated in the CEQA analysis and that relevant sections would be highlighted and addressed, as applicable.

All CEQA compliance and evaluation work for the SMUD Headquarters Building is being conducted by teams with qualified professionals who meet one or more of the Secretary of the Interior's qualifications for work in archaeology, history, architectural history, historical landscape architecture, and historic architecture. The proposed project will be designed to have a minimal impact on character-defining features of the headquarters building and site. Dreyfuss & Blackford, which is both the original architectural firm and the architectural firm providing the rehabilitation design and specifications for the building, includes both in-house preservation architects and teamed preservation architecture staff members from Wiss, Janney, Elstner Associates, Inc. It was noted that Dreyfuss & Blackford has prepared all building design documentation throughout the course of the project, and would remain intimately involved through project completion. Callander Associates Landscape Architecture has been retained for design of the site renovation and is being assisted by Page & Turnbull.

SMUD agreed that all prudent and feasible measures would be undertaken to ensure that all procedures described under the proposed project would avoid alterations of character-defining features of the SMUD Headquarters Building and site as per the Secretary of the Interior's standards for rehabilitation. Under the proposed project, rehabilitation work would result in few changes that would be visually perceptible to employees and visitors to the building. Important proposed project work, such as the improvements needed for the core expansion and addition of the security fence, would be designed to be incorporated with less-than-significant impacts on the building and site's historically significant features and characteristics, and its visual and physical fabric.

It is also anticipated that preservation professionals qualified under the Secretary's Standards may provide further guidance on protection of the historic features of the SMUD Headquarters Building and site during rehabilitation activities within the time frame of the circulation of the IS/MND.

Paleontological Resources

The project's potential impacts on paleontological resources were evaluated using the significance criteria set forth in Appendix G of the State CEQA Guidelines, which state that a project would have a significant impact on paleontological resources if it would directly or indirectly destroy a unique paleontological resource or site. For the purposes of this analysis, a unique resource or site is one that is considered significant under the following professional paleontological standards.

A paleontologically important rock unit is one that (1) has a high potential paleontological productivity rating and (2) is known to have produced unique, scientifically important fossils. The potential paleontological productivity rating of a rock unit exposed at the project site refers to the abundance/densities of fossil specimens and/or previously recorded fossil sites in exposures of the unit. Exposures of a specific rock unit at the project site are most likely to yield fossil

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remains representing particular species in quantities or densities similar to those previously recorded from the unit in other locations.

An individual vertebrate fossil specimen may be considered unique or significant if it is identifiable and well preserved, and it meets one of the following criteria:

- a type specimen (i.e., the individual from which a species or subspecies has been described);
- a member of a rare species;
- a species that is part of a diverse assemblage (i.e., a site where more than one fossil has been discovered) wherein other species are also identifiable, and important information regarding life history of individuals can be drawn;
- a skeletal element different from, or a specimen more complete than, those now available for its species; or
- a complete specimen (i.e., all or substantially all of the entire skeleton is present).

The value or importance of different fossil groups varies depending on the age and depositional environment of the rock unit that contains the fossils, their rarity, the extent to which they have already been identified and documented, and the ability to recover similar materials under more controlled conditions (such as for a research project). Marine invertebrates are generally common; the fossil record is well developed and well documented, and they would generally not be considered a unique paleontological resource. Identifiable vertebrate marine and terrestrial fossils are generally considered scientifically important because they are relatively rare.

Impacts and Mitigation Measures

a) **Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?**

Less-than-Significant Impact with Mitigation Incorporated. The SMUD Headquarters Building and surrounding landscape/site was listed in the NRHP in 2010 and automatically listed in the CRHR, and is therefore a historical resource for the purpose of CEQA. No other historical resources would be affected by the proposed project. The SMUD Headquarters Building and Site Rehabilitation Project would include the in-kind replacement of severely deteriorated significant features, removal of hazardous materials such as asbestos and lead paint, and necessary modernization of infrastructure for the historic building to perform its functions efficiently by 2015 technological standards for the next 50 years. Updates to the site would include the reconfiguration of parking, upgrades to infrastructure, replanting/replacement of trees, and installation of a security fence. Proposed changes to the historic building and site work would be performed according to *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. The rehabilitation plans are being prepared by an architect and site design team experienced in historic preservation work. However, the SMUD Headquarters Building is listed in the NRHP and CRHR and therefore is a historical resource for CEQA



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purposes, and finalization of the proposed design work to meet the Secretary of the Interior's Rehabilitation Standards has not been completed. Thus, absent appropriate mitigation, this impact would be **potentially significant**.

Mitigation Measure CUL-1. Ensure Appropriate Protection Measures for SMUD Headquarters and Site.

To ensure the protection and maintenance of the historic integrity of the historically significant Headquarters Building and associated landscape throughout the construction period, specific protection measures and recommendations developed by the staff of Wiss, Janney, Elstner Associates, Inc. (HSR) and AECOM (CLR) shall be implemented and/or followed during project design, as appropriate. The Headquarters Building treatment measures include those outlined in the HSR (Appendix B), as appropriate given the proposed project components and goals (Wiss, Janney, Elstner Associates, Inc. 2014). The landscape treatment measures include those outlined in the CLR (Appendix C), as appropriate given the proposed project components and goals (AECOM 2014a). Protection measures for the proposed project include but are not limited to, the following:

- (1) Qualified conservators shall be consulted to develop protection measures for the Wayne Thiebaud mural and other artwork. Appropriate preservation staff shall be made available to review all phases of work for consistency with resource protection.*
- (2) Appropriate contributing historic light or other contributing fixtures or features shall be cataloged, salvaged, and taken off-site for refurbishment as necessary.*
- (3) Historic finishes and materials shall be protected with appropriate methods.*
- (4) Where no work will take place, areas of the building and landscape shall be barricaded to maintain a physical space between active construction work and protected features.*
- (5) Contractor activities shall require preparation of "means and methods" procedures ensuring that no protected features are disturbed.*
- (6) Training on protection of historical features shall be provided for all construction workers before the beginning of work on-site.*
- (7) Infrastructure upgrades (e.g., conduit in walls) shall be installed where they will not affect significant historic fabric.*
- (8) In addition to the protective measures, above, cleaning of historic finishes using "the gentlest means possible" as directed by the Standards for Rehabilitation shall be used.*
- (9) When features are to be removed for restoration or repair, all items designated to be retained and reinstalled shall be recorded, labeled, and stored.*



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- (10) *Active site protection administration shall be available from the staff of Wiss, Janney, Elstner Associates, Inc. and AECOM, as needed to ensure that protective measures have been satisfactorily implemented.*

Mitigation Measure CUL-2. Conduct Peer Review of Design Plans.

A qualified historic preservation specialist shall conduct a third-party review of the proposed design plans (at least 60% design) for both the building and site before the start of construction to ensure that the plans meet the Secretary of the Interior's Rehabilitation Standards. Reviewers shall meet The Secretary of the Interior's Professional Qualifications Standards for Historic Architects [Headquarters Building] and Historic Landscape Architects [the site]. If the review results in a finding that the proposed plans do not meet the standards, design plans for those elements found to be noncompliant shall be updated before the start of construction on those specific elements.

According to Section 15064.5(b)(3) of the State CEQA Guidelines, "...generally, a project that follows the [Secretary's Standards]...shall be considered as mitigated to a level of less-than-significant impact on the historical resource." Therefore, rehabilitation of the SMUD Headquarters Building would involve physical upgrades to the historic building's interior, exterior, and site in compliance with the Secretary of the Interior's Rehabilitation Standards, and Mitigation Measures CUL-1 and CUL-2 would ensure that this compliance is followed through construction. Thus, the impact would be reduced to a **less-than-significant** level.

- b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?**

Less-than-Significant Impact with Mitigation Incorporated. To determine whether a substantial adverse change to the significance of archaeological resources would occur, an investigation of the project area was conducted. A records search was completed at the North Central Information Center on July 17, 2014. The records search revealed that four cultural resource studies have been conducted within the general geographic area of the project. The records search further revealed that no previously recorded archaeological sites are located in or within 0.25 mile of the project area.

An aerial review of the project area indicated that it is developed, paved, landscaped, or highly disturbed, suggesting that intact archaeological deposits within these areas are unlikely to be present. Given the high level of disturbance, an intact archaeological deposit is unlikely to exist within the project area.

Based on the lack of archaeological resources observed during the survey, the high level of ground surface disturbance, and the absence of previously recorded sites within the project area, it is unlikely that archaeological resources would be encountered during project construction. However, the potential remains for unanticipated buried cultural deposits to be encountered during construction. Therefore, this impact would be **potentially significant**.



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Mitigation Measure CUL-3. Halt Ground-Disturbing Construction Activities if Cultural Materials Are Discovered.

The following measures shall be implemented to avoid or minimize potential impacts on cultural materials:

- In the event that any unanticipated buried cultural deposits are encountered during any phase of project construction, SMUD shall be contacted, all construction work shall be halted within 100 feet of the discovery, and the cultural deposits shall be assessed for significance by a qualified archaeologist. If, through consultation, the discovery is determined to not be significant, work shall be allowed to continue.*
- If a discovery is determined to be significant, a mitigation plan shall be prepared and carried out in accordance with state guidelines. If the resource cannot be avoided, a data recovery plan shall be developed to ensure collection of sufficient information to address archaeological and historical research questions, and the results shall be presented in a technical report that describes field methods, materials collected, and conclusions. Any cultural material collected as part of an assessment or data recovery effort shall be curated at a qualified facility. Field notes and other pertinent materials shall be curated along with the archaeological collection.*

Implementation of Mitigation Measure CUL-3 would reduce this construction-related impact to a **less-than-significant** level.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less-than-Significant Impact with Mitigation Incorporated. Project-related earthmoving activities would occur in the Pleistocene-age Riverbank Formation. Because numerous vertebrate fossils have been recovered from the Riverbank Formation in northern and central California, including localities that are close to the project site, this formation is considered to be paleontologically sensitive. Therefore, earthmoving activities in the Riverbank Formation could result in accidental damage to or destruction of unique paleontological resources. This impact would be **potentially significant**.

Mitigation Measure PALEO-1. Conduct Construction Personnel Education, Stop Work If Paleontological Resources Are Discovered, Assess the Significance of the Find, and Prepare and Implement a Recovery Plan, as Required.

To minimize the potential for destruction of or damage to previously unknown potentially unique, scientifically important paleontological resources during earthmoving activities at the project site, SMUD shall do the following:

- Before the start of any earthmoving activities, SMUD shall retain a qualified paleontologist to train all construction personnel involved with earthmoving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and proper notification procedures should fossils be encountered.*

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- *If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work in the vicinity of the find and notify SMUD. SMUD shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with Society of Vertebrate Paleontology guidelines (SVP 1996). The recovery plan may include but is not limited to a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. The recovery plan shall be submitted to the City of Sacramento for review. Recommendations in the recovery plan that are determined by the City of Sacramento to be necessary and feasible shall be implemented by SMUD or its contractors before construction activities can resume at the site where the paleontological resources were discovered.*

Implementation of Mitigation Measure PALEO-1 would reduce the potentially significant impact related to damage or destruction of unique paleontological resources to a **less-than-significant** level because construction workers would be alerted to the possibility of encountering paleontological resources and, in the event that resources were discovered, fossil specimens would be recovered and recorded and would undergo appropriate curation.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less-than-Significant Impact with Mitigation Incorporated. Based on the results of the investigation described above under Question b), no cemeteries, Native American burials, or any other human remains have been identified within the project area. If previously unknown human remains were discovered on the project site during construction, this impact would be **potentially significant**.

Mitigation Measure CUL-4. Stop Potentially Damaging Work If Human Remains Are Uncovered during Construction, Assess the Significance of the Find, and Pursue Appropriate Management.

To minimize the potential for destruction of or damage to previously unknown human remains during earthmoving activities at the project site, SMUD shall implement the following measures:

- *In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, the contractor(s) shall immediately halt potentially damaging excavation in the area of the burial and notify the Sacramento County Coroner and a professional archaeologist to determine the nature of the remains. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the NAHC by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). After the coroner's findings have been made, the archaeologist and the NAHC-designated Most Likely Descendant (MLD) shall determine the ultimate treatment and disposition*



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of the remains. The responsibilities of SMUD and the City for acting upon notification of a discovery of Native American human remains are identified in PRC Section 5097.9 et seq.

- *Upon the discovery of Native American remains, SMUD shall ensure that the all construction work will stop within 100 feet of the discovery until consultation with the MLD has taken place. The MLD shall have 48 hours to complete a site inspection and make recommendations after being granted access to the site. A range of possible treatments for the remains, including nondestructive removal and analysis, preservation in place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment may be discussed. PRC Section 5097.98(b)(2) suggests that the concerned parties may mutually agree to extend discussions beyond the initial 48 hours to allow for the discovery of additional remains. The following is a list of site protection measures that SMUD shall employ:*
 - (1) *Record the site with the NAHC or the appropriate Information Center.*
 - (2) *Use an open-space or conservation zoning designation or easement.*
 - (3) *Record a document with the county in which the property is located.*
- *SMUD or SMUD's authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance if the NAHC is unable to identify an MLD, or if the MLD fails to make a recommendation within 48 hours after being granted access to the site. SMUD or SMUD's authorized representative may also reinter the remains in a location not subject to further disturbance if he or she rejects the recommendation of the MLD and mediation by the NAHC fails to provide measures acceptable to the landowner. SMUD shall implement mitigation for the protection of the burial remains. Construction work in the vicinity of the burials shall not resume until the mitigation is completed.*

Implementation of Mitigation Measure CUL-4 would reduce the potentially significant impact related to damage or destruction of human remains to a **less-than-significant** level because construction workers would be alerted to the possibility of encountering human remains and, in the event that human remains were discovered, and would be treated in accordance with California Health and Safety Code Sections 7050.5 and 7052 and PRC Section 5097.



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	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporation	Less-Than- Significant Impact	No Impact
3.6 GEOLOGY AND SOILS				
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated in 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 & Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input 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 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soils, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternate wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project site is located in the Sacramento Valley, which forms the northern portion of the Great Valley geomorphic province of California. The Great Valley is a northwest-trending asymmetrical depression (formed by intersecting, downward-sloping folds of bedrock) approximately 50 miles wide and 400 miles long. It lies between the mountains of the Sierra



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Nevada to the east, the Cascade Range and Klamath Mountains to the north, and the Coast Ranges to the west.

Most of the surface of the Great Valley is covered with Holocene (11,700 B.P. to Present Day) and Pleistocene age (1.8 million to 11,700 B.P.) alluvium, composed primarily of sediments from the Sierra Nevada and the Coast Ranges, which were carried by rivers and deposited on the valley floor. As discussed in detail in Section 3.5, “Cultural Resources,” the headquarters site and the temporary trailer locations at the Field Reporting Facility and 59th Street sites are underlain by the Pleistocene-age Riverbank Formation (Helley and Harwood 1985; Wagner et al. 1987).

The Great Valley is bounded on the west by the Great Valley fault zone and the Coast Ranges and on the east by the Sierra Nevada and the Foothills fault zone. Relatively few faults in the Great Valley have been active during the last 11,700 years. The closest faults to the project site with evidence of displacement during Holocene time are the Dunnigan Hills Fault (approximately 35 miles to the northwest) and the Cleveland Hills Fault (approximately 60 miles to the north). In general, active faults are located along the western margin of the Central Valley (e.g., the Great Valley Fault) and within the Coast Ranges. (Jennings 1994.)

A review of U.S. Natural Resources Conservation Service (NRCS) (2013) soil survey data indicates that the Headquarters Building project site is composed of the Americanos–Urban Land Complex, San Joaquin–Urban Land Complex, and Urban Land. The Field Reporting Facility and 59th Street trailer locations, within which additional earthmoving activities could occur, are both composed of Urban Land. Because the SMUD facilities were constructed in the early 1960s, the Urban Land at these locations presumably consists of compacted artificial fill. Table 3.6-1 shows the relevant characteristics of these soil types.

Soil Map Unit	Water Erosion Hazard¹	Wind Erosion Hazard²	Shrink-Swell Potential³	Permeability⁴	Drainage Class
Americanos–Urban Land Complex	Moderate	5	Low	Moderately high	Well drained
San Joaquin–Urban Land Complex	Moderate	6	Low	Moderately high	Moderately well drained
Urban Land	NR	NR	NR	NR	NR

Notes: NR = not rated

¹ Based on the erosion factor “Kw whole soil,” which is a measurement of relative soil susceptibility to sheet and rill erosion by water.

² The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

³ Based on percentage of linear extensibility. Shrink-swell potential ratings of “moderate” to “very high” can result in damage to buildings, roads, and other structures.

⁴ Based on standard U.S. Natural Resources Conservation Service saturated hydraulic conductivity (Ksat) class limits; Ksat refers to the ease with which pores in a saturated soil transmit water.

Source: NRCS 2013

Regulatory Setting

Federal

In October 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards reduction program. To accomplish this goal, the act established the National Earthquake Hazards Reduction Program. This program was substantially amended in November 1990 by the National Earthquake Hazards Reduction Program Act (NEHRPA), which refined the description of agency responsibilities, program goals, and objectives. The NEHRPA applies to the project because it sets federal standards for building codes, and design and construction techniques to reduce earthquake hazards.

The mission of the National Earthquake Hazards Reduction Program includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improved building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improved mitigation capacity; and accelerated application of research results. The NEHRPA designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns several planning, coordinating, and reporting responsibilities. Other NEHRPA agencies include the National Institute of Standards and Technology, the National Science Foundation, and the U.S. Geological Survey.

State

Alquist-Priolo Earthquake Fault Zoning Act

In 1972, California enacted the Alquist-Priolo Special Studies Zones Act, which was renamed the Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) in 1994 (PRC Sections 2621–2630). The Alquist-Priolo Act requires the establishment of “earthquake fault zones” along known active faults in California. Regulations on development within these zones are enforced to reduce the potential for damage resulting from fault displacement. The main purpose of the law is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The law addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (PRC Sections 2690–2699.6) addresses earthquake hazards from nonsurface fault rupture, including liquefaction and seismically induced landslides. The act established a mapping program for areas that have the potential for liquefaction, landslide, strong ground shaking, or other earthquake and geologic hazards. The act also specifies that the lead agency for a project may withhold development permits until geologic or

soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

California Building Standards Code

The California Building Standards Commission is responsible for coordinating, managing, adopting, and approving building codes in California. The State of California provides minimum standards for building design through the California Building Standards Code (CBC) (CCR Title 24). The CBC applies to building design and construction in the state and is based on the federal Uniform Building Code used widely throughout the country (generally adopted on a state-by-state or district-by-district basis). The CBC has been modified for California conditions with numerous more detailed or more stringent regulations. Structures constructed as part of the project must comply with the CBC.

The state earthquake protection law (California Health and Safety Code Section 19100 et seq.) requires that structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. The CBC requires an evaluation of seismic design that falls into Categories A through F (where F requires the most earthquake-resistant design) for structures designed for a project site. The CBC philosophy focuses on “collapse prevention,” meaning that structures are designed for prevention of collapse for the maximum level of ground shaking that could reasonably be expected to occur at a site. Chapter 16 of the CBC specifies exactly how each seismic design category is to be determined on a site-specific basis through the site-specific soil characteristics and proximity to potential seismic hazards.

Chapter 18 of the CBC regulates the excavation of foundations and retaining walls. This chapter regulates the preparation of a preliminary soil report, engineering geologic report, geotechnical report, and supplemental ground-response report. Chapter 18 also regulates analysis of expansive soils and the determination of the depth to groundwater table. For Seismic Design Category C, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading. For Seismic Design Categories D, E, and F, Chapter 18 requires these same analyses plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also requires that mitigation measures be considered in structural design. Mitigation measures may include ground stabilization, selection of appropriate foundation type and depths, selection of appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions. Peak ground acceleration must be determined from a site-specific study, the contents of which are specified in CBC Chapter 18.

Where no other building codes apply, Chapter 29 of the CBC regulates excavation, foundations, and retaining walls. Appendix J of the CBC regulates grading activities, including drainage and erosion control and construction on unstable soils, such as expansive soils and areas subject to liquefaction.



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The California Historical Building Code (CHBC) (CCR Title 24, Part 8) is part of the CBC. The CHBC provides regulations for preservation, restoration, rehabilitation, relocation, or reconstruction of buildings or properties designated as qualified historical buildings or properties. The CHBC is intended to provide solutions for the preservation of qualified historical buildings or properties, to promote sustainability, to provide access for persons with disabilities, to provide a cost-effective approach to preservation, and to provide for the reasonable safety of the occupants or users. The CHBC requires enforcing agencies to accept solutions that are reasonably equivalent to, but may be different from, the requirements in the CBC's regular code when dealing with qualified historic buildings or properties. Because the Headquarters Building and site is listed in the NRHP, the CHBC would apply to the proposed project.

National Pollutant Discharge Elimination System and Storm Water Pollution Prevention Plans

As discussed in detail in Section 3.9, "Hydrology and Water Quality," the State Water Resources Control Board (SWRCB) and Central Valley Regional Water Quality Control Board (RWQCB) have adopted specific National Pollutant Discharge Elimination System (NPDES) permits for a variety of activities that have the potential to discharge wastes (including sediment) to waters of the state. The SWRCB's statewide stormwater general permit for construction activity (Order 2009-0009-DWQ) is applicable to all land-disturbing construction activities that would disturb 1 acre or more. Compliance with the NPDES permit requires submittal to the Central Valley RWQCB of notices of intent (NOIs) to discharge, and implementation of storm water pollution prevention plans (SWPPPs) that include best management practices (BMPs) to minimize water quality degradation during construction activities.

Local

City of Sacramento General Plan

The following goals and policies from the Environmental Resources Element of the *Sacramento 2030 General Plan* (City of Sacramento 2009) are applicable to the proposed project.

Goal ER 1.1 Water Quality Protection. Protect local watersheds, water bodies and groundwater resources, including creeks, reservoirs, the Sacramento and American rivers, and their shorelines.

- **Policy ER.1.1.3 Stormwater Quality.** The City shall control sources of pollutants and improve and maintain urban runoff water quality through storm water protection measures consistent with the City's National Pollution Discharge Elimination System (NPDES) Permit.
- **Policy ER 1.1.7 Construction Site Impacts.** The City shall minimize disturbances of natural water bodies and natural drainage systems caused by development, implement measures to protect areas from erosion and sediment loss, and continue to require construction contractors to comply with the City's erosion and sediment control ordinance and stormwater management and discharge control ordinance.

Goal EC 1.1 Hazards Risk Reduction. Protect lives and property from seismic and geologic hazards and adverse soil conditions.

- **Policy EC 1.1.1 Review Standards.** The City shall regularly review and enforce all seismic and geologic safety standards and require the use of best management practices (BMPs) in site design and building construction methods.
- **Policy EC 1.1.2 Geotechnical Investigations.** The City shall require geotechnical investigations to determine the potential for ground rupture, ground-shaking, and liquefaction due to seismic events, as well as expansive soils and subsidence problems on sites where these hazards are potentially present.
- **Policy EC 1.1.3 Retrofit Critical Facilities.** The City shall promote the upgrade, retrofitting, and/or relocation of all existing critical facilities (e.g., hospitals, schools, police stations, and fire stations) and other important public facilities that do not meet current building code standards and are within areas susceptible to seismic or geologic hazards.

City of Sacramento Grading, Erosion, and Sediment Control Ordinance

The City's Grading, Erosion, and Sediment Control Ordinance (Sacramento City Code, Title 15, Chapter 15.88) includes specific standards for project construction related to erosion control. This ordinance requires preparation and submittal of a grading plan along with erosion and sediment control plans that would be implemented both during and following the completion of construction activities. The plans must contain a list of all BMPs that would be used to reduce erosion and control stormwater runoff.

Impacts and Mitigation Measures

- 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 California Geological Survey Special Publication 42.)**

Less-than-Significant Impact. Surface ground rupture along faults is generally limited to a linear zone a few yards wide. Because no active faults are mapped across the project site and the project site is not located within an Alquist-Priolo Earthquake Fault Zone, fault ground rupture is unlikely (CGS 2012; Jennings 1994). Therefore, this impact would be **less than significant**.

- ii. **Strong seismic ground shaking?**

Less-than-Significant Impact. The project site is located in the center of the Sacramento Valley, which has historically experienced a low level of seismic ground shaking. The nearest

faults that have exhibited evidence of displacement during the last 11,700 years are the Dunnigan Hills and Great Valley Faults, which are approximately 35 miles northwest and west, respectively, from the project site. Other active faults, such as the Green Valley and Concord Faults, are located approximately 45–50 miles to the west in the Coast Ranges.

The intensity of ground shaking depends on the distance from the earthquake epicenter to the site, the magnitude of the earthquake, site soil conditions, and the characteristics of the source. Ground motions from seismic activity can be estimated by probabilistic method at specified hazard levels and by site-specific design calculations using a computer model. Because a site-specific geotechnical report has not yet been prepared as required by the 2013 CBC, the California Geological Survey's probabilistic seismic hazards ground-motion calculator (CGS 2008) was used to obtain an estimate of the anticipated level of ground shaking as a basis for this environmental assessment. Use of this calculator indicates that a minimum horizontal acceleration of 0.188g (where *g* is the percentage of gravity) could be anticipated at the project site with a 10% probability of earthquake occurrence in a 50-year time frame (also known as the "Design Basis Earthquake") for use in earthquake-resistant design (CGS 2008). Stated another way, these calculations indicated that there is a 1-in-10 probability that an earthquake will occur within 50 years that would result in a peak horizontal ground acceleration exceeding 0.188g. This result indicates that a very low level of seismic ground shaking would be anticipated at the project site.

Because the Headquarters Building was constructed in 1960, it does not meet the requirements of the current CBC for earthquake-resistant design; however, one of the project goals is to retrofit the building to meet the current seismic design standards using methodologies permitted under the CHBC. Therefore, the impact of the project related to strong seismic ground shaking would be **beneficial** and **less than significant**.

iii. Seismic-related ground failure, including liquefaction?

Less-than-Significant Impact. Soil liquefaction most commonly occurs when ground shaking from an earthquake causes a sediment layer saturated with groundwater to lose strength and take on the characteristics of a fluid, thus becoming similar to quicksand. Liquefaction may also occur in the absence of a seismic event, when unconsolidated soil above a hardpan becomes saturated with water. Factors determining liquefaction potential are the soil type, the level and duration of seismic ground motions, the type and consistency of soils, and the depth to groundwater. Loose sands, peat deposits, and unconsolidated Holocene-age sediments are the most susceptible to liquefaction, while clayey silts, silty clays, and clays deposited in freshwater environments are generally stable under the influence of seismic ground shaking.

Although the water table in Sacramento is generally shallow, the Headquarters Building project site and the Field Reporting Facility and 59th Street trailer locations are underlain by stable, Pleistocene-age sediments of the Riverbank Formation (see Section 3.5, "Cultural Resources") along with compacted artificial fill, and active seismic sources are a relatively long distance away. Therefore, liquefaction is unlikely to occur and this impact would be **less than significant**.

iv. Landslides?

No Impact. The Headquarters Building project site and the Field Reporting Facility and 59th Street trailer sites are located on nearly level ground, and are not located adjacent to any steep slopes where landslides could occur. Thus, the proposed project would have **no impact** related to landslides.

b) Result in substantial soil erosion or the loss of topsoil?

Less-than-Significant Impact with Mitigation Incorporated. As shown in Table 3.6-1, NRCS soil survey data indicate that project site soils are moderately susceptible to wind and water erosion hazards. Construction activities would involve grading, excavating, trenching, moving, filling, and temporary stockpiling of soil within the project site. Construction activities would remove vegetative cover and existing paving and would expose site soils to erosion via wind in the summer months, and to surface water runoff during storm events. Sediment from construction activities could be transported within stormwater runoff and could drain to off-site areas and degrade local water quality. Therefore, this impact would be **potentially significant**.

Mitigation Measure GEO-1: Implement Mitigation Measure HYDRO-1, "Prepare and Implement a Storm Water Pollution Prevention Plan and an Erosion and Sediment Control Plan, and Implement Best Management Practices."

The proposed project shall comply with applicable regulations designed to reduce or eliminate construction-related water quality effects, including the NPDES Construction General Permit, stormwater quality improvement plan, and Grading, Erosion, and Sediment Control Ordinance. Before development and issuance of the grading permits, an application for coverage under the Construction General Permit (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-006-DWQ) and an erosion and sediment control plan shall be submitted to the City. Before construction may begin, a NOI shall be filed with the Central Valley RWQCB and a project-specific SWPPP shall be developed to minimize erosion and transport of sediment, meet water quality objectives identified in the Water Quality Control Plan for the Sacramento and San Joaquin River Basins, and protect beneficial uses. BMPs included in the SWPPP shall include measures such as installing silt fences, covering stockpiled soils, and locating stockpiled soils away from storm drain inlets. Through the stormwater quality improvement plan, City staff will provide guidance on BMPs to reduce sediment in construction site runoff and reduce other pollutants such as litter and concrete wastes through good-housekeeping procedures and proper waste management. The City's process includes having City staff complete inspections to verify that the erosion and sediment control plan and SWPPP are implemented correctly.

An erosion and sediment control plan shall be developed that includes a site map and a description of BMPs designed to control dust and stabilize the construction site road and entrance, and a description of the methods of storage and disposal of construction materials. Appropriate BMPs for the erosion and sediment control plan may include but are not limited to the following:

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- *Schedule work to minimize soil-disturbing activities during the rainy season and schedule major grading operations for the dry season when practical.*
- *Cover exposed soil to reduce its exposure to rainfall, reserve existing vegetation where feasible, and apply mulch or hydroseed areas until permanent stabilization is established.*
- *Apply water or other dust palliatives to prevent dust nuisance; prevent overwatering that can cause erosion. Alternatively, cover small stockpiles.*
- *Install silt fences, sediment basins, sediment traps, check dams, fiber rolls, sand or gravel bag barriers, straw bale barriers, vegetated swales, approved chemical treatment, storm drain inlet protection, or other low impact development measures to minimize the discharge of sediment. Cover all stockpiled soil until it is needed. Cover all soil in haul trucks.*
- *Stabilize the construction site entrance to prevent tracking of sediment onto public roads by construction vehicles. Stabilize on-site vehicle transportation routes immediately after grading to prevent erosion and control dust.*

Remove litter from the construction site at least once daily. Dispose of packing materials immediately in an enclosed container.

This mitigation measure would require preparation of grading and erosion and sediment control plans and implementation of BMPs to reduce erosion and contain stormwater runoff during construction activities. Implementation of this mitigation measure would also help to reduce construction-related erosion by requiring preparation of a SWPPP and associated BMPs. Therefore, implementation of Mitigation Measure GEO-1 would reduce this impact to a **less-than-significant** level.

- 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?**

Less-than-Significant Impact. As described previously, project site soils consist of stable Pleistocene-age sediments of the Riverbank formation and compacted artificial fill, and there are no known areas of unstable soils such as steep slopes or creek banks that would represent a building hazard. Therefore, this impact would be **less than significant**.

- d) **Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?**

Less-than-Significant Impact. Expansive soils shrink and swell as a result of moisture change. These volume changes can result in damage over time to building foundations, underground utilities, and other subsurface facilities and infrastructure if they are not designed and constructed appropriately to resist the damage associated with changing soil conditions. A review of NRCS (2013) soil survey data indicates that the locations where project-related



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earthmoving activities would occur are composed of soil types with a low shrink-swell potential (see Table 3.6-1). Therefore, this impact would be ***less than significant***.

- e) **Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?**

No Impact. Wastewater treatment for the proposed project would continue to be provided by the City of Sacramento via underground sewer pipelines. Thus, the proposed project would have ***no impact*** related to soil suitability for use of septic tanks or alternative wastewater disposal systems.

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporation	Less-Than- Significant Impact	No Impact
3.7 GREENHOUSE GAS EMISSIONS				
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant effect on the environment?	<input 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 of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

Certain gases in the earth’s atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining the earth’s surface temperature. A portion of the solar radiation that enters the earth’s atmosphere is absorbed by the earth’s surface, and a smaller portion of this radiation is reflected back toward space. This infrared radiation (i.e., thermal heat) is absorbed by GHGs within the earth’s atmosphere. As a result, infrared radiation released from the earth that otherwise would have escaped back into space is instead “trapped,” resulting in a warming of the atmosphere. This phenomenon, known as the “greenhouse effect,” is responsible for maintaining a habitable climate on the earth.

GHGs are present in the atmosphere naturally, are released by natural and anthropogenic sources, and are formed from secondary reactions taking place in the atmosphere. Natural sources of GHGs include the respiration of humans, animals and plants, decomposition of organic matter, and evaporation from the oceans. Anthropogenic sources include the combustion of fossil fuels, waste treatment, and agricultural processes.

GHG emissions related to human activities have been determined as “extremely likely” responsible (indicating 95% certainty) for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth’s atmosphere and oceans, with corresponding effects on global circulation patterns and climate (ARB 2014). The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; however, no single project alone is expected to measurably contribute to a noticeable incremental change in the global average temperature, or to a global, local, or micro climate.

Regulatory Setting

Federal

The U.S. Supreme Court held that EPA must consider regulation of motor vehicle GHG emissions. In *Massachusetts v. Environmental Protection Agency* (2007) 549 U.S. 497, 12

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states (including California) and cities along with several environmental organizations sued to require EPA to regulate GHGs as pollutants under the CAA (127 S. Ct. 1438 [2007]). The Supreme Court ruled that GHGs fit within the CAA's definition of a pollutant and that EPA had the authority to regulate GHGs. On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- *Endangerment Finding:* The current and projected concentrations of the six key GHGs—carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride—in the atmosphere threaten the public health and welfare of current and future generations.
- *Cause or Contribute Finding:* The combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

State

In 2006, California passed the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32; California Health and Safety Code Section 38500 et seq.). AB 32 further details and puts into law the mid-term GHG reduction target established in Executive Order S-3-05: reduce GHG emissions to 1990 levels by 2020. AB 32 also identifies ARB as the state agency responsible for the design and implementation of emissions limits, regulations, and other measures to meet the target.

In December 2008, ARB adopted its *Climate Change Scoping Plan* (Scoping Plan), which contains the main strategies California will implement to achieve the required GHG reductions required by AB 32 (ARB 2008). The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of California's GHG inventory. ARB further acknowledges that decisions about how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors.

ARB is required to update the Scoping Plan at least once every 5 years to evaluate progress and develop future inventories that may guide this process. ARB approved the *First Update to the Climate Change Scoping Plan: Building on the Framework* in June 2014 (ARB 2014). The Scoping Plan update includes a status of the 2008 Scoping Plan measures and other state, federal, and local efforts to reduce GHG emissions in California and potential actions to further reduce GHG emissions by 2020.

Local

On February 14, 2012, to directly address the issue of climate change and GHG emissions, the City of Sacramento adopted its climate action plan (CAP). The intent of the CAP is to identify the nature of GHG emissions in the city and to implement policies, actions, and measures to reduce existing and future GHG emissions.

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In addition, in November 2014, SMAQMD adopted quantitative thresholds of significance for construction and operational GHG emissions (SMAQMD 2014a). These adopted GHG thresholds of significance are used in this analysis to evaluate the proposed project's GHG emissions.

The CAP established GHG emissions reduction goals of 15% below 2005 levels by the year 2020, 38% below 2005 levels by the year 2030, and 83% below 2005 levels by the year 2050. The CAP outlines seven strategies to meet these goals (City of Sacramento 2012). The City of Sacramento's CAP meets the requirements of State CEQA Guidelines Section 15183.5. Therefore, it is a "qualified CAP" that can be used to streamline CEQA review when projects are determined to be consistent with the CAP. With respect to this analysis, the proposed project will be evaluated for its consistency with the CAP's strategies and measures.

Impacts and Mitigation Measures

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less-than-Significant Impact. Construction-related GHG exhaust emissions would be generated by sources such as heavy-duty off-road equipment, trucks hauling materials to the project site, and worker commute vehicles. Operational emissions would be associated with worker commutes (i.e., mobile sources), energy consumption (i.e., electricity and natural gas), water consumption, and waste disposal. GHG emissions were estimated using the same methodology discussed earlier in Section 3.3, "Air Quality." CalEEMod Version 2012.2.2 can estimate GHG emissions from construction and operational activities in units of carbon dioxide equivalents (CO₂e).

SMAQMD has established quantitative significance thresholds for evaluating GHG emissions in CEQA analyses. The screening level is 1,100 metric tons (MT) CO₂e per year for construction or operation of a land use development project (SMAQMD 2014b). Any residential, commercial, or industrial project that would generate more than 1,100 MT CO₂e per year would make a cumulatively considerable incremental contribution to climate change.

The maximum annual emissions during construction of the proposed project would occur in 2016 and were estimated at 944 MT CO₂e per year. The total construction-related GHG emissions for the proposed project were estimated at 1,540 MT CO₂e.

Operation of the rehabilitated Headquarters Building and site would be largely the same as existing operation. Therefore, the net change in operational GHG emissions is anticipated to be nominal and this GHG analysis assumes the same level of on-road vehicle activity for existing conditions and the proposed project. It should be noted that the rehabilitated SMUD Headquarters Building would be more energy and water efficient than the existing building, and thus, the proposed project would likely result in a net decrease in operational GHG emissions.

The total construction and operational GHG emissions associated with the proposed project would be less than the threshold of 1,100 MT CO₂e per year. Therefore, the proposed project



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would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. The impact would be ***less than significant***.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less-than-Significant Impact. ARB's *First Update to the Climate Change Scoping Plan: Building on the Framework* includes measures to meet California's goal of reducing emissions to 1990 levels by 2020 and reiterates the state's role in the long-term goal established in Executive Order S-3-05, which is to reduce GHG emissions to 80% below 1990 levels by 2050.

The Scoping Plan update provides discussions of sector-specific (e.g., transportation) issues, technologies, needs, and ongoing state activities to significantly reduce emissions through 2050. Achieving California's long-term goal will require improved vehicle efficiency, reduced carbon content of fuels, planning and building of communities to reduce vehicular GHG emissions and provide more transportation options, and improved efficiency throughout the existing transportation systems (ARB 2014).

ARB's Scoping Plan update includes measures that would indirectly address GHG emissions from construction activities, including the phasing-in of cleaner technology for diesel engine fleets and the development of a Low Carbon Fuel Standard. Policies formulated under the mandate of AB 32 that apply to construction-related activity, either directly or indirectly, are assumed to be implemented statewide and would affect the proposed project if those policies are implemented before construction begins. The proposed project would comply with any mandate or standards set forth by the Scoping Plan update.

The City's Construction and Demolition Ordinance became effective on January 1, 2011, and requires that a minimum 50% of construction wastes generated by the demolition and remodeling of buildings be recycled or reused. No additional measures for reducing GHG emissions that would apply to the proposed project's construction activities are included in the CAP or other applicable plans.

The completed project would result in more efficient use of energy and resources, and vehicular and pedestrian access to the site and circulation within the site would be improved. The number of employees at the building over a 10-year period following move-in would be similar to the number of employees currently housed at the headquarters site. Thus, long-term operational activities would not conflict with GHG reduction measures from the Scoping Plan or CAP.

Some of the reallocated employees would commute to the EC-OC. The EC-OC has capacity to house these additional employees. The EIR prepared for the EC-OC (SMUD 2010a) previously analyzed and addressed (i.e., in Mitigation Measure Air-2 from EC-OC draft EIR) impacts of GHG emissions at full occupancy of the building. Therefore, the additional trips to the EC-OC by the relocated employees would not result in any new impacts related to GHGs not already addressed in the EC-OC draft EIR and therefore are not evaluated further in this analysis.

As discussed earlier, the proposed project does not exceed the threshold of significance for GHG emissions. The approach to developing a threshold of significance for GHG emissions is to identify the level of emissions for which a project would not be expected to substantially



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conflict with existing California legislation that has been adopted to reduce statewide GHG emissions. Therefore, the project would not conflict with any applicable plan, policy, or regulation for the purpose of reducing GHG emissions. This impact would be ***less than significant***.



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	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporation	Less-Than- Significant Impact	No Impact
3.8 HAZARDS AND HAZARDOUS MATERIALS				
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or to the environment?	<input 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 a public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input 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 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 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

AECOM performed a Limited Phase I Environmental Site Assessment (ESA) at the SMUD Headquarters Building located at 6201 S Street (including 13.66 acres of the surrounding headquarters grounds), the 59th Street trailer location located at 1708 59th Street, and the Field Reporting Facility trailer location at 6100 Folsom Boulevard (AECOM 2014b). The Limited Phase I ESA included a review of local, state, and federal environmental record sources;



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historical records review; aerial photographs; Sanborn Maps; and physical setting sources. AECOM conducted a site reconnaissance of accessible areas on August 14, 2014, to determine current conditions; to check for the storage, use, production, or disposal of hazardous or potentially hazardous materials; and to interview persons knowledgeable about current and past site use. Specific findings of the Limited Phase I ESA are discussed below.

Results of Records Search for Hazardous Materials

As part of the Limited Phase I ESA, AECOM searched several publicly available databases maintained by the State of California and EPA, to ascertain whether any known hazardous materials are present.

A total of eight sites are listed in the leaking underground storage tank (UST) incident reports and are adjacent to the subject property. Leaking UST tank cases for seven of the eight sites have been completed and are considered closed. The eighth site (A-A Auto Services, located at 6101 Folsom Boulevard) is eligible for closure.

The SWRCB's GeoTracker Web site, which provides data relating to leaking USTs and other types of soil and groundwater contamination, along with associated cleanup activities, identified the following contaminated sites located along the contiguous property boundary:

- Open site assessments are being conducted at the former locations of the Mission Laundry facility and Community Linen Rental Service facility, both reportedly steam laundry businesses. Currently, the parcel is a parking lot used by SMUD employees and is the location of SMUD's former hydrogen vehicle fueling facility. The contaminants could potentially migrate onto the project site.
- An open site assessment at the former Kramer Carton Company for tetrachloroethylene (PCE) and trichloroethylene (TCE) is currently listed. The contaminants could potentially migrate onto the project site. Currently no cleanup action exists for this site.

These sites have been identified as recognized environmental conditions, which are defined as the presence or likely presence of any hazardous substances or petroleum products in, on or at a property.

Oil and Hazardous Materials

Approximately 490 gallons of diesel fuel are stored in the tank generator northeast of the Headquarters Building. No leaks or noticeable staining have been reported from the use of the generator.

Hydraulic Equipment

One hydraulic lift station is located in the former transportation department located in the basement of the SMUD Headquarters Building. The hydraulic lift station contains one hydraulic fluid tank (of unknown volume), an oil-water skimmer, and associated hoses. The current integrity of the UST and its content have not been determined. No records of hydraulic fluid



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releases at the subject property related to the lift station have been found or are known to exist. The hydraulic lift has been identified as a recognized environmental condition.

Water Wells

Two closed-loop cooling-water injection wells are located in the northern grounds of the SMUD Headquarters Building. These wells have been out of commission for more than 20 years and as of November 2014 were capped and decommissioned.

Asbestos and Lead-Based Paint

Asbestos-containing materials (ACMs), including sprayed fireproofing, cement plaster finishes, floor tiles and adhesives, pipe insulation, and roofing materials, are present in the Headquarters Building. Asbestos is designated as a hazardous substance when the fibers have the potential to become airborne because the fibers are small enough to lodge in lung tissues and adversely affect human health. The presence of ACMs in existing buildings poses an inhalation threat only if the ACMs are found to be in a friable state. If the ACMs are not friable, there is no inhalation hazard because asbestos fibers remain bound in the material matrix. Emissions of asbestos fiber to the ambient air can occur during activities such as rehabilitation or demolition of structures made with ACMs (e.g., insulation).

Lead-based paints are also present in the Headquarters Building. Lead is a highly toxic metal that was used until the late 1970s in a number of products, most notably paint. Human exposure to lead has been determined by EPA and the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) to be an adverse health risk. Primary sources of lead exposure are deteriorating lead-based paint, lead-contaminated dust, and lead-contaminated soil.

Polychlorinated Biphenyls

Dielectric fluids containing polychlorinated biphenyls ([PCBs](#)) have been widely used as coolants and lubricants in transformers, capacitors, and other electric equipment because of their insulating and nonflammable properties. Limited sampling of PCBs has been conducted in the Headquarters Building. A preliminary PCB survey detected PCBs in concentrations up to 22,000 milligrams per kilogram in the bulk sample of cast panel and window casing sealants. The window casing sealants are still in place and may be removed during rehabilitation [or left behind if sealed and not posing threats to employee safety](#).

In general, transformers older than from 1978 are suspected of containing PCB-containing fluids. Two electrical transformers are located in the basement of the SMUD Headquarters Building. The transformer area and adjacent ground could not be visually inspected at the time of the site reconnaissance.

Wildfire Risk

PRC Sections 4201–4204 and Government Code Sections 51175–51189 require identification of fire hazard severity zones within the state of California. The California Department of Forestry

and Fire Protection (CAL FIRE) has established a fire hazard severity classification system. Fire prevention areas considered to be under state jurisdiction are referred to as “state responsibility areas.” In state responsibility areas, CAL FIRE is required to delineate three hazard ranges: moderate, high, and very high. “Local responsibility areas,” which are under the jurisdiction of local entities (e.g., cities, counties), are required only to identify very high fire hazard severity zones.

The project site is not located within a state responsibility area as identified by CAL FIRE (CAL FIRE 2007). In addition, the project site is not identified by the City as susceptible to an urban wildfire (City of Sacramento 2009:6.10-18).

Regulatory Setting

Federal

Hazardous Materials Handling

EPA is primarily responsible for enforcing and implementing federal laws and regulations pertaining to hazardous materials. Applicable regulations are contained mainly in CFR Titles 29, 40, and 49. Hazardous materials, as defined in the CFR, are listed in 49 CFR 172.101. Management of hazardous materials is governed by the following laws:

- *Resource Conservation and Recovery Act of 1976 (RCRA)*: The RCRA (42 U.S. Code [USC] 6901 et seq.) established an all-encompassing federal regulatory program for hazardous substances. Under the RCRA, EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances. The RCRA was amended in 1984 by the Hazardous and Solid Waste Amendments of 1984, which specifically prohibits the use of certain techniques to dispose of various hazardous substances. EPA has delegated many of the RCRA requirements to the California Department of Toxic Substances Control (DTSC).
- *Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)*: CERCLA, also called the Superfund Act (42 USC 9601 et seq.), created a trust fund to provide broad federal authority for releases or threatened releases of hazardous substances that could endanger public health or the environment.
- *Superfund Amendments and Reauthorization Act of 1986*: CERCLA created the Superfund hazardous substance cleanup program (Public Law 96-510, enacted December 11, 1980). The program was enlarged and reauthorized by the Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499).

These laws and associated regulations include specific requirements for facilities that generate, use, store, treat, and/or dispose of hazardous materials. EPA compiles a list of national priorities among the known or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories, known as the National Priorities List. These locations are commonly referred to as “Superfund sites.” EPA provides oversight and



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supervision for federal Superfund investigation/remediation projects, evaluates remediation technologies, and develops hazardous materials disposal restrictions and treatment standards.

In addition, the federal Emergency Planning and Community Right-to-Know Act of 1986 imposes planning requirements for hazardous materials to help protect local communities in the event of accidental release of hazardous substances. OSHA regulates use and safety considerations related to blasting activities. The Bureau of Alcohol, Tobacco, Firearms and Explosives of the U.S. Department of Justice regulates storage of explosives and blasting agents (27 CFR 55, "Commerce in Explosives").

Regulation of Polychlorinated Biphenyls

The Toxic Substances Control Act of 1976 (15 USC 2605) banned the manufacture, processing, distribution, and use of PCBs in totally enclosed systems. PCBs are considered hazardous materials because of their toxicity. They have been shown to cause cancer in animals, along with effects on the immune, reproductive, nervous, and endocrine systems, and studies have shown evidence of similar effects in humans. The EPA Region 9 PCB Program regulates remediation of PCBs in several states, including California. Title 40 of the CFR, Section 761.30(a)(1)(vi)(A) states that all owners of electrical transformers containing PCBs must register their transformers with EPA. Specified electrical equipment manufactured between July 1, 1978, and July 1, 1998, that does not contain PCBs must be marked by the manufacturer with the statement "No PCBs" (Section 761.40[g]). Transformers and other items manufactured before July 1, 1978, and containing PCBs must be marked as such.

Asbestos

The federal Clean Air Act was enacted in 1970. The most recent major amendments by Congress were made in 1990. The CAA required EPA to establish primary and secondary national ambient air quality standards. The CAA also required each state to prepare an air quality control plan, referred to as a SIP. Section 112 of the CAA defines "hazardous air pollutants" and sets threshold limits. Asbestos-containing substances are regulated by EPA under the CAA. Additional information about the CAA is contained in Section 3.3, "Air Quality."

Worker Safety Requirements

OSHA is responsible at the federal level for ensuring worker safety. OSHA sets federal standards for implementation of workplace training, exposure limits, and safety procedures for the handling of hazardous substances and addressing other potential hazards. OSHA also establishes criteria by which each state can implement its own health and safety program.

State

Hazardous Materials Handling

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 requires preparation of hazardous materials business plans and disclosure of hazardous materials inventories. A business plan includes an inventory of hazardous materials handled,



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facility floor plans showing where hazardous materials are stored, an emergency response plan, and provisions for employee training in safety and emergency response procedures (California Health and Safety Code, Division 20, Chapter 6.95, Article 1). The business plan program is administered by the California Emergency Management Agency. A business plan is required if a hazardous substance would be stored for more than 30 days in any of the following quantities:

- 500 gallons or more of any solid,
- 55 gallons or more of any liquid,
- 200 cubic feet or more of any compressed gas, or
- any acutely hazardous substance or radiological material that meets the federal threshold planning quantities listed in 40 CFR Part 355, Subpart A.

Cleanup of Contaminated Sites

Several state regulatory structures govern cleanup of contaminated sites in California. Many of these programs are regulated by DTSC: RCRA corrective actions, state Superfund sites, brownfields programs, and voluntary cleanups. The SWRCB (through RWQCBs and some local agencies) regulates releases with the potential to affect water resources under programs such as the UST Program and the Spills, Leaks, Investigations, and Cleanups Program. Regulatory authority for these programs may be delegated by the federal government (as with RCRA corrective actions directed by DTSC) or may be found in the California Health and Safety Code. The specifics of these regulations vary, but generally they require that sites where hazardous materials have been released be reported, investigated, and remediated, and that any hazardous materials be disposed of appropriately. These programs govern a range of pollutants, such as solvents, petroleum fuels, heavy metals, and pesticides in surface water, groundwater, soil, sediment, and air.

Worker Safety Requirements

The California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations in California. Cal/OSHA regulations pertaining to the use of hazardous materials in the workplace (CCR Title 8) include requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and preparation of emergency action and fire prevention plans. Cal/OSHA enforces hazard communication program regulations that contain training and information requirements. These requirements include procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparing health and safety plans to protect workers and employees at hazardous waste sites. The hazard communication program requires that employers make material safety data sheets available to employees and document employee information and training programs.



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Unified Program

The California Environmental Protection Agency grants to qualifying local agencies oversight and permitting responsibility for certain state programs pertaining to hazardous waste and hazardous materials. This is achieved through the Unified Program, created by state legislation in 1993 to consolidate, coordinate, and make consistent the administrative requirements, permits, inspections, and enforcement activities for the following emergency and management programs:

- Hazardous materials release response plans and inventories (business plans)
- California Accidental Release Prevention Program
- UST Program
- Aboveground Petroleum Storage Act Requirements for Spill Prevention, Control, and Countermeasure plans
- Hazardous Waste Generator and On-site Hazardous Waste Treatment (tiered permitting) Programs
- California Uniform Fire Code: Hazardous material management plans and hazardous material inventory statements

California Accidental Release Prevention Program

The goal of the California Accidental Release Prevention Program, overseen by the California Emergency Management Agency, is to reduce the likelihood and severity of the consequences of releases of extremely hazardous materials. Any business that handles regulated substances is required to prepare a risk management plan. Regulated substances are chemicals that pose a major threat to public health and safety or the environment because they are highly toxic, flammable, or explosive, such as ammonia, chlorine gas, hydrogen, nitric acid, and propane. The risk management plan is a detailed engineering analysis of the potential accident factors present at a business and the measures that can be implemented to reduce this accident potential. The risk management plan must provide safety information, hazard data, operating procedures, and training and maintenance requirements.

Public Resources Code Section 65962.5 (Cortese List)

The provisions of PRC Section 65962.5 are commonly referred to as the "Cortese List" (after the legislator who authored the legislation that enacted it). The Cortese List is a planning document used by state and local agencies to comply with CEQA requirements in providing information about the location of hazardous materials release sites. PRC Section 65962.5 requires Cal/EPA to develop an updated Cortese List annually, at minimum. DTSC is responsible for a portion of the information contained in the Cortese List. Other state and local government agencies in California are required to provide additional information about releases of hazardous materials for the Cortese List.

Asbestos Abatement

The ARB Asbestos Program oversees implementation of, and compliance with the National Emission Standard for Hazardous Air Pollutants for Asbestos, and investigates all related complaints, as specified by California Health and Safety Code Section 39658(b)(1). For areas in “nondelegated” districts without asbestos programs, ARB reviews and investigates notifications of demolition or rehabilitation for compliance with the National Emission Standard for Hazardous Air Pollutants for Asbestos as established in Rule 902. The project site is located within a “nondelegated” district (ARB 2010).

Local

Sacramento County Environmental Management Department, Hazardous Materials Division

The Hazardous Materials Division of the Sacramento County Environmental Management Department is the designated Certified Unified Program Agency for the City of Sacramento and Sacramento County. As the Certified Unified Program Agency, the Hazardous Materials Division is responsible for implementing six statewide environmental programs for Sacramento County:

- Underground storage of hazardous substances (USTs)
- Hazardous materials business plan requirements
- Hazardous waste generator requirements
- California Accidental Release Prevention Program
- Uniform Fire Code hazardous materials management plan
- Aboveground storage tanks (spill prevention control and countermeasures plan)

Sacramento 2030 General Plan

The following policies from the Public Health and Safety Element of the *Sacramento 2030 General Plan* (City of Sacramento 2009) are applicable to the proposed project.

- **Policy PHS 3.1.1 Investigate Sites for Contamination.** The City shall ensure buildings and sites are investigated for the presence of hazardous materials and/or waste contamination before development for which City discretionary approval is required. The City shall ensure appropriate measures are taken to protect the health and safety of all possible users and adjacent properties.
- **Policy PHS 3.1.2 Hazardous Material Contamination Management Plan.** The City shall require that property owners of known contaminated sites work with Sacramento County, the State, and/or Federal agencies to develop and implement a plan to investigate and manage sites that contain or have the potential to contain hazardous

materials contamination that may present an adverse human health or environmental risk.

Impacts and Mitigation Measures

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less-than-Significant Impact. Construction of the proposed project would involve the storage, use, and transport of hazardous materials (e.g., asphalt, fuel, lubricants, paint) during construction activities. Operation of the proposed project would involve the use of small quantities of common hazardous materials such as cleaning solvents as well as fertilizers, herbicides, and pesticides that are currently applied as a part of landscape operations.

The California Highway Patrol and Caltrans are responsible for enforcing regulations related to the transportation of hazardous materials on local roadways, and the use of these materials is regulated by DTSC, as outlined in CCR Title 22. SMUD and its construction contractors would be required to comply with the California Environmental Protection Agency's Unified Program. Regulated activities would be managed by the Sacramento County Environmental Management Department, which is the designated Certified Unified Program Agency, and in accordance with the regulations included in the Unified Program (e.g., hazardous materials release response plans and inventories, California Uniform Fire Code hazardous material management plans and inventories). Such compliance would reduce the potential for accidental release of hazardous materials during construction and operation of the proposed project.

The proposed project would be required to implement and comply with existing hazardous material regulations. These regulations are specifically designed to protect the public health through improved procedures for the handling of hazardous materials, better technology in the equipment used to transport these materials, and a more coordinated and rapid response to emergencies. Therefore, this impact would be ***less than significant***.

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?

Less-than-Significant Impact with Mitigation Incorporated. As discussed previously under "Environmental Setting," existing hazardous materials in the Headquarters Building include but are not limited to asbestos-containing sprayed fireproofing, cement plaster finishes, floor tiles and adhesives, pipe insulation, and roofing materials; lead-based paints; potential PCBs associated with window casing sealants and electrical transformers; and an underground hydraulic oil tank from an abandoned vehicle lift. Two surface features resembling fill ports used in sewer tanks were observed outside the Headquarters Building, and soil and grass around these areas has been disturbed. In addition, two closed-loop cooling-water injection wells are located in the northern grounds of the SMUD Headquarters Building. These wells were capped and decommissioned as of November 2014. Open site assessments are being conducted at properties adjacent to the project site. Contaminants from the former Mission Laundry facility, Community Linen Rental Service facility, and Kramer Carton Company have been identified as



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recognized environmental conditions. Migration of contaminants from these facilities could have the potential to contaminate groundwater on the project site. During exterior and interior rehabilitation of the Headquarters Building and construction of building additions and alterations, construction workers could come in contact with and be exposed to the hazardous materials listed above that are present within the Headquarters Building and on the project site. Further, the presence of hazardous materials could create a significant environmental or health hazard for employees or visitors, if left in place. Because construction workers and the general public could be exposed to hazardous materials present on-site during construction and operation of the proposed project and hazardous materials on-site could create an environmental or health hazard if left in place, this impact would be **potentially significant**.

Mitigation Measure HAZ-1: Retain a Licensed Professional to Investigate Known or Unknown Hazards and Hazardous Materials and Implement Required Measures, as Necessary.

To reduce health hazards associated with potential exposure to hazardous substances, SMUD and/or its construction contractors shall implement the following measures before the start of exterior and interior rehabilitation of the Headquarters Building and construction of building additions and alterations:

- *SMUD shall retain a licensed contractor to remove the UST, oil-water skimmer, and other equipment associated with the hydraulic lift located in the basement of the SMUD Headquarters Building. Such removal shall occur in accordance with Sacramento County Environmental Management Department and RWQCB regulations, including SWRCB regulations outlined in CCR Title 23, Division 3, Chapter 16. These regulations establish separate monitoring requirements for existing USTs; establish uniform requirements for unauthorized release reporting and for repair, upgrade, and closure of USTs; and specify variance request procedures. The appropriate federal, state, and local agencies shall be notified if evidence of previously undiscovered soil or groundwater contamination (e.g., stained soil, odorous groundwater) is encountered during construction activities. SMUD shall retain a qualified environmental professional to conduct follow-up sampling to characterize the contamination and to identify any required remediation that shall be conducted consistent with applicable regulations. The environmental professional shall prepare a report that includes but is not limited to activities performed for the assessment, a summary of anticipated contaminants and contaminant concentrations at the project site, and recommendations for appropriate handling of any contaminated materials during construction. Any contaminated areas shall be remediated in accordance with recommendations made by the Sacramento County Environmental Management Department, Central Valley RWQCB, DTSC, or other appropriate federal, state, or local regulatory agencies.*
- *SMUD shall conduct an assessment to identify the contents of the existing electrical transformer located in the basement of the SMUD Headquarters Building. The assessment shall determine whether the existing on-site electrical transformer contains PCBs and whether there are any records of spills from such equipment. If PCBs are identified, the maintenance and/or disposal of the electrical transformer*



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shall be subject to the regulations of the Toxic Substances Control Act under the authority of the Sacramento County Environmental Management Department.

Mitigation Measure HAZ-2: Remove and Dispose of On-Site Asbestos-Containing Materials.

Before and during exterior and interior rehabilitation of the Headquarters Building, SMUD shall ensure that asbestos-containing materials are properly removed by a licensed abatement contractor in accordance with EPA and Cal/OSHA standards and [ARB SMAQMD Asbestos Rule 902](#). The licensed abatement contractor shall develop and implement a worker protection program in accordance with OSHA's regulations pertaining to asbestos to minimize worker risk of asbestos exposure. The plan may include but is not limited to the following components:

- *the use of engineering controls and work practices, where feasible, designed to reduce exposure (for example, washing hands before eating and providing shower facilities for use before employees leave the work site);*
- *the provision of protective clothing and, where necessary, respiratory protection in accordance with 29 CFR 1910.134; and*
- *disposal of wastes from abatement and demolition activities at a landfill(s) licensed to accept such waste.*

Once all abatement measures have been implemented, a Certified Asbestos Consultant shall conduct a clearance examination and provide written documentation to the Sacramento County Environmental Management Department and SMAQMD that testing and abatement have been completed in accordance with all federal, state, and local laws and regulations.

Implementation of Mitigation Measures HAZ-1 and HAZ-2 would reduce the impact related to exposure to hazardous substances to a **less-than-significant** level because previously undiscovered and known hazardous substances would be removed and properly disposed of by a licensed contractor in accordance with federal, state, and local regulations.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less-than-Significant Impact. No K-12 schools exist or are proposed within one-quarter mile of the project site. Phoebe Hearst Elementary School and Saint Mary's School are both located more than one-quarter mile from the project site (approximately 0.4 mile and 0.5 mile, respectively).

However, the Lighthouse Child Development Center and Preschool is located approximately 0.2 mile west of the project site. As discussed previously under Question a), small quantities of hazardous materials such as fuels, oils, and lubricants would be used in construction of the proposed project. Operation of the proposed project would involve the use of small quantities of common hazardous materials such as cleaning solvents, as well as fertilizers, herbicides, and

pesticides that are currently applied as a part of landscape operations. None of these materials are classified as acutely hazardous. The proposed project would be required to implement and comply with existing regulations associated with the transport, use, and disposal of hazardous materials. Potential exposure to existing hazardous materials within the Headquarters Building and groundwater containments during construction would be localized to the project site and would not affect off-site land uses. Therefore, this impact would be ***less than significant***.

- d) **Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?**

No Impact. Based on a search of hazardous waste databases maintained by the SWRCB, DTSC, and EPA, the project site is not included on a list of hazardous materials sites compiled under the requirements of the Cortese List. Therefore, the proposed project would have ***no impact*** associated with creating a hazard to the public or environment.

- e, f) **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; or 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?**

No Impact. The project site is not located within the boundaries of an airport land use plan, nor is it located within 2 miles of a public airport or within the vicinity of a private airstrip. Therefore, the proposed project would have ***no impact*** on public airports or private airstrips.

- g) **Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

Less-than-Significant Impact with Mitigation Incorporated. S Street and 61st Street provide off-site access to the project site and are used for emergency response and evacuation in the project area. Entrances, gates, and internal roadways would be modified to provide improved traffic circulation within the site and to facilitate improved fire department access to the Headquarters Building (see Figure 2-7). However, S Street could be affected intermittently during construction of proposed improvements to the 15-inch storm drain pipeline or connections to the 12-inch water line located within the S Street right-of-way. Because construction activities could result in temporary lane closures, increased truck traffic, and other roadway effects that could interfere with or slow down emergency vehicles, temporarily increasing response times and impeding existing services, this impact would be ***potentially significant***.

Mitigation Measure HAZ-3: Prepare and Implement a Construction Traffic Control Plan.

SMUD and/or its construction contractors shall prepare and implement a traffic control plan for construction activities that may affect road rights-of-way, to facilitate travel of emergency vehicles on affected roadways. The traffic control plan shall follow applicable City of Sacramento standards and shall be approved and signed by a professional

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engineer. Measures typically used in traffic control plans include advertising of planned lane closures, warning signage, a flag person to direct traffic flows when needed, and methods to ensure continued access by emergency vehicles. During project construction, access to the existing surrounding land uses shall be maintained at all times, with detours used as necessary during road closures. The traffic control plan shall be submitted to the City of Sacramento Public Works Department for review and approval before the approval of improvement plans.

Implementation of Mitigation Measure HAZ-3 would reduce the potentially significant impact associated with decreased emergency response times during construction to a **less-than-significant** level by requiring preparation and implementation of a construction traffic control plan that would provide for adequate emergency access during construction activities.

- 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?**

No Impact. Because the project site is not within or near an area of high or extremely high fire hazard severity, implementation of the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas. Therefore, the proposed project would have **no impact** associated with wildland fire hazards.



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	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporation	Less-Than- Significant Impact	No Impact
3.9 HYDROLOGY AND WATER QUALITY				
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input 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 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 type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of a 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 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 type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input 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 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 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



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Environmental Setting

This section evaluates potential environmental effects related to hydrology and water quality that would result with implementation of the proposed project. The analysis addresses surface water, groundwater, stormwater, flooding, and water quality.

Surface Water Hydrology

The city of Sacramento is located at the confluence of the Sacramento and American Rivers within the Sacramento River Basin. The Sacramento River Basin encompasses about 27,000 square miles and is bounded by the Sierra Nevada to the east, the Coast Ranges to the west, the Cascade Range and Trinity Mountains to the north, and the Delta to the southeast. The three forks of the upper American River originate high in the Sierra Nevada and drain approximately 1,875 square miles of mountainous terrain before converging at Folsom Reservoir. Folsom Dam and Reservoir were constructed to regulate water releases for power generation. Nimbus Dam, which forms Lake Natoma, regulates water released from the Folsom Reservoir hydroelectric facility. The lower American River runs from below Nimbus Dam downstream 23 miles to its confluence with the Sacramento River, and is designated as "Recreational" under both the California Wild and Scenic Rivers Act and the National Wild and Scenic Rivers Act. This highly regulated river system is contained by natural bluffs and terraces, and by constructed levees. The project site is located approximately 0.75 mile southwest of the American River, which at that location is protected by federal levees on both sides.

Flow in the lower American River varies throughout the year and is controlled primarily by water releases at Folsom Dam to reduce flooding or to meet downstream water demands. The mean annual flow in the lower American River (1968 to 1998) is 3,300 cubic feet per second (cfs) and the design capacity of the American River channel (for flood flows) is 115,000 cfs (SCWA et al. 2006:2-4).

Flooding

The American River Flood Control System includes Folsom Dam, Nimbus Dam, an auxiliary dam at Mormon Island, and eight earth-filled dikes. A river corridor management plan was developed in 2002 to achieve long-term solutions to the many flood control, environmental protection, and recreation issues in the lower American River. The goal of the river corridor management plan with regard to flood management is to improve the reliability of the existing flood-control system along the lower American River.

According to the most recent Flood Insurance Rate Map (FIRM) prepared by FEMA's National Flood Insurance Program, the project site is located outside of the 100- and 500-year floodplains (FEMA 2013) (Figure 3.9-1).

The project site is located within the Folsom Dam inundation area (Sacramento County 2011: Figure III-4).



Sources: FEMA 2013; DWR 2011; data provided by Sacramento County in 2013 and compiled by AECOM in 2014

Figure 3.9-1. Flood Zone Map

Stormwater

Stormwater for the project site is collected through a series of inlets in the parking lots and landscape areas and conveyed through 8-inch, 10-inch, and 12-inch pipes. Stormwater is conveyed southerly with three points of connection to the City's storm drain system in a 15-inch pipe in S Street. Stormwater is then carried in the 15-inch pipe easterly to 65th Street where it connects to a 60-inch pipe and flows northerly to Sump Pump Station #31. Stormwater is then pumped across the CSUS campus through a drainage system and discharged into the American River.

The on-site pipe network has relatively flat slopes, which limits pipe capacity. Under existing conditions and using the City of Sacramento standards, the site has a 10-year peak discharge of 12 cfs. The capacity of the 15-inch pipe in S Street with a slope of 0.2% is 2.9 cfs under full-flow conditions. Given the relatively flat slopes (close to 0.30%), on-site pipes also have very little capacity when compared to the peak discharge on even a portion of the site. The project site is currently subject to localized flooding as a result of existing deficiencies in the storm drain pipe system. Please see Section 3.17, "Utilities and Service Systems," for additional discussion of storm drainage infrastructure.

Surface Water Quality

The American River system supports a number of beneficial uses along its three main forks and many tributaries and is generally considered an excellent source of high-quality water. Water from the upper watershed above Folsom Dam generally is of excellent quality regarding mineral and nutrient content and has low concentrations of total dissolved solids. Ambient water quality in the American River is influenced by numerous natural and artificial sources, including soil erosion, discharges from industrial and residential wastewater plants, stormwater runoff, agriculture, recreation activities, mining, timber harvesting, and flora and fauna.

Water from the American River watershed between Folsom Dam and the Sacramento River is suitable for beneficial uses such as municipal and domestic supply, agricultural (irrigation) and industrial supply, hydropower generation, contact and noncontact recreation, warm-water and cold-water fish habitat (including fish migration and spawning habitat), and wildlife habitat (Central Valley RWQCB 2011:II-6.00).

The Section 303(d) impaired waters list for California, issued by the Central Valley RWQCB, identifies the lower American River as being impaired by mercury, PCBs, and unknown toxicity (SWRCB and EPA 2011). The total maximum daily load (TMDL) for PCBs and unknown toxicity is expected to be completed by the Central Valley RWQCB and approved by EPA by 2021. The TMDL for mercury was expected to be finished by 2010; however, it has not yet been completed.

Groundwater Hydrology

The project site is located within the Sacramento Valley Groundwater Basin, within the South American Subbasin. The South American Subbasin is defined as the area bounded on the west by the Sacramento River, on the north by the American River, and on the south by the



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Cosumnes and Mokelumne Rivers. The Sierra Nevada represents the approximate eastern edge of the alluvial basin, where little groundwater flows into or out of the groundwater basin from the Sierra Nevada foothills. However, groundwater does interact with adjacent subbasins at greater depths (DWR 2004:1).

Groundwater under the project site is contained within a shallow aquifer (Modesto Formation) and in a deep aquifer (Mehrten Formation) (SCWA et al. 2006:ES-4). The Modesto (formerly known as the Laguna) Formation consists of older alluvial deposits of loosely to moderately compacted sand, silt, and gravel deposited in alluvial fans. These deposits are moderately permeable and are about 100–650 feet thick (DWR 2004:2). The shallow aquifer is typically used for private domestic wells. The Mehrten Formation is between 200 and 1,200 feet thick. The base of the potable water portion of the deep aquifer averages approximately 1,400 feet below ground surface.

Groundwater elevations around the South American Subbasin generally declined consistently from the 1950s and 1960s to about 1980 on the order of 20–30 feet (SCWA et al. 2006:2-27). In general, groundwater levels in the vicinity of the city of Sacramento are now reported to be stable, between 20 feet above and 40 feet below mean sea level, and have fluctuated by no more than 5 feet since 1997 (Sacramento Groundwater Authority 2011:14-15). According to the groundwater elevation contour map included in the *Central Sacramento County Groundwater Management Plan*, groundwater elevations at the project site are approximately 10–20 feet below mean sea level (SCWA et al. 2006:Figure 2-17).

Recharge of the aquifer system occurs along active river and stream channels where extensive sand and gravel deposits exist, particularly along the American, Cosumnes, and Sacramento River channels. Additional recharge occurs along the eastern boundary of Sacramento County at the transition point from the consolidated rocks of the Sierra Nevada to the alluvial-deposited basin sediments (SCWA et al. 2006:2-26). This recharge is classified as subsurface recharge with underground flow into and out of the South American Subbasin with adjacent groundwater basins. Other sources of recharge include deep percolation from applied surface water and precipitation.

Groundwater Quality

Groundwater in the basin is typically described as calcium magnesium bicarbonate, with minor fractions of sodium magnesium bicarbonate (DWR 2004:3; City of Sacramento 2014:6.2-9). Water quality of the upper aquifer is regarded as superior to that of the lower aquifer, as the lower aquifer contains higher concentrations of iron, manganese, and total dissolved solids. Water from the upper aquifer generally does not require treatment other than disinfection (City of Sacramento 2014:6.2-10). There are no known groundwater contaminant plumes in the project area (SCWA et al. 2006:ES-7).

Regulatory Setting

Federal

Clean Water Act

Water quality objectives for all waters of the United States are established under applicable provisions of Section 303 of the federal Clean Water Act. Under Section 303(d) of the Clean Water Act, states are required to develop lists of water bodies that would not attain water quality objectives after implementation of required levels of treatment by point-source dischargers (municipalities and industries). Section 303(d) requires that the state develop a TMDL for each of the listed pollutants. The TMDL is the amount of loading that the water body can receive and still be in compliance with water quality objectives. The TMDL can also act as a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives.

National Pollutant Discharge Elimination System Permits

The NPDES permit program was established in the Clean Water Act to regulate municipal and industrial discharges to surface waters of the United States. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities. The goal of NPDES stormwater regulations is to improve the quality of stormwater discharged to receiving waters to the “maximum extent practicable” through the use of structural and nonstructural BMPs. NPDES permit limits for 303(d) listed pollutants must be consistent with the waste load allocation prescribed in the TMDL.

Federal Emergency Management Agency

FEMA administers the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations that limit development in floodplains. FEMA also issues FIRMs that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection covered by the FIRMs is established by FEMA, with the minimum level of flood protection for new development determined to be the 1-in-100 (0.01) annual exceedance probability (AEP) (i.e., the 100-year flood event) (Figure 3.9-1).

State

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) is California’s statutory authority for the protection of water quality. Under the act, the state must adopt water quality policies, plans, and objectives that protect the state’s waters for the use and enjoyment of the people. The act sets forth the obligations of the SWRCB and RWQCBs to adopt and periodically



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update water quality control plans (basin plans). Basin plans are the regional water quality control plans required by both the Clean Water Act and Porter-Cologne Act in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California. The local applicable basin plan is the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*.

The Porter-Cologne Act also requires waste dischargers to notify the RWQCBs of their activities by filing reports of waste discharge and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements (WDRs), NPDES permits, Section 401 water quality certifications, or other approvals. The RWQCBs also have authority to issue waivers to reports of waste discharge and/or WDRs for broad categories of "low threat" discharge activities that have minimal potential for adverse water quality effects when implemented according to prescribed terms and conditions.

Local

NPDES Permit System and Waste Discharge Requirements for Construction

The SWRCB and Central Valley RWQCB have adopted specific NPDES permits for a variety of activities that have potential to discharge wastes to waters of the state. On September 2, 2009, the SWRCB approved a new Construction General Permit (Order 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-006-DWQ). The Construction General Permit applies to all land-disturbing construction activities that would disturb 1 acre or more. All of the NPDES permits involve similar processes, including submitting to the Central Valley RWQCB notices of intent to discharge, and implementing SWPPPs that include BMPs to minimize those discharges. As mentioned above, the Central Valley RWQCB may also issue site-specific WDRs, or waivers to WDRs, for certain waste discharges to land or waters of the state.

Construction activities subject to the Construction General Permit include clearing, grading, stockpiling, and excavating. Dischargers must eliminate or reduce nonstormwater discharges to storm sewer systems and other waters. The permit also requires dischargers to consider the use of permanent postconstruction BMPs that would remain in service to protect water quality throughout the life of the project. All NPDES permits also have inspection, monitoring, and reporting requirements. In response to a court decision, the Central Valley RWQCB also implemented mandatory water quality sampling requirements in Resolution 2001-046 for visible and nonvisible contaminants in discharges from construction activities.

Construction Dewatering

Where groundwater levels tend to be shallow, dewatering during construction is sometimes necessary to keep trenches or excavations free of standing water when improvements or foundations/footings are installed. Clean or relatively pollutant-free water that poses little or no risk to water quality may be discharged directly to surface water under certain conditions. The Central Valley RWQCB has adopted a general NPDES permit for short-term discharges of small volumes of wastewater from certain construction-related activities. Permit conditions for the discharge of these types of wastewaters to surface waters are specified in the General Order for Dewatering and Other Low-Threat Discharges to Surface Waters (General Dewatering Permit),



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adopted on May 31, 2013 (Order No. 5-00-175, NPDES No. CAG995001). Discharges may be covered by the General Dewatering Permit provided that either (1) they are 4 months or less in duration or (2) the average dry-weather discharge does not exceed 0.25 million gallons per day. The General Dewatering Permit also specifies standards for testing, monitoring, and reporting, receiving-water limitations, and discharge prohibitions. When project construction would exceed 4 months in duration or 0.25 million gallons per day, a project-specific permit from the Central Valley RWQCB is required.

All groundwater discharges to the combined sewer system or separated sewer system are regulated by the City of Sacramento Department of Utilities pursuant to Department of Utilities Engineering Services Policy No. 0001, adopted as Resolution No. 92-439 by the Sacramento City Council. In addition to the state requirements described above, the City requires that any short-term discharge be permitted, or that an approved memorandum of understanding (MOU) for long-term discharges be established, between the discharger and the City. Short-term, limited discharges of 7 days or less must be approved by the City Department of Utilities through an approval letter. Long-term discharges of greater than 7 days must be approved by the City Department of Utilities and the Director of the Department of Utilities through an MOU process. The MOU must specify the type of groundwater discharge, flow rates, and discharge system design, and must include a City-approved contaminant assessment of the proposed groundwater discharge indicating tested levels of constituents, and a City-approved effluent monitoring plan to ensure that contaminant levels remain in compliance with state standards or Central Valley RWQCB–approved levels.

NPDES Municipal Stormwater Permit Program

The SWRCB's Municipal Storm Water Permitting Program regulates stormwater discharges from Municipal Separate Storm Sewer Systems (MS4s). The County of Sacramento and the Cities of Sacramento, Folsom, Citrus Heights, Elk Grove, Rancho Cordova, and Galt are co-permittees to the Sacramento Areawide NPDES MS4 Permit (Sacramento MS4 Permit) (NPDES Permit No. CAS082597, WDR Order No. R5-2008-0142). The intent of the permit is to develop, achieve, and implement a timely, comprehensive, cost-effective stormwater pollution control program to reduce the discharge of pollutants in stormwater runoff to the maximum extent practicable. "Maximum extent practicable" is the performance standard specified in Section 402(p) of the Clean Water Act.

Sacramento Region Stormwater Quality Design Manual

The Sacramento MS4 permittees formed the Sacramento Stormwater Quality Partnership and collaborated and published the *Stormwater Quality Design Manual for the Sacramento and South Placer Regions* in May 2007 to meet the regulatory requirements of their respective municipal stormwater NPDES permits. An updated version of this manual, the *Sacramento Region Stormwater Quality Design Manual*, was completed in May 2014. The manual provides locally adapted information for design and selection of stormwater quality control measures and now incorporates hydromodification management and low impact development design standards.



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City of Sacramento Stormwater Quality Improvement Plan

The City prepared a stormwater quality improvement plan in 2007 to reduce the pollution carried by stormwater into local creeks and rivers to the maximum extent practicable. The comprehensive plan includes pollution reduction activities for construction sites, industrial sites, illegal discharges and illicit connections, new development, and municipal operations. The program also includes an extensive public education effort, target pollutant reduction strategy, and monitoring program. The stormwater quality improvement plan includes a wide range of BMPs, control measures, and performance standards.

Central Sacramento County Groundwater Management Plan

The *Central Sacramento County Groundwater Management Plan* (CSCGMP) was completed in 2006 by Central Sacramento County Groundwater Basin stakeholders, in coordination with the Sacramento County Water Agency. The purpose of the CSCGMP is to establish a framework for maintaining a sustainable groundwater resource for the various users of the Sacramento County Groundwater Basin between the American and Cosumnes Rivers (SCWA et al. 2006:ES-1). The CSCGMP helps overlying water users to maintain a safe, sustainable, and high-quality groundwater resource within a given groundwater basin.

Sacramento City Code

The City's Grading, Erosion, and Sediment Control Ordinance (Sacramento City Code Chapter 15.88) requires project applicants to prepare erosion and sediment control plans for both project construction and the postconstruction period, as well as preliminary and final grading plans. The ordinance applies to projects where 50 cubic yards or more of soil is excavated and/or disposed and requires BMPs that must be approved by the City's Department of Utilities.

In addition, the City's Stormwater Management and Discharge Control Ordinance (Sacramento City Code Chapter 13.16) serves to minimize or eliminate sediment and pollutants in nonstormwater discharges to the stormwater conveyance system and to reduce pollutants in urban stormwater discharges to the maximum extent practicable. Specific control measures must be developed to reduce the risk of nonstormwater discharge and/or pollutant discharge into the City's drainage system or receiving waters from business-related activities.

Sacramento 2030 General Plan

The following goals and policies from the Utilities, Environmental Resources, and Environmental Constraints Elements of the *Sacramento 2030 General Plan* (City of Sacramento 2009) are applicable to the proposed project.

Utilities Element

Goal U 4.1 Adequate Stormwater Drainage. Provide adequate stormwater drainage facilities and services that are environmentally sensitive, accommodate growth, and protect residents and property.

- **Policy U 4.1.1 Adequate Drainage Facilities.** The City shall ensure that all new drainage facilities are adequately sized and constructed to accommodate stormwater runoff in urbanized areas.

Environmental Resources Element

Goal ER 1.1 Water Quality Protection. Protect local watersheds, water bodies and groundwater resources, including creeks, reservoirs, the Sacramento and American rivers, and their shorelines.

- **Policy ER 1.1.3 Stormwater Quality.** The City shall control sources of pollutants and improve and maintain urban runoff water quality through storm water protection measures consistent with the City's National Pollutant Discharge Elimination System (NPDES) Permit.
- **Policy ER 1.1.6 Post-Development Runoff.** The City shall impose requirements to control the volume, frequency, duration, and peak flow rates and velocities of runoff from development projects to prevent or reduce downstream erosion and protect stream habitat.
- **Policy ER 1.1.7 Construction Site Impacts.** The City shall minimize disturbances of natural water bodies and natural drainage systems caused by development, implement measures to protect areas from erosion and sediment loss, and continue to require construction contractors to comply with the City's erosion and sediment control ordinance and stormwater management and discharge control ordinance.

Environmental Constraints Element

Goal EC 2.1 Flood Protection. Protect life and property from flooding.

- **Policy EC 2.1.19 Dam Failure.** The City shall plan for the evacuation of people from areas subject to inundation from Folsom, Nimbus, or an Oroville dam failure.

Impacts and Mitigation Measures

According to the Sacramento Stormwater Quality Partnership's *Stormwater Quality Design Manual*, the project site is in an exempt area and therefore is not subject to the hydromodification requirements (SSQP 2014:Figure 5-2). Therefore, the topic of hydromodification, or changes to the hydrologic and geomorphic processes in a watershed as a result of impervious surfaces and drainage infrastructure from urbanization, is not discussed further.

- a, f) Would the project violate any water quality standards or waste discharge requirements; or otherwise substantially degrade water quality?**

Less-than-Significant Impact with Mitigation Incorporated. Project construction would require vegetation removal, excavation, grading, material stockpiling, and staging at the project



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site that would temporarily disturb surface soils. These activities would expose soil to the erosive forces of wind and water. The soil could ultimately be transported via the storm drainage system to the American River, increasing turbidity and degrading water quality. If construction dewatering is required, sediment impairment of receiving waters could result if the dewatering discharge is sediment laden. Portions of the project site that require utilities upgrades and improved circulation would be stripped to grade; portions of the project site that would not be stripped include the existing building to be refurbished and landscape elements identified for retention in the completed project. Up to 50,000 cubic yards of earthen material could be moved as part of the project and may be reused on-site. Further, heavy equipment used on-site during construction could compact soils and may further reduce the infiltration capacity of soils and increase the potential for runoff and erosion. As described in Section 3.6, "Geology and Soils," project site soils consist of stable Pleistocene-age alluvial soils and compacted artificial fill, and there are no known areas of unstable soils such as steep slopes; however, the potential for erosion during construction remains, as project site soils are moderately susceptible to wind and water erosion.

The proposed project would require construction over an approximately 13.66-acre site, including areas for the reconstructed Headquarters Building, parking areas, and other site improvements such as installation of a security fence. Project construction for the Headquarters Building is estimated to take approximately 20 months and would be completed in four phases. The greatest likelihood for water quality impacts would occur during Phases 2 and 3, because these phases would involve demolition (Phase 2) and building and site rehabilitation (Phase 3). Site rehabilitation would take approximately 12 months and would occur concurrently with building construction.

The potential for accidental releases of chemicals would also be present at the construction site. Once released, substances such as fuels, oils, paints, concrete, and solvents could be transported to the storm drain system and/or groundwater in stormwater runoff, wash water, and dust-control water, potentially reducing the quality of the receiving waters. Erosion and construction-related wastes have the potential to degrade water quality and beneficial uses if they enter runoff and flow into waterways, potentially altering the dissolved oxygen content, temperature, pH, suspended sediment and turbidity levels, and/or nutrient content of receiving waters or causing toxic effects in the aquatic environment. Therefore, project-related construction activities could violate water quality standards or otherwise substantially degrade water quality. This impact would be ***potentially significant***.

Phase 2 of the proposed project specifically includes removal and remediation of hazardous materials within the Headquarters Building, including but not limited to asbestos-containing materials, lead-based paints, oil-type transformers, and an underground hydraulic oil tank from an abandoned vehicle lift. Removal of these hazardous materials, if not properly handled and disposed of, would have the potential to affect water quality. However, existing hazardous materials must be removed and disposed of in accordance with applicable federal, state, and local laws and regulations. Please see Section 3.8, "Hazards and Hazardous Materials," for additional discussion of hazardous materials removal, including Mitigation Measures HAZ-1 and HAZ-2.

The following mitigation measures would be implemented to reduce impacts on water quality resulting from the proposed project.

Mitigation Measure HYDRO-1. Prepare and Implement a Storm Water Pollution Prevention Plan and an Erosion and Sediment Control Plan, and Implement Best Management Practices.

The proposed project shall comply with applicable regulations designed to reduce or eliminate construction-related water quality effects, including the NPDES Construction General Permit, stormwater quality improvement plan, and Grading, Erosion, and Sediment Control Ordinance. Before development and issuance of the grading permits, an application for coverage under the Construction General Permit (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-006-DWQ) and an erosion and sediment control plan shall be submitted to the City. Before construction may begin, a NOI shall be filed with the Central Valley RWQCB and a project-specific SWPPP shall be developed to minimize erosion and transport of sediment, meet water quality objectives identified in the Water Quality Control Plan for the Sacramento and San Joaquin River Basins, and protect beneficial uses. BMPs included in the SWPPP shall include measures such as installing silt fences, covering stockpiled soils, and locating stockpiled soils away from storm drain inlets. Through the stormwater quality improvement plan, City staff will provide guidance on BMPs to reduce sediment in construction site runoff and reduce other pollutants such as litter and concrete wastes through good-housekeeping procedures and proper waste management. The City's process includes having City staff complete inspections to verify that the erosion and sediment control plan and SWPPP are implemented correctly.

An erosion and sediment control plan shall be developed that includes a site map and a description of BMPs designed to control dust and stabilize the construction site road and entrance, and a description of the methods of storage and disposal of construction materials. Appropriate BMPs for the erosion and sediment control plan may include but are not limited to the following:

- Schedule work to minimize soil-disturbing activities during the rainy season and schedule major grading operations for the dry season when practical.*
- Cover exposed soil to reduce its exposure to rainfall, reserve existing vegetation where feasible, and apply mulch or hydroseed areas until permanent stabilization is established.*
- Apply water or other dust palliatives to prevent dust nuisance; prevent overwatering that can cause erosion. Alternatively, cover small stockpiles.*
- Install silt fences, sediment basins, sediment traps, check dams, fiber rolls, sand or gravel bag barriers, straw bale barriers, vegetated swales, approved chemical treatment, storm drain inlet protection, or other low impact development measures to minimize the discharge of sediment. Cover all stockpiled soil until it is needed. Cover all soil in haul trucks.*

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- *Stabilize the construction site entrance to prevent tracking of sediment onto public roads by construction vehicles. Stabilize on-site vehicle transportation routes immediately after grading to prevent erosion and control dust.*
- *Remove litter from the construction site at least once daily. Dispose of packing materials immediately in an enclosed container.*

Mitigation Measure HYDRO-2. Obtain Coverage under the General Dewatering Permit or Obtain a Project-Specific Dewatering Discharge Permit and Implement Associated Requirements to Meet Discharge Limits.

If dewatering is required as part of project construction, SMUD shall obtain coverage for the proposed project under the General Dewatering Permit (Order No. 5-00-175) or obtain a project-specific dewatering discharge permit from the Central Valley RWQCB before construction, depending on the discharge volume and duration of dewatering activities. Discharges may be covered by the General Dewatering Permit provided that either (1) they are 4 months or less in duration or (2) the average dry-weather discharge does not exceed 0.25 million gallons per day. The General Dewatering Permit specifies standards for testing, monitoring, and reporting; receiving-water limitations; and discharge prohibitions. If a project-specific dewatering discharge permit is required from the Central Valley RWQCB, it shall include specific requirements and establish discharge limits.

Mitigation Measure HYDRO-3. Establish a Memorandum of Understanding or Permit for Groundwater Discharges with the City's Department of Utilities.

If dewatering is required during construction, the proposed project shall receive approval from the City of Sacramento Department of Utilities before construction. Any long-term discharges of greater than 7 days must be approved by the City Department of Utilities and the Director of the Department of Utilities through an MOU process. The MOU will specify the type of groundwater discharge, flow rates, and discharge system design, and will include a City-approved contaminant assessment of the proposed groundwater discharge indicating tested levels of constituents and a City-approved effluent monitoring plan to ensure that contaminant levels remain in compliance with state standards or Central Valley RWQCB-approved levels.

Implementation of Mitigation Measures HYDRO-1, HYDRO-2, and HYDRO-3 would reduce this water quality impact to a ***less-than-significant*** level.

- b) Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?**

Less-than-Significant Impact. If dewatering activities are conducted during construction, they would be temporary and the volume of groundwater withdrawn would be very small relative to



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the groundwater storage capacity of the South American River Subbasin, which is estimated to be 4,816,000 acre-feet (DWR 2004:2). During operation of the project, an on-site well would be used to provide landscape irrigation water, similar to current operations. Therefore, the amount of groundwater pumped for on-site irrigation uses would not increase with implementation of the proposed project. Rather, the amount pumped would likely decrease with refurbishment or replacement of the existing irrigation system, which would serve to improve water efficiency.

Implementation of the proposed project would result in a net increase of up to 90,600 square feet (2.08 acres) of impervious surface. Impervious areas at the site would consist of the footprint areas to be covered by building additions, paved pathways, and paved parking. Site soils are characterized as having moderately high permeability, as described in Table 3.6-1 in Section 3.6, "Geology and Soils." Table 3.9-1 compares current and proposed square footage of various elements at the site.

Element	Square Feet of Each Element	
	Current Site Layout	Proposed Site Layout with 281 Additional Parking Spaces
Overall CEQA Site	588,860	588,860
Parking Areas and Driveways	242,557	333,171
Headquarters Building and Patio	53,626	53,626
Total Site Landscape Areas	292,677	202,063

Source: Data compiled by SMUD in 2014

Although the proposed project would result in an increase in impervious surfaces, it would result in a small decrease in the amount of water that percolates to underlying aquifers. The majority of the site that is currently unpaved would remain as pervious area. With implementation of low impact development techniques for stormwater management (e.g., stormwater planters, vegetated swales), additional rainwater would infiltrate into the subsurface instead of running off into the storm drainage system. Any potential decrease in groundwater infiltration would not be of a sufficient magnitude to result in a net deficit in the aquifer volume or lowering of the groundwater table. Therefore, this impact would be **less than significant**.

Although the proposed project would result in an increase in impervious surfaces, it would result in a small decrease in the amount of water that percolates to underlying aquifers. The majority of the site that is currently unpaved would remain as pervious area. With implementation of low impact development techniques for stormwater management (e.g., stormwater planters, vegetated swales), additional rainwater would infiltrate into the subsurface instead of running off into the storm drainage system. Any potential decrease in groundwater infiltration would not be of a sufficient magnitude to result in a net deficit in the aquifer volume or lowering of the groundwater table. Therefore, this impact would be **less than significant**.

c, d, e) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site; or

would the project substantially alter the existing drainage pattern of a 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; or would the project 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?

Less-than-Significant Impact with Mitigation Incorporated. Building additions, in conjunction with additional parking and paved pathways, would replace some of the existing permeable open space with impervious surfaces. Implementing the proposed project would increase the amount of impervious surface at the project site by 2.08 acres. Without implementation of stormwater management controls, the net increase in impervious area would result in an associated increase in both the total volume and the peak discharge rate of stormwater runoff. Therefore, this increase could result in greater potential for on- and off-site flooding, greater potential to exceed the capacity of existing or planned stormwater drainage systems, and the need for construction of new or expanded stormwater drainage facilities. The site is already subject to occasional flooding during storm events.

During operation, runoff from the project site would contain pollutants common in urban runoff including metals, oils and grease, pesticides, herbicides, nutrients, and garbage/litter. Although operation of the proposed project would be similar to existing operations at the project site, the proposed project would result in an increase in square footage of buildings and impervious parking spaces. In addition, reconstruction of the pipe in S Street may be required. Please see Section 3.17, "Utilities and Service Systems," for additional discussion of storm drainage infrastructure.

Without BMPs to remove pollutants, stormwater leaving the project site could degrade the quality of receiving waters. Therefore, the impact of the proposed project on stormwater quality would be ***potentially significant***.

BMPs implemented in compliance with the stormwater quality improvement plan; Grading, Erosion, and Sediment Control Ordinance; Stormwater Management and Discharge Control Ordinance; and Sacramento MS4 Permit must also control the rate or amount of surface runoff from the project site such that flooding on or off-site would not occur. Because the total area of the developed impervious surfaces (e.g., building rooftop and parking areas) exceeds the 1-acre threshold specified in the Sacramento MS4 Permit (CAS082597), the project would be required to incorporate permanent stormwater quality treatment measures to conform with applicable City of Sacramento ordinances and state and federal law. To eliminate any flow increase and exceedances of the capacity of existing or planned stormwater drainage systems, stormwater detention facilities may be required to maintain peak storm flows at no greater than the level existing before development as described below in Mitigation Measure HYDRO-4. As required by the Sacramento MS4 Permit, detention basins, stormwater planters, vegetated swales, and other stormwater quality treatment techniques (BMPs) would involve treatment methodologies as described in the *Sacramento Region Stormwater Quality Design Manual* (SSQP 2014). Runoff reduction measures would be required to infiltrate, filter, store, evaporate, and detain runoff close to its source, where possible. The *Sacramento City/County Drainage Manual*

Volume 2: Hydrology Standards includes drainage design standards to meet local drainage regulations.

The proposed project would include detention basins to help mitigate existing deficiencies in the storm drain pipe system by increasing the on-site storage volume available and metering the outflow to the capacity of the downstream system. In areas where landscaping has been deemed historical and designated for retention, other treatment methods could be incorporated including infiltration trenches, sand filters, stormwater planters and/or vegetative swales.

Mitigation Measure HYDRO-4. Prepare, Submit, and Implement a Final Drainage Plan.

Before the approval of the grading plan and building permit, SMUD shall submit a final drainage plan to the City demonstrating that project-related on-site runoff will be appropriately contained in detention basins or managed through other improvements (e.g., source controls using low impact development techniques such as vegetated swales) to reduce flooding. The plans shall include but not be limited to the following items:

- *an accurate calculation of preproject and postproject runoff for the final design scenario, obtained using appropriate engineering methods, that accurately evaluate potential changes to runoff, including increased surface runoff;*
- *runoff calculations for the 100-year (0.01-AEP) storm event (and other, smaller storm events as required) and the drainage pipeline sizes based on alignments and finalized detention facility locations;*
- *a description of the proposed maintenance program for the on-site drainage system;*
- *a detailed description of the pipe improvements on S Street and required coordination with the City; and*
- *project-specific standards for installing drainage systems.*

Source control BMPs may include the use of low impact development techniques such as surface swales; replacement of conventional impervious surfaces with pervious surfaces (e.g., porous pavement); disconnection of impervious surfaces; green roofs; and trees planted to intercept stormwater.

The final drainage plan shall demonstrate to the satisfaction of the City of Sacramento Department of Utilities that 100-year (0.01-AEP) flood flows would be appropriately channeled and contained, such that the risk to people or damage to structures within or downgradient of the project site would not occur and the capacity of the stormwater drainage system would not be exceeded or require expansion.

Mitigation Measure HYDRO-5: Incorporate Stormwater Quality Control Measures to Satisfy the Requirements of the Sacramento MS4 Permit, Including Long-Term Maintenance Requirements.

Before the approval of the grading plan and building permit, SMUD shall utilize the Sacramento Region Stormwater Quality Design Manual (May 2014) to identify source-control measures, low impact development development measures, and treatment control measures to satisfy the regulatory requirements of the Sacramento MS4 Permit and thereby reduce runoff pollution associated with the proposed project to the maximum extent practicable. A long-term maintenance agreement or covenant for selected control measures shall be established to ensure ongoing maintenance of facilities.

Implementation of Mitigation Measures HYDRO-4 and HYDRO-5 would reduce this impact to a ***less-than-significant*** level.

- g) **Would the project 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?**

No Impact. No new housing is proposed as part of the proposed project. Therefore, the proposed project would have ***no impact*** related to housing within a 100-year flood hazard area.

- h) **Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?**

No Impact. The project area is not located within the 100-year flood hazard area (FEMA 2013). Therefore, the proposed project would have ***no impact*** related to structures that would impede or redirect flood flows.

- i) **Would the project 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?**

Less-than-Significant Impact. The project site is located within the dam inundation area of Folsom Dam. Dam or levee failures can create flash floods that are catastrophic to life and property. The proposed project would not increase the potential for dam or levee failure, because the project site is not located close to levees or dams that would physically affect these structures. Because of adherence to federal and state dam safety and structural requirements, the likelihood of dam failure is considered extremely remote (City of Sacramento 2014:7-23). In addition, in response to the risk, the FloodSAFE California program is guiding development of regional flood management plans to improve integrated flood management systems.

Urban levees in the American River Basin have been evaluated by the California Department of Water Resources in its *Flood Control System Status Report* (2011) based on the U.S. Army Corps of Engineers' *Design and Construction of Levees*, Engineering Manual 1110-2-1913, and the California Department of Water Resources' *Interim Levee Design Criteria for Urban and Urbanizing Areas in the Sacramento-San Joaquin Valley*, Version 4. Most levees along the



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American River in the vicinity of the project area are of lower concern; however, some isolated segments are of higher concern (DWR 2011:ES-10; City of Sacramento 2014:App. C p. 7-24). In partnership with the County of Sacramento, the City of Sacramento has prepared a series of detailed maps of inundation patterns following hypothetical levee breaks. These maps include flood depths, rescue areas, evacuation areas, and potential evacuation routes. The proposed project would result in the addition of 2.08 net acres of new impervious surface that could contribute stormwater runoff to the American River; however, this quantity would be undetectable in relation to American River flows. Therefore, this impact would be ***less than significant***.

j) Would the project result in inundation by seiche, tsunami, or mudflow?

No Impact. The project area is not within an area subject to seiche, tsunami, or mudflows (City of Sacramento 2014:4.5-2). Therefore, the proposed project would have ***no impact*** related to inundation by seiche, tsunami, or mudflow.

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporation	Less-Than- Significant Impact	No Impact
3.10 LAND USE AND PLANNING				
Would the project:				
a) Physically divide an established community?	<input 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 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project site is located within the city of Sacramento in Sacramento County. The project site, which includes the existing Headquarters Building and a 13.66-acre portion of the headquarters site, is bordered by 61st Street to the west, light rail tracks to the north, SMUD's Customer Service Center to the east, and S Street to the south. The project also includes two temporary trailer location sites where SMUD employees would be located during project construction. The project site and surrounding uses are shown in Figure 2-1.

The *Sacramento 2030 General Plan* designates the project site as Public/Quasi-Public. This designation provides for governmental, utility, institutional, educational, cultural, religious, and social facilities and services that are located and designed to complement Sacramento's neighborhoods, centers, and corridors and to minimize incompatibility with neighborhoods and other sensitive uses (City of Sacramento 2009).

The zoning classification for the project is Heavy Commercial Zone (C-4). The purpose of the C-4 zone is to provide for warehousing, distribution activities, and commercial uses that have minimal undesirable impact on nearby residential areas. Minimal light manufacturing and processing are permitted. The maximum building height is 75 feet. The maximum density is 60 dwelling units per net acre.

Regulatory Setting

Federal

No federal regulations related to land use and planning are applicable to the proposed project.

State

No state regulations related to land use and planning are applicable to the proposed project.

Local

The following goal and policy from the Land Use and Urban Design Element of the *Sacramento 2030 General Plan* (City of Sacramento 2009) are applicable to the proposed project.

Goal LU 8.1. Public/Quasi-Public. Provide for governmental, utility, institutional, educational, cultural, religious, and social facilities and services that are located and designed to complement Sacramento's neighborhoods, centers, and corridors and to minimize incompatibility with neighborhoods and other sensitive uses.

- **Policy LU 8.1.7 Compatibility of Non-City Public Uses.** The City shall encourage school and utility districts and other government agencies that may be exempt from City land use control and approval to plan their properties and design buildings at a high level of visual and architectural quality that maintains the character of the district or neighborhood in which they are located.

Impacts and Mitigation Measures

a) **Physically divide an established community?**

No Impact. The proposed project includes the rehabilitation of the SMUD Headquarters Building and a 13.66-acre portion of the headquarters site. SMUD has occupied the building and site since its completion in 1960, and the proposed project would rehabilitate the building and site for continued use into the future. The project comprises rehabilitation of an existing facility for a continuation of existing uses. A security fence would be installed on the headquarters site; however, this fence would be sited behind existing landscape berms where possible to minimize visibility from the S Street frontage, and it would not physically divide an established community. Construction and operation of the project would have **no impact** related to physical division of an established community.

b) **Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?**

No Impact. The proposed project consists of rehabilitation of an existing facility for a continuation of existing uses. The proposed project does not conflict with any applicable land use plan, policy, or regulation, or any agency with jurisdiction over the project, and the proposed project would have **no impact** related to a conflict with an applicable land use plan, policy, or regulation.



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c) **Conflict with any applicable habitat conservation plan or natural community conservation plan?**

No Impact. No habitat conservation plans or natural community conservation plans have been adopted by SMUD or the City of Sacramento that could affect the proposed project site. Therefore, the proposed project would have ***no impact*** related to a conflict with an applicable habitat conservation plan or natural community conservation plan.



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	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporation	Less-Than- Significant Impact	No Impact
3.11 MINERAL RESOURCES				
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the State?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Under the Surface Mining and Reclamation Act, the State Mining and Geology Board may designate certain mineral deposits as being regionally significant to satisfy future needs. The board's decision to designate an area is based on a classification report prepared by the California Geological Survey (formerly California Division of Mines and Geology) and on input from agencies and the public. The project site is located within the designated Sacramento-Fairfield Production-Consumption Region for aggregate materials, which includes all designated lands within the marketing area of the active aggregate operations supplying the Sacramento-Fairfield urban area (Dupras 1988).

In compliance with the Surface Mining and Reclamation Act, the California Geological Survey has established the classification system shown in Table 3.11-1 to denote both the location and significance of key extractive resources.

Classification	Description
MRZ-1	Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence
MRZ-2	Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists
MRZ-3	Areas containing mineral deposits, the significance of which cannot be evaluated from available data
MRZ-4	Areas where available information is inadequate for assignment to any other mineral resource zone
Notes: MRZ = Mineral Resource Zone The California Geological Survey was known as the California Division of Mines and Geology at the time this mineral land classification system was established. Source: Dupras 1988	

The locations where project-related activities would occur, along with most of the developed areas of the city of Sacramento, are classified as MRZ-3—areas containing mineral deposits, the significance of which cannot be evaluated from available data (Dupras 1988:Plate 21). Mining activities in the Sacramento area are generally located along State Route 16, or farther east in the vicinity of Grant Line and White Rock Roads, along ancestral channels of the American River. The closest aggregate mining operation is located approximately 2.5 miles southeast of the project site. The project site is not designated as a locally important mineral resource recovery site in the *Sacramento 2030 General Plan* (City of Sacramento 2009: Environmental Resources Element).

Regulatory Setting

Federal

No federal regulations related to mineral resources are applicable to the proposed project.

State

No state regulations related to mineral resources are applicable to the proposed project.

Local

No local regulations related to mineral resources are applicable to the proposed project.

Impacts and Mitigation Measures

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?**

Less-than-Significant Impact. The project site is classified as MRZ-3—areas containing mineral deposits, the significance of which cannot be evaluated from available data. The project site is located in an urbanized area of Sacramento that has been developed with existing commercial uses since 1960, and the continuation of commercial uses is consistent with the City's land use and general plan designations (see Section 3.10, "Land Use and Planning"). No known mineral deposits are present on the project site. Therefore, this impact would be ***less than significant***.

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?**

No Impact. The project site is not designated as a locally important mineral resource recovery site in the *Sacramento 2030 General Plan* (City of Sacramento 2009:Environmental Resources Element). Thus, project implementation would not result in a loss of availability of locally important mineral resources, and the proposed project would have ***no impact*** related to the loss of availability of a locally important mineral resource discovery site.

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporation	Less-Than- Significant Impact	No Impact
3.12 NOISE				
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 type="checkbox"/>
b) Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 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 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 in or working in the project area to excessive noise levels?	<input 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 in or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Noise-sensitive land uses generally include those where exposure to noise would result in adverse effects, as well as uses where quiet is an essential element of their intended purpose. Noise-sensitive land uses in the vicinity of the project site consist of the CSUS Upper Eastside Lofts, which is an apartment complex about 400 feet northeast of the SMUD Headquarters Building, just across the light rail tracks and about 175–200 feet from 65th Street, and the Lighthouse Childhood Development Center on S Street, approximately 500 feet west of the western edge of the project site. The remaining land uses surrounding the project area consist of industrial facilities and office buildings (predominantly belonging to SMUD), surface streets, a major freeway (U.S. 50), two-way light rail tracks, and a shopping center, which are all existing noise sources.

Existing Traffic Noise

Table 3.12-1 summarizes existing traffic noise levels as of 2013 along U.S. 50 south of the SMUD Headquarters Building. As shown, the location of the 70-decibel (dB) community noise



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equivalent level (CNEL) contour for both annual average and peak traffic volumes would be approximately one-third mile from the centerline of the freeway, or roughly to Folsom Boulevard (about 700 feet north of the project area). Up to 60 dB CNEL is typically considered acceptable in residential environments; therefore, existing noise levels in the vicinity of the two sensitive receptors near the SMUD facilities are significantly louder than levels normally found in residential/school areas.

Table 3.12-1. Traffic Noise Contours—Existing Conditions

Roadway	Segment		Traffic Volume ^a	Noise Levels, dB L _{dn} @ 100 Feet	Distance to Traffic Noise Contours, Feet		
	From	To	ADT	Total	70 dB	65 dB	60 dB
U.S. 50	59th Street	65th Street	192,000 ^b	82.0	1,586	5,014	15,856
U.S. 50	59th Street	65th Street	213,000 ^c	82.5	1,759	5,563	17,590

Notes: ADT = average daily traffic; dB = decibels; L_{dn} = day-night average noise level; U.S. 50 = U.S. Highway 50
^a 2013 volumes, California Department of Transportation traffic data.
^b Annual average daily traffic volume.
^c Peak-month average daily traffic volume.
 Source: Data compiled by AECOM in 2014

With regard to local street noise, Appendix D of the *Sacramento 2030 General Plan* contains contours for existing noise levels as of March 2009. The contours show that 65th Street to the east of the project area produces 65 dB CNEL approximately 350 feet from the center of the roadway, which would extend the contour westward to the middle of the CSUS apartment complex. S Street, on the southern border of the project site, is a minor road with limited use and impact on ambient noise levels. Most other streets in the project vicinity are more than 500 feet away and have little to no impact on noise in the project area.

Existing Light Rail Train Noise

Appendix D of the *Sacramento 2030 General Plan* contains noise contours for existing railways and shows a 65 dB CNEL contour extending approximately 200 feet away from the two-way light rail line that runs along the entire length of the north side of the project area. This distance encompasses the CSUS sensitive receptor identified near the project site, and the childcare facility would still be within the 60 dB CNEL contour. The light rail noise, combined with noise levels from the freeway and nearby streets, indicates that both the CSUS apartments and the childcare center are currently exposed to noise levels that are elevated significantly above levels typically found in residential and school/daycare areas.

Existing Vibration

The existing vibration environment, similar to that of the noise environment, is dominated by transportation-related vibration from roadways and light rail trains in the vicinity of the project site. Heavy truck traffic observed throughout each day on U.S. 50 generates groundborne vibration, which varies considerably depending on vehicle type, weight, speed, and pavement conditions. However, groundborne vibration levels generated from vehicular traffic are not typically perceptible outside of the road right-of-way. Like the freeway, the two-way light rail train



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activity adjacent to the north side of the project site produces groundborne vibration that depends on the train speed, passenger load, and rail conditions.

Regulatory Setting

Federal

U.S. Environmental Protection Agency

EPA's Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. The federal Noise Control Act of 1972 subsequently established programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment (EPA 1974). In 1981, EPA administrators determined that noise would be better addressed by state and local governments. Consequently, in 1982, responsibilities for regulating noise control policies were transferred to state and local governments.¹

Federal Transit Administration

To address human response to groundborne vibration, the Federal Transit Administration (FTA) has maximum-acceptable vibration criteria for different land uses. These guidelines recommend 65 vibration decibels (VdB) for land uses where low ambient vibration is essential for interior operations (e.g., hospitals, high-tech manufacturing, laboratory facilities), 80 VdB for residential uses and buildings where people normally sleep, and 83 VdB for institutional land uses with primarily daytime operations (e.g., schools, churches, clinics, offices). These levels are calculated based on the measured root mean square velocity amplitude relative to a reference velocity amplitude of 1 microinch per second (FTA 2006:8-3).

State

California Building Standards Code

CCR Title 24, also known as the California Building Standards Code, establishes building standards applicable to all occupancies throughout the state. The code provides acoustical regulations for both exterior-to-interior sound insulation, as well as sound and impact insulation between adjacent spaces of various occupied units. Title 24 regulations state that interior noise levels generated by exterior noise sources shall not exceed 45 dB day-night average noise level (i.e., L_{dn}), with windows closed, in any habitable room for residential uses.

¹ However, noise control guidelines and regulations contained in EPA rulings in prior years continue to be enforced by designated federal agencies, allowing more individualized control for specific issues by designated federal, state, and local government agencies.



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California Department of Transportation

For the protection of fragile, historic, and residential structures, Caltrans recommends a threshold of 0.2 inch per second peak particle velocity for normal residential buildings and 0.08 inch per second peak particle velocity for old or historically significant (as defined under CEQA) structures (Caltrans 2004:17). These standards are more stringent than the recommended guidelines established by FTA, presented above.

Local

City of Sacramento Environmental Constraints Element

The Environmental Constraints Element of the *Sacramento 2030 General Plan* (City of Sacramento 2009) presents a noise compatibility matrix. The matrix provided in Table 3.12-2 presents noise exposure guidelines for different land uses.

Land Use Type	Highest Level of Noise Exposure that is Regarded as “Normally Acceptable” ^a (L _{dn} ^b or CNEL ^c)
Residential—Low Density, Single-Family, Duplex, Mobile Homes	60 dBA ^{d,e}
Residential—Multi-Family	65 dBA
Urban Residential Infill ^f and Mixed-Use Projects ^g	70 dBA
Transient Lodging—Motel, Hotels	65 dBA
Schools, Libraries, Churches, Hospitals, Nursing Homes	70 dBA
Auditoriums, Concert Halls, Amphitheaters	Mitigation based on site-specific study
Sports Arenas, Outdoor Spectator Sports	Mitigation based on site-specific study
Playgrounds, Neighborhood Parks	70 dBA
Golf Courses, Riding Stables, Water Recreation, Cemeteries	75 dBA
Office Buildings—Business Commercial and Professional	70 dBA
Industrial, Manufacturing, Utilities, Agriculture	75 dBA

Notes:

^a As defined in the Guidelines, “Normally Acceptable” means that the “specified land use is satisfactory, based upon the assumption that any building involved is of normal conventional construction, without any special noise insulation requirements.”

^b L_{dn} or day-night average level is an average 24-hour noise measurement that factors in day and night noise levels.

^c CNEL or community noise equivalent level measurements are a weighted average of sound levels gathered throughout a 24-hour period.

^d dBA or A-weighted decibel scale is a measurement of noise levels.

^e The exterior noise standard for the residential area west of McClellan Airport known as McClellan Heights/Parker Homes is 65 A-weighted decibels (dBA).

^f With land use designations of Central Business District, Urban Neighborhood (Low, Medium, or High) Urban Center (Low or High), Urban Corridor (Low or High).

^g All mixed-use projects located anywhere in the City of Sacramento.

Source: City of Sacramento 2009: Table EC 1



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The City's Environmental Constraints Element, like the County of Sacramento's Noise Element, also contains details on existing noise sources and levels within the city boundaries that were used to perform the analysis discussed in this IS/MND.

City of Sacramento Noise Ordinance

The City of Sacramento Noise Ordinance is contained in the Sacramento City Code, Title 8, Chapter 8.68—Noise Control, and reads as follows:

8.68.060 Exterior Noise Standards

A. The following noise standards unless otherwise specifically indicated in this article shall apply to all agricultural and residential properties.

- 1 From seven a.m. to ten p.m. the exterior noise standard shall be fifty-five (55) dBA.
- 2 From ten p.m. to seven a.m. the exterior noise standard shall be fifty (50) dBA.

B. It is unlawful for any person at any location to create any noise which causes the noise levels when measured on agricultural or residential property to exceed for the duration of time set forth following, the specified exterior noise standards in any one hour by:

- 1 The noise standard for a cumulative period of more than thirty minutes in any hour;
- 2 The noise standard plus five dB(A) for a cumulative period of more than fifteen minutes in any hour;
- 3 The noise standard plus ten dB(A) for a cumulative period of more than five minutes in any hour;
- 4 The noise standard plus fifteen dB(A) for a cumulative period of more than one minute in any hour; or
- 5 The noise standard plus twenty dB(A) for any period of time.

C. Each of the noise limits specified in subsection B of this section shall be reduced by five dBA for impulsive or simple tone noises, or for noises consisting of speech or music.

D. If the ambient noise level exceeds that permitted by any of the first four noise limit categories specified in subsection B of this section, the allowable noise limit shall be increased in five dBA increments in each category to encompass the ambient noise level. If the ambient noise level exceeds the fifth noise level category, the maximum ambient noise level shall be the noise limit for that category.

8.68.060 Interior Noise Standards

A. In any apartment, condominium, townhouse, duplex or multiple dwelling unit it is unlawful for any person to create any noise from inside his or her unit that causes the noise level when measured in a neighboring unit during the periods ten p.m. to seven a.m. to exceed:

- 1 Forty-five (45) dBA for a cumulative period of more than five minutes in any hour;
- 2 Fifty (50) dBA for a cumulative period of more than one minute in any hour;
- 3 Fifty-five (55) dBA for any period of time.

B. If the ambient noise level exceeds that permitted by any of the noise level categories specified in subsection A of this section, the allowable noise limit shall be increased in five dBA increments in each category to encompass the ambient noise level.

In addition, Section 8.68.080 of the City Noise Ordinance exempts noise from construction between 7:00 a.m. and 6:00 p.m., Monday through Saturday and between 9:00 a.m. and 6:00 p.m. on Sunday, with a limitation on internal combustion engines that do not have “suitable exhaust and intake silencers which are in good working order.”

Impacts and Mitigation Measures

a, c, d) Will the project lead to exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or other standards of other agencies; a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less-than-Significant Impact with Mitigation Incorporated. Construction noise would be short term and temporary, and operation of heavy-duty construction equipment would be intermittent throughout the day during construction. Impacts of noise from construction worker vehicles and from construction equipment are addressed separately below. Operational noise, once the project is completed, is expected to be similar to current conditions, and no impact is anticipated.

Construction Worker Vehicle Noise

Based on the project description, construction would involve an average of 150 workers per day, resulting in approximately 300 additional vehicle trips on the local roadways from workers commuting to and from the site. The transport of equipment and materials would also produce additional vehicle trips each day, including large trucks hauling materials and equipment. Approximately 65 employees would be relocated during the project, leading to a reduction of 130 vehicle trips per day. As a result, there would be a net increase of about 200 vehicle trips per day from the workers and equipment and material trucks. The surrounding surface streets see between 13,000 and 23,000 vehicles per day, on average, and Table 3.12-1 showed nearly 200,000 vehicles per day on the nearby highway, so the projected increase of 200 vehicles per day would be a small percentage of the existing traffic and the contribution to existing noise levels would be minimal. Therefore, the noise impact from construction worker vehicles would be **less than significant**.

Construction Equipment Noise

Construction activities associated with the proposed project would temporarily increase noise in the project vicinity. Noise would be generated by equipment such as front-end loaders, graders, backhoes, scrapers, dump trucks, water trucks, asphalt pavers, an aerial lift, scissor lifts, truck-mounted cranes, welders, and cutting torches. During construction, worst-case noise impacts on sensitive receptors in the project vicinity, as well as SMUD’s Customer Service Center, Field

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Reporting Facility, Energy Management Center, and 59th Street buildings, would involve the removal and repaving of the parking spot and driveway along the north side of the project site, which would occur within approximately 75–100 feet of the CSUS apartments at the nearest points. All other buildings are more than 250 feet away from the Headquarters Building and would have minimal construction noise impacts because of the decrease in noise levels with distance from the sources and the high existing noise levels in the project area. Assuming a worst-case scenario, a front-end loader, grader, paver, and dump truck would be used in the on-site location closest to any nearby sensitive receptor during the same time period. A conservative but reasonable assumption is that these pieces of equipment would operate simultaneously and continuously over a period of at least 1 hour at the on-site location closest to the CSUS sensitive receptor. The resulting hourly noise exposure was calculated (FHWA 2006) to be 83 dB energy-equivalent noise level (L_{eq}) at a distance of 75 feet from the equipment, or at the location of the closest noise-sensitive receptor. This level of noise would be more than 10 dB L_{eq} above the existing ambient noise level; therefore, noise impact from construction equipment would be **potentially significant**.

Mitigation Measure NOISE-1. Implement Best Management Practices to Control Construction Noise.

SMUD and its construction contractor shall implement the following BMPs to control noise associated with project construction equipment:

- *Fixed/stationary equipment (e.g., generators, compressors, cement mixers) shall be operated in locations that are as far away as possible from existing noise-sensitive receptors. All impact tools shall be shrouded or shielded, and all intake and exhaust ports on powered construction equipment shall be muffled or shielded.*
- *All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations.*
- *Equipment engine shrouds will be closed during equipment operation.*
- *All motorized construction equipment shall be shut down when not in use.*
- *Written notification of heavy construction activities (i.e., heavy earthmoving, building demolition) shall be provided to all noise-sensitive receptor properties located within 500 feet of the project site. Notification shall include the dates and hours during which construction activities are anticipated to occur and contact information, including a daytime telephone number, for the project representative to be contacted in the event that noise levels are deemed excessive. Recommendations to assist noise-sensitive land uses in reducing interior noise levels (e.g., closing windows and doors) shall be included in the notification.*
- *Major construction activities (grading, paving, and any other use of heavy equipment) shall be limited to the hours between 7:00 a.m. and 6:00 p.m., Monday through Saturday, and 9:00 a.m. and 6:00 p.m. on Sundays.*



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Implementation of this mitigation measure would minimize noise near the closest sensitive receptor and limit activities to noise ordinance exemption periods. Therefore, implementation of Mitigation Measure NOISE-1 would reduce this impact to a **less-than-significant** level.

b) Would the project lead to exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less-than-Significant Impact. Vibration related to operation of the Headquarter Building and site are expected to be similar to current conditions, once the project is complete; therefore no impacts related to operational vibration would occur. Evaluation of construction vibration impacts associated with the proposed project is based on the methodology developed by FTA (2006). Construction activities on the project site may result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. Groundborne vibration levels caused by various types of construction equipment are summarized in Table 3.12-3. Based on the representative vibration levels identified for various construction equipment types, sensitive receptors located near construction activities could be exposed to groundborne vibration levels exceeding the recommended FTA threshold of 80 VdB.

Equipment	PPV at 25 Feet (in/sec)¹	Approximate L_v (VdB) at 25 Feet²
Large Bulldozer	0.089	87
Jackhammer	0.035	79
Trucks	0.076	86
Small Bulldozer	0.003	58

Notes: in/sec = inches per second; VdB = vibration decibels
¹ Where PPV is the peak particle velocity.
² Where L_v is the root mean square velocity expressed in VdB, assuming a crest factor of 4.
Source: FTA 2006

The vibration threshold for human perception is approximately 65 VdB. Vibration levels in the range of 70 to 75 VdB are often noticeable, but acceptable. Beyond 80 VdB, vibration levels are often considered unacceptable by building occupants (FTA 2006:7-5). Based on the highest reference vibration levels presented in Table 3.12-3 (i.e., large bulldozer, similar to other large earthmoving equipment such as graders, pavers, and scrapers), groundborne vibration–sensitive receptors would need to be located within 40 feet of vibration-producing construction activities to perceive unacceptable groundborne vibration levels (greater than 80 VdB). Based on SMUD’s proposed site plan, heavy earthmoving construction equipment would operate at a minimum of 75 feet from existing, acoustically sensitive uses and all SMUD-owned buildings, namely the Customer Service Center, Field Reporting Facility, Energy Management Center, and 59th Street facilities; therefore, this impact would be **less than significant**.

e, f) 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



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levels; or for a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The project site is located approximately 3.7 miles from Sacramento Executive Airport and 6 miles from Mather Air Force Base, and there are no other airports or airstrips, public or private, in the area. Therefore, the proposed project would have ***no impact*** related to exposure of residents or workers to excessive noise levels.



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	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporation	Less-Than- Significant Impact	No Impact
3.13 POPULATION AND HOUSING				
Would the project:				
a) Induce substantial population growth in an area either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project site is located within the city of Sacramento in Sacramento County. The project site, which includes the existing Headquarters Building and a 13.66-acre portion of the headquarters site, is bordered by 61st Street to the west, light rail tracks to the north, SMUD’s Customer Service Center to the east, and S Street to the south. The project also includes two temporary trailer location sites where SMUD employees would be located during project construction. The *Sacramento 2030 General Plan* designates the project site as Public/Quasi-Public, and the zoning classification is Heavy Commercial Zone (C-4). The project site and surrounding uses are shown in Figure 2-1.

Regulatory Setting

Federal

No federal regulations related to population and housing are applicable to the proposed project.

State

No state regulations related to population and housing are applicable to the proposed project.

Local

No local regulations related to population and housing are applicable to the proposed project.

Impacts and Mitigation Measures

- a) **Induce substantial population growth in an area either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?**

No Impact. The proposed project includes the rehabilitation of the SMUD Headquarters Building and a 13.66-acre portion of the headquarters site. SMUD has occupied the building and site since their completion in 1960, and the proposed project would rehabilitate the building and site for continued use over the next 50 years. The proposed project does not include a residential component. No new houses would be built as a result of the project. The project would replace or improve existing utility and circulation elements that serve the project site. The proposed project does not include an extension of roads or other infrastructure that would induce population growth, would not increase the population in the area, and would not contribute to population growth in the area. Therefore, the proposed project would have ***no impact*** on population growth.

- b) **Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?**

No Impact. No homes would be displaced as a result of construction or operation of the proposed project. Therefore, the proposed project would have ***no impact*** related to displacement of housing.

- c) **Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?**

No Impact. The proposed project would not displace any homes. Because no homes would be displaced, a substantial number of people would not be displaced and the proposed project would have ***no impact*** related to displacement of people.



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	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporation	Less-Than- Significant Impact	No Impact
3.14 PUBLIC SERVICES				
Would the project 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:				
a) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

As stated below under “Impacts and Mitigation Measures,” implementation of the proposed project would not affect schools, parks, or other public services. Therefore, the following discussion focuses on fire and police protection providers that would serve the project site.

Fire Protection Services

The Sacramento Fire Department (SFD) provides fire protection services to the entire city, which encompasses approximately 98 square miles within the existing city limits. In addition, SFD serves three contract areas that occupy 47 square miles in the unincorporated county immediately adjacent to the city boundaries. SFD is staffed by more than 500 firefighters and administrative staff. On a daily basis, the department staffs 24 fire engines, eight ladder trucks, one heavy rescue, and 13 medic units at 24 fire stations, which are divided into three battalions (SFD 2014). The department also has one swift-water rescue team, three rescue-boat companies, two hazardous-materials response teams, and support vehicles such as wildland fire engines and air compressor units that are cross-staffed with fire engine/truck personnel.

The project site is within Fire District 3 and first-response service to the project site is provided by Fire Station #8, which is located at 5990 H Street, approximately 2 miles north of the project site (SFD 2012).



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Police Protection Services

The Sacramento Police Department (SPD) is principally responsible for providing police protection services in the city of Sacramento. In addition, the Sacramento County Sheriff's Department, California Highway Patrol, University of California Davis Medical Center Police Department, and Sacramento Regional Transit District (RT) Police Services support SPD to provide police protection in the greater Sacramento area.

Patrol and specialized teams are deployed from three substations serving four command areas: North, Central, East, and South. The project site is located within Police District 3 and beat 3C (SPD 2013:6). First response to the project site is provided by Central Command, which is located at 300 Richards Boulevard, approximately 7 miles northwest of the project site.

Regulatory Setting

Federal

No federal regulations related to public services are applicable to the proposed project.

State

California Occupational Safety and Health Administration

In accordance with CCR Title 8, Section 1270, "Fire Prevention," and Section 6773, "Fire Protection and Fire Equipment," Cal/OSHA has established minimum standards for fire suppression and emergency medical services. The standards include but are not limited to guidelines on the handling of highly combustible materials; fire hose sizing requirements; restrictions on the use of compressed air; access roads; and the testing, maintenance, and use of all firefighting and emergency medical equipment.

Fire Codes and Guidelines

The California Fire Code contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The California Fire Code contains specialized technical regulations related to fire and life safety.

California Health and Safety Code

State fire regulations are set forth in Section 13000 et seq. of the California Health and Safety Code. The code includes regulations for building standards (as set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers, smoke alarms, high-rise buildings, childcare facility standards, and fire suppression training.

California Historical Building Code

The California Historical Building Code provides for fire protection of qualified historical buildings or properties. It is intended to preserve the integrity of qualified historical buildings or properties while maintaining a reasonable degree of fire protection based primarily on the life safety of the occupants and firefighting personnel (Chapter 8-4). The CHBC identifies specifications for fire-resistant and roofing materials, automatic sprinkler systems, fire alarm systems, smoke and heat detection systems, occupant notification and annunciation systems, and smoke control systems.

Local

The following goal and policies from the Public Health and Safety Element of the *Sacramento 2030 General Plan* (City of Sacramento 2009) are applicable to the proposed project.

Goal PHS 2.2 Fire Prevention Programs and Suppression. The City shall deliver fire prevention programs that protect the public through education, adequate inspection of existing development, and incorporation of fire safety features in new development.

- **Policy PHS 2.2.3 Fire Sprinkler Systems.** The City shall promote installation of fire sprinkler systems for both commercial and residential use and in structures where sprinkler systems are not currently required by the City Municipal Code or Uniform Fire Code.
- **Policy PHS 2.2.4 Water Supplied for Fire Suppression.** The City shall ensure that adequate water supplies are available for fire-suppression throughout the city, and shall require development to construct all necessary fire suppression infrastructure and equipment.

Impacts and Mitigation Measures

a, b, c, Would the project result in substantial adverse physical impacts associated with d, e) the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

Fire Protection Services

No Impact. Implementation of the proposed project would not increase demand for SFD fire protection services such that the construction of new or expansion of existing fire service facilities would be required. Rehabilitation of the Headquarters Building would include upgrades to the buildings and site to meet current fire and life safety codes. SMUD would incorporate California Fire Code and CHBC requirements into project designs. The existing fire sprinkler system and chemical fire suppression system would be replaced by a new wet sprinkler system throughout the building. In addition, the existing fire suppression water system would be evaluated for continued reliable service and replaced in kind if necessary. In the event of a fire



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requiring emergency response, improved access would facilitate fire department response to the Headquarters Building. Therefore, the proposed project would have **no impact** on fire protection services.

Police Protection Services

No Impact. Implementation of the proposed project would not increase demand for SPD police protection services such that the construction of new or expansion of existing police service facilities are required. SMUD Security officers would continue to patrol SMUD property and facilities by both foot and vehicle as part of their regular duties. They would also continue to be stationed at security kiosks within facilities that serve the public. These locations are currently the SMUD Headquarters Building lobby and the Customer Service Center lobby. For the duration of the Headquarters Building rehabilitation, SMUD Security would be relocated to trailers in the Field Reporting Facility parking lot.

Existing security measures would continue to be implemented. These include secure vehicle points (electronic badges to activate cross arms), a 24-hour security force including routine site and building patrols, electronic locks at badged-personnel entrances, building cameras in lobbies and corridors, a manned security kiosk at the front entrance, and implementation of Crime Prevention Through Environmental Design practices. The Sacramento County Sheriff's Department provides additional manned security during scheduled board meetings.

Security improvements would include replacement of existing security gates at main entry points to the headquarters site and installation of new security cameras throughout the site and Headquarters Building. In addition, a security fence would be installed between the Customer Service Center and the Headquarters Building and between the Headquarters Building and the western site boundary.

Because the project would not increase demand for SPD police protection services and would include security improvements, the proposed project would have **no impact** on police protection services.

Schools

No Impact. The proposed project would not provide any new housing that would generate new students in the community. Therefore, the proposed project would have **no impact** on school services and facilities.

Parks

No Impact. The proposed project would not provide any new housing that would generate new residents who would require new or expanded park facilities. Therefore, the proposed project would have **no impact** on parks.



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Other Public Facilities

No Impact. No other public facilities exist in the project area that would be affected by implementation of the proposed project. Therefore, the proposed project would have ***no impact*** on other public facilities.



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	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporation	Less-Than- Significant Impact	No Impact
3.15 RECREATION				
Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project site is located within the city of Sacramento in Sacramento County. The project site, which includes the existing Headquarters Building and a 13.66-acre portion of the headquarters site, is bordered by 61st Street to the west, light rail tracks to the north, SMUD’s Customer Service Center to the east, and S Street to the south. The project also includes two temporary trailer location sites where SMUD employees would be located during project construction. The *Sacramento 2030 General Plan* designates the project site as Public/Quasi-Public, and the zoning classification for the project is Heavy Commercial Zone (C-4). The project site and surrounding uses are shown in Figure 2-1.

Regulatory Setting

Federal

No federal regulations related to recreation are applicable to the proposed project.

State

No state regulations related to recreation are applicable to the proposed project.

Local

No local regulations related to recreation are applicable to the proposed project.

Impacts and Mitigation Measures

- a) **Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?**

No Impact. The proposed project does not include any residential development that could increase the use of existing parks or recreational facilities. Therefore, the proposed project would have ***no impact*** related to increased use that would substantially deteriorate existing facilities.

- b) **Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?**

No Impact. The proposed project does not include any residential development that would require new or expanded recreational facilities. Therefore, the proposed project would have ***no impact*** related to adverse physical effects caused by construction or expansion of recreational facilities.



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	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporation	Less-Than- Significant Impact	No Impact
3.16 TRANSPORTATION AND CIRCULATION				
Would the project:				
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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level-of-service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with adopted policies regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project site is located along the U.S. 50 and RT Gold Line corridors in the East Sacramento area of the city of Sacramento.

Roadway Access

Primary regional roadway access to the site is provided by U.S. 50 (Lincoln Highway), which originates in the city of West Sacramento, passes south of downtown Sacramento, and continues east to Rancho Cordova, Folsom, and El Dorado County. In the immediate vicinity of the project site, U.S. 50 comprises four lanes in each direction, with a full-movement interchange located at 65th Street, just east of the project site. A partial interchange, comprising



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an on-ramp to westbound U.S. 50 and an off-ramp from eastbound U.S. 50, is also provided at the S Street/59th Street intersection, just west of the project site.

Major local roadways serving the project site include Folsom Boulevard, oriented east–west just north of the project site, and 65th Street/Elvas Avenue, oriented north–south just east of the project site. Both Folsom Boulevard and 65th Street/Elvas Avenue are four-lane semi-major arterial roadways (two lanes in each direction). On-street parking is generally limited on these streets, but is provided on some segments.

Local access directly into the SMUD Headquarters Building site (and the adjacent SMUD Customer Service Center) is provided primarily via S Street, which accommodates several access roads serving the surface parking lots surrounding the building. S Street features two travel lanes (one in each direction), with on-street parking on both sides of the street. Alternative access for these surface lots is provided to and from southbound 65th Street.

An additional access road north of the project site passes beneath the Gold Line embankment, connecting the site to SMUD facilities north of the light rail tracks.

Transit Access

The RT Gold Line borders the project site to the north, running in an exclusive right-of-way along the alignment of the former Sacramento Valley Railroad. The closest stops to the project site are the 59th Street Station (just east of 59th Street, west of the site) and the University/65th Street Station (just east of 65th Street, east of the site). Approximate hours of service on the Gold Line are between 5:00 a.m. and 11:00 p.m. on weekdays and Saturdays, and between 6:00 a.m. and 9:00 p.m. on Sundays and holidays. Headways are 15 minutes on weekdays (30 minutes on weekday evenings) and 30 minutes all day on Saturdays, Sundays, and holidays.

Supplementary transit service to the project site is provided by RT buses. A major bus transit center located at the University/65th Street Station serves the following routes:

- 26 Fulton
- 38 P/Q Streets
- 81 Florin–65th Street
- 82 Howe–65th Street
- 87 Howe

Bus stops at the Folsom Boulevard/65th Street intersection also serve three additional bus routes, two operated by RT and one by Amador Transit:

- 210 La Riviera Drive
- 211 College Greens
- Amador Transit Route 1

Bicycle Access

Class I facilities (off-street dedicated bicycle paths), Class II facilities (on-street dedicated bicycle lanes), and Class III facilities (on-street bicycle routes, usually comprising wide curb lanes with signage and sharrows, or shared lane markings) are provided along many streets near the project site. In the immediate vicinity of the site, major north–south bikeways include 58th Street/59th Street, Elvas Avenue/65th Street, and Redding Avenue. Folsom Boulevard and T Street comprise the main east–west bikeways. Bikeways in the vicinity of the project site are described in more detail below.

- *56th Street*: Between J Street and Folsom Boulevard
- *58th Street/59th Street*: Class III facilities between J Street and Folsom Boulevard, Class II facilities between Folsom Boulevard and the 59th Street Station, and Class III facilities between the 59th Street Station and Broadway
- *Elvas Avenue/65th Street*: Class II facilities between M Street and 65th Street, Class II facilities between Elvas Avenue and University/65th Street Station
- *Redding Avenue*: Class II facilities between Folsom Boulevard and 14th Avenue
- *Folsom Boulevard*: Class II facilities along the full length in the vicinity of the project site
- *T Street*: Class I facilities between 65th Street and Kroy Way and Class II facilities west of Kroy Way
- *4th Avenue*: Class II facilities between Redding Avenue and 65th Street
- *Broadway*: Class I facilities between Mae Fong Park and 65th Street

In addition to these facilities, a network of Class I facilities is provided on the CSUS campus, connecting into Elvas Avenue at 65th Street.

Pedestrian Access

Pedestrian facilities such as sidewalks, crosswalks, and curb ramps are somewhat limited near the project site. Sidewalks are occasionally discontinuous, such as along Folsom Boulevard and along the south side of S Street between 59th Street and 65th Street. At some intersections, particularly at ramp terminals such as S Street/59th Street and S Street/65th Street, crossings may not be accommodated on all legs, while at some curb cuts serving off-street parking facilities, marked crosswalks may not be provided across the driveway. Curb ramps are generally provided at all locations with marked crosswalks, although some locations lack tactile warning devices and therefore are not fully compliant with current Americans with Disabilities Act (ADA) regulations.

In general, however, a clear, relatively direct path of travel is available from both the 59th Street Station and the University/65th Street Station (and the adjacent transit center) to the project site.

Sidewalks are provided along all segments of these walking routes, although some curb cuts may not provide marked crosswalks.

Regulatory Setting

Federal

No federal regulations related to transportation and circulation are applicable to the proposed project. Federal regulations that apply to transportation and circulation are administered by Caltrans and local jurisdictions.

State

Caltrans is responsible for planning, designing, constructing, operating, and maintaining all state-owned roadways, including those in Sacramento County. Federal highway standards are implemented in California by Caltrans.

Caltrans policies related to traffic analyses are summarized in Caltrans's *Guide for the Preparation of Traffic Impact Studies*. These guidelines identify circumstances under which Caltrans believes that a traffic impact study would be required, information that Caltrans believes should be included in the study, analysis scenarios, and guidance on acceptable analysis methodologies. [Caltrans also issues transportation permits for the movement of oversize or excessive loads on State Highways and encroachment permits for work affecting State Highway Right-of-ways.](#)

Local

Sacramento 2030 General Plan

The Mobility Element of the *Sacramento 2030 General Plan* (City of Sacramento 2009) establishes various transportation-related policies regarding the circulation system, walkable communities, public transit, roadways, bikeways, parking, goods movement, aviation, and transportation funding. The following goals and policies from the Mobility Element are applicable to the proposed project.

Goal M 1.1 Comprehensive Transportation System. Provide a transportation system that is effectively planned, managed, operated, and maintained.

- **Policy M 1.1.1 Right-of-Ways.** The City shall manage the use of transportation right-of-ways by all travel modes, consistent with the goal to provide Complete Streets, as described in Goal M 4.2.
- **Policy M 1.1.2 Travel System.** The City shall manage the travel system to ensure safe operating conditions.

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- **Policy M 1.1.3 Emergency Services.** The City shall coordinate the development and maintenance of all transportation facilities with emergency service providers to ensure continued emergency service operation and service levels.
- **Policy M 1.1.4 Facilities and Infrastructure.** The City shall effectively operate and maintain transportation facilities and infrastructure to preserve the quality of the system.

Goal M 2.1 Integrated Pedestrian System. Design a universally accessible, safe, convenient, and integrated pedestrian system that promotes walking.

- **Policy M 2.1.7 Parking Facility Design.** The City shall ensure that new automobile parking facilities are designed to facilitate safe and convenient pedestrian access, including clearly defined corridors and walkways connecting parking areas with buildings.

Goal M 3.1 Safe, Comprehensive, and Integrated Transit System. Create and maintain a safe, comprehensive, and integrated transit system as an essential component of a vibrant transportation system.

- **Policy M 3.1.12 Direct Access to Stations.** The City shall ensure that projects located in the Central City and within ½ mile walking distance of existing and planned light rail stations provide direct pedestrian and bicycle access to the station area, to the extent feasible.

City of Sacramento Pedestrian Master Plan

The *City of Sacramento Pedestrian Master Plan* (City of Sacramento 2005) enumerates goals and objectives related to pedestrian awareness, walkability, and pedestrian safety. The master plan designates Folsom Boulevard as a “pedestrian corridor” and the area around Folsom Boulevard between approximately 48th Street and 59th Street, just northwest of the project site, as a “pedestrian node.”

Sacramento City/County Bikeway Master Plan

The *Sacramento City/County Bikeway Master Plan* (City of Sacramento and Sacramento County 2011) establishes goals and objectives for recreational and transportation-related bicycle use. The map of the Bikeway Master Plan with Amendments (2011) and the Existing and Proposed Bikeway Map (updated October 11, 2011) (City of Sacramento 2011a, 2011b) identify several proposed bikeways, including on-street facilities along 59th Street and 65th Street south of the RT Gold Line.

Impacts and Mitigation Measures

- 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**

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intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Less-than-Significant Impact. As described in Section 2.5.5, “Relocation of SMUD Employees,” the project would involve the temporary relocation of approximately 498 employees to various SMUD facilities in the vicinity of the Headquarters Building and the permanent relocation of approximately 65 employees to the EC-OC. In the long-term, the number of employees working on at the Headquarters Building is expected to be similar to current conditions.

The temporary relocation of 498 employees within the SMUD campus would slightly change circulation patterns for employees and visitors heading to and from the project site. For example, employees currently parking in the west and east parking lots may park at the Field Reporting Facility, along S Street, or at the former SMUD Corporate Yard at 59th Street. With the exception of the Field Reporting Facility, which would be accessible only from Folsom Boulevard during construction, these facilities are accessible from the same surface streets as the current parking areas. Therefore, circulation patterns by employees would not fundamentally change general transportation patterns in the vicinity of the project site. The proposed project, primarily comprising the rehabilitation of the Headquarters Building, would not increase the intensity of development or change the type of land use at the site. Therefore, the project would not fundamentally increase the magnitude of the site’s travel demand footprint (i.e., the traffic volumes, transit ridership, and pedestrian and bicycle use generated by uses on the site), including its effects on transportation facilities maintained by Caltrans, Sacramento County, or the City of Sacramento. Accordingly, any localized minor effects on travel patterns associated with the temporary relocation would be temporary and would not continue after completion of the project.

Although the permanent relocation of employees to the EC-OC would permanently increase the number of employees at the EC-OC, these employees would be accommodated in currently unused space in the EC-OC. The permanent relocation of these employees would not fundamentally increase the magnitude of the EC-OC’s travel demand footprint beyond the scope of what was analyzed in the environmental clearance conducted for the EC-OC, including the effects on transportation facilities maintained by Caltrans, Sacramento County, or the City of Sacramento.

The rehabilitation of the Headquarters Building and surrounding site would not fundamentally change access to and from the site for vehicular traffic, transit riders, pedestrians, or bicyclists. Although there would be slight changes to access routes within the site after completion of the project, as described under Section 2.5.2, “Headquarters Site Rehabilitation,” employees and visitors at the headquarters site would continue to be able to access the site as they currently do. In particular, these changes are designed to enhance ADA compliance and improve access to and from the site for transit users, pedestrians, and bicyclists.

There may be a slight increase in traffic to and from the site as a result of construction-related activities, but these effects would be temporary and would be partially offset by a reduced number of trips from employees reporting to the EC-OC as a result of project implementation. In addition, traffic generated by construction-related activities would generally be spread

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throughout the course of the day such that the effect during the peak hours of the transportation network would be minimal. Also, the current employee trips to the site would decrease during project construction activities because the relocation of some employees to the EC-OC and other off-site locations (discussed in Section 2.5.5, “Relocation of SMUD Employees”) would offset increases associated with construction traffic. Therefore, the rehabilitation of the Headquarters Building and surrounding site would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. This impact would be ***less than significant***.

- b) Conflict with an applicable congestion management program, including, but not limited to level-of-service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?**

Less-than-Significant Impact. As stated above, the project would not result in an increase in the magnitude of the travel demand footprint of the headquarters site, while the permanent relocation of employees to the EC-OC would not increase the travel demand footprint at the EC-OC beyond the scope of what was analyzed in the EIR for the EC-OC (SMUD 2010a, 2010b).

As stated above, the effects of construction-related traffic would be temporary and spread throughout the course of the day, such that the effect during the peak hours of the transportation network would be minimal. Therefore, the rehabilitation of the Headquarters Building and surrounding site would not conflict with applicable congestion management programs. This impact would be ***less than significant***.

- 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?**

No Impact. The proposed project would not involve any components that could affect air traffic patterns; therefore, the project would have ***no impact*** related to a change in air traffic patterns.

- d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

No Impact. As described in Section 2.5.2, “Headquarters Site Rehabilitation,” rehabilitation of the headquarters site would include improvements designed to enhance ADA compliance and improve access to and from the site for transit users, pedestrians, and bicyclists. Any such changes would be designed in accordance with applicable design guidelines and engineering standards.

The project would permanently relocate employees to the EC-OC but would not alter the design of the EC-OC site. Therefore, the rehabilitation of the Headquarters Building and surrounding site would not increase hazards due to a design feature or incompatible uses. The proposed project would have ***no impact*** related to an increase in such hazards.

- e) Result in inadequate emergency access?**

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Less-than-Significant Impact with Mitigation Incorporated. Although the proposed rehabilitation would likely result in minor modifications to the circulation of emergency vehicles within the headquarters site, it would not preclude emergency vehicle access. As described in Section 2.5.2, "Headquarters Site Rehabilitation," under "Access and Circulation," the project includes relocation of entrances, gates, and modification to internal roadways to improve traffic circulation and reduce congestion on public streets caused by queueing. The project also would modify the access roads to facilitate improved fire department access to the Headquarters Building, which could also be used by other emergency vehicles. Therefore, emergency vehicles, including fire and medical response vehicles, would be able to better access the site. In addition, the project does not propose permanent changes to the public right-of-way (i.e., the public roadway network serving the site) and therefore would not adversely affect emergency response times to the site or other sites. The proposed project would include installation of a security fence, but the fence would be sited behind existing landscape berms where possible and would not adversely affect emergency response times. As part of project implementation, SMUD would coordinate with the City of Sacramento, including the fire and police departments, regarding the locations and specific design of the relocated vehicle gates to ensure that emergency access would not be adversely affected by the proposed project.

However, S Street could be affected intermittently during construction of proposed improvements to the 15-inch storm drain pipeline located within the S Street right-of-way. Because construction activities could result in temporary lane closures, increased truck traffic, and other roadway effects that could interfere with or slow down emergency vehicles and temporarily increase response times and impede existing services, this impact would be **potentially significant**.

Mitigation Measure TRA-1. Implement Mitigation Measure HAZ-3, "Prepare and Implement a Traffic Control Plan."

SMUD and/or its construction contractors shall prepare and implement a traffic control plan for construction activities that may affect road rights-of-way, to facilitate travel of emergency vehicles on affected roadways. The traffic control plan shall follow applicable City of Sacramento standards and shall be approved and signed by a professional engineer. Measures typically used in traffic control plans include advertising of planned lane closures, warning signage, a flag person to direct traffic flows when needed, and methods to ensure continued access by emergency vehicles. During project construction, access to the existing surrounding land uses shall be maintained at all times, with detours used as necessary during road closures. The traffic control plan shall be submitted to the City of Sacramento Public Works Department for review and approval before the approval of improvement plans.

Implementation of Mitigation Measure TRA-1 would reduce the significant impact associated with decreased emergency response times during construction to a **less-than-significant** level by requiring preparation and implementation of a construction traffic control plan that would provide for adequate emergency access during construction activities.

- f) **Conflict with adopted policies regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance of such facilities?**



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No Impact. As stated above, the project would not result in an increase in the magnitude of the travel demand footprint of the headquarters site, while the permanent relocation of employees to the EC-OC would not increase the travel demand footprint at the EC-OC beyond the scope of what was analyzed in the environmental clearance conducted for the EC-OC.

The project would not conflict with adopted policies regarding public transit, bicycle, or pedestrian facilities or otherwise decrease the performance of these facilities. The proposed rehabilitation of the SMUD Headquarters Building would improve access and safety for pedestrians, bicyclists, and transit riders, in accordance with the Mobility Element of the *Sacramento 2030 General Plan* and the goals and objectives established in the *City of Sacramento Pedestrian Master Plan* and the *Sacramento City/County Bikeway Master Plan*. The proposed project would have **no impact** related to a conflict with policies regarding public transit, bicycle, or pedestrian facilities.



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	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporation	Less-Than- Significant Impact	No Impact
3.17 UTILITIES AND SERVICE SYSTEMS				
Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

Water Supply

Water Availability and Demands

The City of Sacramento is the water purveyor for the proposed project. The City's water supply is obtained from three sources:

- surface water from the American River,
- surface water from the Sacramento River, and
- groundwater from the North American and South American Subbasins.



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Under its permits to divert water from the Sacramento River, the City may divert up to 225 cfs, or an annual limit of 81,800 acre-feet per year (afy) (City of Sacramento 2011c:4-3). In addition, the City has four water rights permits authorizing diversions of up to 589,000 afy of American River water. In 1957, the City entered into a water rights settlement agreement with the U.S. Bureau of Reclamation regarding diversions from the American River (City of Sacramento 2011c:4-4). Under the settlement agreement, the City agreed to limit its diversions from the American River and scale up to the maximum diversion of 245,000 afy by the year 2030 (City of Sacramento 2011c:4-5). Table 3.17-1 shows the settlement contract’s maximum diversion schedule from 2010 to 2035. The City had a total of 227,500 afy of potable water supplies in 2010; this total is anticipated to increase to 326,800 afy by 2035.

Source	Diversions (afy)					
	2010	2015	2020	2025	2030	2035
Maximum Diversion from the American River ¹	170,500	189,000	208,500	228,000	245,000	245,000
Maximum Diversion from the Sacramento River ²	81,800	81,800	81,800	81,800	81,800	81,800
Maximum Combined Diversion Total³	227,500	252,000	278,000	304,000	326,800	326,800

Note: afy = acre-feet per year

¹ The City may divert up to the maximum diversion from the American River as long as the total combined diversion from both the Sacramento and American Rivers does not exceed the maximum combined diversion total.

² The City may divert up to 81,800 afy from the Sacramento River as long as the total combined diversion from both the Sacramento and American Rivers does not exceed the maximum combined diversion total.

³ Represents the City’s total maximum combined diversion from both the American River and Sacramento River.

Source: City of Sacramento 2011c:4-6

Most of the water supplied to the city is surface water; the balance is obtained from groundwater extracted from the North American and South American Subbasins of the Sacramento Valley Groundwater Basin (see Section 3.9, “Hydrology and Water Quality,” for further discussion). The City operates 25 municipal supply wells and five irrigation supply wells north of the American River, and two municipal supply wells and nine irrigation supply wells south of the American River (City of Sacramento 2011c:4-8). Total well pumping capacity is 16,010 gallons per minute, or 23.1 million gallons per day (mgd) (City of Sacramento 2011c:4-10). Although the City maintains pumps in both the North American and South American Subbasins, approximately 95% of the amount pumped by the City is from the North American Subbasin (City of Sacramento 2011c:4-8). In 2010, the City pumped 17,772 afy from the North American Subbasin and 665 afy from the South American Subbasin (City of Sacramento 2011c:4-8). The annual amount projected to be pumped from both subbasins totals approximately 22,300 afy (City of Sacramento 2011c:4-16).

The City’s urban water management plan, which was adopted in October 2011, addresses water supply and demand issues, water supply reliability, water conservation, water shortage contingencies, and recycled-water usage for the locations within its service area. In accordance with Senate Bill x7-7 (see California Water Code Section 10608.12[b][1]), the City’s urban water



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management plan's estimated water demands are based on an estimated gallons-per-capita-per-day target chosen by the City (City of Sacramento 2011c:3-4).

Water Conveyance and Treatment Facilities

The City's water distribution system is a pipeline network in which surface water and groundwater are mixed. The City Department of Utilities operates and maintains the City's two water treatment plants. Water diverted from the Sacramento River is treated at the Sacramento River Water Treatment Plant (SRWTP), located along the Sacramento River just downstream of its confluence with the American River. The capacity of the SRWTP is 135 mgd; design is under way for a project to rehabilitate the older facilities at the SRWTP to bring the capacity back to 160 mgd by 2016 (City of Sacramento 2011c:2-4).

Water diverted from the American River is treated at the E. A. Fairbairn Water Treatment Plant (FWTP), located along the American River approximately 7 miles upstream of the confluence of the Sacramento and American Rivers. The design capacity of the FWTP is 200 mgd, but the current permitted capacity at the FWTP is 160 mgd and the City is restricted to diversions of up to 100 mgd under certain river flow conditions (City of Sacramento 2011c:2-4).

The City maintains 16 water storage facilities: 11 storage tanks located throughout the city and five clear wells located at the SRWTP and FWTP (City of Sacramento 2011c:2-6). The City's transmission and distribution system includes more than 1,760 miles of system mains ranging in size from 4 to 60 inches in diameter (City of Sacramento 2011c:2-6).

Wastewater

Wastewater Collection and Conveyance Facilities

The City Department of Utilities provides wastewater collection services in Sacramento. The City originally used a combined sewer system that provided both sewage and drainage services to more than 24,000 parcels in downtown, midtown, Land Park, and East Sacramento. The system, established in the 1800s, collected sewage and stormwater in the same pipe. The Headquarters Building's sewer system consists of an 8-inch dedicated sewer line with a connection to a manhole and a subsequent 30-inch sewer line along S Street at the southwest corner of the project site. The system becomes a combined sewer system south of U.S. 50 at Frontage Road and 59th Street.

Wastewater Treatment Facilities

Wastewater flows collected from Sacramento Regional County Sanitation District (SRCSD) interceptors are ultimately transported into the Sacramento Regional Wastewater Treatment Plant (SRWWTP). The SRWWTP is located in Elk Grove and is owned and managed by SRCSD. Currently, the SRWWTP has an NPDES permit issued by the Central Valley RWQCB for discharge of up to 181 mgd of treated effluent into the Sacramento River. As of 2013, the SRWTP receives and treats an average of 119 mgd and the SRWWTP discharge constituents are below permitted discharge limits specified in the NPDES permit (SRCSD 2013).



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SRCSO is in the process of upgrading the SRWWTP. The upgrade, known as the EchoWater Project, must be built by 2021–2023 to meet new water quality requirements that were issued by the Central Valley RWQCB as part of SRCSD’s 2010 discharge permit. The requirements are designed primarily to help protect the Delta ecosystem downstream by removing most of the ammonia and nitrates and improving the removal of pathogens from wastewater discharge. The upgrade will include deployment of new treatment technologies and facilities, and will increase the quality of effluent discharged into the Sacramento River and ensure that the SRWWTP discharge constituents are below permitted discharge limits specified in the NPDES permit. The upgrade will not, however, result in a net increase in permitted capacity of the SRWWTP. (SRCSD 2013.)

Flows to the SRWWTP have decreased as a result of water conservation efforts over the last 10 years. It is anticipated that state legislation passed in 2009, which mandates further water conservation efforts, could substantially reduce the amount of wastewater in the future. In addition, SRCSD has prioritized its goals to increase water recycling in the region as an element to support the comprehensive effort to promote water supply reliability and Delta sustainability. Therefore, SRCSD has determined that the SRWWTP can provide capacity to future development beyond what was originally anticipated. If substantial population growth or new development occurs during the planning horizon of the *SRWWTP’s 2020 Master Plan*, SRCSD will reevaluate expansion needs and phase treatment plant expansion to provide for sufficient long-term capacity (SRCSD 2010).

Stormwater

The City Department of Utilities maintains the City’s storm drainage facilities. Stormwater for the project site is collected through a series of inlets in the parking lots and landscape areas and conveyed through 8-inch, 10-inch, and 12-inch pipes. Stormwater is conveyed southerly with three points of connection to the City of Sacramento’s storm drain system in a 15-inch pipe in S Street. Stormwater is then conveyed in the 15-inch pipe easterly to 65th Street, where it connects to a 60-inch pipe and flows northerly down 65th Street to pump station Sump 31 at Elvas Avenue, from which it is pumped through the CSUS campus to the American River. The project site is subject to localized flooding as a result of existing deficiencies in the storm drain pipe system.

Solid Waste

Solid Waste Collection

Solid waste collection services in Sacramento, including residential and a small portion of commercial garbage pickup, recycling, and yard waste hauling, are provided by the City’s Recycling and Solid Waste Division. In 2012, the City disposed of a total of 401,445 tons of solid waste (CalRecycle 2012).

Solid Waste Facilities

Most refuse collected by the City is transported to the Sacramento Recycling and Transfer Station and ultimately to the Lockwood Regional Landfill in Sparks, Nevada. The Sacramento



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Recycling and Transfer Station, which is owned and operated by BLT Enterprises, is limited to accepting 2,500 tons per day (tpd) of solid waste (CalRecycle 2014a).

The Lockwood Regional Landfill is owned and operated by a private firm, Waste Management Inc., and is the primary location for the disposal of waste by the City. This landfill is permitted to accept municipal solid waste and construction and demolition debris and receives approximately 5,000 tpd of waste. The landfill has a total maximum permitted capacity of 302.5 million cubic yards and approximately 270 million cubic yards of available capacity (NDEP 2014). The anticipated closure date of the Lockwood Regional Landfill is approximately 2113 (Applied Soil Water Technologies 2011).

Waste is also processed at the North Area Recovery Station, which is owned and operated by Sacramento County and is limited to accepting 2,400 tpd (CalRecycle 2014b). Waste brought to this station is transported to the Kiefer Landfill. Sacramento County owns and operates the Kiefer Landfill, and the landfill is the primary solid waste disposal facility in the county. The Kiefer Landfill is classified as a Class III municipal solid waste landfill facility and is permitted to accept general residential, commercial, and industrial refuse for disposal, including municipal solid waste, construction and demolition debris, green materials, agricultural debris, and other nonhazardous designated debris. The landfill is permitted to accept a maximum of 10,800 tpd of solid waste and currently has a permitted capacity of approximately 117 million cubic yards. The closure date of the Kiefer Landfill is anticipated to be approximately 2064 (CalRecycle 2014c).

Construction and demolition waste, which is collected by both the City's fleet and private companies, may also be disposed of at the Yolo County Landfill, Forward Landfill, and L and D Landfill. Private haulers can deliver waste to the landfill of their choice and base the decision on market conditions and capacity (City of Sacramento 2009:6.11-67).

Regulatory Setting

Federal

No federal regulations related to utilities and service systems are applicable to the proposed project.

State

2013 California Green Building Standards Code

The standards included in the 2013 California Green Building Standards Code (CALGreen Code) (CCR Title 24, Part 11) became effective on January 1, 2014. The CALGreen Code was developed to enhance the design and construction of buildings, and the use of sustainable construction practices, through planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental air quality (California Building Standards Commission 2013).

Chapter 6 of the 2013 CALGreen Code describes measures to reduce indoor demand for potable water by 20% and to reduce landscape water usage by 50%. It also requires separate



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water meters for nonresidential buildings' indoor and outdoor water use, with a requirement for moisture-sensing irrigation systems for larger landscape projects.

Chapter 7, Section 708, of the 2013 CALGreen Code requires all construction contractors to reduce construction waste and demolition debris by 50%. Code requirements include preparing a construction waste management plan that identifies the materials to be diverted from disposal by efficient usage, recycling, reuse on the project, or salvage for future use or sale; determining whether materials will be sorted on-site or mixed; and identifying diversion facilities where the materials collected will be taken. The code also specifies that the amount of materials diverted should be calculated by weight or volume, but not by both. In addition, the 2013 CALGreen Code requires that 100% of trees, stumps, rocks, and associated vegetation and soils resulting primarily from land clearing be reused or recycled.

California Integrated Waste Management Act

The California Integrated Waste Management Act (CIWMA) of 1989 created the California Integrated Waste Management Board, now known as the California Department of Resources Recycling and Recovery (CalRecycle). CalRecycle is the agency designated to oversee, manage, and track California's 92 million tons of waste generated each year. CalRecycle provides grants and loans to help cities, counties, businesses, and organizations meet the state's waste reduction, reuse, and recycling goals. CalRecycle promotes a sustainable environment in which these resources are not wasted, but can be reused or recycled. In addition to many programs and incentives, CalRecycle promotes the use of new technologies to divert resources away from landfills. CalRecycle is responsible for ensuring that waste management programs are carried out primarily through local enforcement agencies.

The CIWMA is the result of two pieces of legislation, AB 939 and Senate Bill 1322. The CIWMA was intended to minimize the amount of solid waste that must be disposed of through transformation and land disposal by requiring all cities and counties to divert 25% of all solid waste from landfill facilities by January 1, 1995, and 50% by January 1, 2000.

The 50% diversion requirement is measured in terms of per-capita disposal expressed as pounds per day (lb/day) per resident and per employee. The per-capita disposal and goal measurement system uses an actual disposal measurement based on population and disposal rates reported by disposal facilities, and it evaluates program implementation efforts. According to the most recent regional diversion/disposal progress report for 2012, the target solid-waste generation rate for the city was 6.9 lb/day per resident and 10.8 lb/day per employee, and the actual measured generation rate was 4.7 lb/day per resident and 7.6 lb/day per employee (CalRecycle 2012). Therefore, the City's actual generation rate was less than the 50% diversion rate requirement.

Local

Sacramento 2030 General Plan

The following goals and policies from the Utilities Element of the *Sacramento 2030 General Plan* (City of Sacramento 2009) are applicable to the proposed project.



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Goal U 1.1 High-Quality Infrastructure and Services. Provide and maintain efficient, high-quality public infrastructure facilities and services throughout the city.

Goal U 3.1 Adequate and Reliable Sewer and Wastewater Facilities. Provide adequate and reliable sewer and wastewater facilities that collect, treat, and safely dispose of wastewater.

Goal U 4.1 Adequate Stormwater Drainage. Provide adequate stormwater drainage facilities and services that are environmentally-sensitive, accommodate growth, and protect residents and property.

- **Policy U 4.1.1 Adequate Drainage Facilities.** The City shall ensure that all new drainage facilities are adequately sized and constructed to accommodate stormwater runoff in urbanized areas.

Goal U 5.1 Solid Waste Facilities. Provide adequate solid waste facilities, meet or exceed State law requirements, and utilize innovative strategies for economic and efficient collection, transfer, recycling, storage, and disposal of refuse.

- **Policy U 5.1.16 Recycling and Reuse of Construction Wastes.** The City shall require recycling and reuse of construction wastes, including recycling materials generated by the demolition and remodeling of buildings, with the objective of diverting eighty-five percent to a certified recycling processor.

City of Sacramento Climate Action Plan

To implement sustainability goals and policies in the *Sacramento 2030 General Plan*, the City of Sacramento adopted a climate action plan in February 2012. Included in the CAP are several goals, expressed as quantified targets, related to City utilities. These include:

- Achieve 75% diversion of solid waste by 2020, and work towards becoming a “zero waste” community by 2040.
- Achieve a 20% reduction in per capita water consumption by the year 2020.

Sacramento Regional Solid Waste Authority Recycling Ordinance No. 20

The Sacramento Regional Solid Waste Authority (SWA) was formed in December 1992 to assume the responsibilities for the solid waste, recycling, and disposal needs of the Sacramento area. The SWA enforces its ordinances to regulate multifamily and commercial solid waste collection, permit franchised haulers, and promote recycling programs.

SWA Ordinance No. 20, Title IV, describes business and multifamily residential recycling requirements. The following requirements apply to all businesses and nonresidential properties that generate 4 cubic yards per week or more of garbage collection service per week:

- Keep recyclable materials separated from garbage.

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- Subscribe to a recycling service that collects recyclable materials.
- Enter into a written service agreement with a franchised hauler or authorized recycler, or complete and retain a self-hauling form on-site allowing for self-hauling of recyclable materials.
- Place recycling containers in employee maintenance or work areas where recyclable materials may be collected and/or stored.
- Prominently post signs in work areas where recyclable materials are collected and/or stored that instruct employees about what and how to recycle.
- Prominently place labeled containers and posting notices near garbage bins in customer service areas to collect recyclable materials from customers.
- Provide written instructions notifying employees about what and how to recycle.
- Ensure that recyclable materials generated on-site will be taken to a recycling facility, and not a landfill, for proper disposal.
- Retain on-site service agreements or other recycling documents.

Sacramento City Code

Water Efficient Landscape Ordinance

The Water Efficient Landscape Ordinance (Title 15, Chapter 15.92 of the City Code) outlines requirements for water-efficient landscapes that apply to public and private projects that include landscaped areas of at least 2,500 square feet and require a building or landscape permit, plan check, or design review. The City requires project applicants to submit a landscape documentation package for review and approval by the City. The landscape documentation package must contain project information, a water-efficient-landscape worksheet, a soil management report, a landscape design plan, an irrigation design plan, and a grading design plan.

Construction and Demolition Debris Recycling Ordinance

The City requires all contractors to comply with the Construction and Demolition Debris Recycling Ordinance (Title 8, Chapter 8.124 of the City Code) to reduce all project waste by weight from entering landfill facilities by 50% through recycling. The ordinance applies to all new construction valued at \$250,000 or more. Covered projects must recycle five different types of debris and materials: scrap metal; inert materials (concrete, asphalt paving, bricks); corrugated cardboard; wood pallets; and clean wood waste. The City requires contractors to prepare a waste management plan before obtaining building permits. The waste management plan must identify the sources of recyclable materials, outline a recycling method (i.e., self-separation or mixed recovery), and identify a self-haul or franchise waste hauler. Contractors are required to document the quantities of building materials recycled, salvaged or reused, and/or disposed

during construction on a waste management log. The waste management log must be submitted to City Solid Waste Services within 30 days of project completion (City of Sacramento 2014).

Impacts and Mitigation Measures

- a, e) **Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board; result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?**

Less-than-Significant Impact. Wastewater from the project site would continue to be conveyed to the SRWWTP located in Elk Grove. No increase in flow is anticipated from operation of the proposed project. The purpose of the proposed project includes the rehabilitation of the existing SMUD Headquarters Building with upgrades to building systems. Plumbing systems would be upgraded with new piping and low-flow fixtures. Approximately 65 employees would be permanently relocated to the EC-OC which also has adequate wastewater treatment capacity at full occupancy. Therefore, the proposed project would not exceed wastewater treatment requirements of the Central Valley RWQCB and the SRWWTP would have adequate capacity to serve the project's demand in addition to existing commitments. This impact would be *less than significant*.

- b, c) **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 impacts; require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**

Less-than-Significant Impact. As discussed under Question a), the proposed project is not anticipated to increase wastewater generated at the SMUD headquarters facility. Stormwater basin volume would be increased and outflow would be metered to the capacity of the downstream system. This would also mitigate existing deficiencies in the storm drain pipe system. Reconstruction of the pipe in S Street may be required and is part of the proposed project to address flooding issues on the SMUD campus. Therefore, the proposed project would not result in the construction of new water or wastewater treatment facilities or the expansion of existing facilities. This impact would be *less than significant*.

- d) **Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?**

Less-than-Significant Impact. Available water resources and entitlements meet demand by existing SMUD Headquarters Building operation. Rehabilitation of the building would not cause an increase in demand of water resources and existing entitlements and resources would continue to be sufficient to serve the SMUD headquarters. No increase in the number of employees in the building would occur and upgrades to building plumbing systems and



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landscape irrigation system would improve efficiency in use of water resources. New or expanded entitlements would not be needed. This impact would be ***less than significant***.

f, g) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; comply with federal, state, and local statutes and regulations related to solid waste?

Less-than-Significant Impact. The proposed project would cause a temporary increase in the generation of solid waste as a result of construction activities. Compliance with the 2013 CALGreen Code and the City Construction and Demolition Debris Recycling Ordinance would result in a reduction of construction waste and demolition debris and increase recycling. In addition, the construction contractor would comply with goals of the *Sacramento 2030 General Plan* also contains goals regarding solid waste generation and recycling.

The majority of landfilled waste would be delivered to the Lockwood Regional Landfill or Kiefer Landfill. Construction and demolition waste could also potentially be delivered to the L and D Landfill, Yolo County Central Landfill, or Forward Landfill. Combined, these landfills have a large volume of landfill capacity available to serve the proposed project during construction.

Operational impacts of the proposed project would not result in an increase over existing solid waste generation and disposal. Compliance with the CIWMA of 1989 and SWA Recycling Ordinance No. 20, *Sacramento 2030 General Plan* goals, and other City codes would ensure that sufficient solid waste disposal needs would continue to be available. This impact would be ***less than significant***.



	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporation	Less-Than- Significant Impact	No Impact
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3.18 MANDATORY FINDINGS OF SIGNIFICANCE

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 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 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 type="checkbox"/>

Impacts and Mitigation Measures

- 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?**

Less-than-Significant Impact with Mitigation Incorporated. As noted in the checklist sections for biological resources and cultural resources, the project could have potential impacts on nesting bird habitat, trees regulated by the City of Sacramento, and unidentified prehistoric, historic, or paleontological resources. Mitigation measures identified in this IS/MND would be implemented to reduce impacts on the sensitive resources to a **less-than-significant** level.

- b) **Does the project have impacts that are individually limited, but cumulatively considerable?**

Less-than-Significant Impact with Mitigation Incorporated. All of the potentially significant impacts identified in this IS/MND have been mitigated to a **less-than-significant** level, and the



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project would not result in impacts that would be individually limited but cumulatively considerable.

- c) **Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?**

Less-than-Significant Impact with Mitigation Incorporated. Potential impacts identified in this IS/MND would be reduced to a ***less-than-significant*** level with the incorporation of mitigation measures discussed in each applicable section. Implementation of the mitigation measures would ensure that substantial adverse effects on humans, either directly or indirectly, would be less than significant.



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**APPENDIX A:
NOTICE OF INTENT**



Re: Sacramento Municipal Utility District Headquarters Building and Site Rehabilitation Project

To Whom It May Concern:

Sacramento Municipal Utility District (SMUD) has prepared a Draft Initial Study/Mitigated Negative Declaration (IS/MND) addressing the potential environmental effects of rehabilitating the SMUD Headquarters Building and site.

Sacramento Municipal Utility District Headquarters Building and Site Rehabilitation Project (Proposed Project) will be located at 6201 S Street, Sacramento, California. The Proposed Project would consist of rehabilitating the Headquarters Building and site. Key elements proposed include the expansion of the central core of the Headquarters building, the redesign of the main parking area, updated landscaping, and the development of increased physical security concepts (including fencing and cameras) surrounding employee parking areas. SMUD considers the Headquarters Building and site to be significant to their brand and image and desires to rehabilitate the Headquarters Building and 13.66-acre portion of the Headquarters site to support continued use for the foreseeable future. In doing so the building and grounds will be abated of hazardous materials, paths of travel will be updated to comply with ADA standards, traffic and circulation will be improved to provide better pedestrian safety as well as fire truck access and life safety systems will be upgraded to include full fire sprinklers. The Headquarters Building was listed in the National Register of Historic Places (NRHP) in 2010 as an excellent example of Modern International Style. The proposed project would maintain the building and site's place on the historic register. The Proposed Project is anticipated to occur between April 2015 and September 2017.

As lead agency, in accordance with the California Environmental Quality Act (CEQA), SMUD is distributing the Draft Initial Study/Mitigated Negative Declaration to interested public and regulatory authorities for review and comment. SMUD will receive public/agency comments on the Draft Initial Study/Mitigated Negative Declaration for a 30-day period beginning Thursday January 15, 2015 and ending Monday February 16, 2015. The Draft Initial Study/Mitigated Negative Declaration is available on SMUD's web page at <https://www.smud.org/en/about-smud/company-information/document-library/CEQA-reports.htm> and hard copies may be reviewed at the following locations:

- Sacramento Central Library, 828 I Street, Sacramento, CA 95814
- Sacramento Municipal Utility District Office, 6201 S Street, Sacramento, CA 95817
- State Clearinghouse, 1400 Tenth Street, Sacramento, CA 95814

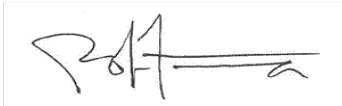
To present the results of the Initial Study/Mitigated Negative Declaration evaluation and to answer questions regarding the Proposed Project, SMUD will hold a public meeting on Tuesday January 27, 2015 at 6:30 p.m. at the SMUD Headquarters Building, 6201 S Street, Sacramento, California. The public is invited to attend this meeting.

Written comments should be submitted to Rob Ferrera, SMUD, P.O. Box 15830, MS B203, Sacramento, CA, 95852-1830, Rob.Ferrera@smud.org, or fax (916) 732-6676 before

5 p.m., February 16, 2015. If you would like a copy or have questions, please contact Rob Ferrera at (916) 732-6676 or at Rob.Ferrera@smud.org.

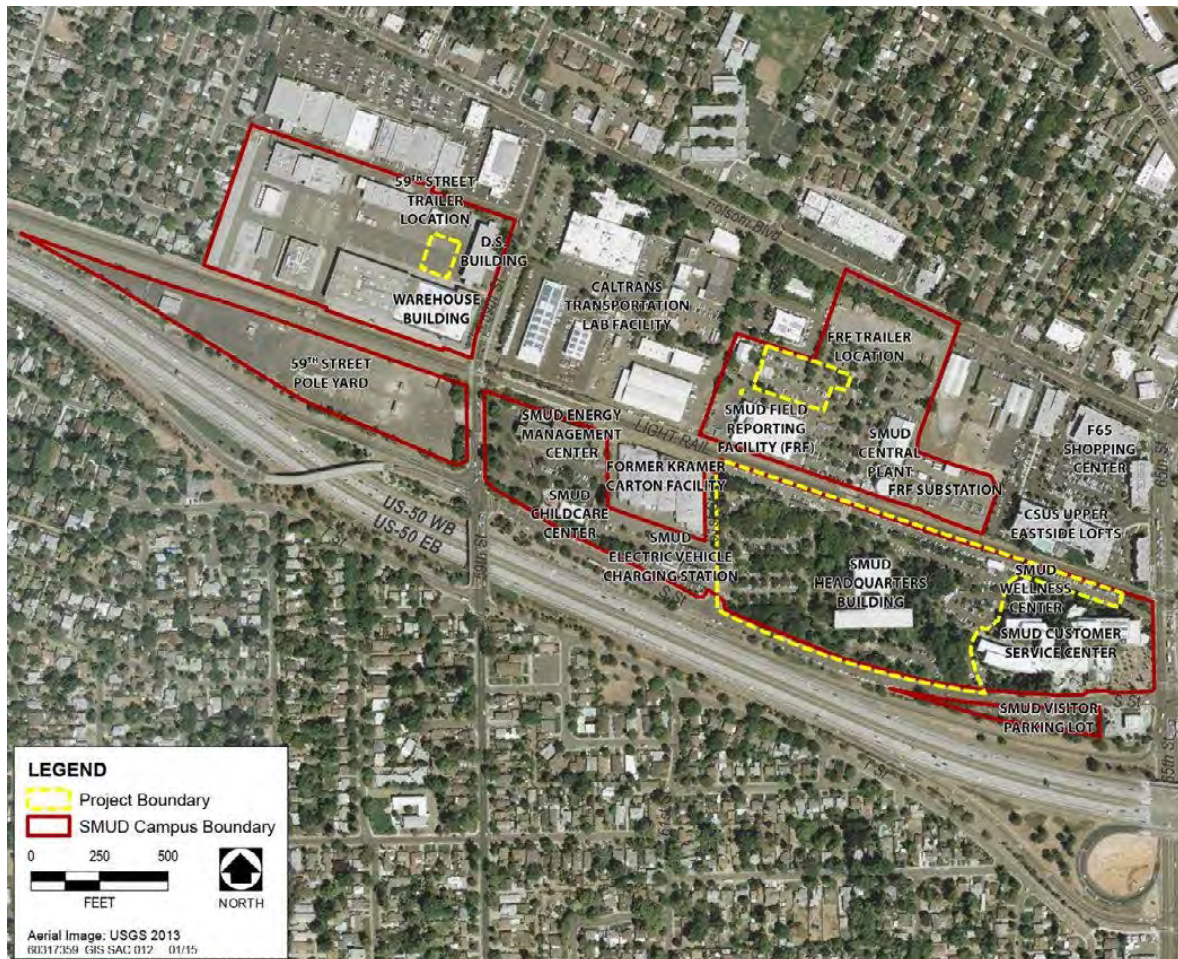
The SMUD Board of Directors will consider adoption of the Initial Study/Mitigated Negative Declaration for this project at two meetings at which the public may make oral comments. Both public meetings will be held at the SMUD Headquarters Building, 6201 S Street, Sacramento, CA 95817. The Energy Resources and Customer Service Committee Meeting will be held on Wednesday April 1, 2015 at 5:00 p.m. in the Headquarters Conference Center (HCC). The Board will take no action at the Energy Resources and Customer Service Committee meeting. The regular Board of Directors meeting will be held on Thursday April 2, 2015 at 9:00 a.m. in the Auditorium.

We appreciate your time and effort to review the subject Draft Initial Study/Mitigated Negative Declaration. Your comments regarding this project will be considered as part of future decisions to be made by SMUD.



Date January 15, 2015

Rob Ferrera, Project Manager
Sacramento Municipal Utility District



**APPENDIX B:
HISTORIC STRUCTURE REPORT**

**APPENDIX C:
CULTURAL LANDSCAPE REPORT**

**APPENDIX D:
AIR QUALITY MODELING DATA**

**APPENDIX B:
HISTORIC STRUCTURE REPORT**

Sacramento Municipal Utility District Headquarters Building and Site Rehabilitation Project

Historic Structure Report • December 2014

Powering forward. Together.



Sacramento Municipal Utility District Headquarters Building and Site Rehabilitation Project

Historic Structure Report • December 2014

Prepared for:

SMUD – Environmental Management
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Acronyms and Other Abbreviations

Ebasco	Ebasco Services, Inc.
Great Western Power	Great Western Power Company
HSR	historic structure report
NPS	National Park Service
NRHP	National Register of Historic Places
PG&E	Pacific Gas and Electric Company
SMUD	Sacramento Municipal Utility District
U.S. 50	U.S. Highway 50
WJE	Wiss, Janney, Elstner Associates, Inc.

Introduction

At the request of the Sacramento Municipal Utility District (SMUD), this historic structure report (HSR) has been prepared for the SMUD Headquarters Building located in Sacramento, California. The HSR has been developed in accordance with *Preservation Brief 43: The Preparation and Use of Historic Structure Reports* (NPS 2004), and in accordance with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. The HSR provides a framework for the future treatment of the SMUD Headquarters Building as part of the overall planning for the SMUD Headquarters property. It is intended to provide guidance to property owners, managers, tenants, preservation consultants, design professionals, contractors, and project reviewers before the start of any treatment of the building.

Executive Summary

The SMUD Headquarters Building is a multi-storied, steel-frame office building, constructed in 1959 and designed in the postwar modernist style pioneered by Mies van der Rohe. The building is centered on a large, heavily planted property with winding pedestrian paths and heavily landscaped parking. The entry is centered on a recessed plinth, which is clad in a mosaic tile mural designed by renowned artist Wayne Thiebaud. The SMUD Headquarters Building is an exceptional example of the International style, and with its iconic aluminum louvers, the building exhibits significant innovations in energy-efficient design. It was placed on the National Register of Historic Places (NRHP) in 2010 under Criterion C, as an exceptional example of an architectural style.

The SMUD Headquarters Building still possesses a very high level of integrity. No significant changes have been made that have altered the strong character of the building's modernist design. The building retains its original location and wooded setting. No significant changes have been made to the exterior, and the SMUD Headquarters Building retains the character of its original tile cladding, aluminum louvers and spandrel panels, aluminum curtain walls, and precast concrete panels. In its present state, the building continues to convey its character as a classic example of the mid-century modernist style, and its association with SMUD as its headquarters for almost 60 years.

It is recommended that the SMUD Headquarters Building, and the character-defining features that convey its significance as an exceptional example of the modernist style, be retained and rehabilitated in compliance with *The Secretary of the Interior's Standards for the Rehabilitation of Historic Buildings*.

Project Methodology

Archival Research

Information presented in the “Historical Context” section draws from extensive historical background research conducted at the following repositories:

- California History Room, California State Library
- Center for Sacramento History
- Cultural library at AECOM
- SMUD Headquarters

Review of Documentation Before Site Investigation

Archival research was performed to gather information about the SMUD Headquarters Building’s original construction and appearance, and about past building modifications and repairs, for use in assessing existing conditions and developing treatment recommendations. The following documents and other sources were reviewed:

- Plans titled:
 - “Sacramento Municipal Utility District Office Building,” Dreyfuss & Blackford Architects, February 12, 1958, revised March 11, 1958
 - “SMUD Headquarters Record Drawings,” SMUD, January 23, 2014
- NRHP Nomination Form, Carol Roland, Roland Nawi Associates: Preservation Consultants, May 10, 2009
- Untitled outline specifications for the building, including designers and consultants, contractor and subcontractors, and building systems and materials, no date (appears to be from near the period of construction)
- Photographs from the SMUD Archives

Site Investigation

Concurrent with historical research, a condition survey of the SMUD Headquarters Building was performed and observations were documented with digital photographs and field notes. For the field survey, the drawings noted above were used to identify alterations and served as base drawings for field notes. The condition assessment addressed the exterior walls, roof, windows, and interior surfaces as well as primary

interior spaces and other character-defining features. These elements were examined from the exterior and accessible locations of the building interior.

Guidelines for Preservation and Treatment Recommendations

Based on the evaluation of the SMUD Headquarters Building's historical and architectural significance, guidelines were prepared to assist in selecting preservation treatments. Specific recommendations that follow these guidelines were prepared for the treatment of significant exterior, interior, and site features. These recommendations address the distressed conditions observed during the site investigation. In addition, recommendations for treatment of the building and its historic materials are included in this report. All recommendations were developed following *The Secretary of the Interior's Standards for the Treatment of Historic Properties*.¹

Historical Context

Early Sacramento History (1840s–1940s)

John Sutter arrived in California and built a fort, which he named New Helvetia, through the support of a Mexican land grant around 1840 near the confluence of the Sacramento and American Rivers.² New Helvetia served as a trading colony and stockade, and was an important stopping point for immigrants traveling on the overland trails.³ Sutter fell into debt and transferred his property to his son, who took 4 square miles of Sutter's land and subdivided it. John Sutter Jr. began selling lots in January 1849. That same year gold was discovered in California and the community, named Sacramento after the river that ran beside it, incorporated and served as an important gateway to California's gold fields. Although the town was challenged by a cholera epidemic in 1850, severe floods in 1850 and 1852–53, and a fire in 1852, it eventually became the capital of California in 1854.⁴

Massive floods in 1861 and 1862 forced Sacramento to build stronger levees, alter the course of the American River, and raise and grade the streets. Thousands of cubic yards of earth were carted in to raise the streets and sidewalks throughout the city blocks—often by as much as a full building floor. The project was complete by 1873. The Central Pacific Railroad of California was formed in 1861, and groundbreaking

¹ Kay D. Weeks and Anne E. Grimmer, *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings* (Washington, D.C.: U.S. Department of the Interior, National Park Service, 1995).

² Joseph A. McGowan and Terry R. Willis, *Sacramento: Heart of the Golden State* (Woodland Hills, CA: Windsor Publications, Inc., 1983), pg. 11.

³ Mildred Brooke Hoover and Douglas E. Kyle, *Historic Spots in California* (Stanford, CA: Stanford University Press, 1990), pg. 287.

⁴ Joseph A. McGowan and Terry R. Willis, *Sacramento: Heart of the Golden State* (Woodland Hills, CA: Windsor Publications, Inc., 1983), pp. 35–37.

commenced in 1863 at Front and K Streets.⁵ The railroad had a tremendous impact on Sacramento and enabled easier transport of materials and goods in and out of the growing city.

An 1890 map of Sacramento (Figure 1) shows the land southeast of the central city area (the future SMUD Headquarters area) as open and flat, with rail lines intersecting nearby at the community of Brighton. Trees were lightly scattered across the landscape, which was subdivided into regular gridded blocks as far as Stockton Road. The rail line along R Street that extends east toward the current SMUD property appeared to be in place at that time.



Source: Library of Congress

Figure 1. Bird's-eye view of Sacramento, 1890, showing the future location of the SMUD Headquarters property.

Outside the city, agriculture eventually supplanted gold as the main industry in the area. Fruit became a major cash crop and a land boom drew immigrants in large numbers in the late 19th century. Large Mexican land grants around the city were eventually sold to

⁵ Joseph A. McGowan and Terry R. Willis, *Sacramento: Heart of the Golden State* (Woodland Hills, CA: Windsor Publications, Inc., 1983), pg. 59.

the public for county developments and new areas around the city were annexed in the early 1900s. Accessible by the automobile, which was introduced to Sacramento in 1900, the growing city expanded in its population and economy. Suburbs and planned communities that harkened to Sacramento's agricultural economy grew around the city, such as Orangevale, Citrus Heights, Fair Oaks, and Rancho Del Paso.⁶

Sacramento's growth required an expanded infrastructure system. Paved roads eventually connected Sacramento with other regional cities such as San Francisco and Stockton and a bus system opened in 1910. Public attention to utilities eventually resulted in the creation of a filtered tap water system and the creation of SMUD in 1923.

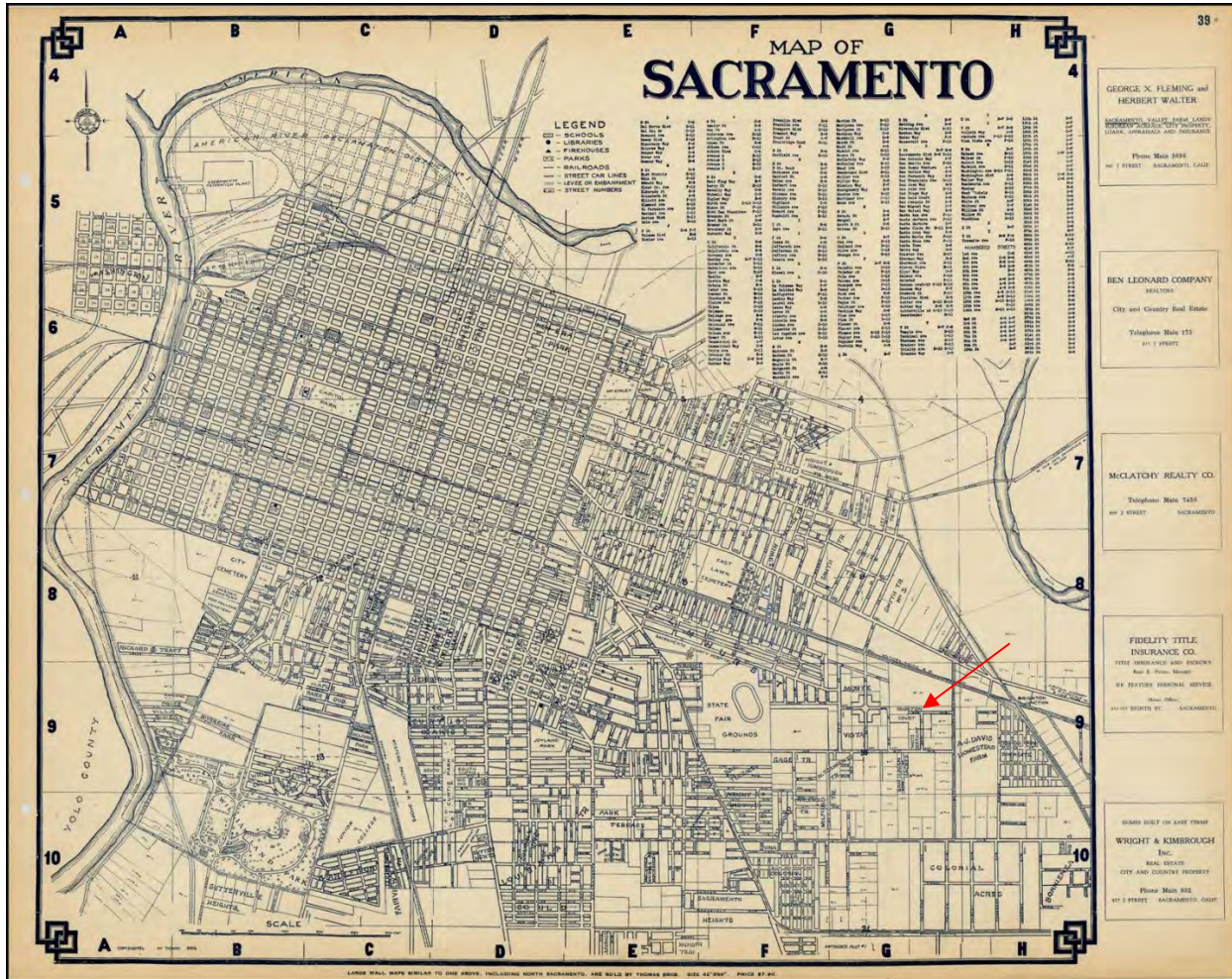
A 1930s map of Sacramento (Figure 2) shows the future SMUD Headquarters property in the context of the growing subdivisions amidst the former farmsteads. Tucked between the railroad tracks, the "Monte Vista" and "Brighton Court" subdivisions, and south of Folsom Boulevard, the future SMUD Headquarters property appears open and devoid of any development.

During the early 1930s, the Great Depression impacted Sacramento. Transient encampments could be found along both the Sacramento and American Rivers and suburban residential development practically ended. Unemployment affected all of Sacramento's two major industries: agriculture and the railroad.⁷ Between 1933 and 1939, the federal Public Works Administration and Works Progress Administration provided relief for workers through projects to construct new buildings, including schools and improve infrastructure. Before the United States entered World War II in 1941, Mather Field, a World War I air base dormant since its closure in the 1920s, was reactivated in 1938. McClellan Air Force Base also operated before World War II, but during the war it expanded and served as a training, repair, and refitting base for aircraft being readied for combat and those that were severely damaged in combat.⁸

⁶ Paul P. Sandul, "Both 'Country Town' and 'Bustling Metropolis': How Boosterism, Suburbs, and Narrative Helped Shape Sacramento's Identity and Environmental Sensibilities," in *River City and Valley Life: An Environmental History of the Sacramento Region*, eds. Christopher Casteneda and Lee Simpson (Pittsburgh, PA: University of Pittsburgh Press, 2013), pg. 166.

⁷ Gray Brechin and Lee M. A. Simpson, "Unseen Investment: New Deal Sacramento," in *River City and Valley Life: An Environmental History of the Sacramento Region*, eds. Christopher Casteneda and Lee Simpson (Pittsburgh, PA: University of Pittsburgh Press, 2013), pp. 186–187.

⁸ Rand Herbert, "The Legacy of War: Sacramento's Military Bases," in *River City and Valley Life: An Environmental History of the Sacramento Region*, eds. Christopher Casteneda and Lee Simpson (Pittsburgh, PA: University of Pittsburgh Press, 2013), pg. 208; Joseph A. McGowan and Terry R. Willis, *Sacramento: Heart of the Golden State* (Woodland Hills, CA: Windsor Publications, Inc., 1983), pg. 85.



Source: David Rumsey Map Collection 1938

Figure 2. Map of Sacramento ca. 1938, showing the future location of the SMUD Headquarters property.

Sacramento in the Postwar Period (1945–Present)

Sacramento’s population increased dramatically after World War II. Developers enacted large building programs in the north and east areas outside the city limits and subdivisions, shopping centers, and grocery stores were constructed. By the mid-1950s, the SMUD Headquarters property was an open, flat landscape surrounded by a fully gridded network of residential properties to the south and a corridor of larger warehouse and commercial buildings along the railroad tracks and Folsom Boulevard. The large building west of the SMUD Headquarters property had been constructed by 1956.

Roads were also improved and widened to four lanes. By 1963, Sacramento could be approached from every direction via a freeway.⁹

As the suburban areas of Sacramento expanded, the city's downtown was rapidly declining. In 1950, the city established the Sacramento Redevelopment Agency, which started proposing redevelopment plans for Sacramento's downtown. By 1961, 15 blocks of mostly dilapidated buildings were demolished. Government office buildings were constructed on M Street (renamed Capitol Mall in downtown). State government buildings continued to be built in downtown and on Capitol Mall through the late 1970s.¹⁰

Sacramento grew again in the 21st century, attracting new residents and businesses. By 2010, Sacramento encompassed more than 92 square miles and had more than 466,000 residents.¹¹

SMUD Corporate History

SMUD was effectively created in 1923 by popular vote of the citizens of Sacramento. In 1921, California Governor William D. Stephens signed the Municipal Utility District Act of 1921 into law, which allowed municipalities to join to form public utility districts. This act, coupled with the Federal Power Act of 1920, further enhanced the opportunity for SMUD's creation.¹²

When SMUD was formed, its service area encompassed the city of Sacramento and the city of North Sacramento (now part of Sacramento), an area of approximately 75 square miles. SMUD immediately requested cost estimates for the purchase of the existing electrical systems in the region owned by Pacific Gas and Electric Company (PG&E) and Great Western Power Company (Great Western Power). In 1934, Sacramento voters approved a \$12 million bond for SMUD to establish a publicly operated electric utility system.¹³ The cost to build a new distribution system was deemed to be too high, so SMUD proceeded with efforts to purchase PG&E's local system through condemnation.

⁹ Joseph A. McGowan and Terry R. Willis, *Sacramento: Heart of the Golden State* (Woodland Hills, CA: Windsor Publications, Inc., 1983), pp. 88–89.

¹⁰ Joseph A. McGowan and Terry R. Willis, *Sacramento: Heart of the Golden State* (Woodland Hills, CA: Windsor Publications, Inc., 1983), pp. 94–101.

¹¹ U.S. Census Bureau, 2014, "State and County Quick Facts," Electronic document, <http://quickfacts.census.gov/qfd/states/06/0664000.html>, accessed in September 2014.

¹² Ruther Sutherland Ward, ...*For the People: The Story of the Sacramento Municipal Utility District* (Sacramento: Sacramento Municipal Utility District, 1973), pp. 10 and 13.

¹³ Ruther Sutherland Ward, ...*For the People: The Story of the Sacramento Municipal Utility District* (Sacramento: Sacramento Municipal Utility District, 1973), pg. 32.

The approval of the bond and effort to acquire PG&E's utility system in SMUD's service area sparked 23 years of lawsuits between SMUD and PG&E.¹⁴ During that period, SMUD was forced to purchase electricity from other companies and agencies because it did not produce any power on its own. This was the direct result of the prohibitively high cost of building its own system.¹⁵ Litigation between the two companies ended in 1946 after the California Supreme Court denied PG&E's petition to appeal a decision by the Sacramento Superior Court, which had ruled against PG&E. That court decision forced PG&E to finally sell its distribution system to SMUD.¹⁶

The distribution system that SMUD inherited from PG&E was antiquated and had not been well maintained by PG&E during the litigious years in the early 20th century. Within the first 10 years of operation, SMUD increased the number of substations and improved the voltage capacity on its lines so it could transmit more power longer distances.¹⁷

Despite the expansion and upgrades, the tremendous population boom in the Sacramento region after World War II strained SMUD's system. SMUD found itself at the limits of its bonded capacity and did not want to risk a second bond election. One method of financing the system expansion involved applying for funds from the Rural Electrification Administration, a federal agency created to provide funding to expand electrical systems into unincorporated areas of a state. Between 1948 and 1959, SMUD borrowed \$23,239,000 in Rural Electrification Administration funds to expand electrical service into the agricultural, unincorporated communities of Sacramento County.¹⁸

As part of its expansion programs, SMUD entered into a contract with the U.S. Bureau of Reclamation in 1954 to receive power from Reclamation's Central Valley Project, a federal project that included Shasta Dam, for a maximum of 290,000 kilowatts for a period not to exceed 40 years. This power was delivered using PG&E lines until SMUD could provide its own direct lines to the Central Valley Project.¹⁹

In 1955, SMUD hired the New York consulting firm Ebasco Services, Inc. (Ebasco) to conduct an extensive study of SMUD's space requirements for its present use and

¹⁴ Ruther Sutherland Ward, ...*For the People: The Story of the Sacramento Municipal Utility District* (Sacramento: Sacramento Municipal Utility District, 1973), pg. 37.

¹⁵ Sacramento Municipal Utility District (SMUD), 2012a, "The History of SMUD's UARP," Electronic document, <http://hydrorelicensing.smud.org/project/system.pdf>, accessed August 2012.

¹⁶ Ruther Sutherland Ward, ...*For the People: The Story of the Sacramento Municipal Utility District* (Sacramento: Sacramento Municipal Utility District, 1973), pp. 44–47.

¹⁷ Ruther Sutherland Ward, ...*For the People: The Story of the Sacramento Municipal Utility District* (Sacramento: Sacramento Municipal Utility District, 1973), pp. 49 and 61.

¹⁸ Ruther Sutherland Ward, ...*For the People: The Story of the Sacramento Municipal Utility District* (Sacramento: Sacramento Municipal Utility District, 1973), pp. 51–52.

¹⁹ Ruther Sutherland Ward, ...*For the People: The Story of the Sacramento Municipal Utility District* (Sacramento: Sacramento Municipal Utility District, 1973), pp. 56–57.

future growth. SMUD had an operations yard at 59th and R Streets and an office at 21st and K Streets, but Ebasco recommended consolidating SMUD facilities into one location. Ebasco estimated that 35 acres of land would be needed for both the operations yard and an office building.²⁰ The following year, in 1956, SMUD hired the local architectural firm Dreyfuss & Blackford. SMUD directed the architects to visit new corporate campuses constructed in the Midwest and on the East Coast, particularly works by Mies Van der Rohe, Victor Gruen, and Skidmore, Owings & Merrill.²¹ In December 1956, SMUD purchased the land for the site of the new campus. It took Dreyfuss & Blackford 11 months to design the building. The first concrete footings were laid on June 5, 1958.²²

By the early 1960s, SMUD was serving 170,000 customers in Sacramento County.²³ In 1969, SMUD started construction on its first nuclear power plant, Rancho Seco, in southeastern Sacramento County.²⁴ The plant became operational in 1974, but it suffered from continual challenges, including a 27-month outage in the 1980s. In 1989, voters voted to close the plant, and SMUD formally shut down the power plant on June 7 of that year. In the 1990s, SMUD diversified its power sources, and by the end of the 20th century, it was serving more than 500,000 customers.²⁵ SMUD continues to enhance its services and explores new options for energy sources for the greater Sacramento region.

International Style and Dreyfuss & Blackford

International style has its roots in Europe's Modern Movement of the 1920s, in which architects and designers based their designs around the concept that buildings should embody and express the scientific technology of the Industrial Age (Roland 2009:8-5). The style was heavily influenced by Walter Gropius, who founded the Bauhaus, a school of design and building at Dessau, Germany.²⁶ The Bauhaus produced some of the master architects who would practice in the modern movement. In 1928, the Congrès Internationaux d'Architecture Moderne was created, providing a forum for international academic discussion about modern architecture. This first meeting was

²⁰ "SMUD Okehs \$3,000,000 Building Plans," *The Sacramento Bee*, February 28, 1957; SMUD, memorandum to Paul Shaad, 1960.

²¹ Albert Dreyfuss, Letter to Paul Shaad, Assistant General Manager, SMUD, August 6, 1956. On file at SMUD Headquarters.

²² H. W. Warmoth, memorandum to W.J. Nolan regarding progress payment to Dreyfuss & Blackford, Architects, 1957; SMUD, memorandum to Paul Shaad, 1960.

²³ SMUD, 2012b, "History," Electronic document, <https://www.smud.org/en/about-smud/company-information/history/>, accessed in August 2012.

²⁴ Ruther Sutherland Ward, ...*For the People: The Story of the Sacramento Municipal Utility District* (Sacramento: Sacramento Municipal Utility District, 1973), pp. 78–79.

²⁵ SMUD, 2012b, "History," Electronic document, <https://www.smud.org/en/about-smud/company-information/history/>, accessed in August 2012.

²⁶ Wolfgang Pehnt, *Encyclopedia of Modern Architecture* (New York, Harry N. Abrams, Inc., 1964), pp. 42.

attended by Gropius and other modernist architects. It established the idea that building design should follow economic and political issues rather than adhering to historical architectural formulas. By the 1930s, there were many examples of Modernism throughout Europe designed by architects of the Bauhaus.

The definition of the International style was first used in 1932, at an exhibit at the Museum of Modern Art in New York. Architects from 16 countries displayed their modernist designs. Henry-Russell Hitchcock and Philip Johnson devised the term “International style” to define the style of architecture being created in Europe by the students of the Bauhaus. Hitchcock and Johnson identified the style by its aesthetic qualities. The style emphasized volumetric forms devoid of ornamentation and was dependent on materials like steel and concrete. Windows were freely distributed, thereby providing ample light, but also serving as an exterior design element. Horizontality became a character-defining feature of the style.²⁷ The lack of ornamentation in the International style also made it a practical means for construction.

Even after the exhibit in New York, International style failed to take root in America except for some iconic designs by master architects including Le Corbusier, Richard Neutra, and Rudolph Schindler.²⁸ With the threat of another world war in the 1930s, many of Europe’s top modernist architects, including Walter Gropius, Mies van der Rohe, and Erich Mendelsohn, immigrated to the United States and began teaching at the architectural schools of Harvard University, the Illinois Institute of Technology, and the University of California, Berkeley. This collective group designed residences, campuses, and commercial buildings with modernist movement styling throughout the United States. With its steel and walls of windows, the International style became the most popular for designing skyscrapers and high-rises. In the 1960s, Philip Johnson altered some of the character-defining features of the style to include repetitive modular rhythms and large expansions of glass and flat roofs.²⁹ These features of the style are still identifiable today.

It was in post–World War II America where the International style finally gained popularity. The demand for commercial enterprises was high after the war. The trend during this period was to integrate architecture with master planning for cities.³⁰ Albert M. Dreyfuss attended Tulane University and then the University of Illinois between 1935 and 1940.³¹ After World War II, he joined the American Institute of Architects in 1947,

²⁷ Hasan-Uddin Khan, *International Style: Modernist Architecture from 1925 to 1965* (Hong Kong: Taschen, 2009), pp. 8, 61–64, and 66.

²⁸ Carol Roland, *National Register of Historic Places Registration Form 10-900 SMUD Headquarters Building* (2009), pg. 8-5.

²⁹ Hasan-Uddin Khan, *International Style: Modernist Architecture from 1925 to 1965* (Hong Kong: Taschen, 2009), pp. 85–104.

³⁰ Carol Roland, *National Register of Historic Places Registration Form 10-900 SMUD Headquarters Building* (2009), pg. 8-7.

³¹ Alan R. Dreyfuss Interview with Albert M. Dreyfuss, September 17, 2014. Sacramento, California.

working first as an associate at Samuel G. Wiener & Associates and then briefly as an associate designer for the California State Architect. He then opened a small firm on J Street in Sacramento in 1950.³² Dreyfuss's first project in Sacramento was the Santa Paula Manor apartments located in north Sacramento.³³ This was followed by Marconi Manor and several civic buildings at Travis Air Force Base in 1951.³⁴ Leonard Blackford graduated from the University of California, Berkeley. He worked for a firm in the San Francisco Bay Area before moving to Sacramento to work for the State of California as a designer. Blackford and his family lived across the street from Dreyfuss, and in 1953 Dreyfuss offered him a job at his firm. The two became partners in 1954. Some of Blackford's early work while working at Dreyfuss & Blackford included the Nut Tree restaurant in Vacaville, California (no longer extant), the Mansion Inn, and the Starr King School in Sacramento.³⁵

Dreyfuss & Blackford had a prolific career. Like most architects during the 1950s, they were influenced by post-World War II Modernism that expressed itself in the International style. Their works in this style in Sacramento include the Harvey's Drive Inn on Fulton Avenue (1957—no longer extant), the former Vogel Chevrolet Showroom (1959) at 1616 I Street, the Mansion Inn (1958), and the Asclepius Medical Building (1964) at 5120 J Street. Their most notable work in Sacramento includes the SMUD Headquarters Building, which was completed in 1959 and designed in the International/Miesian style of post-World War II Modernism. The firm received several architectural awards for the SMUD Headquarters Building.

After designing the SMUD Headquarters Building, Dreyfuss & Blackford designed the condominium tower at 4100 Folsom Boulevard (1963), the former IBM Building on Capitol Mall (1964), Sacramento Savings & Loan (1965—no longer extant), and the *Sacramento Union* Building (1968—no longer extant).³⁶ With these larger commissions, Dreyfuss & Blackford established itself in the 1960s with a signature style that expressed the International style with prestressed concrete panels and fenestration, which often was inset with modular windows.³⁷ During that period, their work in the International style transformed Sacramento's architectural landscape.

By the 1980s, Dreyfuss & Blackford was involved in notable Sacramento projects such as Lincoln Plaza. The firm continues to produce major commissions throughout the Sacramento region, but it appears that both Dreyfuss and Blackford have retired from the firm and no longer practice.

³² American Institute of Architects, "Architects Roster Questionnaire" (1953), pp. 1–3.

³³ *Executive Place*, N.D., "Capitol Plan's Father" (April), pp. 6–7.

³⁴ *Western Building*, "Real Estate Appeal" (May 1954), pg. 20.

³⁵ R. R. Bowker, LLC, *American Architects Directory*, 2nd ed., pg. 59; Douglas Hope, "Architect Blackford Drew Blueprint for His Life's Work in Kindergarten" (*The Sacramento Bee*, December 20, 1970), pg. B3.

³⁶ Carol Roland, *National Register of Historic Places Registration Form 10-900 SMUD Headquarters Building* (2009), pp. 8-13 through 8-14.

³⁷ *Executive Place*, N.D., "Capitol Plan's Father" (April), pp. 6–7.

Wayne Thiebaud

When designing the SMUD Headquarters Building, Dreyfuss & Blackford hired local artist Wayne Thiebaud to create a mosaic tile mural on the main façade of the building. Thiebaud earned a Master of Fine Arts degree in the late 1940s. He then moved from California to New York in the 1950s and began working as a commercial artist. In 1960, he started his teaching career at the University of California, Davis, where he remained until his retirement at the age of 70.

For the SMUD Headquarters Building, Thiebaud created full-size drawings that were sent to Venice for reference as the tiles were manufactured. The tiles were mounted in 15-foot-high panels, which were shipped back to the U.S. and installed by the tile contractor. Thiebaud's mural is the only piece of public art and only ceramic work created by the artist. The piece also is one of the few surviving examples of Thiebaud's experimentation with Abstract Expressionism.³⁸

Physical Description and Condition Assessment

Site

The SMUD Headquarters Building is located on what was originally a 15-acre site. The site is a long rectangle, with the long side running along S Street. The T-shaped building is located at the center of the heavily wooded site and is angled to align along the north-south axis. The building's main entrance, at the south end of the building, is accessed by a sinuously shaped, semicircular driveway. Two rectangular parking lots with rounded edges are located to the west and are aligned with the building axis. Two similarly oriented, matching parking lots were planned and constructed to the east, but they were reconfigured for construction of the new Customer Service Center in the 1990s, which now encroaches on the original parcel in that location.

Although the property was originally relatively flat, the areas around the buildings and parking areas were heavily bermed, softening the building and paved areas, and raising the building's podium level above the original grade. The property also was shaped to protect the basement-level entrance from view and enhance the natural feel of the wooded site. Large boulders were strategically located around the property, and are shown on a separate rock placement plan in the original landscape architecture drawings. Circulation is provided by snaking paths that complement the property's heavily wooded character.

³⁸ Carol Roland, *National Register of Historic Places Registration Form 10-900 SMUD Headquarters Building* (2009), pg. 8-11; Cathleen McGuigan, "Wayne Thiebaud Is Not a Pop Artist" (*Smithsonian*, 2011).

The property is heavily planted and trees and shrubs cover the entire site, giving it a wooded character. The original planting plan appears to have called for dense plantings, but with less dense vegetation at the entry where the current plantings now partially obscures the building from view. The entire property is visible from U.S. Highway 50 (U.S. 50), the freeway that runs parallel to and very near S Street.

Please see the cultural landscape report prepared by AECOM for a more detailed evaluation of site features, and recommendations for treatment of historic elements.

Exterior Evaluation

Description

The SMUD Headquarters Building is a 166,000-square-foot, four-story office building designed in the modernist style, its design significantly influenced by the designs of Mies Van der Rohe. It is roughly T-shaped in plan, consisting of a 280-foot-long, slender, rectangular wing to the south and a slightly smaller 120-foot-square wing to the north, connected by a central core.

The south wing is four stories over a basement and the long axis runs east-west. The south façade constitutes the main, most visible face of the building, facing S Street and an elevated portion of U.S. 50 that was constructed in 1972. This wing houses the main entry and major public spaces at the ground-floor level, a cafeteria below, and offices above. The ground floor is constructed as a recessed podium, which is entirely clad in a mural constructed of Italian mosaic tile and designed by artist Wayne Thiebaud. The entry is provided by an 80-foot-long glass curtain wall that extends from floor to ceiling and is centered on the south wall. The upper stories are supported by square columns spaced at 30 feet and clad in a brown mosaic tile (Figure 3).

The north wing is a total of four stories tall. The first story is level with the basement of the south wing, effectively reducing the overall height by a story. It houses three levels of parking at the first two floors and two floors of offices above (Figure 4). The central core connecting the two wings is five stories tall over a basement, projecting one story above the main wing.

The building is constructed on concrete piers and spread footings. The main structure of the south wing consists of welded steel trusses spanning the full 60-foot width of the building in the north-south direction. These are carried by a wide-flange steel girder supported by wide-flange steel columns at the north and south walls. The floors and roof are constructed of steel decking with a lightweight concrete topping, and the basement floor is concrete slab on grade.



Figure 3. Ground floor, south elevation.

Construction of the north wing is similar, with the steel trusses spanning 40 feet to a central core. Wide-flange steel beams at the exterior wall and core are carried by steel columns at the second and third floor, which are in turn supported by concrete columns at the garage levels below. Roof and office floors are constructed of steel decking with lightweight concrete topping. Raised garage floors are a two-way reinforced concrete slab that tapers in thickness away from the columns, varying in thickness from 10 to 15 inches. The lower story is a concrete slab on grade.

The façades on all wings are clad in a curtain wall characterized by vertical aluminum mullions mounted at 5-foot centers on the face of the building. The mullions are I-shaped and measure 3¼ inches by 4½ inches in section. The finish on the aluminum mullions is noted by the original building description as a Sanford Process, and the appearance is similar to that of bronze anodized aluminum. The mullions are mounted on the face of aluminum spandrel panels with the same Sanfordized finish (Figure 5).



Figure 4. North elevation, office wing over parking garage.

The spandrel panels are separated at each floor by an 8-inch-wide, horizontal reveal, and the mullions extend to approximately 3 inches from the edge of the reveal at each floor. Similar mullions are found on numerous buildings by Van der Rohe and other modernist buildings of the period, including One Bush Street in San Francisco, designed by Skidmore Owings & Merrill in 1959. However, unlike the design of the SMUD Headquarters Building, in all of these designs the mullions are continuous from floor to floor. The reveal at the floor line of the SMUD Headquarters Building aligns with the brise soleil described below, and allows for a common curtain wall design on all elevations.

Between the mullions, the south and north façades of the south wing are glazed, as are the north, east, and west façades of the north wing. The glazing is characterized by the original building description as a ¼-inch grey plate glass, manufactured by Pittsburgh Plate Glass Company.



Figure 5. Curtain wall mullions.

At all other faces, the walls between the mullions are infilled with precast concrete panels seeded with large aggregate, characterized as “mo-sai” panels in the original outline specification referred to above under “Archival Research” (Figure 6). The parking levels are open, with a low railing at the edge (Figure 4). The railing is mounted on the face of aluminum spandrel panels, and is formed of posts that match the mullions in profile, and align with the mullions at the walls above. The rails consist of two horizontal aluminum box sections mounted to the inside face of the posts. The railing finish is similar to other aluminum on the building.



Figure 6. Mo-sai panels.

The south wall of the south wing is dominated by brise soleil; as defined in modern architecture, these are projecting canopies that serve as sun-shading devices (Figure 3). These canopies align with the reveal in the spandrel panels, and extend approximately 5 feet from the building at each floor, and at the roof below the parapet. The face and soffit of each is clad in aluminum panels that match the spandrel panels in finish, and the top of each is a built-up roof with an aggregate cover, probably similar to the original main roof. Deep vertical, aluminum fins are mounted between the brise soleil, spaced 5 feet apart and aligning with the mullions in the curtain wall. These fins support a double row of adjustable, horizontal louvers mounted between fins (Figure 7). These louvers are adjustable to block the sun from the south. Similar brise soleil and fins are present at the two office floors of the north wing on the east and west elevations; however, the vertical louvers are more tightly spaced at 2½ feet apart, and they act as adjustable louvers themselves, blocking sun from the east and west.



Figure 7. Vertical aluminum fins and horizontal louvers mounted between the brise soleil.

The roof is flat and is covered with what appears to be a membrane roof (Figure 8). This roof was installed over the original built-up coal tar roof in 2006. The roof was originally surrounded by a very low parapet, but the parapet has been covered by the new roofing that was installed over foam insulation, bringing the roof in line with the parapet. The roofs over the north and south wings are almost entirely free of penetrations or equipment, except for window washing rigs that extend along the north wall of each wing. The few vents that exist are very low in profile. The roof at the core is similar, but a long ventilation unit extends along the entire east side of the roof. The unit is very low in profile and cannot be seen from anywhere on the site. Access to the north and south wings is provided by doors in the exterior wall of the central core. Access to the core is provided by a roof hatch.



Figure 8. Existing roof at the north wing.

Condition Assessment

General

In general, the exterior appearance of the SMUD Headquarters Building is substantially the same as it was immediately after its completion in 1959. No alterations have been made that affect the exterior appearance, except that shear walls have been added in some locations at the lower two levels of the garage at the base of the north wing. These walls are actually recessed from the edge of the garage slab and located at the first structural column line. However, the walls are visible from the exterior.

All exterior materials are original, with the exception of the roofing at the main roof level. All other exterior materials including the precast concrete mo-sai panels, the aluminum cladding and sun shades, the glazed curtain walls, and the tile cladding are original and unaltered, and have experienced little or no maintenance. In general, the exterior of the

SMUD Headquarters Building is in remarkably good shape, having suffered little significant deterioration over its 55-year life.

Glazed Curtain Walls

The curtain walls located at the first floor of the south wing span the full height of approximately 15 feet from the floor to the finished ceiling. A similar curtain wall is present at the exterior entrance to the cafeteria. The curtain wall is constructed of vertical mullions, spaced in an alternating pattern of 5 feet and 10 feet horizontally, with a transom mullion at approximately 9 feet above the floor. According to the original drawings, glazing is 3/8-inch plate glass at the lower panels, except at the door sidelights, which are glazed in 1/2-inch tempered glass. Transom lights are glazed in 1/4-inch plate. Doors are typically a 10-foot-wide pair of 1/2-inch tempered glass with a slender aluminum extrusion at the head and sill. Push and pull bars are polished aluminum mounted directly to the glass.

Mullions are a simple extruded aluminum box sections measuring approximately 3 1/4 inches by 7 1/2 inches, formed of two pieces that connect at the glazing pocket. Original plans show a steel member housed in each vertical mullion. The glazing pocket is wide (approximately 2-3/8 inches), and accommodates the varying thickness of the glazing panels, which are held in place with an interior aluminum stop.

The curtain wall at the first floor is inset beneath the overhanging second story and has been largely protected from the weather (Figure 9). The finish is notably brighter than that of the mullions at the floors above. The first-floor curtain walls are in generally good condition, exhibiting little deterioration. The curtain wall at the cafeteria faces north, and despite being somewhat less protected, it still appears to have suffered minimal deterioration.

The upper-floor curtain wall was observed from the cantilevered brise soleil at the south wall of the south wing and the east and west walls of the north wing, as well as from the interior. Attempts were made to deglaze a window panel at the northeast corner of the north wing; however, untested sealant was discovered after the interior stops were removed, and the deglazing attempt was abandoned. In addition, when the interior stops were removed, a bead of sealant was observed at the joint between the glass and the interior mullion. It could not be determined whether this sealant was installed at the time of construction or at a later date. Additional interior stops were removed from a mullion at the west wall to verify the consistency of the conditions.

The upper-floor curtain wall glazing system is attached to the vertical I-mullions that provide a regular 5-foot grid on all exterior walls above the first floor. The glazing is installed from the interior, against the I-mullion, which provides the exterior stop at the window jamb (Figure 10). The jamb at the head and sill are provided by a formed section of the aluminum spandrel panels. A flat gasket is located between the glass and the exterior mullion. The gaskets observed appear to be hard and inflexible.



Figure 9. Ground-floor storefront, north elevation of the south wing.

On the interior, aluminum stops attach at each side of an aluminum box mullion approximately 2 inches deep to the face of the glass. A flat gasket is installed between the interior stop and the glazing. The gaskets observed appear to have retained flexibility, but have shrunk in length anywhere from 1 inch to 4 inches, leaving gaps at the corners of the glazing pocket. The attachment of the interior mullion to the exterior mullion could not be observed. In the original drawings, the interior mullion was shown as a U-shaped section with a cap on the interior that hid the bolted connections, but this appears to have been changed during construction.

A layer of sealant was observed on the exterior of the glass, at the sill of all glazing panels located at the east and west walls of the north wing. Similar sealant exists at the glazing panels on the south wall of the south wing at the sill and extending about 6 feet up each jamb. No information is available indicating when this was installed, but it appears to be a remedial solution to air and/or water infiltration at the glazing edge.



Figure 10. Upper-floor glazing attached to vertical I-mullions.

The glazing is specified in the original drawings as ¼-inch grey plate glass, manufactured by the Pittsburgh Plate Glass Company. The thickness of the glazing could not be verified. On the south, east, and west elevations, a grey film has been added to the interior side of the glazing, and the light transmission is very low on the panels with the film installed. The entire curtain wall system, including windows, mullions, and spandrel panels, was significantly dirty, and covered in spider webs, which may contribute to the lack of available light transmission to the interior.

The curtain wall was in generally good condition. As with all other metal components of the building, the surface has weathered and dulled since its original installation. There are no signs of pitting or advanced staining, and it appears likely that the metal can be restored. It was noted that the length of the gaskets at the interior has shrunk at the top and the bottom of the curtain wall, in some places by as much as 4 inches in accumulated length. They retain flexibility and remain functional despite not providing complete protection from water and air intrusion. The exterior gaskets have hardened

considerably and are no longer functional. The exterior wet seal that has been applied may be in response to a failure of the gaskets, and subsequent increases in air and water infiltration as noted above.

Precast Concrete Mo-Sai Panels

The mo-sai panels are constructed of precast concrete. They are approximately 3 inches thick and seeded with quartzite aggregate. The aluminum mullions are present on these elevations in the same pattern as on the glazed façades, and the mo-sai panels are essentially substituted for the glass panels. According to the original drawings, the panels are attached to the back of the vertical mullions by steel compression plates bolted to the mullions. At one location, in the Battery Room, the backs of the panels are exposed and the connections could be observed. It was noted that the bolted connections at the edge of the panels are present. Additional support is provided by two vertical channels that are anchored to the floor slabs and located 10 inches from each edge of the panel. However, it must be noted that these panels were only viewed in one location and that the panels are shorter than typical, approximately 6 feet rather than 9½ feet in height. It is not necessarily possible to extrapolate either the typical connections or the spacing off the anchors from this limited view.

Wiss, Janney, Elstner Associates, Inc. (WJE) observed light soiling on all the precast concrete panels, with heavy rust-colored staining on numerous panels of the building's façade. At roof level along the south elevation, a number of precast concrete panels could be observed close up by WJE. At these locations, WJE observed that the staining appeared to be caused by rust deposits, possibly from embedded steel reinforcing chairs (Figure 11). By using a metal detector, WJE confirmed the locations of the metal elements to be spaced typically at 4 inches apart in both directions across the panel, and the location of stains aligned with the buried metal elements. WJE examined the rust deposits close-up by using a field microscope and noted rust buildup over the white aggregate substrate.

It was also noted that many of the panels appear to be bowed in the vertical, or long, direction. It is not known whether the panels were curved when installed, or whether this condition has developed over time. The connections noted in the description above are such that if installed at the same spacing in a longer, typical panel, an anchor would occur at the center of the panel edge, likely preventing bowing over time.

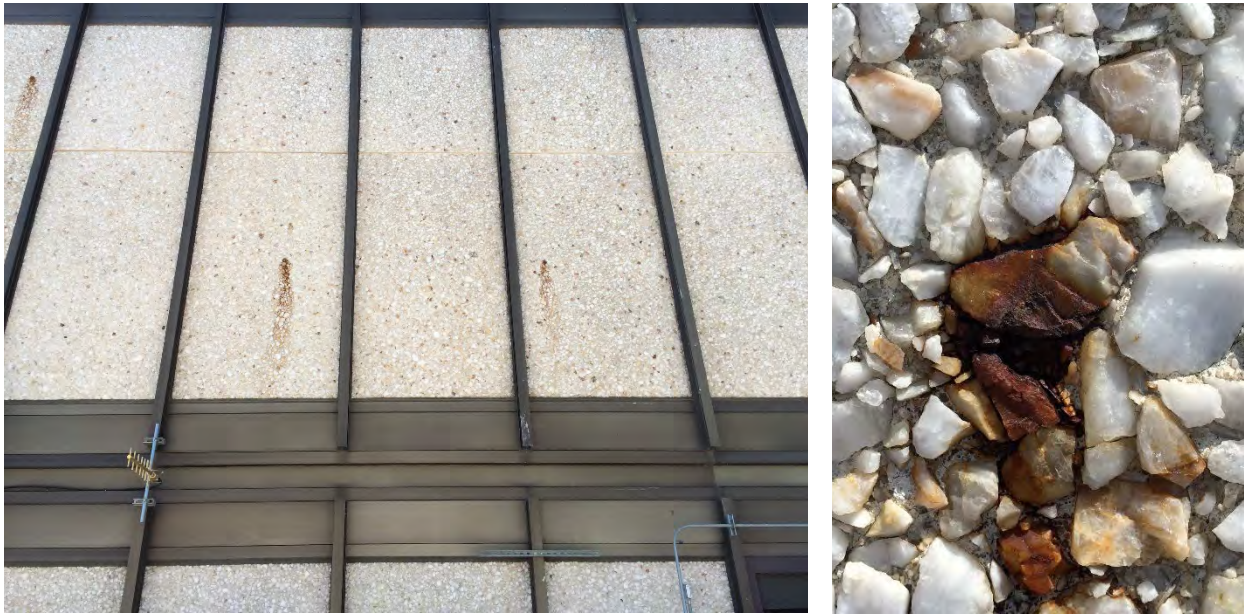


Figure 11. Left: Rust-colored staining at mo-sai panels. Right: Close-up of typical stain.

Aluminum Cladding

The Sanfordized aluminum is the main cladding system on the building, and includes the spandrel panels, the soffits at the brise soleil, the vertical mullions, the sunshades, and the curtain wall glazing system. Overall, the aluminum panel system was observed to be in good condition; however, the exterior finish exhibits a dull appearance, which may be the result of light soiling and soot deposits across the metal finish substrate. Vertical, white streaking is apparent at numerous panels of the building façade, including the fascia and soffits of the brise soleil and spandrel panels at the main façade and the garage slabs (Figure 12). The staining all appears to be the result of water intrusion at joints above the stains and corrosion of the aluminum finish from the runoff.

At the west elevation along the parking structure, a number of aluminum panels were investigated close-up to understand the nature of visible vertical streaking and surface stains. At these locations, WJE observed that vertical staining may be attributable in part to water or residual moisture runoff across the outer metal substrate. Close-up views of the aluminum panels, using a field microscope, showed areas of white haze discoloration that may be calcium buildup on the surface, which has caused the surface discoloration or etching of the substrate.



Figure 12. White streaking at spandrel, under brise soleil.

Tile

The mosaic tile provides cladding at the recessed plinth at the first floor of the south wing and at the columns supporting the floors above. All the tile is square-edged and measures approximately $\frac{3}{4}$ inch by $\frac{3}{4}$ inch. The tile is noted in the original drawings as being Italian in origin, and the tile is very similar to Italian tile on buildings of the same period. The tile at the plinth forms is highly varied in color, and forms a mural noted in the description. The background is off-white and the body of the mural a wide variety of shades of red, orange, yellow, blue, and black. The tile composing the mural was observed to be in good condition, with some obvious soiling but little deterioration (Figure 13).

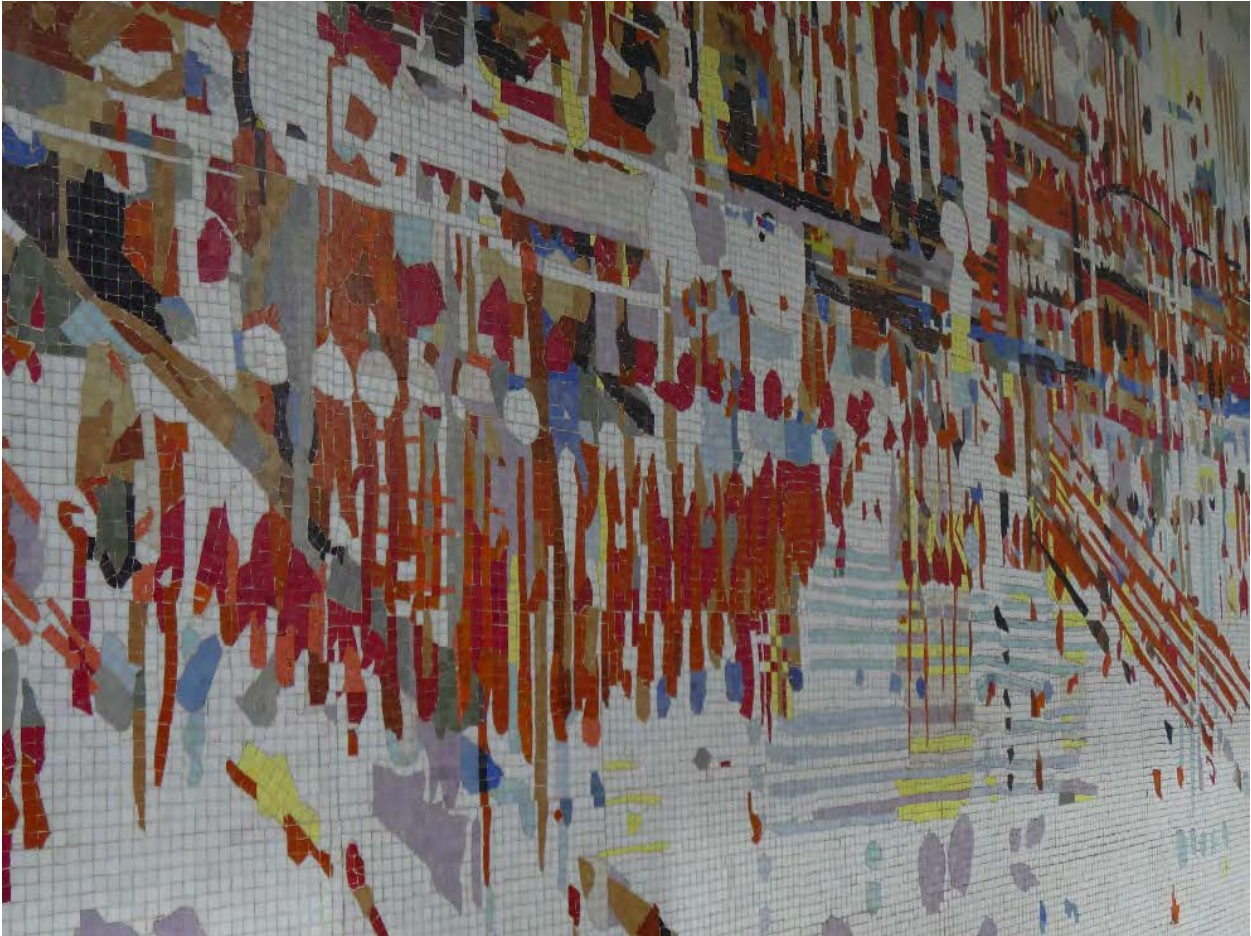


Figure 13. Mosaic tile at ground floor of south wing.

The tile at the columns is a grey/brown range in color. All four sides of the column are clad, and the tile ends at a recessed metal trim piece at the top and a metal flashing at the bottom. Overall, the mosaic tiles at the columns were observed to be in fair condition, with some vertical and horizontal crack patterns present in select locations. Seven of the 20 columns were observed to show small areas of missing tiles, probably from impacts of some type. These areas were usually located near the base of the columns. Overall, WJE observed that the tile finish columns exhibit a dull haze appearance, which may be the result of water staining and possible calcite buildup across select areas of the columns. In select locations, the light-colored hazing across the tile's substrate finish was much more severe. It appears from the location of the heavier staining that the landscape sprinklers are or were a likely cause of the problem.

At the south elevation of the SMUD Headquarters Building, west of the main entrance, two column locations facing the garden and lawn areas were investigated close-up to understand the nature of visible haze surface discoloration and staining. At these

locations, close-up views of the tile areas, using a field microscope, confirmed areas of calcium buildup along the surface, which have caused the surface discoloration of the substrate.

WJE conducted select cleaning trials in the areas referenced above, using a custom masonry cleaner produced by Prosoco, Inc. The area was pre-wet, then the masonry cleaner was lightly applied, using a bristle brush. The cleaner was allowed to dwell on the surface for 5 minutes with occasional agitation of the surface. After two applications and rinsing of the substrate with water, the area was not observed to show signs of calcite removal. However, with the use of fine bristle brush, WJE was able to remove the built-up layer by moderate agitation. Through the use of field microscopy, WJE was able to confirm that the gloss-finish tile substrate would remain intact after the removal of the built-up layer.

Roofing

The main roofs appear to be an existing coated foam roofing system installed over a gravel-surfaced coal tar roof. WJE observed coal tar flowing over the aluminum fascia out from under the new sheet-metal roof-edge flashing. The two main roofs slope toward internal drains. There is currently not any provision for overflow drainage should one of the drains become clogged. It is not currently known whether the structural deck is sloped to drain or whether the foam roof was built up to provide the slope.

The roof gutters along the building's core have typically collected tree debris that can clog the gutter drains. At the lower (north) roof, the gutter has an electrical bus that passes through the bottom of the gutter.

WJE observed some blisters of the foam roof system. At one opened blister location, the separation occurred between layers of foam, not between the coating and the underlying foam. In addition, WJE observed splits in the coating and foam at many of the penetrations by plumbing vents and structural steel pipe roof membranes. Many of the penetrations do not extend the industry standard of 8 inches above the finished roof surface. Splits were observed at every metal roof edge joint. One of the electrical boxes is supported by a unistrut roof penetration, which is not an appropriate profile for a roof penetration.

The existing window washing assembly is scheduled to be removed from the roof at both roof levels. No operating procedures outline sheet has been provided and no appropriate building-access system appears to have been designed or installed as part of the original construction. No tie-off locations for building access and safety systems appear to have been provided.

Brise Soleil

The surfaces of the cantilevered ledges that occur at the south elevation of the south wing, and the east and west elevations of the north wing, of the SMUD Headquarters Building appear to be the original gravel-surfaced coal tar roofs. An internal gutter is located along the building wall with internal roof drains that were not observed (Figure 14). There is currently no provision for overflow drainage should one of the drains in the gutters become clogged; however, it is assumed that the roof edge would serve that function, because it is lower than the top of the aluminum spandrel panel provided below the window system. The gravel surfacing made it difficult to determine whether the decks were sloped toward the gutter; however, with coal tar roofs, the slope is typically minimal, if any slope is present at all. A turned-up metal edge (gravel stop) is located at the perimeter of each roof, including the side with the gutter (Figure 15). The turned-up metal edge prevents water from flowing into the gutter or off the open edge; therefore, during rain events, these ledges are likely full of water until it evaporates or overflows the gutter or roof edge.



Figure 14. Internal gutter full of debris at cantilevered ledge.



Figure 15. Gravel-surfaced coal tar roof and gravel stop at surface of typical cantilevered ledge.

On the east and west ledges, a continuous aluminum track is located below the vertical louvers. There is a space below the track for water to flow toward the gutter. The track and vertical louver supports are sealed at the roof membrane with a pitch pan. The louvers at the south ledges and the ends of the east and west ledges are supported on two pairs of angles.

The gutters were found to be typically full of tree debris (Figure 14). The gutters show evidence that water regularly builds up and remains in the gutter. There are also abundant signs of leakage between the gutter and the wall flashing, including many locations where staining of the aluminum spandrel panels appears to be emanating from the area directly below these gutters (Figure 12). There is additional evidence of staining of the fascia, likely caused by water overflowing at the roof edge.

A slack steel cable runs the full length of each brise soleil adjacent to the curtain wall. It is attached to each end by a steel shackle attached to a steel L-bracket, which in turn is attached to the sill of the curtain wall. The cable is supported along its length by steel L-brackets attached to the vertical mullions every 10 feet. This cable appears to be a drag line installed to provide fall restraint to maintenance staff members or window washing contractors.

Structural

A structural evaluation of the SMUD Headquarters Building was not undertaken as part of this HSR. In general, there are no signs of distress in any of the exterior or interior surfaces. The terrazzo in the basement level is cracking in some areas, possibly indicating settlement or other deformation of the structural slab. Exterior walkways at the main level of the south wing exhibit little distress. An evaluation of the building's seismic performance was performed by Buehler and Buehler, Structural Engineers, in a report titled Structural Evaluation; Sacramento Municipal Utility District Headquarters Building, dated August 5, 1999.³⁹ The recommendations for structural retrofitting included adding new, 12-inch concrete shear walls at the perimeter structural line of the north wing, as noted above in the assessment of exterior conditions. It is not clear from observations whether the evaluation's recommended retrofit of the south wing was carried out.

Cleaning Trials

Tile

WJE carried out select cleaning trials at two columns located at the south elevation of the SMUD Headquarters Building, west of the main entrance, using a custom masonry cleaner by Prosoco. The area was pre-wet, then the masonry cleaner was lightly applied using a bristle brush. The cleaner was allowed to dwell on the surface for 5 minutes with occasional agitation of the surface. After two applications and rinsing of the substrate with water, the area was observed to show no signs of calcite removal. However, with the use of fine bristle brush, WJE was able to remove the built-up layer by moderate agitation. Through the use of field microscopy, WJE was able to confirm that the gloss finish tile substrate would remain intact after removal of the built-up layer.

Mo-Sai Panels

WJE carried out select cleaning trials at the south elevation of the core from the south-wing roof using a custom masonry cleaner by Prosoco. The area was pre-wet, then the masonry cleaner was lightly applied using a bristle brush. The cleaner was allowed to dwell on the surface for up to 5 minutes with occasional agitation of the surface. After

³⁹ The copy of the available report had the date struck out by hand.

two applications and rinsing of the substrate with water, the area was notably cleaner, mostly because the white cement paste surrounding the aggregate was cleaned.

Aluminum Cladding

WJE carried out select cleaning trials at the northwest corner of the parking structure at grade level using a dilution of mild detergent. The area was pre-wet, then the detergent was lightly applied using a soft sponge. The cleaner was allowed to dwell on the surface for 5 minutes with occasional sponging of the surface. After two applications and rinsing of the substrate with water, the area was observed to have no visible signs of improved cleanliness. Although some of the soil deposition was removed, WJE continued to observe the white vertical streaking that was prevalent along the metal substrate. WJE observed that the stain area remained primarily the same in appearance, possibly because etching had occurred on the metal substrate.

Interior Evaluation

Overall Description

The interiors of the SMUD Headquarters Building are generally characterized by extensive glazing and clear sight lines throughout. Offices are generally an open plan, characteristic of the period of construction. The public enters the building at the south side through the main lobby, which occupies the center of the south wing. The lobby is flanked by public spaces and provides entry to the central circulation core, with an elevator and stairs serving the offices in both the north and south wings. A basement level at the south wing contains a large cafeteria, and an open parking garage occupies the north wing below the second floor.

The original finishes were generally simple. Polished terrazzo was used for floors in the public areas, including the main lobby, the public stairs, elevator lobbies, circulation corridors in the basement, and restrooms. Floors in the cafeteria and office spaces were originally 12x12 vinyl tile. Floors in service and mechanical areas were originally specified as 9x9 vinyl asbestos tile.

The first-floor public spaces featured a luminous ceiling composed of a lightweight metal screen with light fluorescent tube fixtures above (Figure 16). At the office floors above, the ceiling is constructed of suspended acoustical tile. Sets of 2-foot by 4-foot flush lighting fixtures are mounted at 4 feet on center, in alternating directions, creating a basket weave pattern rather than linear light banks (see Figure 23 later in this report). The original covers are a plastic grid, similar to the grid used for the luminous ceiling below. In service rooms, smaller acoustical tiles and can lights or suspended fixtures are typical.



Figure 16. Original luminous ceiling.

Typical doors are solid-core and characterized by concealed hinges, specified as “Soss invisible” hinges in the original outline specifications (noted in the “Archival Research” section of this report). In some locations, including utility and nonpublic spaces, pivot hinges or standard butt hinges were used. Slender, vertical metal door pulls are typical of doors in public areas.

Since the original construction, many of the building’s spaces have undergone modest renovations. Most original fixtures are intact and remain in good condition.

Lobby

The main lobby is a high, open space with full height glazing at the south wall where the main entrance to the building is located.

The west wall and portions of the east wall are covered in a wood screen composed of vertical hardwood slats, and referred to in the original building description as “slit

resonator walls.” An audio/visual room for the adjacent auditorium occupies the middle portion of the east wall, projecting into the space of the lobby. The projecting walls are covered with a textured vinyl wall covering.

The west wall and portions of the east wall are covered in a wood screen that is composed of vertical hardwood slats and referred to in the original building description as “slit resonator walls.” An audio/visual room for the adjacent auditorium occupies the middle portion of the east wall, projecting into the space of the lobby. The projecting walls are covered with a textured vinyl wall covering (Figure 17).



Figure 17. Lobby, ground floor of south wing.

Pairs of double doors, visible as one enters the auditorium to the east and a large conference room to the west, are flush with the wood walls and covered with the same wood slats. The doors are mounted on pivot hinges. The door pulls are of typical dimensions and style, but the handles are crafted from a similar wood as the wall screen (Figure 18).



Figure 18. Door pulls and wood slats in the lobby.

At the north, the lobby is open to the elevator core. On either side of this opening, full-height glazing composes the north walls of the lobby. The curtain walls turn north to bridge the gap between the recessed podium of the south wing and the central core. Before turning north, the lobby's glazed walls are interrupted by partial-height walls clad in the same dark tile as the exterior columns. These walls project into the interior from both sides, framing the passage out of the lobby (Figure 19). The glazing terminates at the south wall of the central core, where the mo-sai concrete panels project into the interior and frame the entrance to the elevators. At the curtain-walled transition space between the lobby and elevator core, secondary entrances are located on both sides.

The existing lobby ceiling is a suspended metal grid with acoustical panels and integral light fixtures. The current assembly replaced the original luminous ceiling.



Figure 19. Opening to elevator lobby and curtain walls at the north wall of the lobby. Note the vented steel cap at the base of the curtain wall, and nonoriginal furniture, carpet, and ceiling tiles.

The lobby floor consists of original polished terrazzo, with two large areas of carpet and a walk-off pad at the front door. The carpet is not original. The terrazzo tiles are off-white, with metal spacers at all joints, and measure 16 inches by 52½ inches. The tiles are oriented with the long dimension running east-west, and the short joints staggered. At the curtain walls, a vented steel cap 14 inches wide and 3½ inches tall is installed over an air duct at the floor (Figure 19). This is typical at the base of all exterior curtain walls, on all floors.

All furniture—including custom-built pieces using wood slats similar to those at the walls—is nonoriginal.

Auditorium

The auditorium east of the lobby has a sloping floor that drops below the level of the first floor into the basement, and faces an elevated stage at the east end. Curved walls inserted in the rectangular space on the north and south taper toward the stage. The north, west, and south walls are covered in the same wood “resonator” screen as the lobby. The walls at both sides of the stage are plywood panels. These wood finishes are likely all original, based on early photographs. The wall at the back of the stage is plaster or gypsum board painted white, with a projection screen (Figure 20).



Figure 20. Auditorium.

Fixed seating is installed on the sloping portion of the floor, with circulation aisles at both sides. Two desks and a lectern are permanently installed at the front of the seating area. An “s”-shaped dais at the base of the stage faces the audience, closing off the stage area. Although the dais, desks and lectern have been clad in wood slats similar to those on the walls, they are all later additions, as noted in the NRHP nomination. The stage platform has also been rebuilt in a different configuration than the original. Historic drawings and photos from the SMUD Archives show the stage as a single raised surface, with a symmetrical curved edge projecting out toward the audience. Behind the dais, the stage is now asymmetrical and angular, with a single step up from the dais.

At both sides of the stage, flush double doors finished in the same plywood lead to supporting spaces for the auditorium. The doors are mounted on pivot hinges at the extreme corners. At house right, an additional door to the right of the double doors presumably leads to storage. The door handle matches that of the other doors, but the exposed standard hinges are not similar, and it is assumed this door is a later addition. At house left, a nonoriginal door is located at the level of the dais.

The fixed seating also has been altered from the original design, although it is unclear whether the existing seats are those originally installed. A metal rail has been added between rows near the bottom of the seating area, where it did not exist previously. At the same location, seats were removed to accommodate the built-in audience lectern. The currently installed seats are upholstered metal folding seats with fixed armrests, manufactured by Heywood Wakefield. This matches the manufacturer listed in reference documents, and the seating appears to match historic photos. However, the NRHP nomination reports that the original seating was replaced in 1978. It is possible that the seats were only reupholstered on that date.

The auditorium ceiling is plaster, with a large quantity of recessed lights. In terms of location and size, most of the lights match those in historic photos, although they may not be the original fixtures. Near the rear of the auditorium, it appears that additional lights were added to the original pattern. At the back of the stage, a track is mounted in the ceiling, but it is currently empty. The drapery currently hanging in front of the screen is not original, and it is unknown whether this is the original location for the stage curtain visible in historic photos.

The auditorium floor is dark terrazzo under the fixed seating, with carpet at the aisles and in front of the dais. The floor of the stage is wood.

In the area behind the stage, between the auditorium and the stairwell, are a short hall and two restrooms. This support space exhibits original finishes typical in many nonpublic areas. The floor is 12x12 vinyl tile, the ceiling appears to be original acoustic tile (12x12 at this location), and the walls are finished with wallpaper over wood panels. What appear to be original fixtures are located at the restrooms and in the hall. A Detex watchclock station with key still attached is located at what appears to be an original vanity behind the stage at house right.

The audio/visual room that projects into the lobby features perforated acoustic panels on all ceiling and wall surfaces and on carpet floors. Some of the wall panels are damaged. A potentially original handrail and lighting fixture are intact.

Conference Room and Ancillary Rooms

The rooms located west of the lobby were originally used for public outreach activities and education, focusing on the promotion of electric appliances. Historic documents

record that the area originally contained three kitchens, “one for demonstration and two for preparation of food for demonstration purposes.”⁴⁰

Directly west of the lobby, the main demonstration room has been completely renovated and is now used as a conference room. This room contains no original finishes. Currently, floors are carpet, walls are clad in fabric-covered panels, and the ceilings are the same nonoriginal panel grid as installed in the lobby, with the same suspended light fixtures. The west wall features built-in cabinets and a sink.

An original door at the northwest corner of the conference room leads to a divided room that originally contained the support kitchens. The north half of this space is presently filled with cubicles, but it is notable as the only main room that still contains the original luminous ceiling, composed of a lightweight metal screen with light fluorescent tube fixtures above. The walls are covered with wallpaper, which is peeling at the seams in several locations, and the floor is carpeted.

Along the west wall, a short ramp leads up to a separate room. The two spaces are divided by an original partition of covered plywood panels with glazing above, with an original double door at the top of the ramp. The plywood portion of the partition turns to run along the edge of the ramp. At the south room, the ceiling is dropped by a few feet relative to the luminous ceiling in the north room. The lower ceiling is the basket-weave panel assembly used for the office spaces on the upper floors.

Although the kitchen spaces have been drastically altered and are no longer used for that purpose, original built-in cabinetry and shelving remains along the south wall of the room, and in a smaller storage room to the east. The cabinets are in good condition. The locations of some removed fixtures can be seen in the remaining countertops. Walls at this area are plaster or gypsum board, and the floor is carpeted.

Original double doors at the northwest corner of the former kitchen area lead to a small, square vestibule at the northwest corner of the building. An exterior entrance is located on the north wall of this room, and the east stairwell is accessed through a single door on the south wall. The floor is currently covered with rubber sheet flooring, and the walls are plaster. The original luminous ceiling is still intact in this room as well. A similar room (with terrazzo flooring) occupies the same location on the east side of the ground floor, accessed via the backstage area.

⁴⁰ Letter to Mel Ferris, California Chapter of A.I.A., January 27, 1961. On file at Dreyfuss & Blackford Architects Office. Sacramento, California.

Elevator Lobbies and Stairs

Circulation in the main SMUD Headquarters Building is provided by elevators and stairs located in the central core. The core provides access to the office floors above: three levels in the south wing and two in the north wing.

The floors in the elevator lobbies on all floors are terrazzo. At the ground floor, the light-colored terrazzo from the main lobby extends to the elevator core and wraps up the base of the walls by a few inches. On the levels above, the terrazzo is dark, similar to that in the Auditorium.

At the ground floor, the original dark tile matching the exterior columns is intact on the elevator and stairwell walls; however, a large wood header has been installed over the tile and wood slat walls directly above the elevator doors. On the north wall, original wood slats matching the lobby walls are intact. At the elevator, stairwell, and north walls, a new light-cove projects out below the ceiling, partially covering the original walls (Figure 21). South of the stairs and elevators, the east and west walls are clad with wallpaper, which may be original. In the spaces between the stairs and elevator and the north wall, infill walls have been added and are finished with a similar wallpaper. The nonoriginal lobby ceiling extends into the circulation core, where the luminous ceiling was originally installed.

At the second- through fourth-floor elevator lobbies, the ceiling is the nonoriginal acoustic panel assembly, and the walls are typically covered with wallpaper.

The main stairwell is located off the elevator lobby. There are three additional stairwells in the office wings, located at the east and west ends of the south wing and at the north end of the north wing. All stairwells are similar in finishes, with terrazzo treads and risers and a very thin, open aluminum railing featuring a single flat handrail and widely spaced balusters/supports. A horizontal 2x4-style wood rail has been added about halfway between the handrail and the stair nosing, and an additional rail has been installed above the handrail at the fourth-floor landings. The undersides of the stairs are clad in the original 12x12 ceiling panels, with lighted panels at all landings (Figure 22).

The main restrooms on each floor are located behind the elevators, with entries on either side of the elevator doors. These restrooms were renovated approximately 10 years ago with nonoriginal fixtures, partitions, and tile walls. The floors are light-colored, square terrazzo tiles. It is unknown whether this is the original flooring, refinished flooring, or a replacement flooring constructed at the time of the renovations.

Mechanical, electrical, telecom, and other support rooms fill the remainder of the core on each floor. Floors in these areas are typically 9x9 or 12x12 vinyl tile, and walls and ceilings are original acoustic panels, plaster, concrete, or insulated panels. These utility rooms typically appear to be unaltered from the original construction.



Figure 21. Ground-floor elevator lobby.

South-Wing Offices: Second and Third Floors

The south-wing offices on the second and third floors are free of support columns, allowing for a fully open plan (Figure 23). Original partitions were moveable, constructed of extruded aluminum frames with translucent glazed panels, and solid panels finished in walnut, oak, vinyl fabric, or vinyl with glazing above. A reveal at the top of the aluminum frame separates it from the ceiling panels.



Figure 22. Typical stairwell.

On both the second and third floors, original partitions are located on both sides of the entrance to the elevator lobby. The footprint of the original enclosed spaces is the same at both floors (matching the width of the circulation core to the north). On both floors, the room to the west is a single room with three original doors—one from the elevator area and two from the open office space. All partitions in this room are original wood panels (Figure 24).



Figure 23. Open office plan with original ceiling configuration.

The configuration of the rooms on the east side of the entrance varies slightly between the floors. Both are divided into smaller rooms, with one room accessed via the elevator area, a smaller room to the north, and a plaster wall dividing the original room that is farthest from the entrance. It is unclear whether the plaster walls are original. The other walls in these rooms are typically original wood panels, except for the south and east walls of the third-floor offices, which feature vinyl and translucent panels, respectively. On the third floor, a single restroom with original 9x9 tile flooring and what appears to be an original light fixture is located on the north side of the offices. All doors located in original partitions are original as well.



Figure 24. Typical original wood partitions.

Original partitions are also intact on the south wall on both the second and third floors, directly opposite the entrance to the elevator lobby. On the third floor, an office and conference room feature wood-paneled partitions on the east, west, and dividing walls, and translucent panels with original doors on the north wall. An office of similar size is present in the same location on the second floor, with wood panels on the east and west walls and translucent panels with an original door at the north. Three smaller rooms extend from the east wall of this office, with original glass and vinyl partitions (and one nonoriginal vinyl partition between two rooms). All three smaller offices have original doors.

A few additional offices have been added since the original construction, but they are so few in number that the original open plan is still preserved. Nonoriginal partitions are distinguished by the lack of wood paneling, the inclusion of vertically divided vinyl panels, and standard butt hinges at the doors (Figure 25).



Figure 25. Typical original (left) and nonoriginal (right) vinyl partitions.

On the third floor, nonoriginal partitions have been added to the rooms on the east side of the elevator lobby entrance. However, one wall of the additional space is original vinyl panels with an original door, so it is unclear how this area was initially divided. Additional nonoriginal partitions form an isolated conference room on the north wall, a cluster of three rooms at the northeast corner, and a single office west of the original rooms on the south wall.

On the second floor, additional rooms have been added in the southwest and southeast corners, west of the office on the south wall, and on both sides of the offices flanking the entrance to the elevators.

Floors in the offices are now typically carpet over what was originally specified as vinyl tile. The walls at the stairwells have a vinyl wall covering. Ceilings are suspended, with acoustic tile and light fixtures in the original basket-weave pattern, but approximately two-thirds of the light fixtures have been taken out of service. These retain their original

grid covers. The remaining one-third of the light fixtures have been replaced with new fixtures with translucent plastic covers.

South-Wing Offices: Fourth Floor

The fourth floor of the south wing is similar in construction to the floors below; however, an original complex of permanent offices occupies the west quarter of the floor. These offices are constructed with fixed partition walls clad on both sides in a combination of plaster, fabric panels, and oak-wood paneling. (Figure 26). At the base of the walls, a sheet metal baseboard is set into a reveal. The adjacent stairwell walls are covered in thickly textured wallpaper. The area west of the stairwell, including two restrooms, has been recently renovated. A kitchenette and nonoriginal door have been added to the hallway at this location, and all finishes are nonoriginal. All other doors in this area are original, including the concealed hinges noted elsewhere. Water damage is present at the metal duct cover in one of the offices along the south wall (Figure 27).

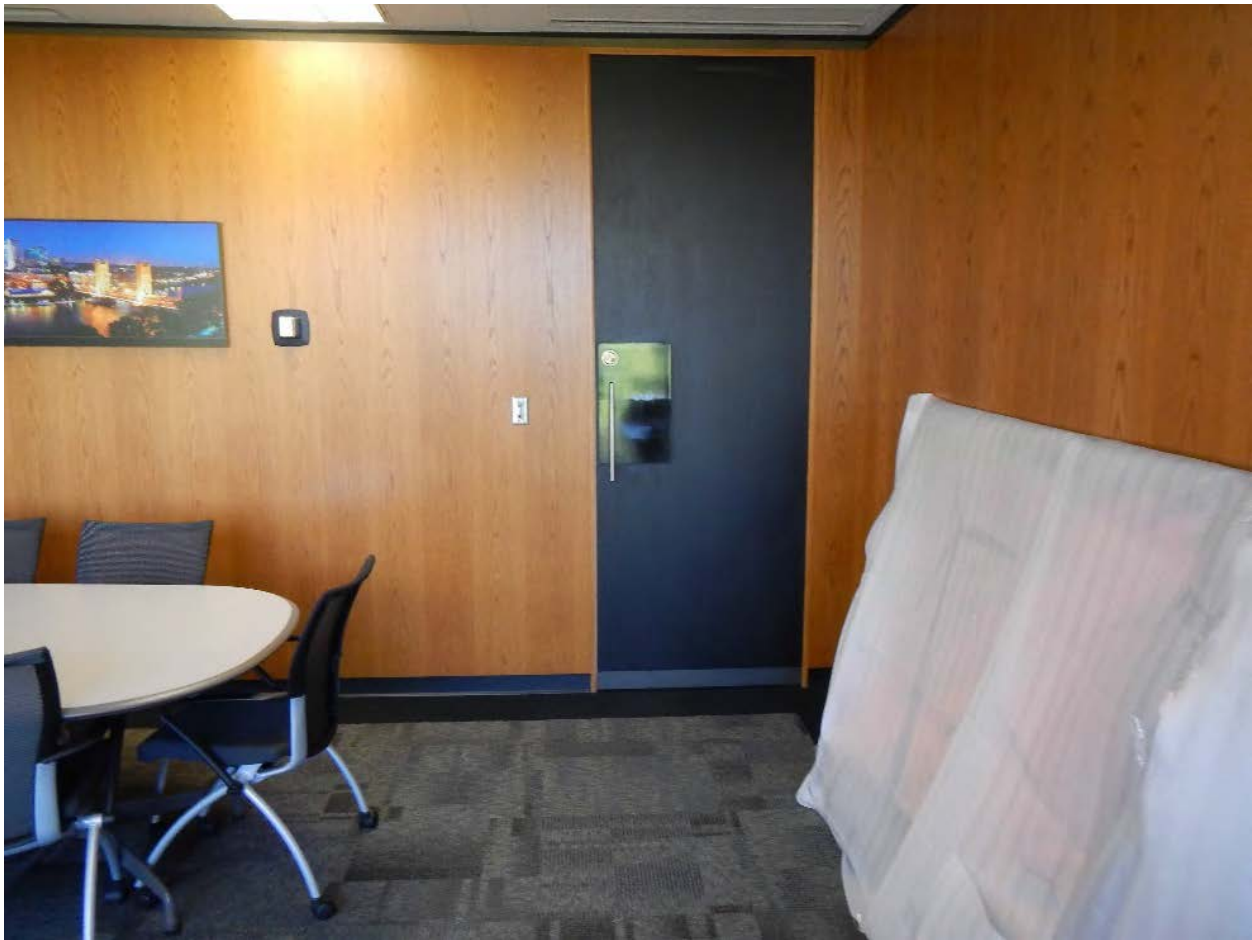


Figure 26. Original permanent wood partitions at fourth floor, south wing.



Figure 27. Water damage at metal duct cover, fourth floor of south wing.

Several additional rooms have been constructed throughout the floor, thus almost entirely obscuring the open floor plan. The rooms are configured so that a corridor leads from the elevator lobby to the middle of the south wing, then intersects another corridor that runs from the west offices to a larger open space at the east end of the floor. Nonoriginal double doors are located on both sides of the corridor intersection.

The south wall of the east-west corridor is made up of original moveable partitions, although these partitions are not shown in the original plans. Starting near the west offices, translucent glazed and vinyl panels extend to the double doors in the middle of the floor. Glazed partitions in this area are constructed of extruded aluminum and translucent glazing, similar to the moveable partitions, but they lack the reveal at the ceiling (Figure 28). On the other side of the doors, wood panels extend to the east stairwell.



Figure 28. Typical original translucent panels.

Floor and ceiling finishes on the fourth floor are similar to those on the second and third floors.

North-Wing Offices

Offices in the north wing are similar in finish and character to those in the south wing; however, the 120-foot-square plan does not allow for a clear span of the structural members as in the more slender south wing. On each floor of the north wing, two rows of columns run in the north-south direction at 40 feet from the exterior walls. As originally designed, with the exception of the columns noted above, the floor plans were almost entirely open (Figure 29). As in the south wing, the offices currently include a handful of rooms formed by original partitions, with additional rooms divided by nonoriginal vinyl panels. Service and mechanical rooms partially extend into the office space from the circulation core.



Figure 29. Typical north-wing office with interior columns.

On the third floor, the space has been divided roughly along a north-south axis into two large east/west rooms, with smaller rooms in between. Of the smaller rooms that form the axis line, three near the stairwell feature original vinyl or wood partitions, and plaster

or gypsum board walls that may be original. One original door is intact directly adjacent to the door to the stairwell.

Enclosed spaces shown on the original plan for the second floor include a vault enclosed in concrete walls near the elevator lobby entry, with adjoining rooms to the north and west. The walls of the vault are still present; however, the surrounding partition walls either were never constructed or have been relocated. Partitions that appear to be original are also present at the southeast corner and near the southwest corner. Wood, vinyl, and partially glazed panels are present. Rooms formed by nonoriginal partitions exist at the southwest corner and in a large area at the center of the floor. Floor and ceiling finishes in the north wing are typically similar to those in the south wing. On the third floor, a telecom room located east of the passage to the elevators has 12x12 vinyl tile flooring.

Basement/Cafeteria

The basement level was originally designed with a cafeteria and kitchen occupying the entire west half and a series of larger rooms in the east half. A north-south corridor extends from the elevators between the two halves of the basement, and an east-west corridor accesses the rooms on the east portion of the floor. Many of the original spaces have been divided further, but most of the original walls remain in place.

The original configuration of the kitchen remains intact, although some finishes and fixtures have been updated. In the storage rooms and restroom that occupy the southwest corner, all finishes and fixtures appear to be original. Walls are plaster or are covered with a textured vinyl wall covering. Floors are original vinyl tile, and ceilings are original acoustic panels that have been painted in some rooms. In the kitchen, floors are terrazzo tiles measuring approximately 30 inches by 25 inches. These terrazzo tiles may be original or may have been replaced when the kitchen was remodeled. All doors in this area are original, with the exception of the door to the storage room at the west end of the building.

The serving and seating areas have been renovated, with a nonoriginal acoustic panel ceiling and sheet flooring. The seating area originally extended across the entire west half of the basement, but the western portion has now been partitioned off (red wall visible in Figure 30). The original wood-slat wall finish remains intact on the north and south walls of the current seating area and the west and south walls of the partitioned room to the west. The slats are damaged in some places. A pass-through to the kitchen is built into the south wall of the seating area. No other finishes or fixtures in the partitioned area are original (Figure 30). The wall and double door at the east end of the cafeteria are not original. The mechanical room at the east end of the serving area is in original condition, with 9x9 floor tiles, insulated panels on the walls and ceiling, and a potentially original light fixture.



Figure 30. Seating area of basement cafeteria.

Original terrazzo flooring matching the ground floor is extant at the elevators and in the north-south corridor. The tiles are cracked across the shorter dimension in many places. In the east half of the basement, all finishes and fixtures in public areas are nonoriginal, with the possible exception of the vinyl wall covering in the east-west corridor. Mechanical and electrical rooms remain in original condition.

Parking Garage

The parking garage occupies the area below the offices of the north wing, with three levels between the basement and second floor. The lowest level of the garage is located at the basement, a mezzanine level is located below the first floor, and the upper level of the garage is located above the first floor. The west, north, and east walls of the garage are open except at the enclosed lower level, and in the northeast and southwest corners of the mezzanine level, where concrete shear walls have been added. The footprint of the garage is similar to that of the floor slabs above, so that the outer columns are inset from the perimeter of the space.

On the lower level, the parking garage is organized around an enclosed auto service area at the center. This area appears to be unaltered, with original tile and painted plywood wall finishes intact. On the upper level, a single storage room is located at the north side of the garage.

Vertical circulation is provided by two spiral staircases, located in the northwest and southeast corners. The stairs are constructed of diamond-plate steel treads projecting from a central large steel-pipe column. The outside railing is steel pipe shaped to follow the spiral, supported by two slender steel balusters at each tread. The stairs penetrate the concrete decks through a tight round opening with a dropped edge (Figure 31).



Figure 31. Parking garage staircase.

On the lower and mezzanine levels, the underside of the structural slab is visible. The slab is a two-way system, faceted such that the thickness subtly increases from the center point of each column bay to the columns. The faceted surfaces are distinguished by v-notch reveals cast into the bottom of the slab (Figure 32). On the upper level, the ceiling is finished in plaster.



Figure 32. Underside of structural slab, lower level of parking garage.

Significance and Integrity

Overall Significance

The SMUD Headquarters Building is listed in the NRHP as individually significant at the local level. The NRHP nomination, authored by Carol Roland in 2009, states:

The SMUD Headquarters Building, constructed in 1959, is a product of the dissemination of the Modernist architectural philosophy and aesthetic in

America, and specifically, in Sacramento, California, in the decades immediately following World War II. Strongly influenced by the work of Mies van der Rohe and the International sub-style of Modernism, it is an excellent example of its style and property type. It exemplifies not only the principles and design aesthetics of Modernism, it incorporates innovative design and high artistic values that have made it a landmark building within its local context. It is one of the most outstanding works of a locally and regionally significant Modernist architectural firm, Dreyfuss and Blackford, which designed a number of striking buildings in the local area beginning in the 1950s. The property meets the National Register Criterion C in the area of Architecture as one of the best examples of the Modernist International style in the City of Sacramento.⁴¹

Period of Significance

The period of significance listed in the NRHP nomination that was prepared in 2009 for the SMUD Headquarters Building is 1959, based on its significance under Criterion C for its architectural design. This is appropriate because any changes made to the building after the date of original construction would not contribute to its significance under this criterion.

Significant Character-Defining Features

All the extant original interior and exterior elements of the SMUD Headquarters Building contribute to the building's historic character and its listing in the NRHP. All of these elements should be retained in conformance with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. The most significant character-defining features of the design, and the features that contribute most prominently to the building's historic character, are listed below.

Site

- The scale of the 15-acre site, including the lack of visual intrusion from other structures and the spatial relationship of the SMUD Headquarters Building to the site
- The landscape elements: mounded earth berms, rock outcroppings, dense plantings, meandering paths, and site lighting

See the cultural landscape report for a description of significant historic landscape features.

⁴¹ Carol Roland, *National Register of Historic Places Registration Form 10-900 SMUD Headquarters Building* (2009), pg. 8-8.

*Building Exterior***Summary**

The composition of the exterior of the SMUD Headquarters Building is the single most important character-defining feature of the building, and should be rated as very significant. The design is very rigorous in establishing simple design criteria and adhering to their constraints. The vertical aluminum mullions are consistently present on every building elevation, and their patterns and spacing do not vary. Building elevations are either solid, with the precast concrete mo-sai panels inserted between the mullions, or fully glazed. Solid surfaces are not penetrated and solid cladding is not introduced in the glazed portions. The projecting brise soleil are exactly aligned with the recesses in the spandrel panels on the elevations where the brise soleil are not present. Shading fins align with the mullions at the building façade. The building's exterior possesses remarkable integrity and has experienced no significant or minor alterations to the original design.

The SMUD Headquarters Building is constructed in a campus setting and is meant to be viewed from all sides; however, a hierarchy of importance applies to the various elevations based on intended use, detailing, and visibility. The south wing, the most highly detailed of the three building elements, presents the long, linear form and almost transparent glazed façade that are the most prominent character-defining features of the building. It features the recessed plinth and the colonnade created by the overhanging upper stores and supporting columns that define the archetypical modernist design. The upper stories present the widely spaced vertical sunshade fins that are a character-defining feature of the building. The crowning feature of the building is the Thiebaud mural that wraps the plinth on three sides. The south elevation of the south wing is the most distinguished and visible façade of the SMUD Headquarters Building, and is the iconic view of the building that is most well-known by the public.

The north wing is secondary to the south wing in location and form. It is not as highly finished or as detailed as the south wing. The two-story offices located above the open parking garage are visibly raised above grade, similar to the south wing, but not as dramatically or elegantly. The north wing is blocky in form compared to the south wing and is more heavily anchored to the site by the parking garage. The sunshades on the east and west walls are doubled in frequency, which prevents the transparent view that is characteristic of the south wing. The north wing is more hidden from view, although the west elevation is the portion of the building that one views first when approaching the building from the employee parking lots. The only major alteration to the building occurs here, with the addition of the concrete shear walls at the corners of the parking garage's basement and first-floor levels. Although the north wing is still a very significant element of the historic SMUD Headquarters Building, it is subordinate to the south wing in its importance.

The core is the anchor that ties the two wings together, but its façade is more simply finished than either the north or south wing. The core is entirely clad in mo-sai panels, and its visual and circulation function is as a transitional building element. Its shape is its most important feature, providing a strong vertical element that accentuates the horizontality of the south and north wings. The core's five-story height, projecting above the level of the south wing, accentuates its verticality and makes it visible from the south, which is the building's most public face.

Exterior Features of Primary Significance

- The original form and massing of the building, including its T-shaped plan and the differential massing of the three distinct building elements
- Distinctive and regular vertical aluminum mullions
- Differentiation of entire façades by installation of glazing or solid cladding panels
- The recessed plinth, mosaic tile mural, and tiled columns at the south wing
- Brise soleil, aluminum sunshades, and adjustable louvers at the south, west, and east façades
- The aluminum spandrel and soffit panels
- The extruded aluminum curtain walls and glazing
- The precast concrete mo-sai panels
- The flat main roof with low profiled penetrations

Building Interior

Summary

The significance of the interior space of the SMUD Headquarters Building is dominated by the open character of the plan, beginning with the main lobby and culminating with the open office plan.

Interior Elements of Primary Significance

- The overall configuration and features that emphasize the open plan, including the entry, circulation, and open office plans
- The first-floor south-wing lobby, auditorium, and former demonstration kitchen, including their spatial configuration and original materials

- Original mosaic tile walls in the entry
- Original wood-slat walls in the auditorium, main lobby, elevator lobby, and cafeteria
- The original luminous ceiling materials that remain in the demonstration kitchen area
- The open floor plan on the office floors, especially those in the south wing
- Terrazzo flooring, especially in the major public spaces including the main lobby, stair lobbies, auditorium, and first-floor conference room

Interior Elements of Secondary Significance

- Elevator lobbies, including original materials
- Terrazzo stairwells and stainless steel railings in the circulation core and office wings
- Original moveable partition walls on the office floors
- Original fixed partitions in the fourth-floor corporate offices including interior doors, oak-paneled walls, and glazed partitions
- Original cabinets in the former demonstration kitchen
- Original finishes in the parking garage, especially exposed concrete columns and faceted concrete ceilings
- The original balcony railings and spiral staircases in the parking garage

Assessment of Integrity

The assessment of integrity is based on an evaluation of the significance and condition of the physical features that date to a property's period of significance. The assessment also considers the degree to which the individual qualities of integrity are present. The seven aspects of integrity as defined in the NRHP Criteria for Evaluation are location, design, setting, materials, workmanship, feeling, and association. As noted in *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation*:⁴²

Location is the place where the historic property was constructed or the place where the historic event occurred. Design is the combination of elements that create the form, plan, space, structure, and style of a property. Setting is the physical environment of a historic property.

⁴² National Park Service, *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation* (date of publication: 1990; revised 1991, 1995, 1997), pp. 44–45.

Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property. Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. Feeling is a property's expression of the aesthetic or historic sense of a particular period of time. Association is the direct link between an important historic event or person and a historic property.

National Register Bulletin 15 defines integrity as “the ability of a property to convey its significance.”⁴³

The primary historical significance of the SMUD Headquarters Building is a combination of its design and setting. The building is significant as a significant example of the modernist style of the postwar period. It is also a significant example of the modernist landscape concepts of placing a building in a campus-like setting and fully integrating the landscape and the building.

Integrity of Location

The SMUD Headquarters Building retains a high degree of integrity of location. The building location and the boundaries of the property on which it is located are essentially unchanged since construction was completed in 1959.

Integrity of Design

The SMUD Headquarters Building retains a high degree of integrity of design. Almost no changes have been made to the building's exterior, and it essentially retains its original appearance. Changes to the interior of the building have been limited and have not significantly altered its most significant character-defining features, including the openness of its plan and the character of its public spaces.

Integrity of Setting

The SMUD Headquarters Building retains a high degree of integrity of setting. The expansiveness of the property protects the building from visual impacts caused by changes in the surrounding properties and landscape. The building is clearly visible from U.S. 50, and this view has not changed since the building's construction, except that the raised freeway has enhanced the view.

⁴³ National Park Service, *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation* (date of publication: 1990; revised 1991, 1995, 1997), pp. 44–45..

Integrity of Materials and Workmanship

The SMUD Headquarters Building retains a high degree of integrity of materials and workmanship. The character-defining exterior materials—the Sanfordized aluminum sun control panels, the precast concrete mo-sai panels, and the Thiebaud mural—are in good condition.

Integrity of Feeling

The SMUD Headquarters Building retains a high degree of integrity of feeling. The building still conveys its character as a postwar modernist office building in a campus setting. The building’s iconic south façade and its surrounding landscape remain highly visible from U.S. 50.

Integrity of Association

The SMUD Headquarters Building retains a high degree of integrity of association. It remains the headquarters for SMUD, the agency that originally constructed and occupied the building in 1959.

Recommendations for Treatment

Standards for Treatment

Secretary of the Interior’s Standards for Treatment of Historic Properties

The Secretary of the Interior establishes standards for all programs under departmental authority and advises federal agencies on the preservation of historic properties listed in or eligible for listing in the NRHP. *The Secretary of the Interior’s Standards for Treatment of Historic Properties* were initially developed by the Secretary of the Interior to determine the appropriateness of proposed project work on registered properties included in the Historic Preservation Fund grant-in-aid program. These standards have guided federal agencies in carrying out their historic-preservation responsibilities for properties in federal ownership or control; they also have guided state and local officials in reviewing both federal and nonfederal rehabilitation proposals. In addition, the Secretary of the Interior’s Standards have been adopted by historic district and planning commissions across the country.

The intent of *The Secretary of the Interior’s Standards for Treatment of Historic Properties* is to assist the long-term preservation of a property’s significance through the preservation of historic materials and features. The standards pertain to historic buildings of all materials, construction types, sizes, and occupancy and encompass the exterior and interior of the buildings. They also encompass related landscape features and the building’s site and environment, as well as attached, adjacent, or related new construction.

The National Park Service has developed definitions for the four major treatments that may be applied to historic buildings: preservation, rehabilitation, restoration, and reconstruction. The four treatments are defined as follows:

Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of a historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.

Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features that convey its historical, cultural, or architectural values.

Restoration is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.

Reconstruction is defined as the act or process of depicting, by means of new construction, the form, features, and detailing of a nonsurviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.⁴⁴

The SMUD Headquarters Building was originally constructed as the headquarters for SMUD in 1959. SMUD is committed to retaining the SMUD Headquarters Building for continued use as its headquarters for the foreseeable future. This commitment may require modifying the building to adapt it to changing conditions in the workplace and SMUD needs, which have developed since the building's original construction. The appropriate treatment for any renovation project under the *Secretary of the Interior's Standards for Treatment of Historic Properties* is **rehabilitation**.

⁴⁴ National Park Service, *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*, prepared by Charles Birnbaum with Christine Capella Peters for the U.S. Department of the Interior (1996).

As stated in the definition, the treatment "rehabilitation" assumes that at least some repair or alteration of the historic building will be needed to provide for an efficient contemporary use; however, these repairs and alterations must not damage or destroy materials, features, or finishes that are important in defining the building's historic character. Alterations should maintain and protect the original historic fabric and be reversible when possible. Additions must conform to the architectural design language of the original building and be subordinate to the historic building, while differentiating the new work to such a degree that it will not be mistaken for historic fabric. The Secretary of the Interior's Standards for Rehabilitation are listed below.

*Secretary of the Interior's Standards for Rehabilitation*⁴⁵

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.

⁴⁵ National Park Service, *The Secretary of the Interior's Standards for the Treatment of Historic Properties, with Guidelines for the Treatment of Cultural Landscapes*, prepared by Charles Birnbaum with Christine Capella Peters for the U.S. Department of the Interior (1996).

8. Significant archaeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Specific Guidelines for Treatment

Site

The relationship of the building to its site is one of the dominant character-defining features of the SMUD Headquarters Building. Every effort should be undertaken to maintain the relationship, and to retain the character-defining features of the surrounding landscape. The cultural landscape report prepared by AECOM contains detailed descriptions and identification of these features, and provides specific recommendations for their treatment.

Exterior Alterations and Additions

SMUD is committed to retaining the SMUD Headquarters Building for continued use as its headquarters for the foreseeable future. This commitment may require modifying the building to adapt it to changing conditions in the workplace and SMUD needs that have developed since the building's original construction. The appropriate treatment for any renovation project under *The Secretary of the Interior's Standards for Treatment of Historic Properties* is rehabilitation. As stated in the definition, the treatment "rehabilitation" assumes that at least some repair or alteration of the historic building will be needed to provide for an efficient contemporary use. In altering the building for its modified or continued use, all attempts should be made to retain the significant character-defining features of the building's exterior.

The SMUD Headquarters Building was designed and remains in a landscaped campus setting. It was designed to be viewed from all sides; therefore, all views of the building are significant to the historic character. In adapting the building for the new use, all attempts should be made to retain the exterior in its current configuration, and to avoid additions or alterations that would alter the rigorous geometry of the building plan and/or obscure or damage original material. All original materials should be retained and rehabilitated rather than replaced or altered.

As noted above, all elevations of the SMUD Headquarters Building are historically significant. However, it must be acknowledged that the south wing does constitute the primary façade because of its location, design, enhanced detailing, and role as the primary entry to the building. Every attempt should be made to protect all façades from the intrusion of additions or alterations, but the south wing should be the last area to be considered for alterations or additions, and protecting its historic materials should a priority.

General Treatment of Historic Materials

Treatment of historic materials should be performed only by qualified historic treatment specialists. Qualified supervisory personnel should be present when work begins and during its progress. Records should be made of existing work areas before each procedure, and progress should be recorded during the work.

All cleaning and repair techniques should be tested in inconspicuous areas to determine their efficacy, and to identify possible hazards to the historic material. Adjacent materials should be protected from possible damage caused by the cleaning or repair. The goal of the rehabilitation procedures should be to retain as much existing material as possible, and to repair and consolidate the existing material rather than replacing it with new materials. Where possible, historic repair techniques and replacement materials should be used.

Where missing features are to be repaired or replaced, the appearance of the new work should be based on accurate duplications of existing material rather than on conjecture. Where the work requires that existing features be removed or dismantled and reinstalled, these operations should be performed without damaging the material itself, adjacent materials, or the substrate.

Tile Walls and Columns

The tile mural that clads the recessed base of the SMUD Headquarters Building's prominent south wing is a striking character-defining feature of the building. It has survived with minimal damage since its original construction, in large part because it is protected from the elements. Any treatment of this mural should be supervised by a conservator experienced in the treatment of mosaic tile murals. All efforts to clean the tile should be made by using the gentlest means available and assessing effectiveness before proceeding with incrementally more aggressive cleaning techniques. All tile, including moderately damaged tile, should be retained where possible. Replacement tiles, where required, should match the existing tile as closely as possible.

Treatment of the tile that clads the columns supporting the SMUD Headquarters Building at the edge of the recessed plinth should follow the same guidelines as described above for the mural tiles. However, the tile on the columns has suffered more as a result of the weather and staining from adjacent landscape irrigation sprinklers.

Although more aggressive cleaning techniques may be required to remove the calcite deposits present on the surface of the tile, the cleaning trials showed that the calcite could be removed using a light-duty masonry cleaner.

Cleaning should proceed as noted above. The gentlest means possible should be used to start, and the results should be assessed before proceeding with more aggressive cleaning products and techniques. Several tiles are damaged or missing from the columns, and replacement tiles will be required. These tiles should match the existing tiles as closely as possible. It was noted that some pieces of the original tile may be stored on-site. Reusing the existing tile would be the preferable option.

Aluminum Cladding, Mullions, and Sunshades

The aluminum cladding, vertical mullions, and sunshade elements present on the exterior of the SMUD Headquarters Building were reportedly finished by a Sanfordizing process, which is similar to an anodized finish but more robust. Every attempt should be made to restore the existing finish by using the mildest techniques available to remove oxidation and restore the original luster. Corrosion, where present, should be thoroughly removed using mild cleaning agents and, where necessary, gentle mechanical methods. Recoating of areas damaged by corrosion, where required, should be done using a compatible material.

Samples of the existing metal should be removed at a protected location and at a location exhibiting corrosion, and should undergo laboratory testing. Testing should be done to determine the nature and composition of the surface degradation and the range of potential treatments that may be appropriate. Samples of any selected recoating materials should be applied in discreet locations, and the color and texture should be evaluated as a match for the original finish.

If the deterioration of the finish is determined to be too advanced, or if matching the existing color, reflectivity, and texture proves impractical, consideration should be given to recoating all the metal to attain a durable and monolithic appearance. Color and reflectivity should match the original finish, as established by examining the protected areas of the original metal finish.

Glazing Panels

The original glazing panels of the curtain wall system have been altered from the original by the addition of a film on the interior of the panels located on the office floors at the south, east, and west elevations. Adding the film has changed the appearance of the glazing, altered the transparency of the building from the exterior, and restricted the light that can penetrate the interior. Removing the film and retaining the original glazing may not be practical, and given the likely reason that the film was added, film removal may not be desirable because it could increase the building's energy consumption.

It should be determined whether replacing the glazing with new, higher performance glazing could increase light penetration while still restricting heat transfer. If the existing glazing is replaced, the new glazing should match the color and appearance of the original glazing as closely as possible. Whether the existing glazing is retained or replaced, glazing should be cleaned thoroughly and a maintenance program should be initiated to establish a regular cleaning schedule.

Precast Mo-Sai Panels

The mo-sai panels exhibit general atmospheric soiling and areas of more significant ferrous stains. The staining appears to be caused by the corrosion of imbedded metal components and the penetration of the stains to the exterior. Given the limited occurrences of the staining, it is not anticipated that the corrosion is systemic or ongoing. However, tests to verify this assumption are recommended.

The precast concrete panels should be cleaned to remove the ferrous staining before general cleaning occurs. The application of a light-duty ferrous stain cleaner appears to be effective, based on the preliminary cleaning tests described in this report. It is likely that removing the stains and applying a sealant around the stain area will prevent the staining from reoccurring. If the staining reoccurs, it can be cleaned using similar methods.

A more aggressive approach to treating the ferrous stains would be to expose the corroded metal components at each stain location, treat the metal with a corrosion-resistant coating, and patch the panel with concrete and aggregate to match the existing. Although this would more likely be more effective than simple cleaning to prevent reoccurrence, it is destructive of historic material, and matching the existing material with new patching material could be very difficult. Because of these issues, it is not the recommended option for stain prevention.

After the ferrous stains are cleaned, the panels should be cleaned to remove atmospheric deposits, soil, staining, grease, oil, paint, and other contaminants without damage to or disintegration of the concrete surface. Cleaning trials should be carried out, beginning with the gentlest means, and the results should be assessed before proceeding to a more aggressive cleaning method. Detergent and warm water should be used; the water should be applied with a low-pressure spray at 100–400 pounds per square inch, and the surface should be scrubbed with a soft, natural bristle brush as a first test. The goal of the cleaning is not to return the façade to a 100 percent clean or new appearance, but to improve the appearance without damaging the surface.

Roofing

The original main building roofs at the north wing, core, and south wing were covered in 2006 with a new roof consisting of coated foam. The roofing has been run over the low

parapet edge and has obscured the parapet. SMUD has determined that the roof should be replaced as part of the total building rehabilitation.

Reusing the original coal tar roofing is problematic because of environmental concerns. Instead, the original roof should be removed and replaced with new roofing material. The low roof profile should be maintained, so new roofing must be selected that is suitable for a low-slope roof like the current roof of the SMUD Headquarters Building. Insulation should be restricted to a thickness that will allow for reestablishment of the original parapet and proper flashing at the roof's edge. Flashing along the roof's edge should be repaired or replaced with flashing to match the original metal finish. Drains should be cleared of debris and the drainage path verified.

The original coal tar roofs are still in use at the overhangs. The roofs are at the end of their useful life. They currently drain to an interior gutter along the building wall. SMUD maintenance staff reported that the interior gutters are considered a problem, and resloping of the roof toward the outer edge of the overhang has been contemplated. Rerouting of the water to the outer edge without providing a water collection system would cause rainwater to run down the fascia, likely causing the metal panels to become stained and corroded, as is currently observed on the building wall. A gutter could be built into the roof's edge in a manner that would retain the existing fascia; however, without proper maintenance, this gutter would develop the same problems that are currently present. In addition, a gutter at the edge of the overhang would require adding downspouts that would compromise the appearance of the building.

It is recommended that the roof be replaced with a membrane roof that would accommodate the low slope, or with a traffic-coating material suitable for a walkable surface. The existing drainage system should be rehabilitated, including replacement of the metal flashing at the building wall. The existing cable restraints should be refurbished to allow for gutter maintenance and removal of leaves so that the roof will drain properly.

Interior

General

SMUD is committed to retaining the SMUD Headquarters Building for continued use as its headquarters for the foreseeable future. This commitment may require modifying the building to adapt it to changing conditions in the workplace and SMUD needs that have developed since the building's original construction. The appropriate treatment for any renovation project under *The Secretary of the Interior's Standards for Treatment of Historic Properties* is rehabilitation. As stated in the definition of "rehabilitation" earlier in this report, the treatment rehabilitation assumes that at least some repair or alteration of the historic building will be needed to provide for an efficient contemporary use.

Treatment of Historic Materials

Any alterations to the SMUD Headquarters Building for its continued use should make all attempts to retain the significant character-defining features of the building's interior. Additions or alterations, including new office partitions, should not intrude on the significant public spaces, and care should be taken to avoid any alterations that alter the open sight lines and floor plans of the original design. Structural upgrades and construction of new mechanical, electrical, and plumbing systems should be undertaken in a manner that does not intrude on the significant public spaces, and that is not visible from the exterior.

Public spaces should be retained and all original materials should be preserved during any alterations, additions, or rehabilitation that might occur as part of adapting the SMUD Headquarters Building for its continued use. Priority should be given to those features identified as of primary significance in the "Significance and Integrity" section of this report. Careful consideration should be given before removing historic materials to accommodate new programmatic elements. The following treatments should be applied in order of priority:

- Historic materials should be retained in place where possible and protected for future use. This particularly applies to materials like terrazzo flooring, original luminous ceiling grids, and mosaic tile walls that cannot be easily removed without damaging the material.
- Where preservation and protection is not feasible, original materials should be removed carefully and stored for reinstallation in the original location.
- Where reinstalling historic materials in their original locations is not feasible, consideration should be given to reusing the materials in another suitable location.

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American Institute of Architects

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**APPENDIX C:
CULTURAL LANDSCAPE REPORT**

Sacramento Municipal Utility District Headquarters Building and Site

Cultural Landscape Report • December 2014



Powering forward. Together.



Sacramento Municipal Utility District Headquarters Building and Site

Cultural Landscape Report • December 2014

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Acronyms and Other Abbreviations

BCE	Before Common Era
CE	Common Era
CLR	Cultural Landscape Report
CRHR	California Register of Historical Resources
Director's Order 28	<i>Director's Order 28: Cultural Resource Management Guideline</i> (National Park Service)
Ebasco	Ebasco Services, Inc.
Great Western Power	Great Western Power Company
NPS	National Park Service
NRHP	National Register of Historic Places
PG&E	Pacific Gas and Electric Company
SMUD	Sacramento Municipal Utility District
U.S. 50	U.S. Highway 50

Introduction

At the request of the Sacramento Municipal Utility District (SMUD), this cultural landscape report (CLR) has been prepared for the SMUD Headquarters Building located in Sacramento, California. The SMUD Headquarters property is listed in the National Register of Historic Places (NRHP) and requires specialized preservation planning to maintain its listed status. The *historic designed landscape* is an important component of the property. This type of landscape is defined by the U.S. Department of the Interior as:

[A] landscape that was consciously designed or laid out by a landscape architect, master gardener, architect, or horticulturist according to design principles, or an amateur gardener working in a recognized style or tradition. The landscape may be associated with a significant person(s), trend, or event in landscape architecture; or illustrate an important development in the theory and practice of landscape architecture.¹

Management of the landscape plays a critical role in preserving the character of the SMUD Headquarters property. This CLR provides guidance for treatment of the landscape according to *The Secretary of the Interior's Standards for the Treatment of Historic Properties* and information to help preserve the historic character of the landscape. In addition, this CLR offers recommendations for managing and preserving landscape features and systems.

Executive Summary

The SMUD Headquarters property is a remarkably intact historic building and landscape. The property was listed in the NRHP in 2010 to commemorate the 50 years since its construction, and the building and landscape are significant for their mid-century modern design. The historic landscape comprises a wide variety of features: mature trees, lawn, sculpted topography, pedestrian and vehicular circulation systems, boulders, site walls, and a paved plaza and terracing. It creates an important modern landscape context for the International-style building.

The documentation by this CLR of the historic context, physical history, and existing conditions of the SMUD Headquarters property provides the background required to support an evaluation, analysis, and integrity assessment for the landscape. The property retains integrity, although the eastern portion of the site has been modified to accommodate parking for SMUD's Customer Service Center, which was constructed in the 1990s.

¹ National Park Service, *Preservation Brief 36: Protecting Cultural Landscapes: Planning, Treatment and Management of Historic Landscapes*. Technical brief prepared by Charles A. Birnbaum, ASLA, for the U.S. Department of the Interior.

SMUD's management goals for the historic property are to adaptively use the site for continued SMUD operations, accommodate more sustainable maintenance and management practices, and create a safer and more accessible landscape. According to *The Secretary of the Interior's Standards for the Treatment of Historic Properties*, rehabilitation enables alterations or additions to support the new or continued use of a property, which is consistent with the goal for the stewardship program for the SMUD building and landscape. Therefore, the appropriate treatment approach for the SMUD property is rehabilitation.

This CLR, prepared in tandem with a historic structures report and a landscape inventory report, recommends a treatment program that facilitates the retention and repair of historic features and the adaptive reuse of the historic site, while preserving the historic character for which the property is significant.

Scope of Work and Methodology

The study area for the CLR is the historic SMUD Headquarters property. The scope of the CLR focuses on the steps required to achieve SMUD's preservation goals for the historic landscape, based on best theory and practice for preservation management. The CLR documents existing conditions at the property and compares them to known historic conditions from the period of significance, as identified through archival research and documentation of the landscape's evolution. The evaluation and analysis is grounded in guidance provided by the NRHP and the NRHP nomination for the property. The information developed during the analysis forms the basis for the treatment recommendations for the landscape.

Treatment planning for a designed landscape is based on a thorough documentation of the historic appearance and evolution of the landscape. The evidence for the landscape's appearance and evolution is found in historic maps and plans, historic photographs, or contemporary narrative descriptions by the designer or other observers. Occasionally, these sources are missing or incomplete, or they do not render the detail required to accurately and fully describe the characteristics of the landscape. In addition, historic vegetation is often challenging to identify or date with certainty, or it may not have reached its intended design character until many years after the building's period of significance. In these cases, the CLR focuses on identifying the design's intent and the site's essential historic landscape character, and on promoting treatment strategies that retain this character.

The CLR does not address specific guidance for the historic building, which will be described in detail as part of a historic structures report. The CLR also does not generate specific tree preservation strategies. However, relevant information about the building and vegetation has been incorporated as necessary into the treatment guidance for the historic landscape, using the appropriate data from the historic structures report and findings from the landscape inventory report, which are being completed in tandem with the CLR.

To prepare the CLR according to national standards provided in Chapter 7, “Management of Cultural Landscapes,” of National Park Service (NPS) *Director’s Order 28: Cultural Resource Management Guideline* (Director’s Order 28), project investigators perform the following tasks:

- Conduct archival research at local repositories, collecting and identifying readily available historic drawings, photographs, correspondence, and narrative descriptions of the property.
- Review site documentation.
- Survey the existing conditions of the landscape through photographs and other documentation. The survey focuses on age-eligible and other potentially significant features and characteristics such as spatial organization and land use, topography, views and vistas, vegetation, circulation systems, buildings and structures, and small-scale features. The existing-conditions survey is coordinated with the vegetation (arborist) study to avoid duplication of effort. Updated information about existing conditions is included on the project’s base map.
- Assess the condition of historic features (in coordination with the vegetation report, which identifies the condition of historic trees and shrubs). AECOM bases its condition assessments for key landscape features on the NPS *List of Classified Structures* ratings: good, fair, or poor. The assessments of current conditions for inventoried landscape features are based on observations recorded during the field survey and information provided by SMUD site managers.
- Prepare a narrative description of the historic context for the property and a description of the property’s evolution over time.
- Evaluate the significance of the historic landscape, based on established significance statements in the NRHP nomination and any potential significance of the landscape that was not previously documented.
- Analyze the landscape’s features, with a focus on historic character-defining features. The analysis includes a brief narrative of the character and condition of each historic landscape feature; its construction-of-origin date; the feature’s location; photographs and notes; and applicable significance criteria.
- Generate appropriate treatment guidance, including the treatment concept (coordinated with SMUD stewardship goals), and prepare guidelines and recommendations for landscape management. In addition to Director’s Order 28, the CLR relies on *The Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* and

A Guide to Cultural Landscape Reports: Content, Process, and Techniques as standards and guidelines for landscape treatment.

Site History

This historical overview documents the physical changes in the SMUD Headquarters property over time and the historic context in which these changes took place. The site history also provides the foundation for the evaluation and analysis of the landscape, which in turn support the development of treatment guidelines and recommendations. Historical information about the property's condition and meaning provides the rationale for the future preservation planning activities recommended for this landscape.

Research indicates that the historic context for the SMUD Headquarters property is associated with the following themes:

- Modern Movement: International Style—described in the historic structures report
- Modern Landscape Architecture

Historical Context

Modern Landscape Architecture

Modern landscape design began its slow evolution in the United States in the 1930s, following a long period of design domination by the Beaux Arts and Picturesque traditions. Modern landscape architecture adapted some formal characteristics from these earlier styles, as it did from other design and visual arts such as painting and sculpture. The emerging design idiom was imbued with an ecological dimension, however, which differentiated it from modern architecture and other artistic and design professions. With roots in the French Art Deco Exposition of 1925, modern landscape architecture spread through Europe and beyond as it matured over several decades. Several of its most prominent practitioners in the United States were located in California, where they designed some of the most influential landscapes of the mid-20th century.

Eclectic landscape designers in the U.S. such as Fletcher Steele were drawn to the pioneering amalgamation of fine arts and design on display in the gardens of the 1925 French Art Deco Exposition. The inventive, even radical use of materials in these gardens, such as the concrete trees created by Robert Mallet-Stevens, as well as cubist-inspired prismatic landscape geometries fascinated and influenced Steele, who traveled widely in Europe and likely visited many of the new modern gardens during his French travels in the 1920s.² Steele praised the groundbreaking approaches to modern

² Marc Treib, "Axioms for a Modern Landscape Architecture" in *Modern Landscape Architecture: A Critical Review*, ed. Marc Treib (Cambridge, MA: The MIT Press, 1993), pp. 36–38.

garden design, including the French designers' rejection of the classical axial arrangement of garden elements and their embrace of a new spatial sensibility. Steele explored some of these new ideas in his landscape design practice, particularly in gardens such as Naumkeag. His writings, such as a 1937 essay for *Contemporary Landscape Architecture and Its Sources*, were also influential and found eager audiences at Harvard University, where Walter Gropius taught a program of architecture heavily influenced by international modernism. Christopher Tunnard's article, the 1938 *Gardens in the Modern Landscape*, was another early and important "manifesto" for the modern landscape movement.³

Three Harvard University students in the 1930s—James Rose, Dan Kiley, and Garrett Eckbo—became early spokesmen for the new modern landscape-design idiom. Through their design work and extensive writing for publications such as *Architectural Record* and *Pencil Points*, Rose, Kiley, and Eckbo explored the meaning of modern landscape architecture and helped shape its practice. Their work embraced a new formal landscape vocabulary and spatial sensibility, with a focus on function, modern technologies and materials, and ecological processes.⁴ Their professional work shared a philosophical underpinning with modern architecture and fine arts. They collaborated with architects such as Eero Saarinen, and were profoundly influenced by Mies van der Rohe and Le Corbusier. In gardens such as Kiley's Miller Garden, Eckbo's Menlo Park, and Rose's own private garden, among many others, the principles of modern landscape architecture evolved to include the following elements, as described in Marc Treib's "Axioms for a Modern Landscape Architecture":

1. A denial of historical styles. Instead, landscape expression derives from a rational approach to the conditions created by industrial society, the site, and the program.
2. A concern for space rather than pattern, deriving a model from contemporary architecture.
3. The idea that landscapes are for people. Landscape design ultimately concerns making outdoor spaces for human use.
4. The destruction of the axis. The modern landscape is multifaceted and omnidirectional.
5. Use of plants for their individual qualities as botanical entities and sculpture.

³ Marc Treib, "Axioms for a Modern Landscape Architecture" in *Modern Landscape Architecture: A Critical Review*, ed. Marc Treib (Cambridge, MA: The MIT Press, 1993), pg. 36.

⁴ Marc Treib, "Axioms for a Modern Landscape Architecture" in *Modern Landscape Architecture: A Critical Review*, ed. Marc Treib (Cambridge, MA: The MIT Press, 1993), pp. 40–43.

6. Integration of house and garden, not “house-and-then-a-garden.”⁵

Design of Modern Institutional and Corporate Campus Landscapes

Although site planning for the corporate campus or institution shared the axioms of modern landscape architecture with the residential garden design that preceded it, new challenges for this scale of design emerged in the second half of the 20th century. The post–World War II suburban expansion around the county’s major cities was fueled by urban renewal policies and the financing of the federal highway program, and it “commanded the attention of large developers and all designers,” particularly landscape architects.⁶ The Bauhaus ideal of the collaborative practice provided the foundation for the multi-discipline design teams required to develop and implement designs for new suburban projects.

A new model of corporate landscape-architecture practices also thrived during this time, with many emerging modern landscape architecture firms such as Sasaki, Walker and Associates as well as EDAW (Eckbo, Dean, Austin & Williams). These firms developed expertise to manage the increasing pressure on the landscape to accommodate vehicular traffic and the needs of the modern worker. Landscape architects, along with architects, civil engineers, and site planners, added a new problem-solving mentality to their more artistic design endeavors. Specifically, they aimed to solve the design dilemma for suburban corporate campuses that required large areas for parking, service, and roads along with areas to meet the environmental needs of staff members.

Many corporate office parks of this period sited modern buildings into an abstracted pastoral landscape, intended to provide a simplified “organic” canvas for the buildings and the activities of their inhabitants. Other schemes united the building and landscape with one shared modernist design vocabulary. The Deere & Company World Headquarters in Moline, Illinois (Figure 1), is an example of the former approach. Designed through collaboration between Sasaki Associates and Eero Saarinen Associates between 1959 and 1964, the landscape of this corporate headquarters highlights the naturally rolling topography, biomorphically shaped ponds, curving roads, sculpted lawn areas, large parking areas, and collections of deciduous trees. The parking areas and buildings were aligned in an orthogonal relationship, while the curvilinear geometries of the site interwove the plants, water, and ground with the buildings in a united plan. The two ponds that stepped down from the main administrative buildings preserved the view of the architecture in an otherwise wooded landscape.

⁵ Marc Treib, “Axioms for a Modern Landscape Architecture” in *Modern Landscape Architecture: A Critical Review*, ed. Marc Treib (Cambridge, MA: The MIT Press, 1993), pp. 53–59.

⁶ Peter Walker, “The Practice of Landscape Architecture in the Postwar United States” in *Modern Landscape Architecture: A Critical View*. ed. Marc Treib (Cambridge, MA: The MIT Press, 1993), pg. 252.



Source: The Cultural Landscape Foundation

Figure 1. Deere & Company Headquarters, Moline, Illinois. Landscape design by Sasaki Associates.

The General Motors Technical Center in Warren, Michigan (Figure 2), is an example of the latter approach. The architect, also Eero Saarinen, worked with Thomas Church (as discussed in more detail below) to create the technical campus between 1949 and 1955. The perfectly flat landscape facilitated a clean geometrical design arranged in gridded spaces across the rectangular parcel. Miles of roads and parking traverse the site, which also includes numerous low buildings and a 22-acre reflecting pool. Dubbed an “industrial Versailles,” the assemblage of buildings and landscape spaces was a modern masterpiece that reflected the deliberate and systematic approach to engineering espoused by General Motors. Its unified geometry and interlocking landscape spaces were reinforced with linear tree plantings and evergreen hedges. Church and Saarinen designed wide views across the landscape that were framed by perimeter tree plantings.



Sources: Bing (left) and The Cultural Landscape Foundation (right)

Figure 2. General Motors Technical Center in Warren, Michigan. Landscape design by Thomas Church.

Modern Landscape Design in California

California landscape architects were early adopters of the new modern idiom. In contrast with the Spanish colonial revival architecture and lavish ornamental gardens that found their heyday in California during the 1920s, the new modern landscape seemed to be a creative yet pragmatic approach to the new economic and social circumstances of the post-Depression period.⁷ Modern landscape architects rejected the historical forms of earlier designs and espoused the spatial sensibilities and contemporary malleable materials (such as plastic, concrete, aluminum, and steel) that embodied the new approach to design. With its mild climate and strong tradition of outdoor living, California became a powerful center for the nascent modern landscape profession.

Strongly rooted in residential garden design, the practice of modern California landscape architecture was heavily influenced by the careers of Florence Yoch and Thomas Church.^{8,9} Florence Yoch grew up in California and studied at the University of California, Berkeley, later completing a landscape gardening degree at the University of Illinois. Her practice spanned half a century and well over 200 projects. Major commissions included residential and other private projects, such as Il Brolino in Montecito, and several Hollywood movie sets. Many of these were designed in an eclectic style that borrowed from Italianate, Mission Revival, and Spanish Colonial Revival idioms. Over time, and particularly after World War II, Yoch's design sensibilities migrated from her earlier eclecticism toward work that demonstrated both greater abstraction and naturalism. A spare, restrained approach to design characterized her later work, undertaken with her professional and personal partner, Lucille Council. One of Yoch's transitional gardens is the landscape she designed for George Cukor, a film director who lived in the Hollywood Hills. The Cukor garden displays a new spatial sensibility and pared-down design vocabulary that hints at its Italian precedents but abstracts them. The garden design focused on a tightly interwoven relationship between house and landscape, with garden rooms that took advantage of the mild climate for outdoor living.

Like Yoch, Thomas Church attended the University of California, Berkeley; he later graduated from Harvard University's Graduate School of Design. Church's education and European travels influenced an early interest in Beaux Arts design, but he quickly became an avid experimenter with modern forms and materials. He produced nearly 2,000 projects over his career, including an early work of abstract modernism; a swimming pool garden in the San Francisco *Exhibition of Mural Conceptualism* of 1938; and his later, most famous work, the Donnell Garden, built in 1948 (Figure 3).

⁷ David Streatfield, *California Gardens: Creating a New Eden* (New York: Abbeville Press, 1994) pg. 190.

⁸ David Streatfield, *California Gardens: Creating a New Eden* (New York: Abbeville Press, 1994).

⁹ Marc Treib, *Thomas Church, Garrett Eckbo, and the Postwar California Garden*. 2014. Online document, <http://www.nps.gov/nr/publications/bulletins/suburbs/treib.pdf>, accessed in July 2014.



Source: The Cultural Landscape Foundation.

Figure 3. The Donnell Garden, Sonoma, California. Landscape design by Thomas Church.

Like Garrett Eckbo, who was Church's employee for a time and another seminal California landscape architect, Church was also a writer. He authored two books on residential garden design, *Gardens are for People* and *Your Private World*, and articles for *House Beautiful* and the *San Francisco Chronicle*. Church's prolific office was actually quite small, yet he hired and trained many of the landscape architects who would eventually dominate the profession in California: Lawrence Halprin, Douglas Baylis, Robert Royston, George Rockrise, Theodore Osmundson, June Meehan, Ralph Jones, and Gerald Henderson. The work of Church and those he mentored focused on gardens that united indoor and outdoor spaces. These gardens used biomorphic forms, new materials, and plants that were both sculptural and either native to California—like the superb California live oak—or new to the nursery trade, like hibiscus, bougainvillea, and bromeliads.

Church's designs were based on four principles that resonated through his project work and throughout California landscape design: unity, function, simplicity, and scale. His compositions were restrained, yet dynamic. As Church said, "the lines of the modern

garden need to be moving and flowing so that it is pleasing when seen from anywhere inside or out.”¹⁰

The strength of California’s landscape design tradition during the modern period emanated from residential commissions. Supported by the influential postwar program of Case Study Houses sponsored by *Arts & Architecture Magazine* between 1945 and 1966, talented designers focused their attention on the spatial structure of the dwelling and garden.¹¹ The intent of the Case Study House program was to enable designers to build low-cost houses for real clients and to experiment with industrial materials and construction systems.¹² Among the other examples of this experimental residential architecture and landscape architecture, which was intended to promote modern design and materials, is the ALCOA Forecast garden in Los Angeles, 1952–1966. This garden was designed by Garrett Eckbo after the Aluminum Company of America asked Eckbo to create a garden using large amounts of aluminum to publicize its products. Joseph Eichler’s program of suburban house construction during the same time period similarly buoyed enthusiasm for modern design in California. This popularization of modern landscape architecture through a prolific practice and exposure through the press expanded the forms, materials, and methods of modern design beyond the residential garden and into the public realm.

The Modern Corporate Campus in California

California landscape designers created numerous campuses (including corporate campuses) and corporate headquarters during the modern period from the 1930s through the 1960s. Many of these projects represent a trend toward decentralization away from the state’s urban centers onto more solitary corporate or commercial properties, with the building often isolated as an object in a designed landscape. Frequently, the landscape provided equal space for public access, the working environment, and vehicular facilities such as parking.¹³ The Industrial Indemnity Company headquarters in Fresno, with landscape designed by Garrett Eckbo, is an example of this trend (Figure 4), with a low building set on large swathes of lawn punctuated by curving planted beds containing shrubs and specimen trees.

¹⁰ David Streatfield, *California Gardens: Creating a New Eden* (New York: Abbeville Press, 1994), pg. 196.

¹¹ Marc Treib, “Axioms for a Modern Landscape Architecture” in *Modern Landscape Architecture: A Critical Review*, ed. Marc Treib (Cambridge, MA: The MIT Press, 1993), pg. 59.

¹² Elizabeth Smith, *Case Study Houses* (Los Angeles: Taschen, 2006) pp. 6–7.

¹³ City of Fresno Planning and Development Department, *City of Fresno Mid Century Modernism Historic Context*, 2008, prepared by Planning Resource Associates, Inc., pg. 43.



Source: City of Fresno.

Figure 4. The Industrial Indemnity Company in Fresno, California. Landscape design by Garrett Eckbo.

Two of Thomas Church's important corporate commissions are the Stuart Building (Stuart Pharmaceutical Company Office and Plant) in Pasadena and the Sunset Magazine Headquarters in Menlo Park. Built on almost 6 acres, the Stuart Building (Figure 5) was designed by Edward Durrell Stone and constructed between 1956 and 1958. Church's landscape design includes a planted lawn that separates the white, low horizontal building from the street. The landscape includes a patterned arcade cantilevered over a pool, a rear courtyard, raised planting beds, and concrete walks. Typical of many modern campuses, the Stuart Building and its landscape merge at an artistically ambiguous indoor/outdoor space, creating an overlapping seam in the site with layers of plantings, columns, roof, walkways, and water.



Source: The Cultural Landscape Foundation.

Figure 5. Stuart Building in Pasadena, California. Landscape design by Thomas Church.

The Sunset Magazine Headquarters, constructed in 1951 (Figure 6), is located on a more suburban site with substantial lawn areas that highlight specimen plantings and a covered plaza/walkway along the perimeter of the building. The plantings, especially the specimen trees, were placed so that their sculptural qualities were evident.



Source: The Cultural Landscape Foundation.

Figure 6. Sunset Magazine Headquarters, Menlo Park, California. Landscape designed by Thomas Church.

Other examples of modern landscape design for public facilities include educational campuses in California, many of which experienced an architectural boom during the post–World War II period. The University of California, Berkeley, and the University of California, Davis, were both laboratories for mid-century design and introduced a new layer of modern landscape architecture through project work by Church, Halprin, Eckbo, Theodore Osmundson, Ralph Jones, and others. Hallmarks of the campus design (see example in Figure 7) included an integration of indoor and outdoor spaces, layered transitions between these spaces, the use of curving berms of lawn to define spaces, plants used for their sculptural qualities, the use of modern materials such as concrete, sculpted landforms, and the use of amoeba-like or curvilinear shapes in the landscape.



Source: University of California, Davis 2009.

Figure 7. Everson Hall, University of California, Davis. Landscape design by Lawrence Halprin.

The Naval Postgraduate School, built between 1952 and 1954 in Monterey (Figure 8), provides a similar example of modern buildings in a campus landscape. The school's General Classroom and Office Building, designed by SOM (Skidmore Owings & Merrill), includes horizontal layers of concrete and glass in an asymmetrical pattern. The landscape, with both rectangular and curvilinear lawn and planting spaces and large specimen trees, provides an abstract wooded setting for the school and allows natural light into the buildings.¹⁴

Some modern institutional campus landscapes focused heavily on accommodating pedestrians. For example, Orange Coast College, designed by Richard Neutra and Robert Evans Alexander in collaboration with Garrett Eckbo during his tenure with Eckbo, Royston & Williams (Figure 9), was a pedestrian-only campus that provided an intertwining, layered connection between modern horizontal buildings and the surrounding landscape of lawn, plantings, and specimen trees.¹⁵ Covered walkways and louvered paneled walls create transitional spaces typical of the modern period.

Designers

Sacramento architects Dreyfuss & Blackford and Sacramento artist Wayne Thiebaud collaborated on the design of the SMUD Headquarters Building. They are described in greater detail in the historic structures report.

¹⁴ U.S. Department of Defense, Resource Management Program, *Historic Context for Evaluating Mid-Century Modern Military Buildings*, 2012, pg. 41.

¹⁵ The Cultural Landscape Foundation, <http://tclf.org/landscapes/orange-coast-college>.



Source: DoD 2012

Figure 8. Naval Postgraduate School in Monterey.



Source: The Cultural Landscape Foundation 2014

Figure 9. Orange Coast College, Costa Mesa, California. Landscape design by Garrett Eckbo.

Ralph Jones was the landscape architect for the SMUD Headquarters property. Leonard Blackford worked in Jones's office while he was a student. Before opening his own firm, Jones was employed by Thomas Church and by the city of Alameda as a landscape architect. In 1952, Jones designed the landscape for the University of California, Davis's Creuss Hall, which he later expanded in 1966. After his work on the SMUD Headquarters, Jones remained in private practice, designing parks for the city of Pleasanton and a 6-mile stretch of the Bay Area Rapid Transit's right-of-way through Hayward.¹⁶

SMUD Corporate History

SMUD was effectively created in 1923 by popular vote of the citizens of Sacramento. In 1921, California Governor William D. Stephens signed the Municipal Utility District Act of 1921 into law, which allowed municipalities to join to form public utility districts. This act, coupled with the Federal Power Act of 1920, further enhanced the opportunity for SMUD's creation.¹⁷

When SMUD was formed, its service area encompassed the city of Sacramento and the city of North Sacramento (now part of Sacramento), an area of approximately 75 square miles. SMUD immediately requested cost estimates for the purchase of the existing electrical systems in the areas that were owned by Pacific Gas and Electric Company (PG&E) and Great Western Power Company (Great Western Power). In 1934, Sacramento voters approved a \$12 million bond for SMUD to establish a publicly operated electric utility system.¹⁸ The cost to build a new distribution system was deemed to be too high, so SMUD proceeded with efforts to purchase PG&E's local system through condemnation.

The approval of the bond and effort to purchase PG&E's utility system in SMUD's service area sparked 23 years of lawsuits between SMUD and PG&E.¹⁹ During that period, SMUD was forced to purchase electricity from other companies and agencies because it did not produce any power on its own. This was the direct result of the prohibitively high cost of building its own system.²⁰ Litigation between the two companies ended in 1946 after the California Supreme Court denied PG&E's petition to

¹⁶ Carol Roland-Nawi, National Register of Historic Places Nomination Form 10-900-a, 2010, pp. 8–13; Sal M. Genito, III, *Landscape Design Standards, University of California, Davis* (revised September 2005), pp. 34–35; *The Argus*, "BART Official Plans WPA Landscaping Cooperation," June 25, 1969.

¹⁷ Ruther Sutherland Ward, ...*For the People: The Story of the Sacramento Municipal Utility District* (Sacramento: Sacramento Municipal Utility District, 1973), pp. 10 and 13.

¹⁸ Ruther Sutherland Ward, ...*For the People: The Story of the Sacramento Municipal Utility District* (Sacramento: Sacramento Municipal Utility District, 1973), pg. 32.

¹⁹ Ruther Sutherland Ward, ...*For the People: The Story of the Sacramento Municipal Utility District* (Sacramento: Sacramento Municipal Utility District, 1973), pg. 37.

²⁰ Sacramento Municipal Utility District (SMUD), 2012a, "The History of SMUD's UARP," Electronic document, <http://hydrolicensing.smud.org/project/system.pdf>, accessed August 2012.

appeal a decision by the Sacramento Superior Court, which had ruled against PG&E. That court decision forced PG&E to finally sell its distribution system to SMUD.²¹

The distribution system that SMUD inherited from PG&E was antiquated and had not been well maintained by PG&E during the litigious years in the early 20th century. Within the first 10 years of operation, SMUD increased the number of substations and improved the voltage capacity on its lines so that it could transmit more power along longer distances.²²

Despite the expansion and upgrades, the tremendous population boom in the Sacramento region after World War II strained SMUD's system. SMUD found itself at the limits of its bonded capacity and did not want to risk a second bond election. One method of financing the system expansion involved applying for funds from the Rural Electrification Administration, a federal agency created to provide funding for expanding electrical systems into unincorporated areas of a state. Between 1948 and 1959, SMUD borrowed \$23,239,000 in Rural Electrification Administration funds to expand electrical service into the agricultural, unincorporated communities of Sacramento County.²³

As part of its expansion programs, SMUD entered into a contract with the U.S. Bureau of Reclamation in 1954 to receive power from Reclamation's Central Valley Project, a federal project that included Shasta Dam, for a maximum of 290,000 kilowatts for a period not to exceed 40 years. This power was delivered using PG&E lines until SMUD could provide its own direct lines to the Central Valley Project.²⁴ By the early 1960s, SMUD was serving 170,000 customers in Sacramento County.²⁵

In 1969, SMUD started construction on its first nuclear power plant, Rancho Seco, in southeastern Sacramento County.²⁶ The plant became operational in 1974, but it suffered from continual challenges, including a 27-month outage in the 1980s. In 1989, voters voted to close the plant, and SMUD formally shut down the power plant on June 7 of that year. In the 1990s, SMUD diversified its power sources, and by the end of the 20th century, it was serving more than 500,000 customers.²⁷ SMUD continues to enhance its services and explores new options for energy sources for the greater Sacramento region.

²¹ Ruther Sutherland Ward, ...*For the People: The Story of the Sacramento Municipal Utility District* (Sacramento: Sacramento Municipal Utility District, 1973), pp. 44–47.

²² Ruther Sutherland Ward, ...*For the People: The Story of the Sacramento Municipal Utility District* (Sacramento: Sacramento Municipal Utility District, 1973), pp. 49 and 61.

²³ Ruther Sutherland Ward, ...*For the People: The Story of the Sacramento Municipal Utility District* (Sacramento: Sacramento Municipal Utility District, 1973), pp. 51–52.

²⁴ Ruther Sutherland Ward, ...*For the People: The Story of the Sacramento Municipal Utility District* (Sacramento: Sacramento Municipal Utility District, 1973), pp. 56–57.

²⁵ SMUD, 2012b, "History," Available: <https://www.smud.org/en/about-smud/company-information/history/>, accessed August 2012.

²⁶ Ruther Sutherland Ward, ...*For the People: The Story of the Sacramento Municipal Utility District* (Sacramento: Sacramento Municipal Utility District, 1973), pp. 78–79.

²⁷ SMUD, 2012b, "History," Available: <https://www.smud.org/en/about-smud/company-information/history/>, accessed August 2012.

Evolution of the Landscape at the SMUD Headquarters Property

This CLR outlines the physical development of the SMUD property, beginning with a brief description of the site's prehistory and Sacramento history, and followed by a more detailed description of the design and development of the current site conditions.

Prehistory

Sacramento is located in the southern Sacramento Valley of California, in the Central Valley. This region has five defined periods in its prehistoric chronology: Paleo-Indian; Lower, Middle, and Upper Archaic; and Emergent.²⁸ Material culture and climatic changes define these periods.

The Paleo-Indian Period (11,550 to 8,550 Before Common Era [BCE]) generated the earliest prehistoric archaeological sites, although active natural processes have obliterated all but a few. The archaeological evidence suggests that early inhabitants moved throughout the valley hunting large game and gathering edible plants. Evidence of occupation at this time consists of a single possible diagnostic projectile point reported near Thomas Creek.²⁹

In the Sacramento Valley, an isolated artifact recovered west of Orland represents the Lower Archaic Period (8,550–5,550 BCE).³⁰

A drier, warmer climate characterized the Middle Archaic Period (5,550–550 BCE). Settlement patterns and subsistence activities shifted with the desiccation of lakes and other water bodies. Middle Archaic archaeological sites in the Sacramento Valley are rare and are found in buried contexts. The latter portions of the Middle Archaic are better represented, with settlements that contained tools, trade objects, and evidence of longer-term occupation of the sites. Hunting and gathering was focused on game, fish, and nuts, especially acorns and pine nuts. Beads, ornaments, and obsidian provide evidence of trade.³¹

The Upper Archaic Period (550 BCE–1,100 Common Era [CE]) had a cooler and wetter climate, resulting in the return of water bodies that had dried in the intervening periods. Sociopolitical conditions became more complex during the Upper Archaic Period;

²⁸ T. L. Jones and K. A. Klar (eds.), *California Prehistory: Colonization, Culture, and Complexity* (Lanham, MD: Altamira Press, 2007).

²⁹ J. S. Rosenthal, G. C. White, and M. Q. Sutton, "The Central Valley: A View from the Catbird's Seat," in *California Prehistory: Colonization, Culture, and Complexity*, eds. T. L. Jones and K. A. Klar (Lanham, MD: Altamira Press, 2007), pp. 147–164.

³⁰ J. S. Rosenthal, G. C. White, and M. Q. Sutton, "The Central Valley: A View from the Catbird's Seat," in *California Prehistory: Colonization, Culture, and Complexity*, eds. T. L. Jones and K. A. Klar (Lanham, MD: Altamira Press, 2007), pp. 147–164.

³¹ J. S. Rosenthal, G. C. White, and M. Q. Sutton, "The Central Valley: A View from the Catbird's Seat," in *California Prehistory: Colonization, Culture, and Complexity*, eds. T. L. Jones and K. A. Klar (Lanham, MD: Altamira Press, 2007), pp. 147–164.

evidence of distinctive entities and material cultures is present throughout the Valley. People processed diverse foods and lived in communal villages.³² Village settlements in the Sacramento Valley were larger and remained occupied for many months out of the year.

The Emergent Occupation (1,000 CE–Historic) was cool and dry, with local floods and droughts. Archaic Period technology began to disappear and was replaced by the bow and arrow; social systems and practices became more complex and varied, as seen in burial patterns and domestic forms. Large settlements were present along the rivers of the Sacramento Valley. Those who lived in the valley continued to hunt game, fish, and process nuts and other plants with a mortar and pestle. Monetary systems using manufactured beads were in place throughout the trade networks. The Nisenan were living in the immediate area when the first Europeans arrived. Before European settlement, riparian forest, swamp, and open grassland were the primary ecosystems in the Central Valley. The forests bordered waterways and included oaks, willows, alder, and many other species, which supported a variety of wildlife including jackrabbits, mule deer, raccoons, and bear among many others.

Early Sacramento History (1840s–1940s)

John Sutter arrived in California and built a fort, which he named New Helvetia, through the support of a Mexican land grant around 1840 near the confluence of the Sacramento and American Rivers.³³ New Helvetia served as a trading colony and stockade, and was an important stopping point for immigrants traveling on the overland trails.³⁴ Sutter fell into debt and transferred his property to his son, who took 4 square miles of Sutter's land and subdivided it. John Sutter Jr. began selling lots in January 1849. That same year gold was discovered in California and the community, named Sacramento after the river that ran beside it, incorporated and served as an important gateway to California's gold fields. Although the town was challenged by a cholera epidemic in 1850, severe floods in 1850 and 1852–53, and a fire in 1852, it eventually became the capital of California in 1854.³⁵

Massive floods in 1861 and 1862 forced Sacramento to build stronger levees, alter the course of the American River, and raise and grade the streets. Thousands of cubic yards of earth were carted in to raise the streets and sidewalks throughout the city blocks—often by as much as a full building floor. The project was complete by 1873. The Central Pacific Railroad of California was formed in 1861, and groundbreaking

³² J. S. Rosenthal, G. C. White, and M. Q. Sutton, "The Central Valley: A View from the Catbird's Seat," in *California Prehistory: Colonization, Culture, and Complexity*, eds. T. L. Jones and K. A. Klar (Lanham, MD: Altamira Press, 2007), pp. 147–164.

³³ Joseph A. McGowan and Terry R. Willis, *Sacramento: Heart of the Golden State* (Woodland Hills, CA: Windsor Publications, Inc., 1983), pg. 11.

³⁴ Mildred Brooke Hoover and Douglas E. Kyle, *Historic Spots in California* (Stanford, CA: Stanford University Press, 1990), pg. 287.

³⁵ Joseph A. McGowan and Terry R. Willis, *Sacramento: Heart of the Golden State* (Woodland Hills, CA: Windsor Publications, Inc., 1983), pp. 35–37.

commenced in 1863 at Front and K Streets.³⁶ The railroad had a tremendous impact on Sacramento and enabled easier transport of materials and goods in and out of the growing city.

An 1890 map of Sacramento (Figure 10) shows the land southeast of the central city area (the future SMUD Headquarters area) as open and flat, with rail lines intersecting nearby at the community of Brighton. Trees were lightly scattered across the landscape, which was subdivided into regular gridded blocks as far as Stockton Road. The rail line along R Street that extends east toward the current SMUD property appeared to be in place at that time.



Source: Library of Congress 1890

Figure 10. Bird's-eye view of Sacramento, 1890, showing the future location of the SMUD Headquarters property.

Outside the city, agriculture eventually supplanted gold as the main industry in the area. Fruit became a major cash crop and a land boom drew immigrants in large numbers in the late 19th century. Large Mexican land grants around the city were eventually sold to the public for county developments and new areas around the city were annexed in the early 1900s. Accessible by the automobile, which was introduced to Sacramento in 1900, the growing city expanded in its population and economy. Suburbs and planned

³⁶ Joseph A. McGowan and Terry R. Willis, *Sacramento: Heart of the Golden State* (Woodland Hills, CA: Windsor Publications, Inc., 1983), pg. 59.

communities that harkened to Sacramento’s agricultural economy grew around the city, such as Orangevale, Citrus Heights, Fair Oaks, and Rancho Del Paso.³⁷

Sacramento’s growth required an expanded infrastructure system. Paved roads eventually connected Sacramento with other regional cities such as San Francisco and Stockton and a bus system opened in 1910. Public attention to utilities eventually resulted in the creation of a filtered tap water system and the creation of SMUD in 1923.

A 1930s map of Sacramento (Figure 11) shows the future SMUD Headquarters property in the context of the growing subdivisions amidst the former farmsteads. Tucked between the railroad tracks, the “Monte Vista” and “Brighton Court” subdivisions, and south of Folsom Boulevard, the future SMUD Headquarters property appears open and devoid of any development.



Source: David Rumsey Map Collection 1938

Figure 11. Map of Sacramento ca. 1938, showing the future location of the SMUD Headquarters property.

³⁷ Paul P. Sandul, “Both ‘Country Town’ and ‘Bustling Metropolis’: How Boosterism, Suburbs, and Narrative Helped Shape Sacramento’s Identity and Environmental Sensibilities” in *River City and Valley Life: An Environmental History of the Sacramento Region*, eds. Christopher Casteneda and Lee Simpson (Pittsburgh, PA: University of Pittsburgh Press, 2013), pg. 166.

During the early 1930s, the Great Depression affected Sacramento. Transient encampments could be found along both the Sacramento and American Rivers and suburban residential development practically ended. Unemployment affected all of Sacramento's two major industries: agriculture and the railroad.³⁸ Between 1933 and 1939, the federal Public Works Administration and Works Progress Administration provided relief for workers through projects to construct new buildings, including schools and improve infrastructure. Before the United States entered World War II in 1941, Mather Field, a World War I air base dormant since its closure in the 1920s, was reactivated in 1938. McClellan Air Force Base also operated before World War II, but during the war it expanded and served as a training, repair, and refitting base for aircraft being readied for combat and those that were severely damaged in combat.³⁹

Sacramento in the Postwar Period (1945–Present)

Sacramento's population increased dramatically after World War II. Developers enacted large building programs in the north and east areas outside the city limits and subdivisions, shopping centers, and grocery stores were constructed. By the mid-1950s, the SMUD Headquarters property was an open, flat landscape surrounded by a fully gridded network of residential properties to the south and a corridor of larger warehouse and commercial buildings along the railroad tracks and Folsom Boulevard. The large building west of the SMUD Headquarters property had been constructed by 1956. Roads were also improved and widened to four lanes. By 1963, Sacramento could be approached from every direction via a freeway.⁴⁰

As the suburban areas of Sacramento expanded, the city's downtown was rapidly declining. In 1950, the city established the Sacramento Redevelopment Agency, which started proposing redevelopment plans for Sacramento's downtown. By 1961, 15 blocks of dilapidated buildings were demolished. Government office buildings were constructed on M Street (renamed Capitol Mall in downtown) in the early 1950s. State government buildings continued to be built in downtown and on Capitol Mall through the late 1970s.⁴¹

³⁸ Gray Brechin and Lee M. A. Simpson, "Unseen Investment: New Deal Sacramento," in *River City and Valley Life: An Environmental History of the Sacramento Region*, eds. Christopher Casteneda and Lee Simpson (Pittsburgh, PA: University of Pittsburgh Press, 2013), pp. 186–187.

³⁹ Rand Herbert, "The Legacy of War: Sacramento's Military Bases," in *River City and Valley Life: An Environmental History of the Sacramento Region*, eds. Christopher Casteneda and Lee Simpson (Pittsburgh, PA: University of Pittsburgh Press, 2013), pg. 208; Joseph A. McGowan and Terry R. Willis, *Sacramento: Heart of the Golden State* (Woodland Hills, CA: Windsor Publications, Inc., 1983), pg. 85.

⁴⁰ Joseph A. McGowan and Terry R. Willis, *Sacramento: Heart of the Golden State* (Woodland Hills, CA: Windsor Publications, Inc., 1983), pp. 88–89.

⁴¹ Joseph A. McGowan and Terry R. Willis, *Sacramento: Heart of the Golden State* (Woodland Hills, CA: Windsor Publications, Inc., 1983), pp. 94–101.

Sacramento grew again in the 21st century, attracting new residents and businesses. By 2010, Sacramento encompassed more than 92 square miles and had more than 466,000 residents.⁴²

SMUD Headquarters Site (1959–Present)

In 1955, SMUD hired the New York consulting firm Ebasco Services, Inc. (Ebasco) to conduct an extensive study of SMUD's space requirements for its present use and future growth. SMUD had an operations yard at 59th and R Streets and an office at 21st and K Streets, but Ebasco recommended consolidating SMUD facilities into one location. Ebasco estimated that 35 acres of land would be needed for both the operations yard and an office building.⁴³ In 1956, SMUD hired the local architectural firm Dreyfuss & Blackford. SMUD directed the architects to visit new corporate campuses constructed in the Midwest and on the East Coast, particularly works by Mies Van der Rohe, Victor Gruen, and Skidmore, Owings & Merrill.⁴⁴ In December 1956, SMUD purchased the land for the site of the new campus. It took Dreyfuss & Blackford 11 months to design the building. The first concrete footings were laid on June 5, 1958.⁴⁵

In 1959, SMUD constructed its Headquarters Building on the parallelogram-shaped property between S Street and the railroad tracks. The Headquarters Building was aligned to face south, with a bar-shaped building wing stretching east to west and a second square wing connected to the north (Figure 12). The landscape included a gently curving vehicular entrance way with diagonal parking that provided access to the site from S Street. The property was located across the road from a public open space or park associated with the residential subdivision to the south. A second access road connected to S Street east of the main public entrance to the headquarters and looped around behind the building along the railroad tracks. This access road terminated at 61st Street.

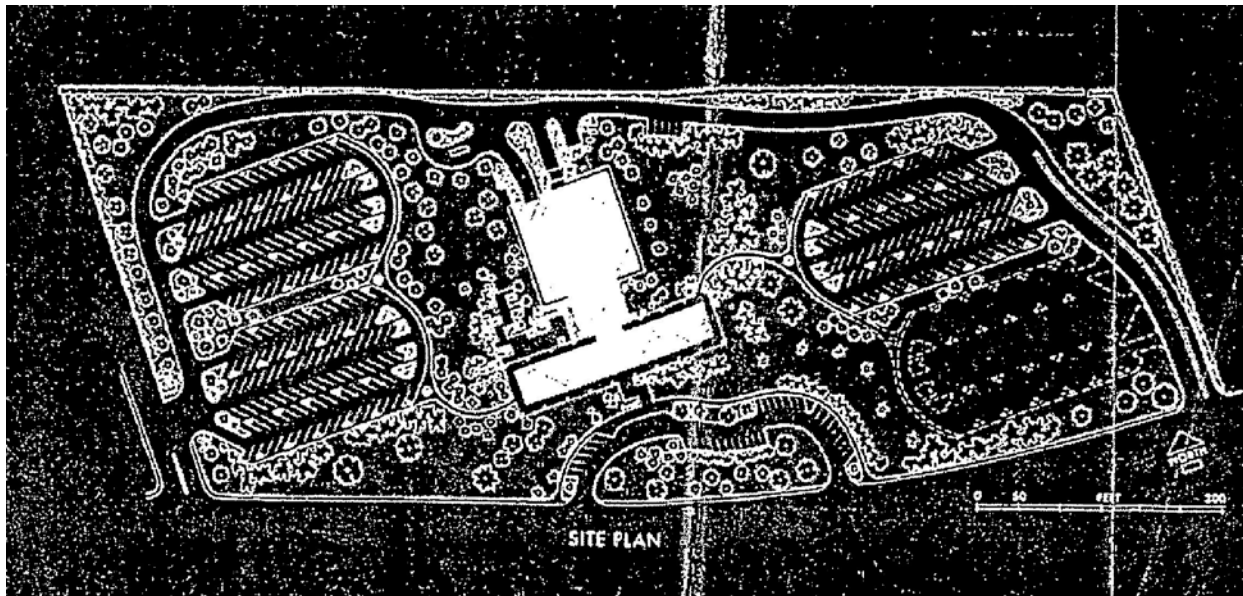
The loop access road provided a vehicular connection to the site's two parking areas: one parking area east of the building and one double-size parking area to the west (Figure 13). The east parking area contained six bays of parking with three aisles; trees were interspersed within the parking area. A gently curving sidewalk connected the east parking area to the south wing of the SMUD Headquarters Building. South of the east parking area, another parking area of similar size and shape was planned, and trees were planted in anticipation of its construction. The parking area was aligned with the east-west axis of the south wing. The western parking area was almost a mirror image of the eastern parking area, although it was fully built out with 12 bays of parking and six aisles, and a central planted bed separating the two areas.

⁴² U.S. Census Bureau, 2014, "State and County Quick Facts." Available: <http://quickfacts.census.gov/qfd/states/06/0664000.html>, accessed in September 2014.

⁴³ "SMUD Okehs \$3,000,000 Building Plans," *The Sacramento Bee*, February 28, 1957; SMUD, memorandum to Paul Shaad regarding office building dates, 1960.

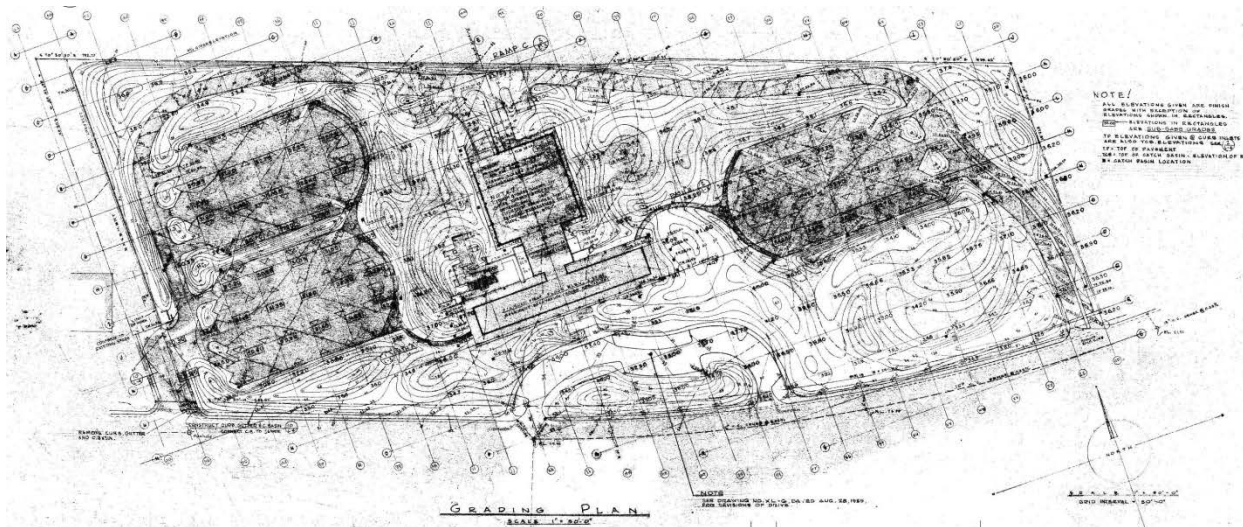
⁴⁴ Albert Dreyfuss, letter to Paul Shaad, Assistant General Manager, SMUD, 1956.

⁴⁵ H. W. Warmoth, memorandum to W. J. Nolan regarding progress payment to Dreyfuss & Blackford, Architects, 1957; SMUD, memorandum to Paul Shaad, 1960.



Source: Dreyfuss & Blackford

Figure 12. 1959 site plan for the SMUD Headquarters property.



Source: Dreyfuss & Blackford

Figure 13. 1959 grading plan for the SMUD Headquarters property.

Among the distinguishing characteristics of the site design were the gently molded, swirl-shaped earthen berms located throughout the landscape. These berms provided visual privacy for the site from the surrounding streets, provided modest separation between the parking areas and the building, and shaped circulation systems. The organic, curving character of the berms created a deliberately artful, “natural” context for the rigorously geometrical building.

Vegetation and boulders supplemented the abstracted pastoral character created by the designed topography. The trees and shrubs were placed in clusters throughout the lawn-covered ground plane, around the perimeter of the site, and in rows throughout the parking areas. The boulders ranged in size, averaging 2–10 feet in diameter, and featured an uncut natural character. With their massive size, the boulders particularly dominated the cafeteria terrace, where they were interspersed with concrete paving and planting areas.

The cafeteria terrace was a critical design feature intended to provide SMUD workers with direct access to the outdoors from the building. The design for the cafeteria represents a departure from the curvilinear geometry of the rest of the landscape, and instead reflects the orthogonal organization of materials and spaces of the building. The cafeteria terrace and the stepped concrete terraces and planting areas intermingled as they advanced up the hill northwest of the south wing. A notable feature of the cafeteria terrace was the inclusion of custom-designed benches and “table-benches” that were placed on the individual terrace levels. Made of redwood with precast exposed aggregate concrete bases, the site furnishings provided SMUD employees with a place to sit outside for meals. The lowest terrace also included a pool along the eastern wall.

Lights lined the pathways throughout the site, and irrigation was installed in lawn areas and in planting beds.

The landscape’s design was documented in detail in 1961 in as-built drawings (Appendix A) that show the implemented landscape and plans for expansion. Expansion plans included adding the southeastern parking area. Appendix B presents photographs illustrating the historic condition of the landscape.

In 1972, the section of U.S. Highway 50 (U.S. 50) was constructed south of the SMUD property. This intervention separated the SMUD property from its residential neighbors to the south, and likely had a large impact on the atmosphere of the site. Noise from passing cars likely was noticeable throughout the SMUD property, and the view to and from the building was altered.

Around 1980, the second eastern parking area was constructed based on the design from 1959. The eastern parking area was revised again in the 1990s when SMUD built the new Customer Service Center to the east. This modification resulted in the removal of the two designed eastern parking areas that reflected the original Ralph Jones plan. The new design for the site access and parking areas maintained the approximate location of the entrance road, but adapted the road’s alignment to accommodate the altered parking configuration. (See Figures 12 and 13 and Figure 14, which respectively illustrate the historic and current conditions.) The connection from the altered eastern parking area to the building provided new paved areas, seating, lighting, and planting areas.



Source: AECOM

Figure 14. Existing conditions.

Other changes to the original design include new security features on the south side of the property: new boulders (smaller than the original historic boulders), metal bollards, concrete planters, a flagpole, additional pedestrian paving, a site sign, new plantings, and above-grade mechanical equipment. Some individual trees and shrubs have been replaced or added over time, and three new paths have been added, but the dates of their construction are uncertain.

Existing Conditions

The SMUD Headquarters Building has occupied the same location and has been used for the same purpose since its construction in 1959. Although the building has changed very little, the landscape has matured over the decades. Portions of the landscape have undergone design revision as well. The existing-conditions documentation that follows will provide a record of the current configuration, materials, qualities, and character of the property. These conditions are documented further with photographs below and in Appendix C, which includes representative photographs taken during field investigations on August 25, 2014.

Spatial Organization and Land Use

The SMUD Headquarters Building serves as the public electric utility headquarters. The Headquarters Building is home to the SMUD Board of Directors, and the newer Customer Service Center to the east provides a location for more public interface with the utility company. Public and employee parking areas are provided at the entrance to the Headquarters Building, in the east and west parking areas, and along the loop road.

The SMUD Headquarters property is enclosed by S Street and U.S. 50 to the south, the light rail tracks to the north, and 61st Street and 65th Street to the west and east, respectively. The adjacent neighborhoods have residential, commercial, and industrial uses, although many of the immediately adjacent facilities are SMUD-owned parking areas and buildings. Located as it is on a flat valley floor, the general environs of the SMUD Headquarters property are quite open, with little to create enclosure besides low buildings and trees.

The SMUD Headquarters Building dominates the center of the wooded property and is the feature around which the landscape revolves. Aligned along the east/west axis, the building faces S Street, but is separated from the street by a low berm of lawn, trees, boulders, and other low plantings. The southern building façade of steel, concrete, and louvered windows is set on a plinth with a columned loggia that is now mostly obscured by mature deciduous and evergreen trees (Figure 15). A small parking and entrance plaza separates the building from the road.



Source: AECOM

Figure 15. Southern entrance plaza.

To the east and west of the SMUD Headquarters Building are sheltered parking areas, each enclosed by a thick band of trees. The raised and undulating topography along the perimeter of the property increases the spatial separation between the interior parking areas and the street and sidewalk along its edges. The parking areas are densely enclosed by trees and shrubs. The western parking area is further subdivided by tree and shrub plantings along the parking bays and is separated from the outside edge of the property by a thick, almost impenetrable hedge of trimmed trees and shrubs. The eastern parking area has a different configuration than the western parking area, and is elongated in a curving alignment, rather than consolidated in one flat area.

The cafeteria terrace is enclosed by low walls, sloping topography, and planters, and serves as a transitional space between the Headquarters Building and the tree-covered landscape beyond. It is located at the northwest juncture between the two building wings and is sheltered in a low “bowl.”

In the rear portion of the site, a structured parking area located behind the north wing of the Headquarters Building holds cars and service vehicles. This area is sheltered with trees.

The SMUD Headquarters property has several key spaces and uses:

- Entry/public face (south)
- Interior transition areas (east and west)
- Semi-private cafeteria terrace (center)
- Sheltered parking (east and west)
- Sheltered structured parking entrance (north)

Topography

Sacramento occupies California’s Central Valley at the confluence of the Sacramento and American Rivers. Much of the city is floodplain and is quite flat. The SMUD Headquarters property lies at a low elevation and is naturally situated on smooth, even topography.

However, the Headquarters property contains topographic modifications throughout the landscape. Gently curving landforms flow throughout the landscape (Figure 16). These vary in height and slope, but are defined by their smoothly graded shape and curving character. In addition, low retaining walls define separate spaces such as the cafeteria terrace. This multi-level terrace is located between the north (rear) and south (front) wings of the building and creates a low area depressed into the topography. The rear

structured-parking ramp and walls also negotiate the designed grade change, which is intended to provide access to the building from the loop road.



Source: AECOM

Figure 16. Sculpted landform.

The SMUD Headquarters property includes several key modifications to the topography:

- Sculpted landforms throughout the landscape
- Retained grade at the cafeteria terrace
- Stepped cafeteria terrace
- Retained grade at the parking ramp

Views and Vistas

Considering the area's undifferentiated topography, the four-story height of the building, and the size of the mature trees surrounding the building, the SMUD Headquarters property is a moderately visible landmark in its immediate landscape. U.S. 50 separates the SMUD Headquarters Building from the other surrounding buildings to the south; therefore, its main exposure is to high-speed traffic passing by. The building's southern façade is enveloped by taller deciduous and evergreen trees, although to a lesser extent than the eastern, western, and northern sides of the building. The heavy

vegetation surrounding the SMUD Headquarters property creates an insular landscape, limiting views from ground level into the surrounding area.

Key views of the SMUD Headquarters property include the following:

- View to the Headquarters Building's southern façade from the street

Vegetation

The plantings that cocoon the SMUD Headquarters Building have reached maturity; many of the trees planted in 1959 are now more than 50 years old. The plantings are diverse, with clusters of deciduous and evergreen trees and smaller screening trees that buffer parking areas and other more private zones on the property (Figure 17). Lawn is the primary ground cover; ornamental vegetation dots the landscape in planters and along the building's southern façade. Lawn creates a smooth surface for the undulating topography, which renders the manipulated earthen forms in a legible medium.



Source: AECOM

Figure 17. Cafeteria terrace plantings.

Distinctive planting areas include the courtyard terrace, the ivy-covered parking ramp area, the main entrance walk, and the parking area “triangles” and “circles.”

A full list of trees is provided in the inventory report for the SMUD Headquarters property. Notable tree specimens include red oak (*Quercus rubra*), California buckeye (*Aesculus californica*), and California sycamore (*Platanus racemosa*). Several trees in the landscape have reached heritage size. Among these Heritage-sized trees are individuals of the species listed above; a crape myrtle located on the edge of the western parking area; several strawberry trees, including one at the southwestern corner of the site; and Italian stone pines east of the building's south wing.

Common tree species include the zelkovas (*Zelkova serrulata*) located in the western parking area, and Japanese flowering cherry (*Prunus serrulata*) and Chinese hackberry (*Celtis sinensis*) located throughout the landscape.

The plantings in front of the south wing of the SMUD Headquarters Building contain a higher percentage of younger plants such as Japanese maple (*Acer palmatum*) and blue spruce (*Picea pungens*). Hedges made of dense shrub plantings include Japanese privet, glossy privet, and Chinese photinia. Other ornamental plantings are located near the building and include banana shrub, camellias, hibiscus, and rhododendron; smaller ornamental vegetation has been added to planters.

The SMUD Headquarters Building includes the following key vegetation types:

- Tree clusters
- Screening trees
- Shrubs
- Lawn areas
- Other ornamental plantings

Circulation Systems

Vehicular access roads, parking, and pedestrian walkways are the primary circulation systems in the landscape at the SMUD Headquarters property. In addition, the loggia at the building's south (front) wing is an important circulation element that connects the landscape with the building.

Seven major vehicular access/egress points punctuate the SMUD Headquarters property: two at the south entrance near the south (front) wing; one at the 61st Street parking entrance; one at the north end of the property under the railroad tracks; two at the north end along the access road; and one at S Street. The access road at the south entrance includes three major pull-in parking zones. A single parking access point at 61st Street serves the double parking area west of the building; this access point provides vehicular circulation to the inner loop road. Sporadic parking edges this inner

loop road across the north side of the property. The gently curving loop road also provides access to the ramp at the structured parking. The eastern parking area and access road bend in a serpentine curve from north to south, with wedges of parking along its perimeter.

Poured-in-place exposed aggregate concrete paths wind around the landscape, connecting primary spaces in gently curving arcs (Figure 18). The main entrance to the SMUD Headquarters Building and the courtyard terrace are the exceptions to the curving geometry of the pathways; these pedestrian areas are arranged in irregular, orthogonal planes. Several pathways connect the parking areas with the building and to the sidewalk along S Street. These pathways vary in width from 6 feet to approximately 4 feet and follow the curves of the topography and wind around planting areas. One set of steps links a path in the northwest corner of the property to the north wing of the building adjacent to the cafeteria terrace. A ramp provides access to the southern entrance.



Source: AECOM

Figure 18. Path and steps.

The loggia (Figure 19) forms the critical seam between the building and the landscape and is a pedestrian circulation space formed by the building's edge, with its windows and mosaic, columns, building overhang/roof; and planting areas.



Source: AECOM

Figure 19. Loggia.

The SMUD Headquarters property has several key circulation features:

- South entrance road/parking
- West parking area
- East parking area
- North parking ramp
- North inner loop road
- Pedestrian paths
- Steps
- Pedestrian ramp at south entrance plaza
- Loggia

Buildings and Structures

The SMUD Headquarters Building is set back from S Street and is roughly T-shaped in plan, with a long wing facing south and connected to a square-shaped north wing in the back. The first floor of the south wing is recessed behind a columned loggia and wrapped by a multicolored glass-tiled mosaic mural entitled *Water City*. The south wing extends three stories above the first-floor plinth. The building has a clear-span steel frame, a flat roof, and precast and glass curtain walls that extend between the second and fourth floors. The upper south façade is fitted with a grid of aluminum louvers to control sun exposure. The building's cafeteria is located in the basement of the south wing and opens to the cafeteria terrace. The cafeteria terrace contains a flat lower plaza of concrete with a linear pool against the eastern wall. The terracing steps up the hill to the northwest and is interspersed with large boulders and planting areas. The north wing is recessed by one floor and its lower floors provide structured parking. The two wings are connected by a mechanical tower. A concrete pad covers a mechanical vault located north of the south wing.

The property includes other major and minor site walls made of concrete. These are constructed of poured-in-place concrete near the cafeteria terrace and near the structured-parking entrance. Other retaining walls are located along S Street; these low walls are constructed of rock-face concrete block and exposed aggregate concrete. A tiled freestanding wall with the SMUD name shields the southern (front) entrance plaza (Figure 20). A small wall emblazoned with the SMUD name also fronts S Street.



Source: AECOM

Figure 20. Freestanding wall at the southern entrance plaza.

The following are the key buildings and structures on the SMUD Headquarters property:

- Headquarters Building
- Cafeteria terrace
- Landscape retaining walls
- Landscape freestanding wall

Small-Scale Features

The details in the landscape—such as site lighting, site furnishings, bollards, boulders, and art—include materials that are both commonplace and special. Concrete is a common material throughout the landscape for paving, site furnishings, and curbs, and exposed aggregate concrete is used for paving. Wood is incorporated into the landscape in the site furnishings and in the courtyard paving as an edging material. New site furnishings and outdoor kitchen equipment are located in the cafeteria terrace. Distinctive lights include taller bollard-style lights aligned with the pathways, recessed lights, and taller light poles in the parking areas. Boulders are an integral part of the landscape design (Figure 21) and are placed throughout the landscape in key areas, such as around the courtyard, at the main entry, in the parking planted areas, and at the vehicular entrances.



Source: AECOM

Figure 21. Boulder on the SMUD Headquarters property.

A flagpole is located at the entrance to the SMUD Headquarters property. A basic metal link fence encloses sections of the property's perimeter; the cafeteria terrace area is also enclosed by a metal picket fence with a gate at its northern edge. Irrigation is located throughout the landscape. An outdoor sculpture flanks the entrance plaza.

The SMUD Headquarters property includes the following small-scale features:

- Site lighting
- Flagpole
- Signs
- Fencing
- Benches and tables
- Trash receptacles
- Bollards
- Boulders
- Concrete planters
- Handrails
- Art

Evaluation and Analysis

The SMUD Headquarters property is a designed landscape that represents the work of mid-century modern designers in California. The designed landscape provides the setting for the SMUD Headquarters Building, which is a significant work of modern architecture.

Documentation and Evaluation of Historic Significance

The historic resources within the SMUD Headquarters property are described and documented in an NRHP nomination. The criteria for evaluation of cultural resources for inclusion in the NRHP as historic properties are set forth in Title 36, Part 60.4 of the Code of Federal Regulations.

To be eligible for listing in the NRHP, a property must be at least 50 years of age and possess significance at the local, state, or national level under one or more of the following four criteria:

- A. It is associated with events that have made a significant contribution to the broad patterns of our history; or
- B. It is associated with the lives of persons significant in our past; or
- C. It embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction; or
- D. It has yielded, or may be likely to yield, information important in prehistory or history.

A resource meeting one or more of the NRHP criteria also must retain the essential physical features that enable it to convey its historic identity, meaning that it retains integrity of location, design, setting, materials, workmanship, feeling, and/or association. To retain historic integrity, a property must always possess several, and usually most, of the aspects.

The California Register of Historical Resources (CRHR) was created to identify resources deemed worthy of preservation on a state level and was modeled closely after the NRHP. The criteria are nearly identical to those of the NRHP but focus on resources of statewide rather than national significance. The CRHR consists of both properties that are listed automatically and those that must be nominated through an application and public hearing process.

The eligibility criteria for listing in the CRHR are based on NRHP criteria, but are identified as 1–4 instead of A–D. To be eligible for listing in the CRHR, a property must be at least 50 years of age and possess significance at the local, state, or national level, under one or more of the following four criteria:

- 1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; or
- 2. It is associated with the lives of persons important to local, California, or national history; or
- 3. It embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values; or

4. It has yielded, or has the potential to yield, information important in the prehistory or history of the local area, California, or the nation.

Historic resources eligible for listing in the CRHR may include buildings, sites, structures, objects, and historic districts. A resource less than 50 years of age may be eligible if it can be demonstrated that sufficient time has passed to understand its historic importance. Although the enabling legislation for the CRHR is less rigorous with regard to the issue of integrity, there is the expectation that properties reflect their appearance during their period of significance.

The SMUD Headquarters property has been deemed significant under Criterion C as a work of the Modern Movement: International Style. The headquarters building was designed by Dreyfuss & Blackford, an architectural firm that opened in Sacramento in 1950. The SMUD Headquarters Building was designed and constructed in the late 1950s for the publicly owned power company of Sacramento. Set on a wooded 15-acre parcel, the Headquarters Building is roughly T-shaped in plan, with a clear span steel frame, a flat roof, and precast concrete and glass curtain walls. The recessed solid base plinth is wrapped by a mosaic created by artist Wayne Thiebaud. The south wing of the building is fitted with custom louvers that were “a very innovative means of glare and temperature control entirely in keeping with the mission of the utility company and its desire to have an energy efficient facility.”⁴⁶

SMUD’s NRHP nomination, completed in 2009, further states that:

...the SMUD building remains a virtually pristine example of the International Miesian style of post-WWII Modernism in Sacramento. It is an exceptional example of its style and building type, embodying the general precepts of the design canon, while also exhibiting innovation in energy efficient design, the use of new materials, and unique artistry. The building retains a very high level of integrity. There are no major exterior alterations and the original materials—aluminum louvers, glass walls, glass tile murals, interior/exterior cladding, landscape plan and plantings—remain intact. The building retains its original landscape setting in a mature form, is in its original location, retains its original materials, and continues to convey its feeling and association. It continues to serve the function for which it was originally constructed.⁴⁷

Modernism is a design movement that has recently become the focus of new preservation efforts as its architectural and landscape architecture landmarks begin to face demolition and deterioration. Modernism is characterized by an embrace of abstraction, a questioning of tried-and-true forms and formalities, and a willingness to experiment with altogether new forms, technologies and materials. Pure geometries and

⁴⁶ SMUD Headquarters Building National Register Nomination, 2009, Section 7, pg. 1.

⁴⁷ SMUD Headquarters Building National Register Nomination, 2009, Section 8, pg. 5.

monolithic materials characterizing this style lacked the traditional details and decorative motifs of earlier styles.

Landscape Significance

The SMUD Headquarters landscape creates an abstracted natural landscape for the Headquarters Building, with accommodations for vehicles and pedestrians throughout the site. The landscape design relies on two geometrical systems to organize the site: an orthogonal geometry for the vehicular parking areas (matching the building's east/west alignment) and a curving geometry for the layout of pedestrian paths and topographical modifications. A wide variety of trees are scattered throughout the landscape and line the property's parking lots and perimeter. The design—while not groundbreaking on its own—reflects distinctive trends in mid-century modern landscape design.

The landscape design provides a critical setting for the SMUD Headquarters Building, creating a foil for the clean geometries and modern materials of the building with its gently flowing berms and lush vegetation. The exceptions to the curvaceous forms in the landscape's design are the outdoor cafeteria terrace, the entrance plaza area, and the covered entry loggia; their orthogonal geometries relate more directly to the forms of the building. The cafeteria terrace and the loggia are quintessential modern spaces. Layers of vegetation, columns, covered paving, and the building plinth create the loggia's ambiguous indoor/outdoor character. The "Water City" mural adorns the building plinth and relates the building conceptually to its environment through a reference to the two rivers flowing together in Sacramento. The cafeteria terrace is an artfully composed outdoor space that flows easily between building and landscape. From the large windows that connect the terrace visually with the cafeteria inside, to the stepped concrete landings and clean-lined site furnishings and arranged boulders, the terrace is a threshold between the SMUD Headquarters Building and the "natural" landscape. The ample property provides the building with a setback large enough to create views of the full south façade, and also space to enable a progression through the property's discrete spaces (from enclosed parking, through the planted and "hilly" landscape, and into the ambiguous indoor/outdoor zone of the loggia at the building entry.)

The landscape architect for the project was Ralph Jones, who had worked for master designer Thomas Church before starting his own practice. He worked in the Modernism style, with projects that displayed the clean-lined and dynamic spaces of the idiom.

Period of Significance

The NRHP nomination recommends a period of significance for the SMUD Headquarters property as 1959, the construction date for the building. The designed landscape's features and systems were put in place in the months that followed (likely throughout the first half of 1960), and no new historically significant features have been

added since then. The vegetation matured over several decades, however, and likely reached its intended character many years after construction. Therefore, the analysis undertaken for this CLR considers the character of the historic landscape during the years following construction, up to the date of the east parking area's revision in the 1990s, as the basis for a comparison between historic and existing conditions at the SMUD Headquarters property.

Comparative Analysis of Historic and Existing Conditions

Comparative analysis is an essential tool for unraveling the complex conditions of a cultural landscape. This analytic process is both quantitative and qualitative. It compares known historical conditions to existing conditions to determine which landscape features remain from the period of significance. It identifies how the design conveys the modern design context for which the property is significant by gauging the site's design against other designs of their time. Finally, it identifies how the extant features and systems reflect the design intent for the property. Design intent in the context of a modern designed landscape or structure has been defined and elaborated upon by Theodore H. M. Prudon, a preservation architect, in his 2008 text, *Preservation of Modern Architecture*:

Continuity and the ability to recognize original design intent is critical to the preservation of modern architecture. Original design intent is the visual and conceptual expression of the designer's creativity and therefore informs every aspect of both the building and its construction. This acceptance of and greater reliance on the intangible (and therefore the lesser reliance on material expression) diverges from conventional preservation practices in the U.S. It requires both a broader definition of authenticity and a less literal approach to material preservation. Whereas in traditional preservation practice the original material and its presence is considered the most authentic and thus what needs to be preserved, in the preservation of modern architecture there is likely to be a combination of both design intent and material authenticity with, probably, a somewhat greater priority placed on the design itself.

Therefore, the intended quality of the landscape—conveyed through its planned mature character—is one test of landscape authenticity. This analytic process recognizes that historic landscape materials evolve or change over time in ways that may enhance or detract from the intended character. For example, historic trees may become “over mature” and exceed their appropriate size or lose their proper habit. Thus, the plant material may be authentically historic, but the intended landscape character created by the vegetation may have been lost. Mitigation of these unintended ramifications of change over time is addressed in treatment.

Information collected and presented in the history and the existing-conditions documentation provides a basis for understanding the evolving relationship between the

existing conditions of the landscape, its intended character, and its appearance during the period of significance. A comparison between historic aerial imagery from 1964 and current aerial imagery aids the analysis. The three main goals of the comparative analysis are to:

- understand which features and qualities contribute to the significance and historic character of the landscape,
- establish the basis for an evaluation of integrity, and
- provide the basis for a well-grounded treatment plan for the cultural landscape.

The purpose of comparing historic and present conditions is to identify which existing landscape features survive from the period of significance and represent its significance. The narrative and table below identify the status of individual features in the landscape using the following classifications:

- A **character-defining** or **contributing feature** adds to the historic associations, historical architectural qualities, or archaeological values for which the cultural landscape is significant. Generally, it was present during the period of significance; relates to the documented significance of the landscape; possesses historic integrity or is capable of revealing information about the period; or it independently meets NRHP criteria.
- A **noncontributing feature** does not contribute to the significance of the cultural landscape. Noncontributing features are those that were added to the landscape after the period of significance or have been altered beyond recognition (lost integrity). Noncontributing features may be compatible or noncompatible. **Noncontributing compatible** is a term used most often to describe buildings or other features that are not historic in their own right, but are constructed or sited in a way that does not detract from the surrounding historic fabric. Other features are **noncontributing incompatible**; these features may have a negative effect on the integrity of the landscape because they are visually intrusive or not in keeping with the site's significant character. They should be considered for removal or replacement with compatible features.
- A **missing feature** was documented as existing within the cultural landscape during the period of significance, but no longer exists.
- Features may be identified as **undetermined** if their status is not known. This category may include features for which insufficient information has been found to determine their origin, condition, exact location, etc.

A comparison of the historic site plan, conditions after construction, and existing conditions helps support the integrity analysis that follows.

Spatial Organization and Land Use

Historic condition: The SMUD Headquarters Building was designed to be the primary focus of the property, with the landscape providing a dynamic, flowing foil to the strict geometries of the structure. The primary spaces and uses in the landscape were related to each side of the building: public entrance area to the south, parking to the east, parking to the west, and a separate back entrance to the north, with transitional spaces between access points and the building. The cafeteria terrace in the northwest corner of the building shares the orthogonal geometry with the building and is the area most closely related to it both functionally and spatially. The parking areas were each designed to be contained in one area, with linear bays of parking. Trees were intended to provide some enclosure around the overall property, for the courtyard, and for the parking areas. During the period of significance, the trees were insufficiently large to provide any sense of enclosure, but when grown, they effectively delineated landscape spaces throughout the property. In general, the building's south (front) entrance area was less heavily planted than areas to the east, north, or west, possibly to ensure that the building's façade would be clearly open and visible. The landscape surrounding the cafeteria terrace was the most heavily sheltered semi-private space, and was surrounded by vegetation, topography, and the building.

Existing condition: The building remains largely unchanged since its construction and is used for the same purpose. Likewise, the designed landscape spaces (e.g., south [front] entrance, parking, cafeteria terrace, north [back] entrance) remain in place, and the orchestrated sequence through these spaces has been retained. The thick vegetative enclosure has been maintained in many locations around the perimeter of the property. However, it appears that many plants have been added to the landscape over the years, particularly along the southern edge of the property, which once was quite open. The cafeteria terrace remains as a lower, enclosed landscape space. The layout of the eastern parking area has been modified, but the basic location of the parking area is similar to the historic condition. The parking areas are enclosed by plantings.

Analysis: The current land use and spatial organization closely resemble the designed condition; the revisions to the eastern parking area are the exception. The designed sequence of spaces created a progression through the site that seamlessly connected the building and landscape in a dynamic and non-axial arrangement that reflects the modern approach to architecture, for which the design is significant. Likewise, the incorporation of designed spaces for vehicular parking reflected the needs and context of the increasingly suburbanizing conditions in the 1950s and 1960s.

- *Entry/public face (south)*—character-defining space, but with modifications such as the addition of new vegetation that further encloses the southern façade of the building

- *Interior transition areas (east and west)*—character-defining, but with less open lawn area than existed historically
- *Semi-private cafeteria terrace (center)*—character-defining
- *Sheltered parking (east)*—noncontributing because the layout has changed substantially
- *Sheltered parking (west)*—character-defining
- *Sheltered structured parking entrance (north)*—character-defining

Topography

Historic condition: The topographic modifications to the landscape were a critical aspect of the historic design and reflected design strategies seen in many modern landscapes of the period. The gently curving undulations in the ground plane provided a framework for spaces and circulation patterns. The designed pattern of low swales and knolls created a sculptural and artfully organic contrast to the building's strongly linear and geometric qualities. The manipulated topography also sheltered or screened the more functional spaces within the landscape, such as the parking areas, and provided a gentle separation between the inner landscape areas and the perimeter roads and sidewalks. The semi-private cafeteria terrace was depressed topographically in a stepping fashion (Figure 22), and connected the upper landscape with the lower level of the building. A second depressed area with seating is located on the opposite side of the central core from the cafeteria terrace, although it does not appear to have been intended as a functional terrace. The paths were designed to gently rise and fall throughout the landscape, with slopes of approximately 1–6%. The ramp into the structured parking was steeply sloped at more than 14%, although the other vehicular paved areas were relatively flat. The south wing of the SMUD Headquarters Building perches higher on the landscape than the north wing, which was depressed somewhat into the ground. The design included several retaining walls, several of which extended from the building into the landscape. These walls followed the same linear geometry of the building.

Existing condition: The topographic conditions at the SMUD Headquarters property appear to have remained in place throughout most of the landscape. Exceptions to this continuity include the location of the east parking area, which has been modified. New low walls retain grade along the sidewalk at S Street. The flow of stormwater through the earthen berms to the stormwater inlets has created erosion in some locations.



Source: SMUD

Figure 22. Topographic modifications at the cafeteria terrace during construction.

Analysis: The low berms and swales retain their approximate location and character as the original conditions. In addition, the building's location in the topography, with the depressed cafeteria and north wing, is retained. In recent years, the topography has been modified along the eastern parking area and the pedestrian connection to the building. Despite these modest changes, the topography continues to convey the dynamic, flowing character that helped define modern landscape design. The abstracted organic character of the earthen berms reflected the artistic values of many modern landscape architects of the time.

- *Sculpted landforms*—character-defining, but threatened by erosion in some locations
- *Building location within topography*—character-defining
- *Retained grade at the cafeteria terrace*—character-defining
- *Stepped cafeteria terrace*—character-defining
- *Retained grade at the structured parking entrance*—character-defining

Views and Vistas

Historic condition: At the time of construction in 1959, the SMUD Headquarters property was still an open landscape, with little enclosure provided by the young vegetation

(Figure 23). Views of the SMUD Headquarters Building were prominent from all sides. However, as the vegetation matured in the historic period, the clear views of the building became more limited. It appears from the historic planting plan that the building's southern façade was intended to remain slightly more open than its other sides, perhaps to enable the public to see the building's most important façade. The presence of the louvers on the south side also suggests that the building was not intended to be heavily shaded.



Source: SMUD

Figure 23. Rendering of the view toward the SMUD Headquarters building at the time of construction.

Existing condition: A thick layer of mature trees and shrubs wraps the landscape today and prevents clear views of the building from the street or parking areas. The upper stories are visible above the dense canopy of trees. The introduction of U.S. 50 also altered the view of the building.

Analysis: Although the landscape was not designed to capture long views or vistas into the surrounding environment, the short views of the building's south façade have been compromised by the addition of U.S. 50 and new vegetation and the overgrowth of older trees.

- *View to building façade from the street*—character-defining, but compromised by new vegetation and oversized vegetation

Vegetation

Historic condition: The planting plan for the landscape includes a wide variety of native and nonnative trees, shrubs, lawn, ground covers, and other ornamentals. Chinese Pistache (*Pistacia chinensis*), Catalina Cherry (*Prunus lyonii*), Creeping Juniper (*Juniperus horizontalis*), Pacific Wax Myrtle (*Myrica californica*), Coast Redwood (*Sequoia sempervirens*), and Camellia (*Camellia japonica*) are among the many plants that were used in the landscape for various purposes, such as to provide evergreen ground cover or ornamental flowers. The planting plan was modified from its original design to include substantially more vegetation, although the key to the planting plan is not visible on the historic as-built drawings. During the 1959 period of significance, the dominant visible planting was lawn ground cover, because the trees and shrubs were still quite small.

The planting components included a row of shrubs around the perimeter of the property; linear arrangements of trees in the parking areas (particularly the “triangle” plantings within paved vehicular areas); linear alignments of shrubs between the cafeteria terrace and building; and “natural” clusters of trees and shrubs throughout the rest of the landscape. In anticipation of the construction of the second eastern parking area, the trees in that future parking zone were planted according to the linear alignment seen in the other parking areas, although they were set in a field of lawn and not paving.

The trees matured over decades and likely started to reach their mature character 20-30 years after the period of significance.

Existing condition: The site contains more than 400 trees and shrubs of different varieties; mature trees include large evergreens, deciduous canopy trees, and smaller ornamental trees (Figure 24). A substantial number of new species of trees has been introduced over time. Several of the new trees have been planted in recent years, while others are mature, with substantial size. Many of the older trees are beginning to decline, with poor structure or health. The planting beds include a covering of light soil, pine mulch, or stones.

Analysis: Some trees and shrubs have been replaced over the years and the plantings in the eastern parking area have been revised. Nonetheless, the planting concept appears to remain largely intact with perimeter plantings, parking area plantings (in the western parking area), and clusters of trees and shrubs. Lawn continues to dominate the ground plane. Vegetation appears to have served multiple purposes in the design, including creating a cleanly legible ground plane with lawn; sheltering landscape spaces; creating a layered spatial connection between the building and the landscape; and providing sculptural interest in the landscape. These last two characteristics were typical planting goals of modern landscape design.



Source: AECOM

Figure 24. Rows of trees in the western parking area, with lawn-covered berm and lighting.

- *Tree clusters*—character-defining
- *Screening trees around parking areas*—character-defining
- *Perimeter shrubs*—character-defining
- *Shrubs*—character-defining in some areas, although areas lining the southern façade of the building contain oversized shrubs that obscure the building
- *Parking area plantings (west)*—character-defining
- *Parking area plantings (east)*—historic plants missing; new plants are noncontributing compatible
- *Lawn*—character-defining
- *Other ornamental plantings*—new container plantings and other ornamental perennials and shrubs at the southern entrance and plaza are noncontributing incompatible

Circulation Systems

Historic condition: The site plan included both vehicular and pedestrian circulation features. The project called for new sidewalks along S Street; a curving northern loop road; a curving south-entrance road and parking area at the front of the building; three large surface parking areas (two to the west and one to the east); a parking ramp accessed by the loop road; and three curving pedestrian pathways that provided access to the SMUD Headquarters Building from each parking area. The building's recessed plinth created space for the columned loggia, which provided access to the building entrances. The parking areas followed the same strict east/west alignment that organized the building placement on the site; the southern edge of the western parking was exactly aligned with the back edge of the building's southern wing.

The pedestrian sidewalks were 6-foot-wide, exposed aggregate concrete sidewalks that met grade on both sides. The vehicular paving areas were lined with curbs or curb stops. Planting areas were interspersed with the pedestrian and vehicular paving areas.

Existing condition: Most of the circulation features present today are those that were originally constructed. New paths have been added over time to connect the parking areas with the SMUD Headquarters Building and with S Street. These new paths are constructed of exposed aggregate concrete or plain concrete with a rough finish, and are approximately 4 feet wide (Figure 25). Two new paths extend from the western parking area to the north wing of the building and the parking ramp; one extends from S Street toward the building; one extends from the entry parking area directly to the loggia; and one path extends from the parking ramp to the eastern parking area. The eastern parking area is now aligned along a serpentine access road with wedges of parking bays. The eastern portion of the loop road has been straightened slightly and includes more parking along its perimeter; it also has several new access points across or under the light rail line to the north. The parking access ramp remains. A small section of paving has been modified along the south-entrance parking area to accommodate new site security features.



Source: AECOM

Figure 25. A 4-foot-wide, exposed aggregate concrete path that postdates initial construction.

Analysis: Most of the historic circulation features and systems remain in place, with the exception of the eastern parking area, which was modified in the 1990s to accommodate the new Customer Service Center (Figure 26). Other features, such as the loop road, have been modified and new pedestrian paths have been added, although these changes were undertaken in a manner that was reasonably compatible with the historic character of the design. Three paths currently located in the landscape were not part of the original design, but appear to have been added relatively soon after the landscape was installed, based on the close match in materials. These include the path from S Street to the southwest corner of the SMUD Headquarters Building; the path from the front parking loop to the building's southeast corner; and the path from the northwest parking area to the building's north wing. The critical progression through the landscape shaped by the circulation system—from S Street, to parking, to pedestrian paths, to loggia—has been largely retained over time. The curving, non-axial alignment of circulation features was a hallmark of modern design. The loggia was the most distinctive pedestrian feature, and created a transitional zone between the landscape and building that exemplified modern design.



Source: Historic aerials and SMUD

Figure 26. Comparison between historic and new circulation features on the eastern edge of the property, using 1964 aerial imagery with a current site-plan overlay. Note the western shift in the loop road's connection to S Street and the retained location of the circular planting bed within the pathway.

- *South entrance road/parking area*—character-defining, but with some modifications, such as the expansion of pedestrian paving and the addition of new site security features
- *West parking area*—character-defining
- *East parking area (new)*—noncontributing incompatible
- *East parking area (historic)*—missing
- *North parking ramp*—character-defining
- *North loop road*—character-defining, but with modifications

- *Pedestrian paths (historic)*—character-defining
- *Pedestrian paths (new)*—noncontributing compatible
- *Loggia*—contributing

Buildings and Structures

Historic condition: The SMUD Headquarters Building included the south and north wings, connected by a central core. Distinctive features of the building included the recessed plinth at the south wing, which was lined with the tiled mural *Water City* (Figure 27). The building was the central object in the landscape and was aligned to face due south. Each building face was designed to mitigate light penetration into the building in distinctive ways; the south face's distinctive louvers were an innovative element at the time. The building's connection to the landscape was equally distinctive and included an open loggia around the south wing, a transparent core, a transparent seam at the cafeteria, and open structured parking.



Source: Dreyfuss & Blackford

Figure 27. Historic view toward the south façade of the SMUD Headquarters building, with the loggia and mural visible at ground level.

The cafeteria terrace was one of the most distinctive structures in the landscape. Located north of the south wing, the plaza adjoined the cafeteria's glass-walled edge and stepped up the hillside in low wood-edged concrete terraces interspersed with planting areas and large boulders. A pool lined one edge of the lower terrace area.

Other designed structures included in the landscape were concrete retaining walls that aligned with the building walls at the cafeteria terrace and at the structured parking ramp. A low-walled, concrete-paved area with a metal equipment cover was located north of the south wing above the transformer vault. A freestanding tiled wall at the southern plaza linked the materials of the landscape to the tiled walls of the building's interior, although it is not clear when this wall was constructed and it does not appear to be part of the original design. A small service station was located near the north side of the building by the parking ramp.

Existing condition: The SMUD Headquarters Building remains largely unchanged in the landscape. The cafeteria terrace also retains its historic configuration, although it appears that the redwood headers at the cafeteria terrace steps have been replaced over time. The pool remains, although it appears to have been modified with new blue tiles and a planting container. Additional retaining walls have been added to the landscape, including two low block and concrete walls along S Street.

Analysis: The historic structures remain remarkably intact and continue to convey the significance of the original design. The intertwining of indoor and outdoor spaces achieved through a carefully configured seam of space between building and landscape is an extraordinary expression of the tenets of modern design.

- *Headquarters Building*—contributing
- *Cafeteria terrace, with pool*—contributing, but with some modifications, including updates to the pool
- *Retaining walls (surviving from the period of significance)*—character-defining; these include the retaining walls at the cafeteria terrace and the structured parking ramp
- *Freestanding wall at the building entrance*—undetermined
- *Retaining walls along S Street (postdating the period of significance)*—noncontributing incompatible because of the discrepancy between the new and historic wall materials and the location
- *Service station*—missing

Small-Scale Features

Historic condition: The original site contained a limited but carefully designed palette of small-scale features. These included the site lights, the boulders of many sizes, and custom-designed benches and “table-benches” placed at the south (front) entrance plaza, the cafeteria terrace, and the northeast paved area (over the mechanical vault).

Existing condition: The landscape has retained many of its original small-scale features, such as the boulders and custom benches. However, many new features have been added to the site, such as planters, bollards, signs, new lights, metal fencing, and new furniture. Some features are required for safety, such as traffic signs, gates, and lighting, but others clutter the landscape.

Analysis: The old boulders and site furnishings were a critical component of the original design, and their retention in the landscape helps to maintain the historic character. However, other new features in the landscape, such as visible mechanical equipment, seriously detract from the historic character.

- *Site lighting (bollard height)*—noncontributing
- *Site lighting (tall)*—noncontributing
- *Flagpole*—noncontributing
- *Signs*—noncontributing
- *Fencing (perimeter)*—character-defining
- *Fencing (cafeteria terrace)*—noncontributing incompatible
- *Benches and tables (historic)*—character-defining where still in place at the front entrance; missing from the cafeteria terrace
- *Cafeteria terrace furniture (new)*—noncontributing
- *Trash receptacles*—noncontributing
- *Bollards*—noncontributing
- *Boulders (historic)*—character-defining
- *Boulders (new)*—noncontributing compatible
- *Concrete planters*—noncontributing incompatible
- *Handrails*—noncontributing compatible
- *Art*—noncontributing compatible
- *Mechanical equipment*—noncontributing incompatible

See the comparison aerial imagery and table of landscape features in Figure 28, Figure 29, and Table 1.



Source: Historic Aerials

Figure 28. 1964 aerial view of the SMUD Headquarters Building.



Source: Bing

Figure 29. 2014 aerial view of the SMUD Headquarters Building.

Table 1. Landscape Features.

Feature	Key Characteristics	Condition	Date of Origin	Integrity	Status
Spatial Organization and Land Use					
Entry/public face (south)	Separated from public street and sidewalk by vegetation and topography; contains parking and sidewalks; plaza area connects to building loggia.	Good; the condition of individual features is noted below.	1959, with recent modifications.	Integrity is retained but moderately diminished. The entry area has been modified with new pedestrian paving and bollards that extend the plaza area. New small-scale features such as a flagpole and an outdoor sculpture have been installed. Additional vegetation has been planted between S Street and the SMUD Headquarters Building. These changes are not completely incompatible with the historic condition. New mechanical equipment is present and strongly visible in a way that detracts from the historic character of the entrance.	Character-defining
Interior transition areas (east and west)	Contains bermed topography and vegetation.	Good; the condition of individual features is noted below.	1959, with some modest modifications.	Integrity is retained but moderately diminished on the eastern side of the property because of the changes in the parking; the western side retains integrity.	Character-defining
Semi-private cafeteria terrace area (center)	Stepped terracing nestled into topography, and surrounded by building walls and landscape to provide a protected space.	Good; the condition of individual features is noted below.	1959, with some modest modifications.	Integrity is retained.	Character-defining
Sheltered parking, west	Flat paving area surrounded by bermed topography and vegetation, with rows of trees separating the parking bays.	Good; the condition of individual features is noted below.	1959.	Integrity is retained.	Character-defining
Sheltered parking, east	Asymmetrical bays of parking with trees along edges and in planting areas.	Good; the condition of individual features is noted below.	1959, with modifications in the 1980s and 1990s.	Integrity is lost.	Missing; new design noncontributing

Table 1. Landscape Features.

Feature	Key Characteristics	Condition	Date of Origin	Integrity	Status
Sheltered structured parking entrance (north)	Graded parking entrance from loop road; sheltered by retaining walls and vegetation.	Good; the condition of individual features is noted below.	1959.	Integrity is retained.	Character-defining
Topography					
Sculpted landforms	Curving, smoothly graded earthen berms primarily with lawn cover flow throughout the property. These sculpted landforms differentiate the designed landscape from the otherwise flat surroundings.	Generally Good, but with some areas in Fair condition based on mild erosion or failure of lawn cover.	1959, with some modifications along S Street and near the eastern parking area.	Integrity is retained but moderately diminished by the the addition of new retaining walls along S Street and with modifications along the edge of the eastern parking area.	Character-defining
Building location within topography	The south wing is perched higher on the landscape, creating an at-grade front entry, while the north wing is slightly depressed into the topography. The elevations of the building wings enable the discrete placement of the parking entrance and cafeteria terrace.	Generally Good, with little sign of major erosion.	1959.	Integrity is retained.	Character-defining
Retained grade at cafeteria terrace	The cafeteria terrace's depressed placement in the topography is enabled through the retention of slope around the north and west sides of the terracing. Retaining walls and terraces are documented separately below under "Structures."	Generally Good with no signs of major erosion.	1959.	Integrity is retained.	Character-defining
Stepped cafeteria terrace	The cafeteria terrace negotiates the slope difference between the lower building entrance level and the upper landscape through a series of raised terraces.	Generally Good.	1959.	Integrity is retained.	Character-defining

Table 1. Landscape Features.

Feature	Key Characteristics	Condition	Date of Origin	Integrity	Status
Retained grade at structured parking entrance	The retained grade at the parking entrance enables the connection between the loop road and the ramps. The major grade changes near the parking entrance are a unique condition in the designed landscape. Retaining walls are documented separately below under "Structures."	Generally Good.	1959.	Integrity is retained.	Character-defining
Views and Vistas					
View to building façade from the (south) street	The southern façade is the public face of the building. It is largely obscured by tall vegetation, and the street-level space has been filled with additional features such as sculpture, mechanical equipment, and bollards that disrupt the once-open view. The addition of U.S. Highway 50 also disrupted any longer views from the south to the building.	Fair. The object of the view (the building façade) and the vantage point (S Street) are still in place. However, the view has been disrupted by the growth of vegetation and the accumulation of new features.	1959.	Integrity is retained but moderately diminished by the accumulation of new features and the overgrowth of vegetation on the south side of the building. The addition of U.S. Highway 50 has also negatively affected the view toward the southern façade of the building.	Character-defining
Vegetation					
Tree clusters	The landscape contains several clusters of distinctive and mature large specimen trees such as large red oaks, plane trees, and Italian stone pines. Smaller but still distinctive trees include crape myrtles and strawberry trees. The relatively dense plantings in the landscape prevent many specimens from standing out in the landscape as individuals. The plantings are scattered across the site.	The landscape inventory report suggests that the majority of trees on the property are in Fair condition, meaning that either their health or their structure is fair. Please see the inventory report for more detail.	1959, with additions and subtractions over time.	Integrity is retained but moderately diminished by the accumulation of new trees and the loss of some historic trees. The Fair to Poor condition of many older trees dampens the historic character of the modern landscape.	Character-defining

Table 1. Landscape Features.

Feature	Key Characteristics	Condition	Date of Origin	Integrity	Status
Screening trees around the parking areas	The parking areas are screened by a thick cluster of diverse trees and shrubs.	The landscape inventory report suggests that the majority of trees in the project site are in Fair condition, meaning that either their health or their structure is fair. Please see the inventory report for more detail.	1959, with additions and subtractions over time.	Integrity is retained but moderately diminished by the accumulation of new trees and the loss of some historic trees. The Fair to Poor condition of many older trees dampens the historic character of the modern landscape.	Character-defining
Perimeter shrubs	The perimeter of the property is screened by a thick band of privet, hackberry, photinia, and interior live oaks, among others.	Some of the screening vegetation is voluntary, meaning that it was not deliberately planted. Many of these are in Fair condition, meaning that either their health or their structure is fair. Please see the inventory report for more detail.	1959, with additions and subtractions over time.	Integrity is retained.	Character-defining
Shrubs	Clusters of shrubs flank the building entrances and are distributed in the cafeteria terrace area.	Many of these shrubs are younger and in Good or Fair condition.	1959, with additions and subtractions over time.	Integrity is retained but moderately diminished by the accumulation of new shrubs and the loss of some historic shrubs.	Character-defining
Parking area plantings (west)	Zelkovas were and continue to be the dominant trees in the western parking area, creating the property's only real monoculture planting.	Many of these trees are in Fair to Poor condition.	1959.	Integrity is retained.	Character-defining
Parking area plantings (east)	Zelkovas were specified for the eastern parking area, but these were removed when the parking area was modified in the 1990s. Now a diverse range of trees occupies this area.	Many of these trees are in Fair to Poor condition.	1990s.	Integrity is lost.	Noncontributing compatible

Table 1. Landscape Features.

Feature	Key Characteristics	Condition	Date of Origin	Integrity	Status
Lawn areas	Lawn is the dominant ground cover for the landscape and was intended to cover nearly all nonpaved surfaces. The smooth lawn surface is broken in some locations by erosion, planting areas with a simple soil or mulch cover, or utility features such as grates.	Fair. Wear, erosion, excessive shade, and dry conditions plague some areas of the lawn.	1959.	Integrity is retained.	Character-defining
Other ornamental plantings	New vegetation in planters and near the entrance sign, for example, provides additional ornamental character in the landscape that was not part of the original scheme for the property.	Good.	Unknown, but postdating the period of significance.	None.	Noncontributing
Circulation Systems					
South entrance road/parking	Gently curving with diagonal parking interspersed with planting and connecting to a curving path. Separated from S Street by an earthen berm.	Good. The asphalt and concrete paving appears to be in satisfactory condition.	1959, likely with repairs and replacements over time.	Integrity is retained but slightly diminished by the reconfiguration and enlargement of the entrance plaza.	Character-defining
West parking area	Straight aisles of parking interspersed with travel lanes and planting, connecting to a curved pathway. The parking area is made up of two virtually identical parking areas.	Fair. The curbs, paving, and planting beds require additional maintenance.	1959.	Integrity is retained.	Character-defining
East parking area (new)	Wedges of perpendicular parking accessed from the reconfigured loop road.	Good.	1990s.	None.	Noncontributing
East parking area (historic)	Designed to match the west parking area.	N/A	1959, with full buildout in the 1980s.	None.	Missing

Table 1. Landscape Features.

Feature	Key Characteristics	Condition	Date of Origin	Integrity	Status
North parking ramp	Access to the structured parking through steep ramps and bridge structure.	Good.	1959.	Integrity is retained.	Character-defining
North inner loop road	The gently curving loop road encircles the property and provides access to the parking areas and to new parking spaces along its northern side. It also connects across the light rail line to other roads and parking areas.	Good/Fair.	1959, modified over time.	Integrity is retained but diminished by changes to its eastern loop, which was modified in the 1990s to accommodate the new eastern parking area.	Character-defining
Pedestrian paths (historic)	The 6-foot-wide exposed aggregate concrete paths were located in three areas, connecting the entry, eastern and western parking areas to the building loggia. They curved gently through the landscape.	Good. No major chipping, cracking, or spalling.	1959.	Integrity is retained.	Character-defining
Pedestrian paths (new)	Several new curving concrete pathways have been added to the landscape. Some of these appear to mimic the historic paths in material and character. Other concrete paths mimic the flowing alignment of the historic paths, but were constructed of plain concrete with a rough coating.	Good, although the coating on some of the paths is sloughing off.	Unknown, likely built in stages.	None.	Compatible
Loggia	The loggia is formed by the recessed plinth of the building, with simple concrete paving. Columns and the mural form the vertical edges of the loggia.	Good/Fair. There is some cracking, wear, and disintegrating coating on the concrete paving. See the HSR for more information about the building.	1959.	Integrity is retained.	Character-defining

Table 1. Landscape Features.

Feature	Key Characteristics	Condition	Date of Origin	Integrity	Status
Buildings and Structures					
Headquarters Building	Two wings linked by a mechanical core. The south wing is set higher on the topography than the north wing. The building is closely connected to the landscape. See the HSR for more detail.	See the HSR.	1959.	Integrity is retained.	Contributing
Cafeteria terrace with pool	The cafeteria terrace linked to the building's cafeteria through a glass wall and door. The concrete terracing with wood edging stepped up the hill in a series of low platforms. The pool is in its correct location but appears to have been retiled and includes a new planter.	Good/Fair. Sections of the concrete terracing have been replaced over the years with concrete that does not perfectly match the historic, but the current paving does not appear to be overly cracked or chipped.	1959.	Integrity is retained, but with some minor modifications to the pool and retaining walls (with some new cladding and new "kitchen" area).	Character-defining
Retaining walls (historic)	Simple, concrete walls retained soil at the cafeteria terrace and near the parking ramps.	Good/Fair. Minor staining and chipping. Vegetative growth may contribute to wall deterioration over time.	1959.	Integrity is retained.	Character-defining
Freestanding wall at the building entrance	This tiled wall with lettering may have been designed by the architects, as it was not documented in the landscape drawings and appears to match other tiled walls in the building.	Fair.	Post-1959.	Undetermined.	Undetermined
Retaining walls (new)	New low retaining walls of different concrete materials are located along S Street. Their block and concrete infill construction does not match the historic in materials or character.	Fair.	Unknown.	None.	Noncontributing
Service station	Unknown.	N/A.	1959 (original).	None.	Missing

Table 1. Landscape Features.

Feature	Key Characteristics	Condition	Date of Origin	Integrity	Status
Small-Scale Features					
Site lighting (bollard height)	Waist-height, metal, with flat shield.	Fair, with corrosion and staining.	Unclear; the lights appear to be historic and are similar to lights specified in the historic drawings.	None.	Noncontributing
Site lighting (tall)	Metal, with flat shield. (Historic lights in the parking areas appear to have been low floodlights.)	Good.	Postdates the period of significance.	None.	Noncontributing compatible
Flagpole	Standard metal external halyard flagpole.	Good.	Unknown.	None.	Noncontributing
Signs	Small metal site directional signs; small metal identity signs; large concrete identity sign.	Good/Fair.	Unknown.	None.	Noncontributing
Fencing (perimeter)	Some sections along the site perimeter are lined with metal link fencing.	Unknown.	Original link fencing was specified in 1959, although it is likely that this fencing has been replaced over time.	Although the original fence may not remain, the current fencing is in the proper location.	Undetermined
Fencing (cafeteria terrace)	Metal picket fence with gate.	Good.	Unknown.	None.	Noncontributing
Benches and tables (historic)	Redwood platform on a concrete base. The table-benches were wider than the benches, but the same height. Many are missing from the cafeteria terrace. These were custom-designed for the project.	Good.	1959.	Remaining benches retain integrity.	Those remaining are Character-defining; others missing
Cafeteria terrace furniture	Common metal tables and chairs.	Good.	Unknown (new).	None.	Noncontributing
Trash receptacles	Metal.	Good.	Unknown (new).	None.	Noncontributing
Bollards	Metal and concrete.	Good.	Unknown (new).	None.	Noncontributing

Table 1. Landscape Features.

Feature	Key Characteristics	Condition	Date of Origin	Integrity	Status
Boulders (historic)	The boulders have retained their natural shape and color and varied in size from approximately 2 feet square to 10 feet square, with the majority in the 4-foot-square size range. They were placed throughout the landscape, but focused at building entrances and at the cafeteria terrace.	Good.	1959.	Integrity is retained.	Character-defining
Boulders (new)	The new boulders are a lighter color grey and are generally smaller than the historic boulders. They are used in the landscape for barriers.	Good.		None.	Compatible
Concrete planters	Large round concrete planters located at the entrance plaza.	Good.	Unknown (new).	None.	Incompatible
Handrails	Metal painted handrails located at the entrance plaza.	Fair.	Unknown (new).	None.	Compatible
Art	Outdoor sculpture located at the entrance plaza.	Good.	Unknown (new).	None.	Compatible
Visible mechanical equipment	Pipes and other above-grade equipment located at prominent locations in the landscape such as the entry parking area and cafeteria terrace.	N/A.	Unknown (new).	None.	Incompatible

Notes:

HSR = historic structures report; N/A = not applicable.

In addition to identifying the characteristics, date of origin, integrity, and status of the landscape's key features, the table documents the features' physical condition based on the criteria developed for the National Park Service's List of Classified Structures rating. A **Good** rating indicates that the feature is intact, structurally sound, and serving its intended purpose; the feature needs no repair or rehabilitation, but only routine or preventive maintenance. A **Fair** rating indicates that there are early signs of wear, failure, or deterioration, although the landscape feature is generally structurally sound and performing its intended purpose, or there is failure of a significant characteristic of the feature. A **Poor** rating suggests that the structure and characteristics of the feature are no longer performing their intended purpose or significant structures or characteristics are missing, or deterioration or damage affects more than 25% of the feature, or the feature's significant structures and characteristics show signs of imminent failure or breakdown. Condition is related to but different from integrity.

Assessment of Historic Integrity

NPS defines integrity as the faithfulness of a landscape's historic identity, substantiated by the continued existence of physical characteristics present during its period of significance.⁴⁸ An evaluation of historic integrity is based on quantitative and qualitative analyses of both historic and existing-conditions data to determine whether the characteristics and features that distinguished the landscape during the historic period remain.

The seven qualities of historic integrity defined by the NRHP program are *location*, *setting*, *feeling*, *association*, *design*, *workmanship*, and *materials*. Initially developed for the evaluation of buildings, these were later adapted for cultural landscapes.

- *Location* is the place where the historic property was constructed or where the historic event occurred. The SMUD Headquarters property retains integrity of location because it remains in the same location in which it was designed.
- *Setting* is the physical environment of a historic property or landscape. As defined by the NRHP, "whereas location refers to the specific place where a property was built or an event occurred, setting refers to the character of the place in which the property played its historical role. It involves how, not just where, the property is situated and its relationship to surrounding features and open space." The SMUD Headquarters property retains integrity of setting, although it has been compromised by the addition of U.S. 50, which disrupted the original connection and views between the SMUD Headquarters property and the neighborhoods and open spaces to the south. However, the character of the landscape to the east, north, and west of the SMUD Headquarters property remain very similar to that of the historic condition.
- *Feeling* is a property or landscape's expression of the aesthetic or historic sense of a particular period of time. The SMUD Headquarters property retains integrity of feeling and has retained a modern sensibility, heightened by strong maintenance practices that have preserved the designed landscape's individual characteristics over time.
- *Association* is the direct link between an important historic event or person and a historic property or landscape. The SMUD Headquarters property retains integrity of association because it is owned and used by the same entity for which it was built.

⁴⁸ *Preservation Brief 36: Protecting Cultural Landscapes: Planning, Treatment and Management of Historic Landscapes*. Technical brief prepared by Charles A. Birnbaum, ASLA, U.S. Department of the Interior.

- *Design* is the combination of elements that create the form, plan, space, structure, and style of a property or landscape. The SMUD Headquarters property retains integrity of design, although there are minor variations from the original design, such as the revision of the eastern parking area, the addition of new pathways and parking, and some overgrowth of vegetation, which has compromised views and landscape spaces.
- *Workmanship* refers to the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. The SMUD Headquarters property retains integrity of workmanship, which is evident primarily in the building and constructed elements of the landscape, such as the clean-lined concrete paving.
- *Materials* are the physical elements that were combined during a particular period of time and in a particular configuration to form a historic property or landscape. The SMUD Headquarters property retains integrity of materials with relatively few losses and additions of landscape materials since the period of significance.

Treatment

The intent of treatment is to manage the effects of proposed changes to the historic landscape and to preserve remaining character-defining features. Although some areas of the SMUD Headquarters landscape were altered over its history, it retained sufficient integrity to be listed in the NRHP. Management that is consistent with *The Secretary of the Interior's Standards for the Treatment of Historic Properties* will ensure that it remains a listed property. SMUD stewardship goals include protecting the property's historic character while adaptively using the site for continued SMUD operations, accommodating more sustainable maintenance and management practices, and creating a safer and more accessible landscape.

Treatment includes four main activities:

1. *Establishing the appropriate treatment approach, using one of the four NPS-defined options.* The selected treatment approach dictates which set of treatment standards will be applied to the historic property during the planning and implementation of project work and other stewardship activities.
2. *Defining the treatment concept.* The treatment concept identifies the particular qualities and character of the historic landscape that must be protected, and outlines the general practices for the retention of the property's integrity within the framework of the treatment approach.

3. *Creating treatment guidelines.* Guidelines establish means and methods for undertaking treatment activities; guidelines are the “How To” section of treatment planning.
4. *Preparing treatment recommendations.* Recommendations are the specific actions required for the retention, repair, replacement, or update of character-defining features in the landscape. Recommendations may also suggest the removal of nonhistoric features.

Recommendations and guidelines may be organized according to management zones, or may be applied to the entire property.

Treatment Approach

The Secretary of the Interior’s Standards for the Treatment of Historic Properties defines four possible treatment approaches to historic landscapes: preservation, rehabilitation, reconstruction, and restoration. Each treatment option was weighed based on its possible application to the landscape’s condition.

- *Preservation* is defined as “the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction.”⁴⁹
- *Rehabilitation* is defined as “the act or process of making possible a compatible use through repair, alterations, and additions while preserving those portions of features which convey its historical, cultural, or architectural values.”⁵⁰
- *Reconstruction* is defined as “the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.”⁵¹
- *Restoration* is defined as “the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time

⁴⁹ Kay D. Weeks and Anne E. Grimmer, *The Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitation, Restoring and Reconstructing Historic Buildings* (Washington, DC: U.S. Department of the Interior, National Park Service, 1995), pg. 17.

⁵⁰ Kay D. Weeks and Anne E. Grimmer, *The Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitation, Restoring and Reconstructing Historic Buildings* (Washington, DC: U.S. Department of the Interior, National Park Service, 1995), pg. 61.

⁵¹ Kay D. Weeks and Anne E. Grimmer, *The Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitation, Restoring and Reconstructing Historic Buildings* (Washington, DC: U.S. Department of the Interior, National Park Service, 1995), pg. 165.

by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period.”⁵²

Rehabilitation is considered the best approach for treatment when repair or replacement of deteriorated features is necessary; when alterations or additions are planned to support new or continued use; and when the recreation of the landscape to represent a particular time is not appropriate. Rehabilitation is the appropriate treatment approach for the SMUD Headquarters property because it allows compatible adaptive use of the landscape to accommodate sustainable maintenance practices, SMUD operations, and modification of buildings and grounds to meet new health/safety and accessibility codes.

The Secretary of the Interior’s Guidelines for Rehabilitation of Cultural Landscapes specifies the following standards for rehabilitation:

- A property will be used as it was historically or will be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
- The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
- Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
- Changes to a property that have acquired historic significance in their own right will be retained and preserved.
- Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
- Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
- Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

⁵² National Park Service, “Technical Preservation Services: Restoration as a Treatment” Available: <http://www.nps.gov/tps/standards/four-treatments/treatment-restoration.htm>.

- Archaeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
- New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
- New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Treatment Concept

According to the Secretary of the Interior's *Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*, "when alterations to a cultural landscape are needed to ensure its continued use, it is most important that such alterations do not radically change, obscure, or destroy character-defining spatial relationships and land patterns, or features and materials...if, after a thorough evaluation of alternative solutions, a new addition is still judged to be the only viable alternative, it should be planned, designed, and installed to be clearly differentiated from the character-defining features so that these features are not radically changed, obscured, damaged, or destroyed."

The goal of treatment at the SMUD Headquarters property is to manage change within the landscape in a way that preserves historic character and character-defining features while permitting new uses, alterations, and additions that support continued SMUD operations. Treatment for the landscape is proposed in a rehabilitation framework that incorporates principles of sustainability and accessibility, in cases where small modifications to the landscape conditions or proposed maintenance activities can support these principles while also supporting the integrity of the historic landscape. Treatment focuses on the retention, maintenance, and repair of historic features and the preservation of overall landscape patterns and relationships that characterize the design. These patterns and relationships include the primary spatial organization of the building, plazas, and terraces; the organization of major circulation features and vegetation; and the designed landforms. Rehabilitation will also protect the general aesthetic character of the property as it was designed during the period of significance, with a special emphasis on the landscape's planned mature character.

The property's historic character is defined through the unified Modernism style of the building and landscape, constructed over a relatively short period of time in 1959; the spatial organization of the landscape created by the arrangement of building, roads, topography, and vegetation; the maintained appearance of the lawns and vegetation;

and the private courtyard with its distinctive materials and plantings. The landscape character evolved over a longer period of time than the SMUD Headquarters Building, and matured in later decades of the 20th century when the vegetation reached full size. The historic character of the site is created by the relationship of its components, not by any one feature in isolation. The streamlined character of the historic modern landscape—with healthy plants, trimmed lawn, edged walkways, smooth paved surfaces and topography, and clean structures—is an important attribute of the landscape. The historic as-built drawings provide an outstanding record of the landscape's historic character and are a reference for the preservation of historic features and a benchmark for proposed changes.

Treatment Guidelines

Guidelines for treatment describe how to accomplish necessary changes in the landscape without compromising historic character. The guidelines are intended to complement the treatment recommendations and to establish a general method for landscape preservation.

General

- Undertake all landscape work in compliance with *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*.
- Preserve the character of the historic designed landscape by protecting individual elements as well as the overall landscape.
- Ensure the compatibility of proposed elements by appropriately responding to the historic designed character and scale of the site.
- Base all treatments on historic documentation whenever possible.
- Minimize new construction. Construct limited new improvements as necessary to increase the functionality of the site, enhance the user experience, increase the site's ecological sustainability, achieve accessibility, or meet other project-specific goals.
- When adding new features, carefully consider the potential impact of the development on the patterns of spatial organization and the cultural landscape, natural features and systems, health of the environment, and historic character of the site as a whole. New or altered facilities should be as nonintrusive as possible while allowing for utility, accessibility, and safety.
- Minimize destructive activities such as excavation.

Documentation

- Undertake specialized historic documentation such as a historic American building survey or historic American landscape survey through the efforts of experienced historic preservation professionals before changes that affect the property's historic resources are initiated in the future. Detailed surveying or other methods of documentation may be required.
- Maintain a “record of treatment” for all landscape management activities. This record should include photographs, accounting information, narratives of the work, conditions, contractors, and construction materials.

Spatial Organization and Land Use

- Preserve the spatial relationships of the historic building and structures in the landscape.
- If additional new buildings or structures are required, consider placing them outside the primary zone of the main SMUD Headquarters Building and in areas without a concentration of historic landscape features. New buildings or structures must not compete in scale or size with the existing historic building.
- Preserve general vegetation patterns of the property.
- Plan any future use of the historic buildings and landscape to be compatible with the historic context and character of the property.
- Maintain to the greatest extent feasible all landscape features associated with historic land use, including maintaining historic functions and use, where possible.

Topography

- Preserve the general topographic configuration of the landscape.
- Undertake a topographic survey that documents the shape, slope, elevation, aspect, and contour of the land before undertaking any changes to existing topography.
- If grade changes are required, attempt to resolve grading through fill rather than cut to protect original topography. If cut is required, attempt to preserve the essential characteristics of the topography at that location, with an emphasis on the retention of shape, slope, aspect, and contour.

- Before initiating ground-disturbing activities, undertake archaeological investigations of the area to be disturbed.
- Conduct slope stabilization as needed, using lawn, appropriate native species rather than invasive species, or unobtrusive slope stabilization materials that are compatible with the historic character of the landscape.
- When controlling drainage and erosion problems, explore design alternatives that minimize changes to the landform. Any necessary changes should be compatible with the original design concept of the sculpted landform.
- Minimize trenching or digging and minimize ground disturbance near historic resources.
- If soil disturbance is required for construction of utilities or for other subsurface interventions, minimize the negative effects on designed topography by using hand digging or other methods that reduce impacts on the landform. Replace soil and the ground cover to match the surrounding condition.

View and Vistas

- Screen undesirable views from the property or views of new features through the use of vegetation or topography. Ensure that new screening vegetation or topography is compatible with the historic character of the property.
- Consider restoring a historic view only after historic documentation confirms its location, determines that the object of the view is still in place, and finds that the intervening features can be removed without a negative effect on the landscape.

Vegetation

Because planted landscapes require intensive maintenance and upkeep, vegetation management is critical. Vegetation management strategies must be considered in conjunction with the management of historic resources, as well as access, safety, and sustainability.

Existing Vegetation

- Preserve character-defining trees and shrubs.
- Preserve character-defining lawn and other ground cover vegetation.
- Monitor tree health. Follow tree maintenance recommendations developed by certified arborists to protect the long-term health of mature trees.

- Develop a removal plan for hazardous trees and trees in poor condition, using the services of a certified arborist experienced with historic trees and gardens. Before removal, document all historic features with photographs and on plans.
- Remove hazardous trees, using a method that minimizes potential impacts on known cultural landscape resources, under the guidance of a historical landscape architect and/or an archaeologist.

Invasive Vegetation

Disturbed sites or sites undergoing construction activities may be overwhelmed by invasive vegetation, which can lead to the degradation of the historic character of the landscape. Invasive vegetation management is a complex and often challenging process, one that will have to be accounted for in relation to both maintenance needs and labor capacity. Long-term management commitment and a consistent approach with regular follow-up are critical to the successful control of invasive plants. The following protocols should be followed:

- Do not remove existing vegetation (invasive or not) without a plan for its replacement.
- Engage a qualified professional to develop a historic landscape maintenance plan.
- Engage management staff or another qualified professional to research sustainable strategies for eradication and control of invasive vegetation, and to update these on a regular basis as new research becomes available.
- Eradicate disruptive invasive vegetation through sustainable methods. Consider the use of appropriate herbicides if necessary.
- Develop a list of predicted invader species and develop sustainable strategies to prevent their colonization of cleared areas.
- Avoid management of invasive vegetation in areas that may have archaeological or cultural landscape resources until further cultural resource analysis and investigation has been completed.
- Undertake ecologically sound removal practices that minimize ground disturbance and will not damage other resources.
- Select noninvasive plants for new plantings.

Protection of Historic Trees and Plants during the Construction Phase

- Retain the services of a certified arborist to determine tree preservation strategies during construction. Create a tree protection plan.
- Control fugitive dust during construction to protect historic plants.
- Protect the root zones of historic trees during construction to minimize compaction of the root zone.
- Control invasive species on disturbed sites during construction.
- Mark all vegetation to be protected on plans and in the field before construction.
- Consider transplanting rather than removing historic plants within the site.
- Protect historic trees by avoiding the raising or lowering of the surrounding grades.
- Do not store toxic materials within 100 feet of historic vegetation areas that will remain.
- Minimize ground disturbance in sensitive historic areas when installing new plantings. Consider undertaking any ground disturbance through hand digging in historic-tree protection zones.
- Use planting methods such as installing plants by hand, select planting locations that do not conflict with the desirable plants that will remain, and protect existing plants and resources that will remain.
- Stockpile topsoil and other construction materials in areas with few or no known historic resources.
- Identify historic vegetation on a plan that is available to the contractor. Flag all areas containing sensitive historic resources before construction and designate them as “no construction” zones. Some resources may need to be fenced.

New Planting

- When replacing character-defining vegetation, attempt to match the species or cultivars currently on the site, or consider using native species or drought-resistant species with similar characteristics to the missing historic plants.
- Select plants that are not diseased or infected with any plant pathogen to avoid threats to existing plant communities.

- Install new plants in areas of known or sensitive cultural resources using minimally damaging planting techniques. Recommended techniques include minimizing ground disturbance by installing small plants and saplings when possible; installing plants by hand; avoiding planting trees on steep slopes; selecting planting locations that do not conflict with or threaten existing, desirable plants; and protecting existing plants and other resources. Acceptable planting techniques include repairing and mitigating damage to resources caused by planting.
- If lawn replacement is required, consider adding new low-ground-cover plants or lawn that is drought-tolerant or native, or both. New plants should retain the smooth historic quality of the landscape's ground plane.
- Any grass seeding should occur at the proper time of year, and with a seed mixture that is based on an understanding of existing soil and light conditions, hydrology, and potentially historic plants.

Irrigation

- Work to meet Leadership in Energy and Environmental Design (i.e., LEED) certification standards for all new irrigation systems.
- Consider incorporating new technologies for irrigation as a means of enhancing water conservation.
- Minimize ground disturbance when removing or replacing existing irrigation components to protect cultural resources.
- Reuse existing irrigation line trenches during replacement of irrigation systems, to the degree practicable.
- Establish a cyclic maintenance program for the replacement of valves, irrigation heads, water lines, and automation clocks to maintain optimal effectiveness and system efficiency.
- Consider creating separate lawn and tree irrigation zones to provide water efficiently to different types of vegetation in the landscape.
- If adding or replacing new irrigation, ensure that the appearance of the irrigation system is minimized and is compatible with the historic landscape.

Circulation

- Preserve historic circulation features and systems.

- Before repairing or modifying any circulation feature, document its condition, design, and construction for the historic record.
- Repair walkways that are in poor condition. When the number of repairs and patches on a particular walkway negatively affects the character of the feature, replace the material altogether with new material that matches the existing material in its historic location. Date-stamp the new material to distinguish it from the historic material.
- If necessary in the future, design new pathways or other pedestrian circulation systems that are compatible in character with the historic circulation systems. Refer to guidelines for topographic modifications when updates for circulation systems are required.
- Construct new paths in the landscape to meet Americans with Disabilities Act Accessibility Guidelines standards for accessibility.
- Retain the historic alignment and width of the historic roads. If modifications must be made to historic roads, limit the change in alignment and width to the minimum required for safety and accessibility.

Buildings and Structures

- Preserve the historic building and structures.
- Plan for any required additions or modifications to the historic building and structures in consultation with preservation specialists and in a manner that is compatible with the historic character and scale of the features.
- Maintain the historic building and structures through collaboration with the appropriate preservation specialists, such as historical architects or structural engineers familiar with historic buildings. Maintenance activities may include:
 - removing stains and blemishes from buildings and structures,
 - repainting railings and other exterior surfaces of the building,
 - repairing damage to concrete,
 - inspecting and repairing the mural and other tiled structures with the assistance of appropriate experts,
 - clearing the building's foundation of debris and other materials or water that may accumulate through soil displacement or water collection, and

- removing biological growth from the building and structures.
- Match existing historic materials during replacement, duplication, or repair to the extent possible. Consult with qualified professionals to undertake a materials analysis. Consider using sustainable or local materials for replacements, if doing so is possible without compromising the historic character of the feature, if that replacement will result in maintenance reduction or provide better longevity.

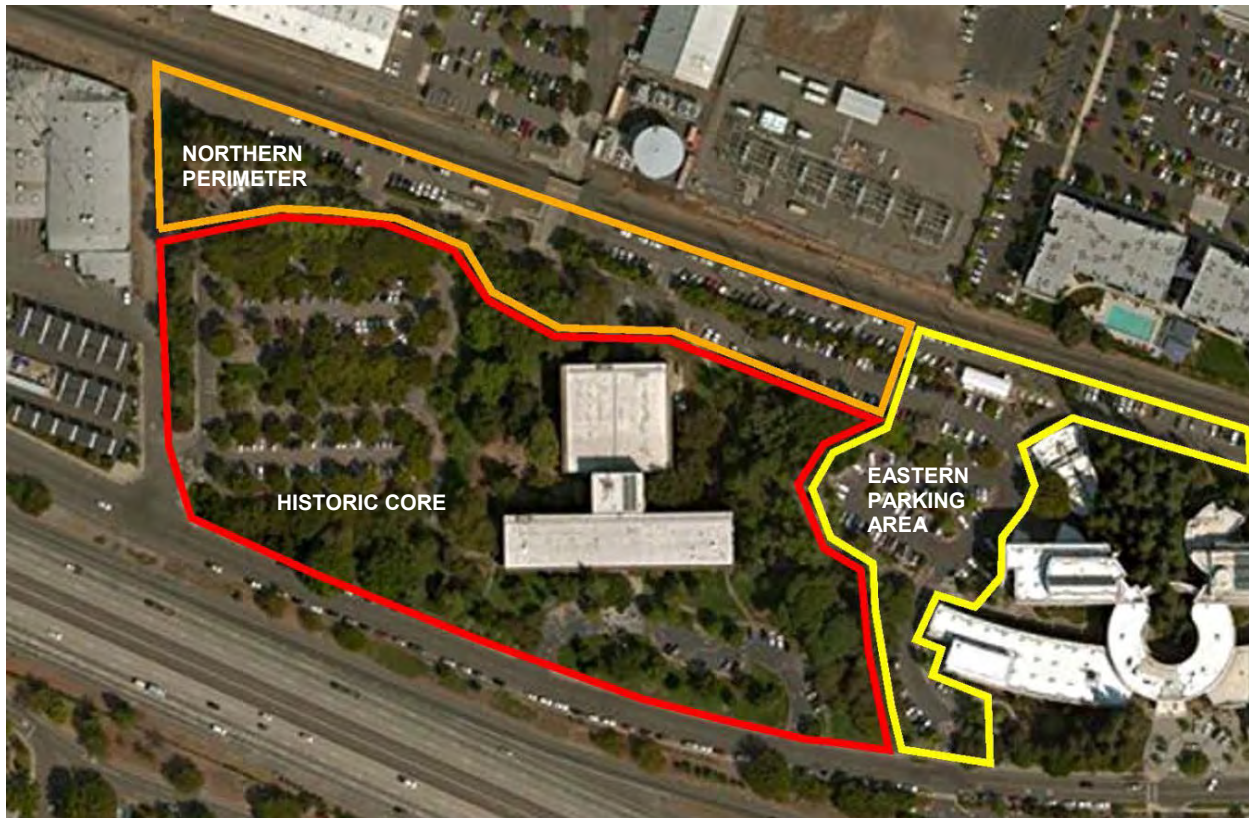
Small-Scale Features

- Preserve character-defining small-scale features in the landscape, such as historic boulders.
- Document any small-scale features slated for removal for the historic record.
- Consider removing new incompatible small-scale features.
- Minimize the addition of new small-scale features to the landscape, and ensure that new features are compatible with the site's historic character.
- Limit new small-scale features to those required for safety, sustainability, or accessibility.

Management Zones

Treatment recommendations are organized by cultural landscape management zones (Figure 30) and by the landscape characteristics documented above under "Analysis." This CLR proposes three management zones defined by their historic integrity:

- The **Historic Core** retains the most historic integrity, with a higher density of character-defining features and high design significance.
- The **Northern Perimeter** has moderate integrity, with a moderate density of character-defining features and a moderate level of design significance.
- The **Eastern Parking Area** retains low or no integrity, with a low density of character-defining features and low design significance.



Source: Bing aerial image and AECOM

Figure 30. Cultural landscape management zones.

Treatment Recommendations

Recommendations are intended to (1) preserve the character-defining features of the property that convey its significance as a designed landscape; (2) provide viable approaches for future management of the property, and (3) enable necessary safety and operational updates without compromising the integrity of the historic design. These recommendations are intended to be part of the long-term planning for the historic landscape. Treatment recommendations identify detailed actions that can be undertaken to preserve contributing resources. The basic process for treatment includes the following possible actions, in order of priority:

1. **Identify, retain, and preserve:** These basic actions involve identifying, retaining, and preserving the features in a historic landscape that contribute to its significance and to the character of the historic landscape. These actions are the first priority for treatment. The contributing and character-defining features of SMUD landscape are described in detail above under “Evaluation and Analysis.”
2. **Protect and maintain:** These actions describe the measures that should be undertaken to protect and maintain the identified contributing features.

3. **Repair:** When the contributing features are in poor condition, repair is recommended.
4. **Replace:** If a feature's condition is too poor to repair, then replacement, usually in-kind, is recommended.
5. **Compatible alterations and additions:** Alterations and additions may be required for a feature to ensure its continued use.

See the project's as-built drawings for guidance on all repairs and replacements of historic material and character-defining features.

Historic Core

The Historic Core contains the primary historic resources on the SMUD Headquarters property: the Headquarters Building and loggia, cafeteria terrace, entrance plaza, southern and western parking areas, pedestrian paths, sculpted landforms, and vegetation. This assemblage of features—maintained to emphasize its particular combination of smooth, streamlined paving and lawn with “natural” boulders and trees—created the modern landscape character for the property. A restrained palette of small-scale features complemented the abstracted organic character of the landscape.

The goal for the Historic Core is to minimize disruptive changes in the landscape, and to retain, maintain, and repair historic features and systems as necessary for their long-term preservation. All new interventions intended to improve access, security, or other functions must be carefully planned and designed to incur minimal visual and physical disturbance in the landscape. Creative alternatives requiring little or no physical landscape alteration to meet project goals are considered before new physical interventions in the Historic Core are undertaken.

Topography

The manipulation of the topography at the SMUD Headquarters property resulted in one of the essential characteristics of the designed landscape: the abstracted organic quality of the undulating ground plane. The modified topography created a subtle separation between land uses in the landscape, organized pedestrian movement, and enclosed spaces such as the cafeteria terrace. The lawn planting throughout much of the Historic Core created a surface condition for the landforms that made them easily legible.

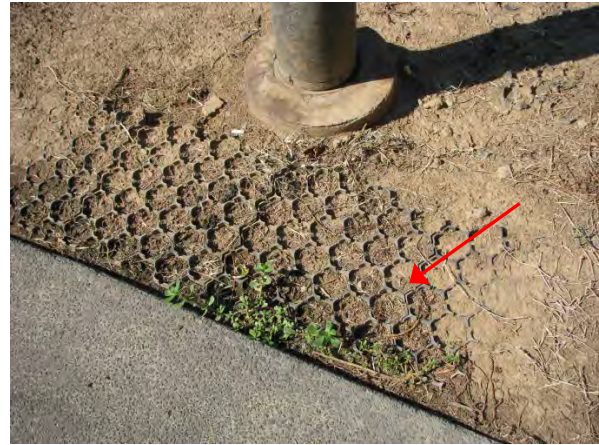
- Retain and maintain the existing contours of the landform.
- Reestablish lawn on sculpted landforms that are unprotected by vegetation or other ground cover (Figure 31).

- Minimize the visual impacts of erosion control or stabilization measures in highly visible locations such as along the margins of walks. For example, consider using shade-tolerant, low-maintenance and low-growing ground cover plantings (Figure 32) to stabilize slopes too shaded for grass, or erosion-control netting made out of natural materials under lawn.



Source: AECOM

Figure 31. Landform with no ground cover



Source: AECOM

Figure 32. Exposed soil stabilization materials

- Consider adding drainage improvements or soil stabilization along walks and in areas where erosion is a problem. However, avoid visually prominent surface drainage interventions, such as concrete-lined swales or major regrading, that will alter the landform's simple curves and unified ground plane.
- If topographic modifications are required near paved areas in the Historic Core, minimize regrading to satisfy safety and accessibility requirements, and ensure that revised landforms create a curving, smooth even slope and meet flush with adjacent pavements or curbs.
- Consult the as-built drawings before undertaking projects that could result in changes to topography, drainage, or landform.

Views and Vistas

The primary view of the SMUD Headquarters Building is from the south. This view is now largely blocked by vegetation. The centrally located entrance is obscured by thick, evergreen trees and shrubs, although the upper corners of the building are still visible from the street and sidewalk. The goal for treatment is to restore the view of the building's south façade, while not removing all of the vegetation from the south side of the property.

- Consider removing selected vegetation to recreate a more complete view of the Headquarters Building's south façade. Avoid removing all vegetation from this area. Consult the historic planting plan for guidance and coordinate treatment actions with the recommendations presented under "Vegetation" below.
- Avoid adding new features visible from S Street that would compromise the view toward the building and landscape from the south.

Vegetation

The planting concept for the SMUD Headquarters property relied on introducing screening vegetation to shelter the parking areas and loop roads, rows of trees to shade the parking areas, and clusters of trees and shrubs throughout the Historic Core with an overall ground cover of lawn. The planting plan for the property was altered (possibly during the construction period) to include substantially more trees and shrubs. For example, the original planting plan for the south entrance area limited vegetation to approximately 12 oak trees and lawn. The as-built plan showed a greater quantity and wider variety of trees and shrubs, although the planting key is missing from the final as-built plan, which hinders the identification of specific plants. In addition, many trees and shrubs have been added or replaced over time, resulting in a substantial amount of new vegetation. The landscape inventory and partial plants list in Appendix D document the discrepancy between the as-built planting condition and current conditions.

Recommendations for the rehabilitation of vegetation are therefore based on a goal to enhance the intended historic character of the landscape by retaining historic vegetation, selectively removing nonhistoric trees, replacing historic trees that are in poor health, refurbishing lawn and shrub plantings, and selectively substituting nonnative or drought-intolerant vegetation with native and drought-tolerant plants if required. Vegetation in the Historic Core should be compatible in form, size, habit, and character with the historic species; sustainable, in that it complies with the proposed water supply and maintenance practices for the landscape; and appropriate within the context of the historic designed landscape.

Historic vegetation may be replaced if the plant is in poor condition and cannot be rejuvenated; if the plant is not a unique or heritage specimen; or if the plant requires exceptional maintenance practices, including high levels of water or other support for health and survival.

Lawn and Other Ground Cover

- Retain and maintain the lawn in good condition throughout the Historic Core, with green color and a neat, trimmed height.

- Renovate and maintain lawn areas as needed, and based on sound horticultural practices, to create a healthy lawn. Consider options such as core aeration, thatching, or weed control.
- Renovate the lawn adjacent to pathways in locations where the soil has become compacted from foot traffic and the lawn is in poor condition or missing. Lawn may need to be replanted or resodded in these areas.
- Rejuvenate the lawn in areas that have become denuded over time (Figure 33).
- Maintain a clean edge between the lawn and pathways and other paved areas.
- Avoid replacing lawn with new paved areas.
- Retain and maintain ivy (*Hedera helix*) and periwinkle (*Vinca minor*) in locations where it currently exists. Trim these plants from paved areas, structures, and trees (Figure 34). Consider replacing these ground covers over time with other species that provide the same evergreen, low-growing characteristics but are not invasive.



Source: AECOM

Figure 33. Lawn requiring rejuvenation.



Source: AECOM

Figure 34. Ivy requiring trimming.

- Avoid replacing lawn areas with other ground covers or planting areas. If lawn must be replaced because of operational or maintenance demands, investigate the use of alternative turf grass varieties or species that match the character of the historic lawn but have smaller water demands, are easier to maintain, or are more tolerant of foot traffic. Also consider adding low-growing ground-cover plants that match the surrounding lawn color and height as closely as possible. Consider installing alternative plantings on the “back” or lowest side of land forms so that their visibility is limited in the landscape.

Trees

- Retain and maintain trees that qualify as Heritage Trees.
- Retain and maintain mature trees that are in good condition.
- Consider new maintenance practices for mature trees in fair or poor condition; revise pruning regimens, watering rates, or other horticultural practices based on best arboriculture management to upgrade the condition of these trees.
- Retain and maintain healthy zelkovas (*Zelkova serrata*) in the western parking area. If the trees in this area cannot be rejuvenated or upgraded from poor condition to fair or good condition, consider replacing them.
 - Replace trees in-kind or replace the trees with others that match the zelkovas in habit, size, and character, but have smaller water demands or are more sustainable in other ways. Consider creating a mix of species (two to three) that match both each other and the historic zelkovas in appearance to retain a consistent character for the parking area vegetation and to promote ecological diversity.
- Retain and maintain mature, healthy trees that provide screening for the western parking area (located between the western parking area and S Street). In addition to several Heritage-sized trees, these also include trees such as strawberry tree (*Arbutus unedo*).
- Retain and maintain mature, healthy trees between the loop road and the western perimeter of the property. In addition to several Heritage-sized trees, these include olives (*Olea europaea*) and cork oak (*Quercus suber*).
- Retain and maintain the Japanese flowering cherries (*Prunus serrulata*) along the eastern edge of the parking area. Although these are new trees, they match the vegetation specified in the historic planting plan.
- Retain and maintain selected mature, healthy trees near the parking ramp area. Consider reducing the number of smaller or unhealthy trees to match the character proposed in the as-built drawings for plantings, which specified only eight trees for this location. (Coordinate with the recommendations for shrub plantings and ground covers.)
- Retain and maintain mature, healthy trees in the cafeteria terrace area.
- Retain and maintain healthy, mature trees south of the SMUD Headquarters Building that are documented in the historic as-built drawings.

- Consider removing selected trees to improve the view of the building from the south. Trees considered for removal may include the Chinese juniper (*Juniperus chinensis*) behind the freestanding wall (Figure 35) or the Norway maple (*Acer platanoides*) in the planting bed between the parking area and S Street. Neither of these species appeared in the historic as-built planting plans.



Source: AECOM

Figure 35. View-blocking Chinese juniper

- Consider removing trees from the Historic Core that are hazardous or in poor condition with no likelihood for rejuvenation. Consider removal and replacement under the following conditions:
 - If the tree to be removed is a unique specimen on the site, or a Heritage-sized tree, or if it can be proven to date to the period of significance, replace the tree in-kind.
 - If there is a strong justification for not replacing the tree in-kind, consider replacing it with another tree that matches the original in character with similar habit, form, size, and ornamental characteristics.
 - If the tree to be removed is not unique, or is part of a well-developed cluster of trees that requires additional room for the healthy growth of the other individuals, or if it was not identified on the historic as-built planting plan, then consider not replacing the tree at all.
- Maintain lawn under individual trees that are located in lawn areas.

- Provide a well-defined mulch bed around the trunks of clustered trees or trees in planting beds, such as trees in the parking area's "triangle" or "circle" planting areas.
- Avoid adding new trees within the Historic Core unless undertaking a tree replacement plan based on the historic as-built drawings.

Shrubs

- Retain and maintain healthy, mature shrubs such as glossy privet (*Ligustrum lucidum*), rhododendron (*Rhododendron occidentale*), or other shrubs that match the type and location of shrubs identified on the historic as-built planting plan. Mulch shrub areas.
- Remove volunteer shrubs from planting areas.

Ornamental Vegetation

- Consider removing selected ornamental vegetation such as daylilies (*Hemerocallis sp.*) or other species from areas historically designated for lawn (Figure 36). Replace these plants with lawn.



Source: AECOM

Figure 36. Incompatible plantings that may be removed.

- Retain ferns and other ornamental vegetation in the cafeteria planting beds.
- Rejuvenate the planting beds around the cafeteria terrace through fertilization, aeration, mulching, or other techniques to improve plant health.
- Consider adding new ornamental vegetation in the cafeteria terrace planting beds to fill in bare areas. Base the selection of new plants on the historic planting lists. (See Appendix D.)

Circulation

The circulation systems within the Historic Core comprise vehicular parking areas, entrance driveways, and pedestrian pathways. A variety of curbs and simple edging define the discrete circulation features and separate them from the surrounding lawn areas. Concrete and asphalt are the primary materials for the landscape's circulation systems, and a streamlined, simple geometry for the layout of the systems helps create the modern character for the landscape (Figure 37). The circulation systems also structure the progression of movement through the landscape, from site entrance to parking to pathway to building.

Vehicular Systems

- Retain and maintain the historic vehicular entrances and exits within the Historic Core.
- Retain and maintain the loop road within the Historic Core. Retain its historic alignment and width.
- Retain and maintain the south-entrance parking area and the two western parking areas in their historic location and with their historic layout.
- Retain and maintain the ramps into the structured parking.
- Avoid adding new surface parking areas or driveways within the Historic Core.
- Coordinate the maintenance and repair of vehicular systems with the rehabilitation for the associated planting areas, such as the triangle planting areas, lawn areas, and tree planting.
- Consider replacing the new concrete paving within the south-entrance parking area with asphalt and a curb to match the historic condition.
- Maintain the alignment of the curving concrete curbs. If curbs are excessively chipped, cracked, or broken (Figure 38), replace them in sections using the original alignment, and match the historic concrete material and shape.
- Maintain asphalt paving and repair sections determined to be in poor condition. Undertake repairs or replacement in sections to avoid unsightly spot patching.
- Coordinate any required regrading for vehicular pavement with plans for the associated regrading for pedestrian pavements (for example, if code or other safety and accessibility requirements prescribe design updates for curb ramps or the historic “reversed” curb). Maintain the historic horizontal alignment of circulation features during regrading if possible.



Source: AECOM

Figure 37. New concrete paving at entrance.



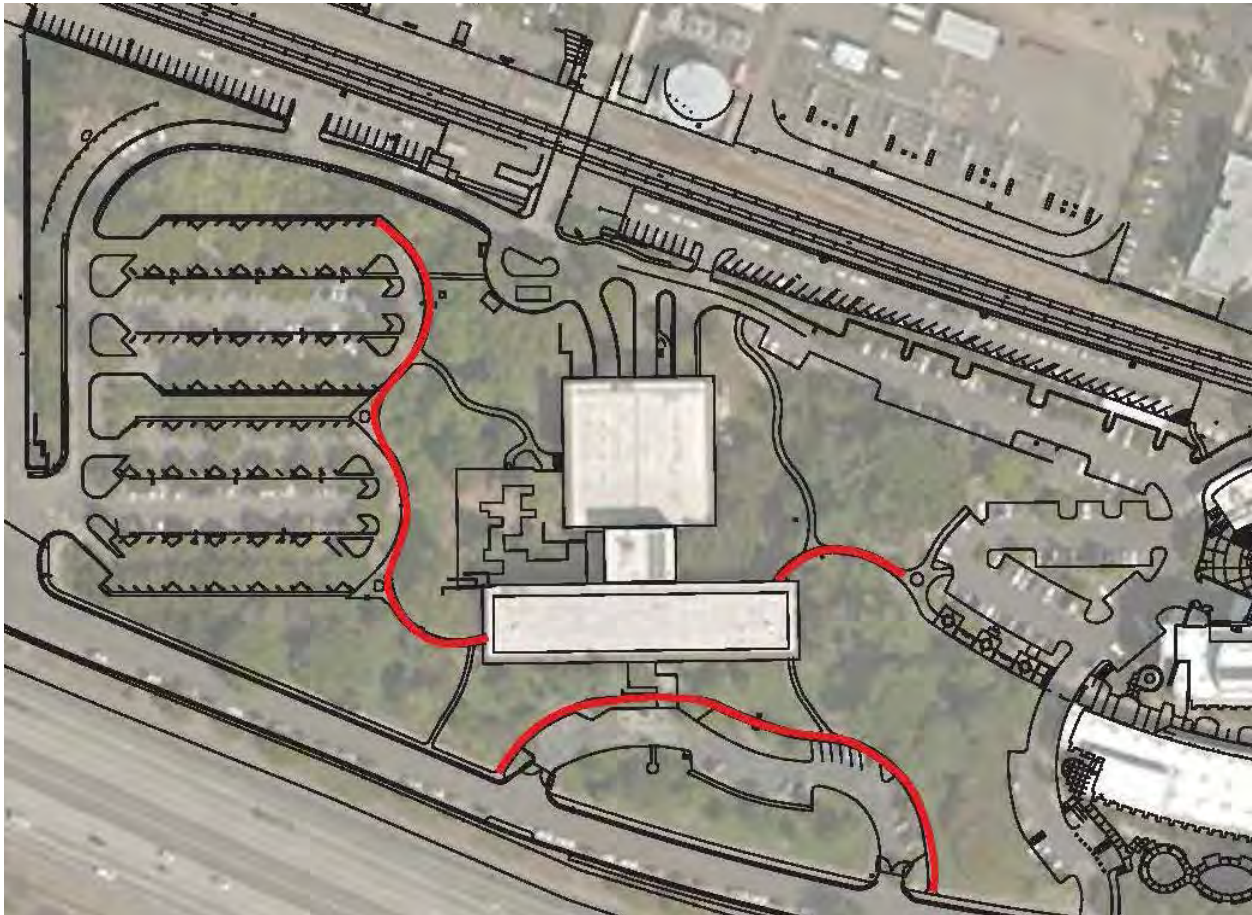
Source: AECOM

Figure 38. Broken curbs.

- Minimize the introduction of visually obtrusive new interventions within paved vehicular areas, such as brightly painted curbs, bollards, or ramps. Attempt to resolve safety requirements with features that have a minimal visual impact on the historic landscape.
- Replace concrete curb stops as necessary when their condition deteriorates. Replace curb stops in kind.
- Retain and maintain wood edging between the asphalt paving in the western parking area and the triangle planting locations. If the edging continues to deteriorate and requires replacement, replace it in-kind or consider using a more durable material that matches the size and color of the historic edging.
- Ensure positive drainage on all paved roads and parking areas.
- If new utilities, stormwater management features, or other site systems are required for the property in the future, consider placing them below ground under asphalt pavement in parking areas or roads to minimize their appearance in the Historic Core.

Pedestrian Systems

- Retain and maintain the historic pathways, including the gently curving pathway along the south-entrance parking area, the curving pathway along the western edge of the western parking area that connects to the SMUD Headquarters Building, and the curving pathway linking the eastern parking area to the building (Figure 39). Retain the historic alignment, grading, materials, and width of these features.

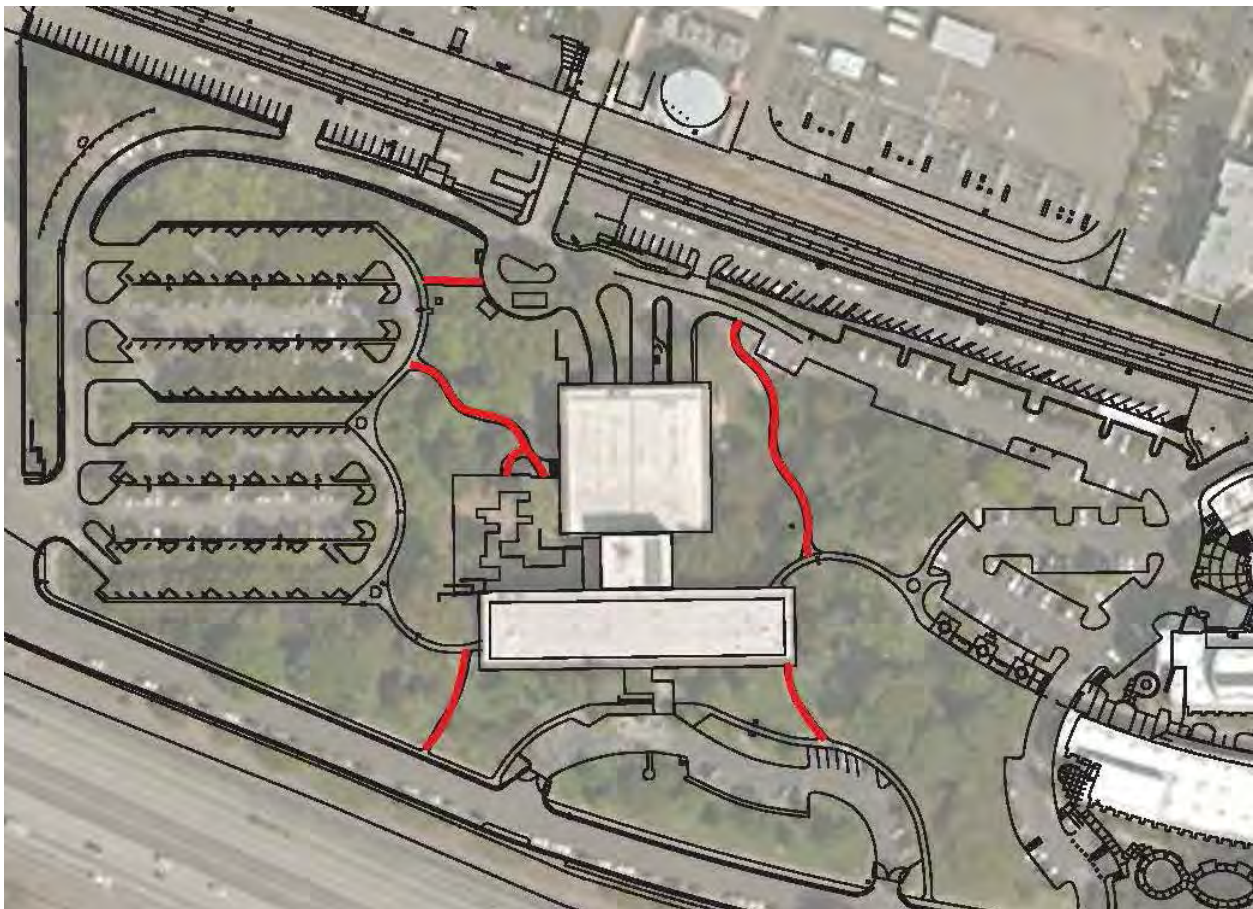


Source: Bing aerial imagery, SMUD, AECOM

Figure 39. Historic pathways to remain.

- Retain and maintain the concrete entrance plaza.
- Maintain a clean edge between pathways and adjacent lawn areas.
- Repair the concrete pathways as necessary, while maintaining the smooth curve of the path alignment and the tinted, exposed aggregate concrete material. Repair concrete in complete sections as required, cutting along joint lines to avoid unsightly spot patching. Maintain a smooth and level surface for pathways.
- If updates to the pathway system are required to improve site accessibility, maintain the historic alignment of the path, but undertake the minimal grading or widening required to render the path accessible. Undertake regrading in coordination with guidance presented above under “Topography,” and to provide a smooth transition between the pathways and adjacent lawn areas.

- Consider removing pathways that postdate the period of significance. These include the paths:
 - from S Street to the southwest corner of the SMUD Headquarters Building,
 - from the western parking area to the cafeteria terrace,
 - from the western parking to the loop road “bump-out” north of the Headquarters Building,
 - from the entrance parking to the southeast corner of the Headquarters Building, and
 - from the northern loop road to the northeast corner of the Headquarters Building (Figure 40).



Source: Bing aerial imagery, SMUD, AECOM

Figure 40. New pathways that may be removed.

- Retain and maintain the circular planting areas within the pathways near the parking areas.
- If the noncontributing (but compatible) paths must remain, then maintain them through periodic inspections and repair according to the recommendations for the historic paths, above.
- Avoid adding new paths in the landscape. If new paths are required in the future, ensure that they are compatible with the historic paths, using simple curving alignments around the historic berms, tinted exposed aggregate concrete materials, and simple jointing. Date-stamp new paved pathways.
- Remove incompatible concrete or plastic stabilization materials from the edges of all paths (Figure 41).
- Retain and maintain the loggia. Repair concrete paving that is cracked, chipped, or spalled (Figure 42). Consider removing the painted coating from the concrete paving.



Source: AECOM

Figure 41. Incompatible path edging that may be removed.



Source: AECOM

Figure 42. Concrete paving with incompatible new coating.

- Ensure positive drainage on all pathways.
- Retain the jointing pattern on all concrete paving.

Buildings and Structures

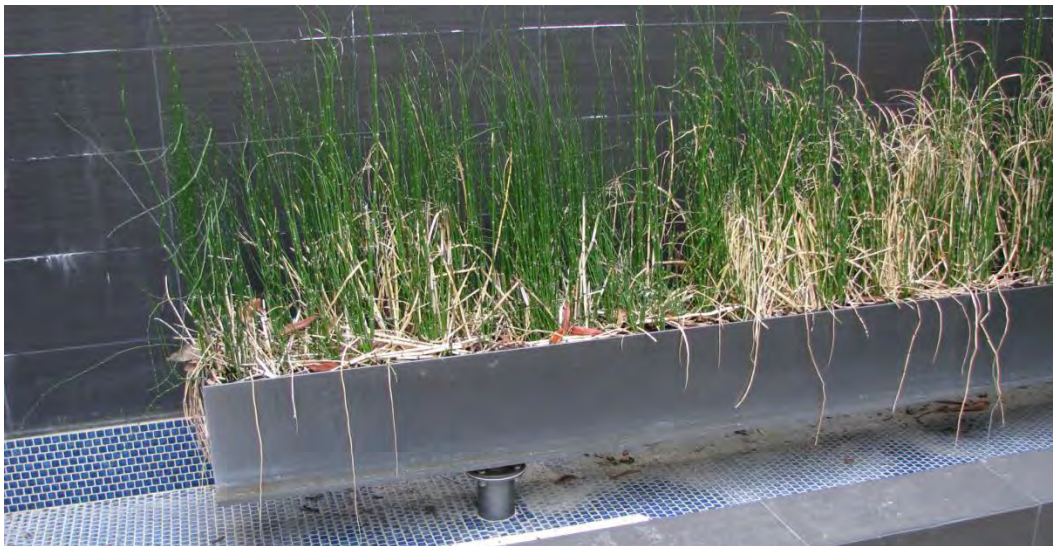
The historic building and structures are the central features at the SMUD Headquarters property and establish the property's modern aesthetic. The strong object-quality of the

building, building transparency, mural, concrete site walls, terraces, and simple palette of materials help to define and shape the site's character and organization. Specific recommendations for the treatment of the SMUD Headquarters Building are included in the property's historic structures report. However, this CLR provides basic recommendations for the general treatment of buildings and structures insofar as those actions may affect the design and use of the surrounding landscape.

- Preserve or rehabilitate the historic building and structures following *The Secretary of the Interior's Standards for the Treatment of Historic Properties*.
- Minimize new additions or modifications to historic buildings and structures.
- Avoid adding new above-grade buildings or structures in the Historic Core management zone. If new buildings are required for SMUD operations, consider locating them outside the Historic Core.
- If a new building is required in the Historic Core, mitigate its appearance by placing it below grade, screening it with appropriate vegetation that is compatible with the character of historic vegetation, and/or screening it with topographic modifications that are compatible with the historic condition (i.e., lawn-covered earthen berms).
- Undertake accessibility improvements to building exteriors if required, using a palette of materials and design that is compatible with the historic character of the building and site, such as concrete or metal accessibility ramps and painted metal railings with a strong horizontal geometry. Consider placing new structures such as ramps in visually unobtrusive locations.
- Maintain the stone edging around the foundation of the building's north wing.
- Remove noncontributing structures, such as the two concrete retaining walls located along S Street. Replace these walls with graded topography and vegetation such as lawn that match the character of the historic condition. (See historic drawings L-3 and XL-12 in Appendix A).
- Consider retaining the freestanding wall at the entrance plaza until more can be learned about this feature. Maintain the tiles and lettering on the wall. Clean the tiles periodically and repair or replace the grout as needed with new material that matches the historic. Periodically inspect the wall for structural integrity. Consider screening the mechanical systems on the north side of the wall with low-growing vegetation.
- Retain and maintain the concrete retaining walls at the cafeteria terrace and at the structured parking entrance. Do not add paint or other coatings to the wall surfaces. Clean the walls periodically and keep them free of plants and other

biological growth. If a historic retaining wall becomes structurally unsound or is damaged, replace it in kind.

- Retain and maintain the cafeteria terrace. Repair the concrete-stepped terraces as necessary and replace them in-kind with new concrete that matches the historic concrete when or if the concrete becomes severely cracked, chipped, or spalled. Date-stamp any new concrete. Maintain the wood headers and replace them with new redwood headers when required; miter the header corners as directed in the as-built drawings.
- Consider removing the tiles from the cafeteria terrace pool and vertical walls to restore the original appearance of the terrace. If the original concrete surfaces remain behind the tiles, clean and repair them as necessary. Clean and repair any tiles that remain.
- Consider removing the planter located in the pool at the cafeteria terrace (Figure 43).



Source: AECOM

Figure 43. Incompatible planter in cafeteria terrace pool.

- Consider removing the outdoor kitchen equipment from the cafeteria terrace and replacing it with a planting area according to the historic as-built drawings.
- Coordinate any proposed rehabilitation of the cafeteria terrace with updates for vegetation and small-scale features.

Small-Scale Features

The Historic Core contains a large number of small-scale features; most of them postdate the period of significance and many of them are incompatible with the historic character of the landscape. The goal for the management of small-scale features is to retain historic features, replace missing features, remove unnecessary nonhistoric features, and mitigate the appearance of required small-scale features.

- Retain all historic boulders in their original location.
- Retain all historic benches and table-benches in their original locations.
- Replace the missing historic benches and table-benches to the cafeteria terrace, as identified in the historic as-built drawings. If the missing site furnishings must be reconstructed, build them according to the historic drawings.
- Consider removing the site identity sign facing S Street and replacing this sign with graded topography and lawn.
- Consider replacing the bollard lights with new unobtrusive lights. These may be ground-level lights flush with lawn or pathways.
- Avoid adding new fencing. If new fencing is required anywhere in the Historic Core, ensure that the fencing matches the horizontal geometry, materials, and character of the building's historic railings or is very unobtrusive in design (Figure 44).



Source: AECOM

Figure 44. Historic railing, above, and incompatible fencing, below.

- Consider removing incompatible small-scale features such as concrete planters, fencing around the cafeteria terrace, painted metal bollards, concrete bollards, the flagpole, and bike racks in the loggia (Figure 45).



Source: AECOM

Figure 45. Incompatible planters, bollard, flagpole, and mechanical equipment at the south entrance area.

- Consider moving mechanical equipment from highly visible locations at the front of the building and from the cafeteria terrace to more unobtrusive locations if possible. Screen mechanical equipment with appropriate vegetation or compatible fencing.
- Replace chain-link fences near the building with new fencing (or vegetation) that is compatible with the historic character of the site or remove the fences altogether.
- Maintain a simple palette of new site furnishings such as tables, chairs, and trash receptacles for areas such as the lower level of the cafeteria terrace. Avoid adding site furnishings to other landscape locations.
- If perimeter security is required, consider retaining the existing (new) boulders or use simple metal bollards painted a dark color to minimize their appearance.

Northern Perimeter

The Northern Perimeter zone contains historic resources such as the northern loop road and perimeter plantings along the light rail tracks. The loop road was designed as a gently curving linkage between parking areas and site entrances on the east and west sides of the SMUD Headquarters property. It also provided access to surface parking stalls near the north wing of the SMUD Headquarters Building and to the structured parking ramps. A small driveway historically created the access for a service station on a concrete pad. The loop road has two lanes and today provides significantly more parking than was available historically. The eastern end of the road appears to have been widened and straightened. This zone provides access between the Headquarters property and other SMUD property to the north. The historically utilitarian nature of the northern loop road, the lack of visibility from the front entrance to the property, and the modest modifications undertaken in the Northern Perimeter zone over time suggest that minor changes required to support SMUD operations and access may be appropriate for this zone.

Treatment for the Northern Perimeter zone is focused on retaining historic features and sensitive adjustments to the landscape that facilitate additional program or compatible uses. New additions to this zone should be compatible with the historic landscape and proposed uses should be consistent with the historic use. Screening new uses or features with compatible materials or features is an appropriate approach for this zone.

Spatial Organization and Land Use

- Continue to use this zone for access and parking or other compatible functions that increase the property's connectivity.
- Retain and maintain the vegetative screen between the SMUD Headquarters Building and the light rail tracks. New interventions along the northern loop road may also be screened.
- Retain the linear organization of the road and associated parking.

Topography

- Retain and maintain the designed landforms as possible, particularly in the northwest corner of the property.
- Consider adjusting the less visually prominent slopes as necessary to mitigate erosion or to manage stormwater more effectively.
- Consider planting low shrubs and ground cover on the less visually prominent slopes to mitigate erosion and eliminate the need for mowing. Coordinate with the recommendations presented below under "Vegetation."

Views and Vistas

- Avoid undertaking changes in this zone that would compromise the view toward the building and landscape from the south. For example, avoid adding features that are visible over the surrounding trees or the SMUD Headquarters Building.
- Consider screening new features with landform, vegetation, or compatible fencing.

Vegetation

- Retain and maintain character-defining vegetation in this zone, such as the perimeter plantings and tree clusters.
- Consider replacing lawn in less visible areas with other low-growing vegetation to aid in stormwater management, or to reduce mowing demands and soil erosion.
- Replace historic vegetation in poor condition in-kind or with native and drought-resistant plants that match the historic character of the vegetation.

Circulation

- Retain the historic circulation features (loop road, parking ramp access, and circular service drive) (Figure 46 and Figure 47). Retain the historic alignment and slopes of these features where they exist in their historic condition.



Source: AECOM

Figure 46. Historic character of the loop road to be maintained.



Source: AECOM

Figure 47. Repaved service drive to be maintained.

- If widening a historic road is necessary for emergency vehicle access or other health/safety–related requirements, minimize the change in the road’s alignment and grading to that required by code or other relevant standards and guidelines.
- Consider restoring the historic condition of the road on the eastern side of the site, with its curving alignment and narrower width. See the historic drawings for this feature in Appendix A.
- If necessary, maintain the new on-street parking and screen it with compatible vegetation.
- Avoid adding new light-rail crossings.
- Avoid adding new circulation features such as pathways or driveways.
- Repair historic circulation features as necessary. Follow the recommendations for repair listed above under “Historic Core.”
- If utilities or other new subsurface interventions are required in the Northern Perimeter zone, consider placing them under asphalt paving within the road.

Buildings and Structures

- Avoid adding major new buildings or structures in this zone. If a minor new structure is required in this zone, consider screening it with compatible vegetation or fencing.

Small-Scale Features

- Retain and maintain historic character-defining small-scale features such as historic boulders.
- Avoid adding new small-scale features.
- Consider replacing incompatible small-scale features such as brightly painted bollards or bollard lights with compatible new features that harmonize with the historic landscape (Figure 47).



Source: AECOM

Figure 47. Brightly painted bollards, which are among the property's incompatible small-scale features.

Eastern Parking Area

The Eastern Parking Area zone contains few features that date to the period of significance; therefore, it is the appropriate location for more major interventions in the landscape. New designs for this zone should respect the historic character and scale of the adjacent Historic Core and should minimize visual impacts on it. The seam between the Historic Core and the Eastern Parking Area is marked by the location of the curving pathway at the western edge of the parking area.

Spatial Organization and Land Use

- Maintain the vegetative screen, particularly tree clusters, between the eastern parking area and the Historic Core.
- Consider retaining this area for parking or initiating a new compatible use.

Topography

- Avoid major grade changes in this zone or other topographic modifications that would inhibit accessible connections between this zone and the other zones.

Views and Vistas

- Avoid adding features that are visually obtrusive and incompatible with the Historic Core.

Vegetation

- Maintain mature trees.
- If new vegetation is required in this zone, consider using plants that were specified in the historic planting plans for this area.
- Consider using a simple palette of low-growing vegetation such as lawn, ground cover plants, or low shrubs that are compatible with the vegetation in the Historic Core.
- Consider pruning the existing shrubs to maintain a natural habit, rather than a hedge-like habit, so that they are more compatible with the shrubs in the Historic Core.

Circulation

- Consider removing the brick paving from the pathways and replacing it with concrete.
- Retain the circular planting bed within the pathway adjacent to the parking areas because it appears to date to the period of significance.

Buildings and Structures

- This zone may be an appropriate location for adding new buildings or structures. Ensure that new buildings or structures do not compete in size or massing with the SMUD Headquarters Building.

Small-Scale Features

- Minimize the addition of new small-scale features.
- Retain any historic features in this zone, such as boulders.
- Ensure that all small-scale features are compatible with the historic landscape of the Historic Core.

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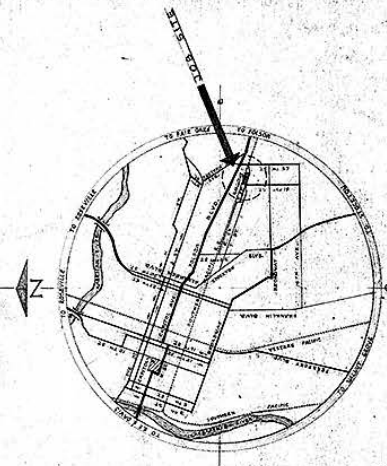
APPENDIX A

1961 As-Built Landscape Plans

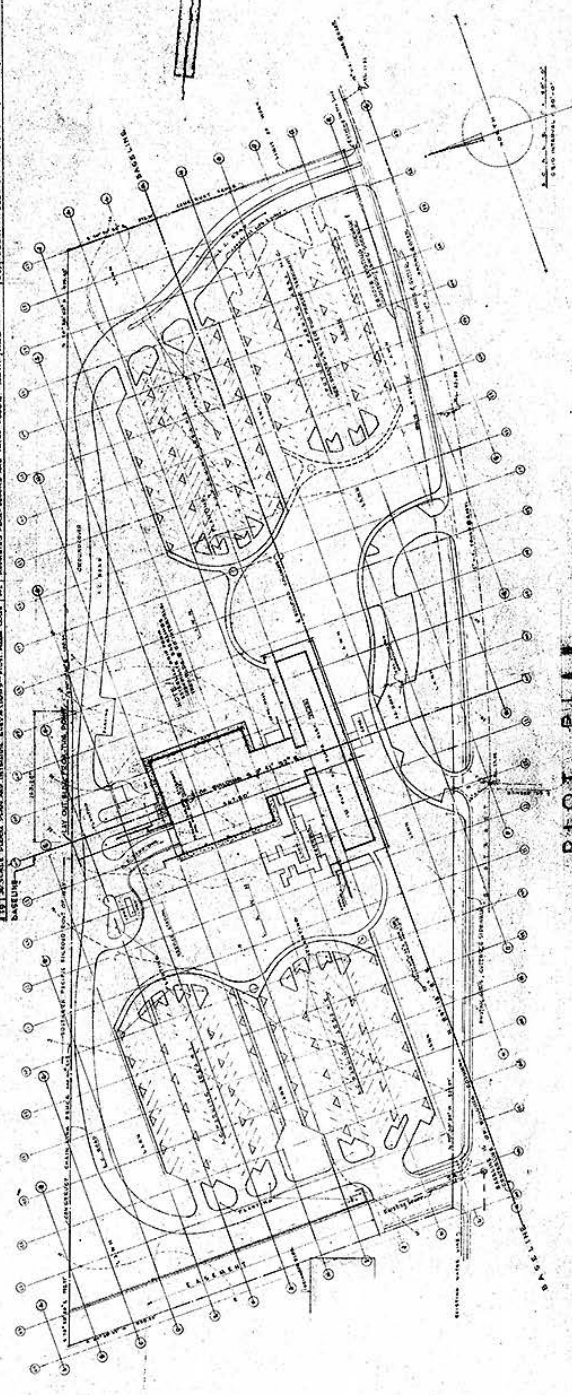
SACRAMENTO MUNICIPAL UTILITY DISTRICT OFFICE BUILDING

INDEX OF DRAWINGS

NO.	DESCRIPTION	DATE
1	GENERAL NOTES	
2	FOUNDATION PLAN	
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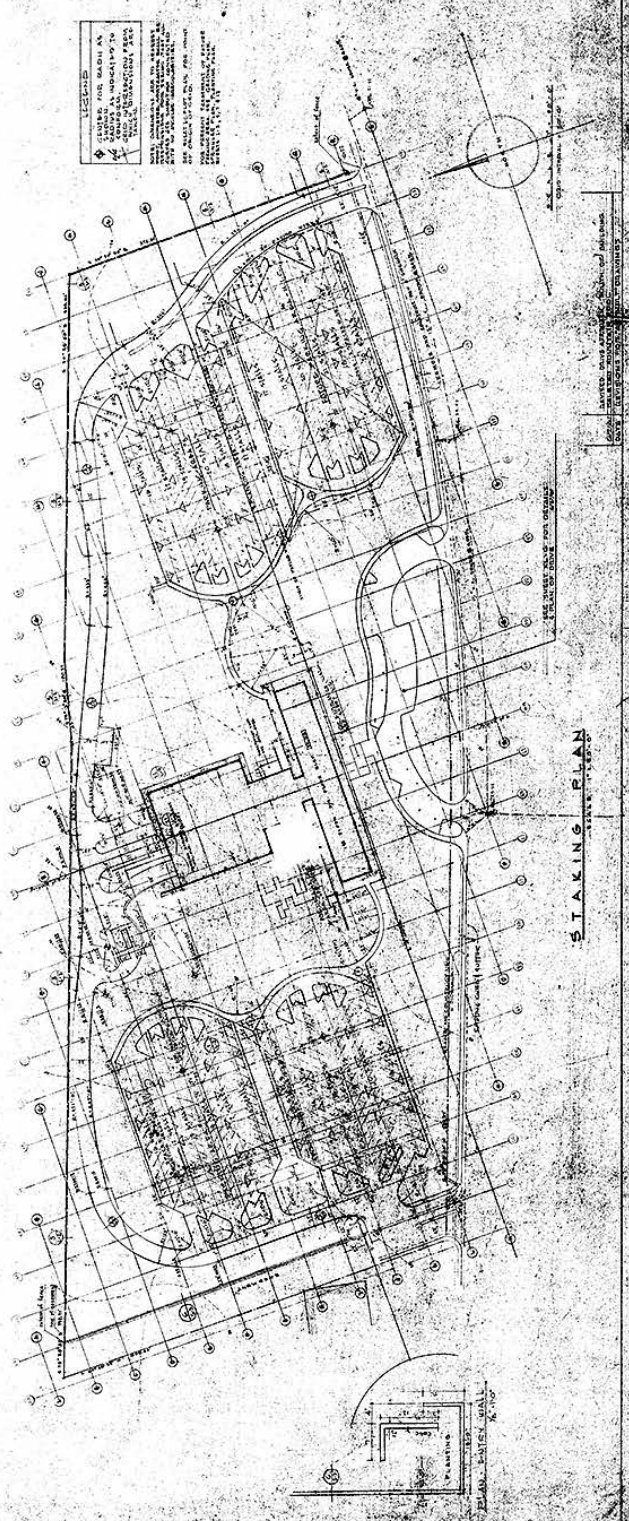


VICINITY MAP
CITY OF SACRAMENTO

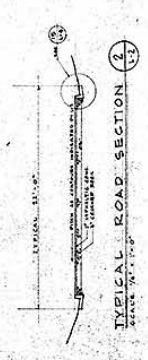
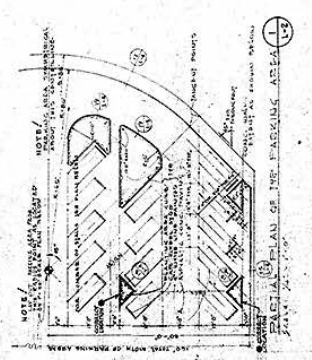
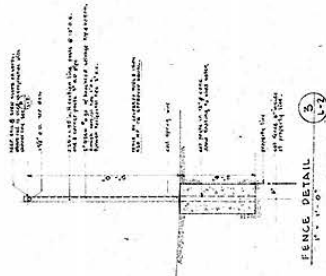


PROT. PLAN

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 ARCHITECTS & PLANNERS: DREYFUS & BLACKFORD
 2127 JAY STREET, SACRAMENTO, CALIFORNIA
 SHEET 2-2926
 SACRAMENTO MUNICIPAL UTILITY DISTRICT
 OFFICE BUILDING
 SACRAMENTO, CALIFORNIA
 COMPILED BY: DREYFUS & BLACKFORD
 CHECKED BY: DREYFUS & BLACKFORD
 DRAWN BY: DREYFUS & BLACKFORD



STAKING PLAN



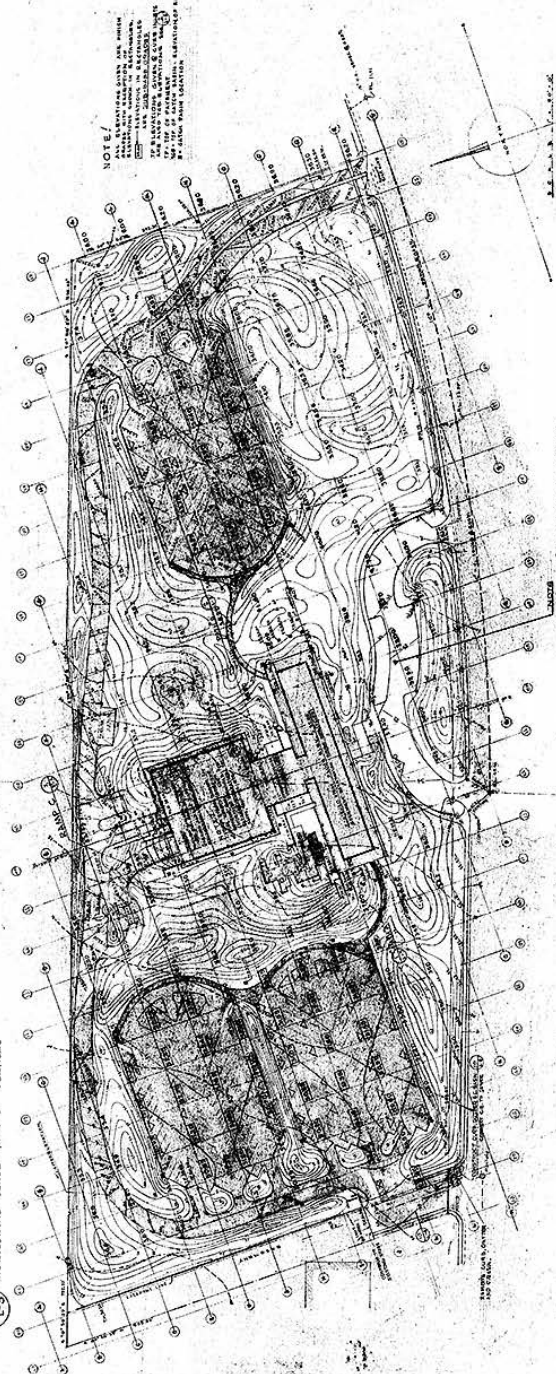
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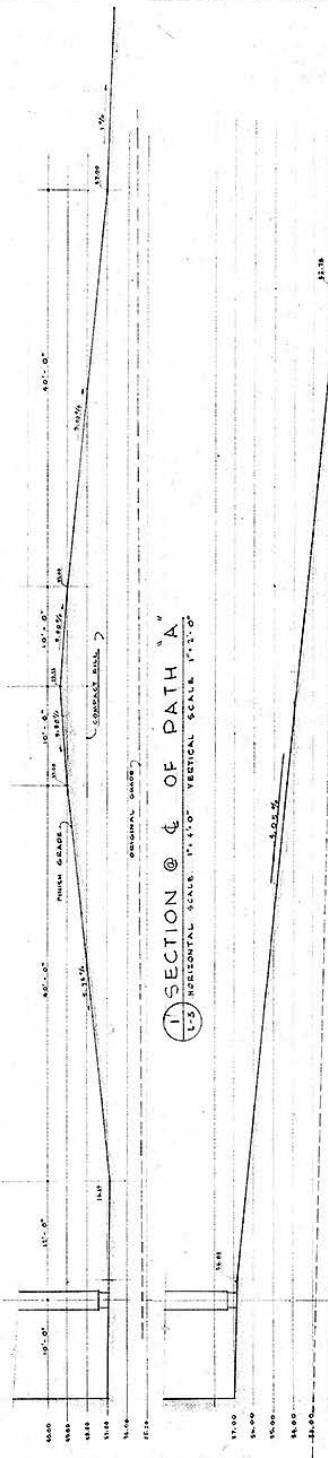


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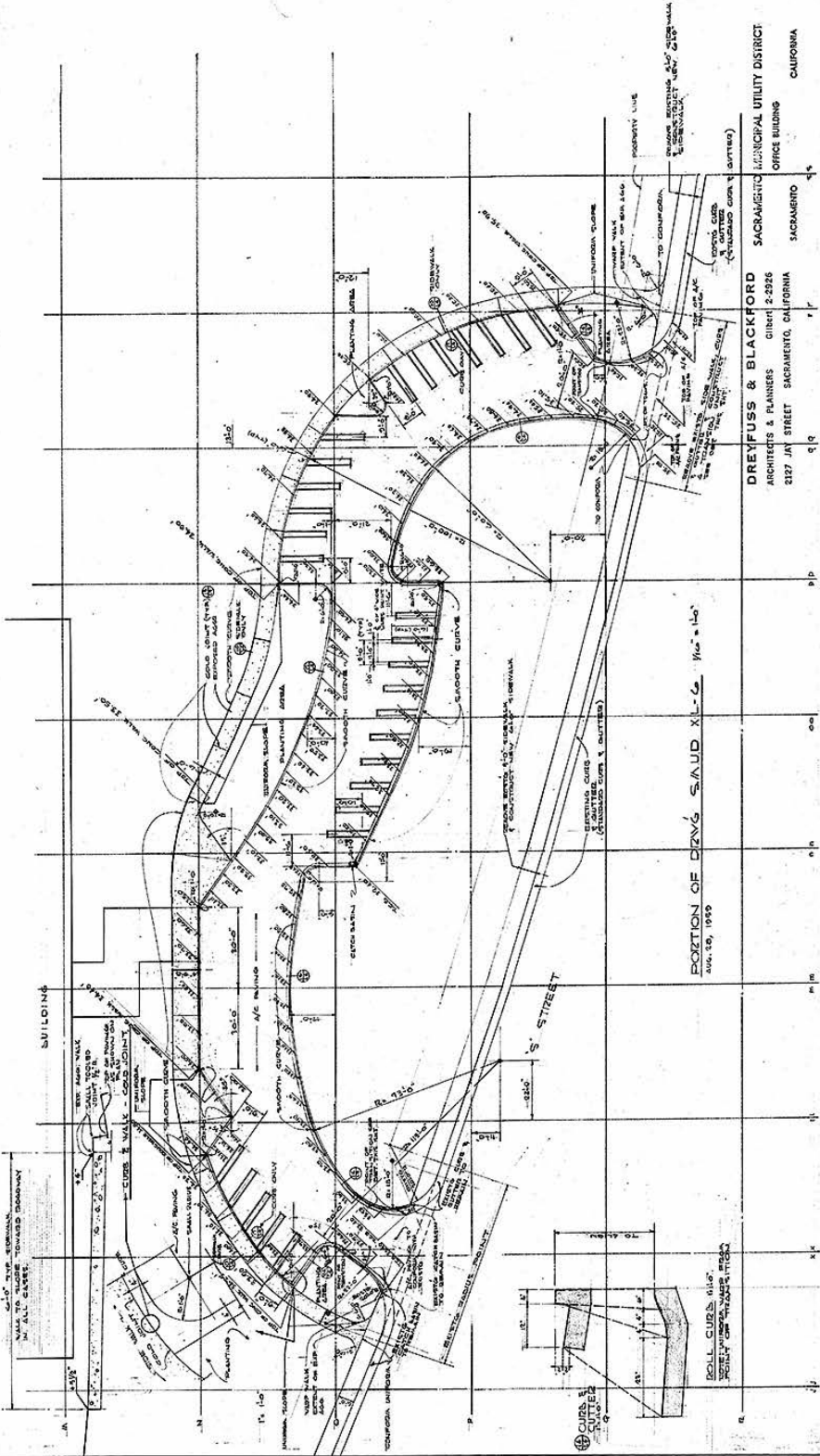
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1 SECTION @ & OF PATH 'A'
 L-3 HORIZONTAL SCALE 1"=40' VERTICAL SCALE 1"=2'0"



ORIGINAL GRADE
 PROPOSED GRADE



PORTION OF DEAVIS SAUD XL-6 1/4" = 1'-0"
AUG. 15, 1949

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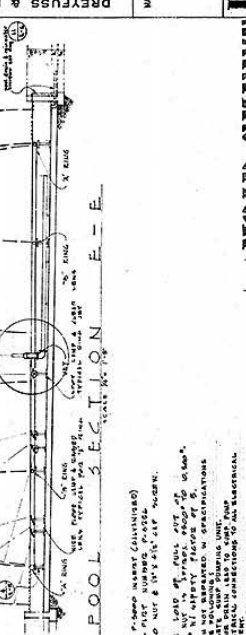
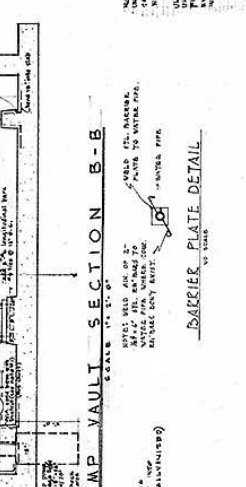
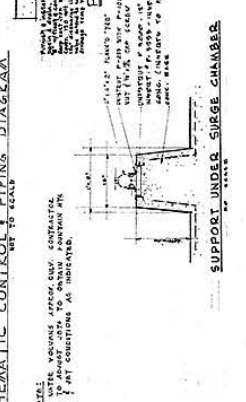
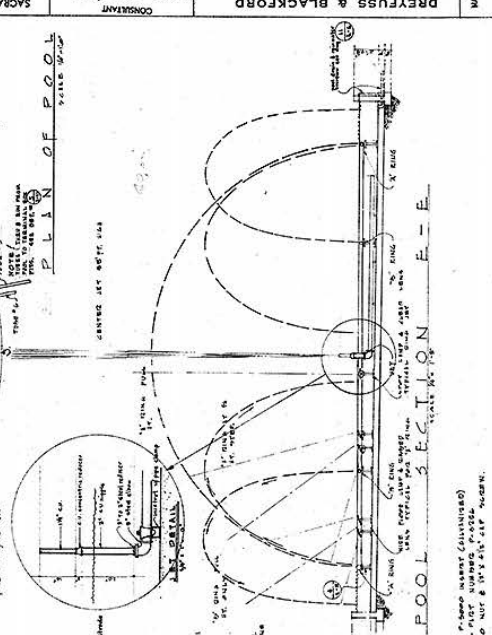
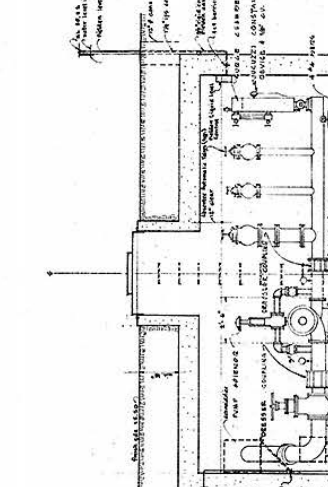
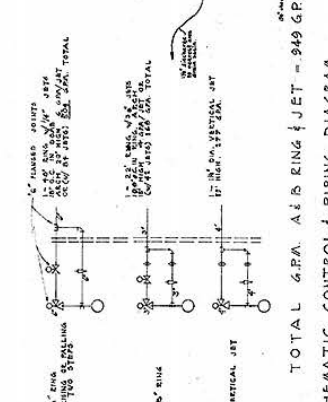
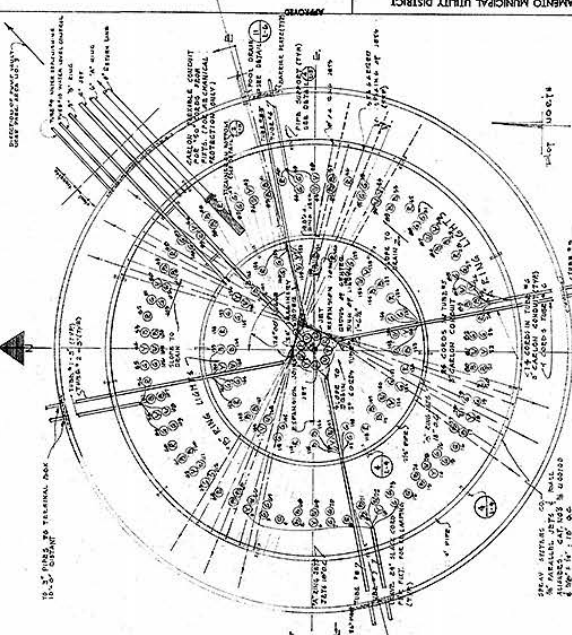
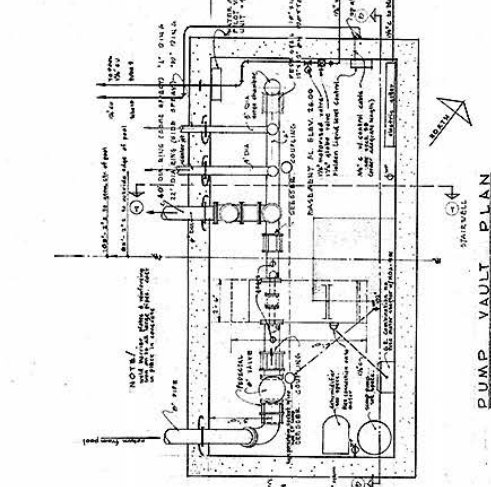
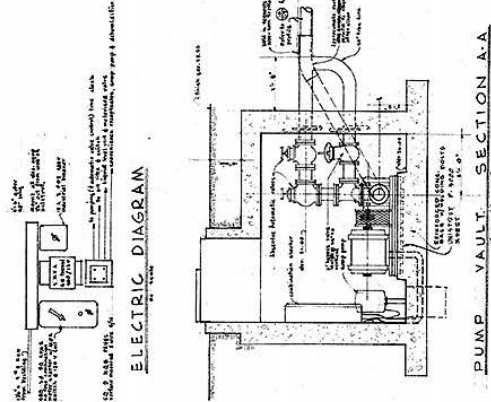
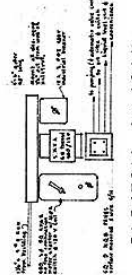
SACRAMENTO MUNICIPAL UTILITY DISTRICT
OFFICE BUILDING
SACRAMENTO CALIFORNIA

XL-6

REVISED, OCT. 13, 1951

INCLUDE IN SET OF AS-BUILT DRAWINGS - 02/21

10



VOID SHEET

DATE: _____

PROJECT: _____

CONTRACTOR: _____

ARCHITECTS & PLANNERS: _____

CLIENT: 2-2926

CONSULTANT: _____

DESIGNED BY: _____

CHECKED BY: _____

APPROVED BY: _____

SACRAMENTO MUNICIPAL UTILITY DISTRICT

OFFICE BUILDING

RALPH JONES

DATE: _____

PROJECT: _____

CONTRACTOR: _____

ARCHITECTS & PLANNERS: _____

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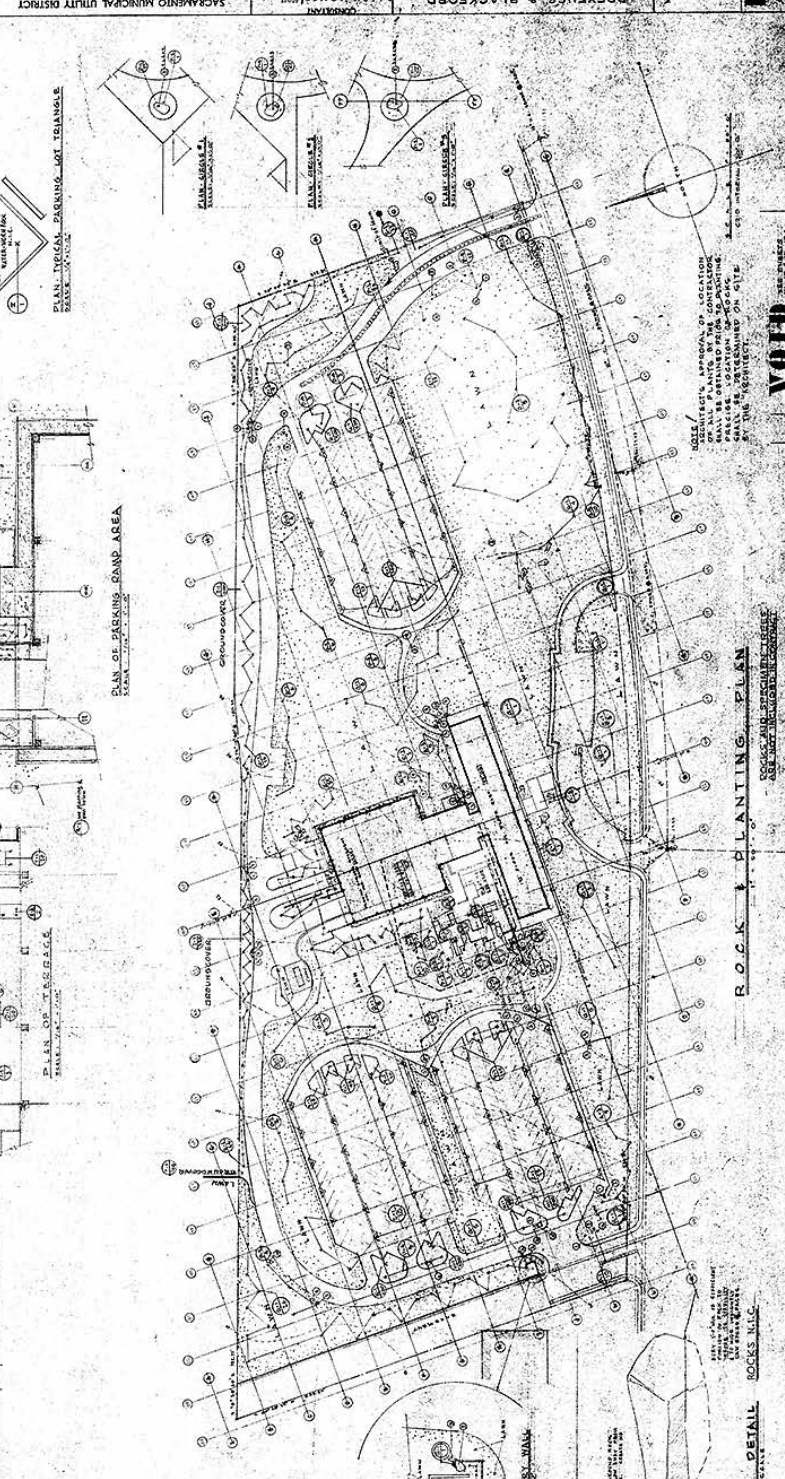
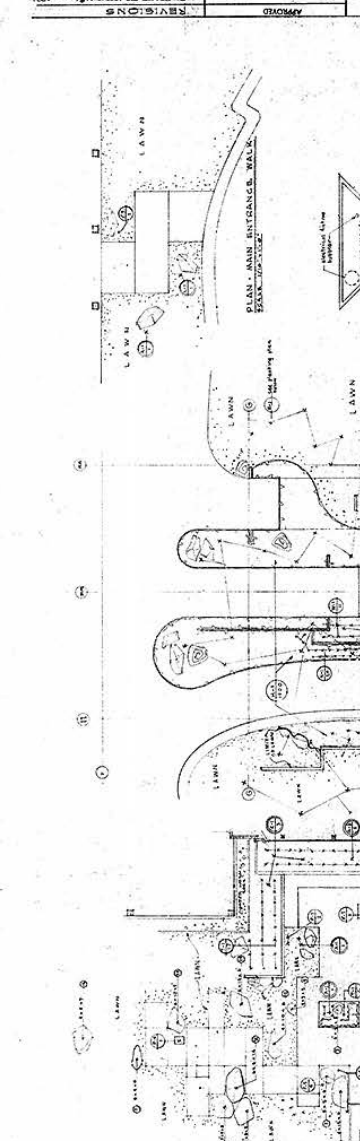
SACRAMENTO MUNICIPAL UTILITY DISTRICT

OFFICE BUILDING

RALPH JONES

KEY LIST OF PLANT MATERIALS

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2	2	1/2" BIRCH	100	
3	3	1/2" CEDAR	100	
4	4	1/2" FIR	100	
5	5	1/2" PINE	100	
6	6	1/2" SPRUCE	100	
7	7	1/2" TYPHOID	100	
8	8	1/2" YEW	100	
9	9	1/2" JUNIPER	100	
10	10	1/2" LARIX	100	
11	11	1/2" PINUS	100	
12	12	1/2" TAXUS	100	
13	13	1/2" THUJA	100	
14	14	1/2" CYPRIPEDIUM	100	
15	15	1/2" LILY	100	
16	16	1/2" ORCHID	100	
17	17	1/2" TULIP	100	
18	18	1/2" HYDRANGEA	100	
19	19	1/2" ROSE	100	
20	20	1/2" CAMELLIA	100	
21	21	1/2" AZALEA	100	
22	22	1/2" VIBURNUM	100	
23	23	1/2" SPYRÆA	100	
24	24	1/2" LIGULARIA	100	
25	25	1/2" PHELOXERUS	100	
26	26	1/2" PASTINACA	100	
27	27	1/2" ANEMONE	100	
28	28	1/2" PASTINACA	100	
29	29	1/2" PASTINACA	100	
30	30	1/2" PASTINACA	100	
31	31	1/2" PASTINACA	100	
32	32	1/2" PASTINACA	100	
33	33	1/2" PASTINACA	100	
34	34	1/2" PASTINACA	100	
35	35	1/2" PASTINACA	100	
36	36	1/2" PASTINACA	100	
37	37	1/2" PASTINACA	100	
38	38	1/2" PASTINACA	100	
39	39	1/2" PASTINACA	100	
40	40	1/2" PASTINACA	100	
41	41	1/2" PASTINACA	100	
42	42	1/2" PASTINACA	100	
43	43	1/2" PASTINACA	100	
44	44	1/2" PASTINACA	100	
45	45	1/2" PASTINACA	100	
46	46	1/2" PASTINACA	100	
47	47	1/2" PASTINACA	100	
48	48	1/2" PASTINACA	100	
49	49	1/2" PASTINACA	100	
50	50	1/2" PASTINACA	100	



ROCK & PLANTING PLAN

SCALE: 1/4" = 1'-0"

DATE: 10/15/2010

PROJECT: SACRAMENTO MUNICIPAL UTILITY DISTRICT OFFICE BUILDING

DESIGNER: DREYFUS & BLACKFORD ARCHITECTS & PLANNERS

LOCATION: SACRAMENTO, CALIFORNIA

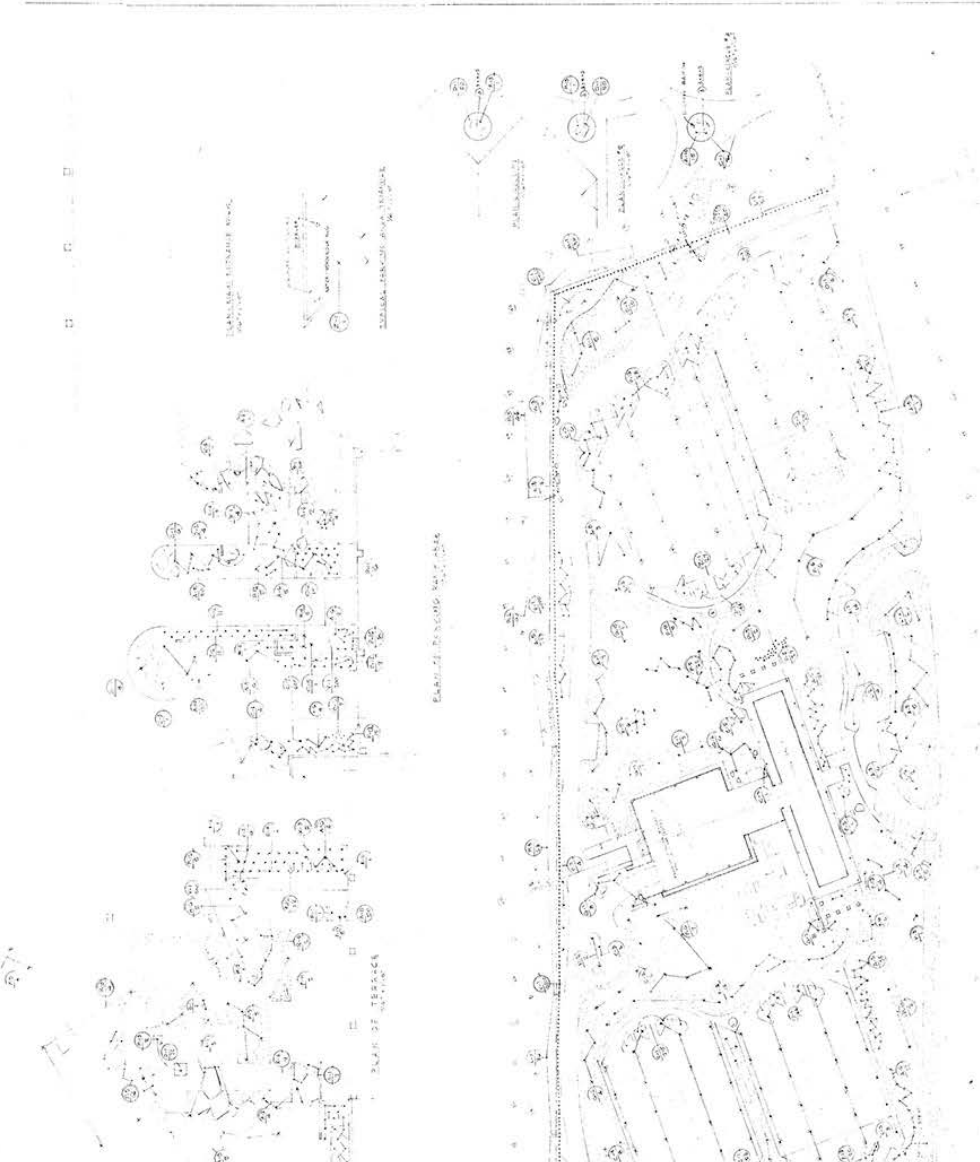
REVISIONS: APPROVED

NOTES: APPROVAL OF LOCATION SHALL BE OBTAINED FROM THE CITY OF SACRAMENTO. APPROVAL OF THE CITY SHALL BE OBTAINED BY THE ARCHITECT.

EDGE DETAIL ROCKS N.C.C.

PLANTING PLAN

NO.	PLANT	QTY.	REMARKS
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PLANTING PLAN

SCALE 1/8" = 1'-0"

NO. 507

NO. 11-12

DEPT. OF AGRICULTURE

WASHINGTON, D.C.

1917

DEPT. OF AGRICULTURE

WASHINGTON, D.C.

1917

NO. 11-12

NO. 507

DEPT. OF AGRICULTURE

WASHINGTON, D.C.

1917

NO. 11-12

DEPT. OF AGRICULTURE

WASHINGTON, D.C.

1917

NO. 11-12

NO. 507

DEPT. OF AGRICULTURE

WASHINGTON, D.C.

1917

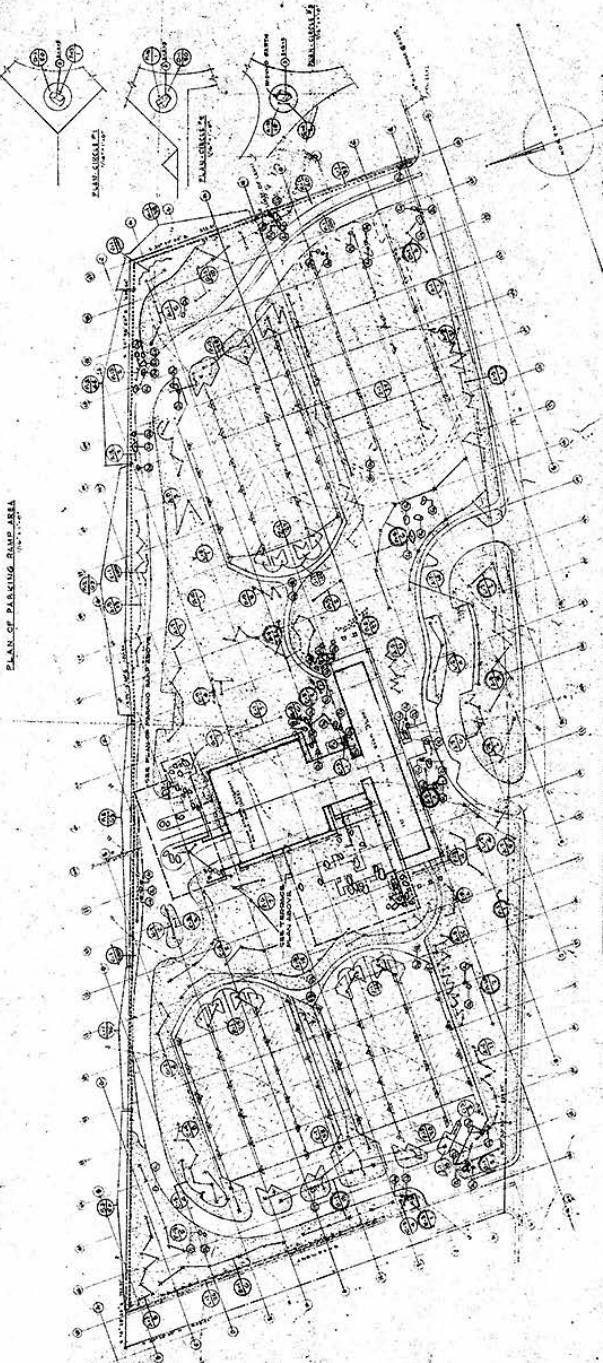
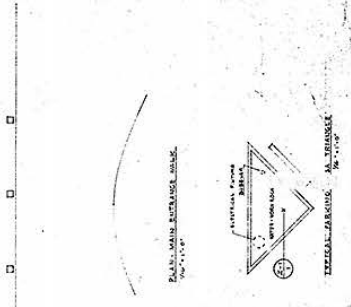
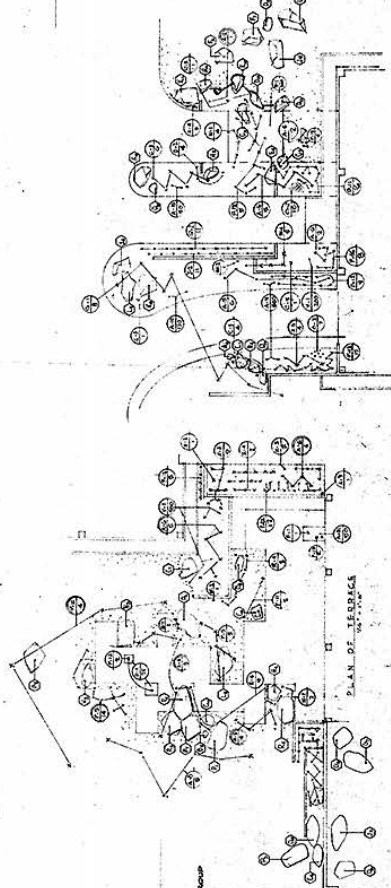
NO. 11-12

ROCK SIZE SCHEDULE

NO.	DESCRIPTION	NO. ROCKS
A	12" x 12" x 12"	100
B	12" x 12" x 8"	100
C	12" x 8" x 8"	100
D	12" x 8" x 6"	100
E	12" x 6" x 6"	100
F	12" x 6" x 4"	100
G	12" x 4" x 4"	100
H	12" x 4" x 3"	100
I	12" x 3" x 3"	100
J	12" x 3" x 2"	100
K	12" x 2" x 2"	100
L	12" x 2" x 1.5"	100
M	12" x 1.5" x 1.5"	100
N	12" x 1.5" x 1"	100
O	12" x 1" x 1"	100
P	12" x 1" x 0.75"	100
Q	12" x 0.75" x 0.75"	100
R	12" x 0.75" x 0.5"	100
S	12" x 0.5" x 0.5"	100
T	12" x 0.5" x 0.25"	100
U	12" x 0.25" x 0.25"	100
V	12" x 0.25" x 0.125"	100
W	12" x 0.125" x 0.125"	100

EXPLANATION OF KEY

1. NUMBER OF ROCKS OF EACH GROUP
 2. TYPE OF ROCK (SEE SCHEDULE)
 3. SIZE OF ROCK (SEE SCHEDULE)



GEORGE & BLACKBURN ARCHITECTS & ENGINEERS
 1107 AVENUE ST. BARTHOLOMEW, CALIFORNIA, U.S.A.
 JULY 16, 1959

NI-12A

SHEET NO. 12A
 TOTAL SHEETS 12

RALPH JONES
 LANDSCAPE ARCHITECT
 1107 AVENUE ST. BARTHOLOMEW, CALIFORNIA, U.S.A.
 JULY 16, 1959

APPENDIX B

Historic Landscape Photographs



PHOTOGRAPH 1: May 12, 1958 photograph showing flat construction site at the location of the future headquarters building.



PHOTOGRAPH 2: March 24, 1960 construction of the cafeteria terrace showing the grading, retaining walls, new boulders, terracing, and site furnishings behind the south wing of the building.



PHOTOGRAPH 3: May 4, 1960 construction showing the south façade of the building, the boulders, and graded site.



PHOTOGRAPH 4: July 13, 1960 aerial photograph of the site, with its neighborhood context.



PHOTOGRAPH 5: c. 1960 photograph of the site from the west.



PHOTOGRAPH 6: June 14, 1960 of the parking from the west.



PHOTOGRAPH 7: Custom-designed bench.



PHOTOGRAPH 8: "Table bench" at the cafeteria terrace.



PHOTOGRAPH 9: Cafeteria terrace.



PHOTOGRAPH 10: Cafeteria terrace.



PHOTOGRAPH 11: Cafeteria terrace.



PHOTOGRAPH 12: South façade, 1961.



PHOTOGRAPH 13: 2009 Conditions, south façade.



Tree 459, a glossy privet fused with an interior live oak

APPENDIX C

2014 Existing Conditions Photographs



PHOTOGRAPH 1: Free standing wall and vegetation at the entrance plaza.



PHOTOGRAPH 2: Entrance plaza with paving and historic site furnishings.



PHOTOGRAPH 3: Vegetation, outdoor sculpture, and historic “table-bench” at the entrance plaza.



PHOTOGRAPH 4: Concrete path and bollard lighting near the building entrance.



PHOTOGRAPH 5: New flagpole, planters, bollard, and mechanical equipment at the entry parking.



PHOTOGRAPH 6: Two types of concrete paving at the entrance plaza.



PHOTOGRAPH 7: View to S Street from the entrance plaza parking area, with planters and lighting in the foreground.



PHOTOGRAPH 8: Parking with new bollards at the south façade of the building.



PHOTOGRAPH 9: A view to S Street, the highway, and a site light from the entrance parking.



PHOTOGRAPH 10: Earthen berms and a site sign with planting separate the property from the sidewalk.



PHOTOGRAPH 11: Detailed view of the site sign.



PHOTOGRAPH 12: Current view of the building from S Street.



PHOTOGRAPH 13: Typical bollard light.



PHOTOGRAPH 14: Main vehicular site entrance.



PHOTOGRAPH 15: Vegetation and new boulders on the earthen berms.



PHOTOGRAPH 16: Historic and new trees intermingled with historic and new boulders.



PHOTOGRAPH 17: Lawn area over sculpted topography.



PHOTOGRAPH 18: Earthen berm with boulder and mature vegetation.



PHOTOGRAPH 19: Path to loggia. The path post-dates the original landscape construction.



PHOTOGRAPH 20: Erosion and erosion control matting along path.



PHOTOGRAPH 21: Stones placed on slope for erosion control.



PHOTOGRAPH 22: Detail from the *Water City* mural.



PHOTOGRAPH 23: Sculpted landforms with drainage inlet.



PHOTOGRAPH 24: Outdoor sculpture.



PHOTOGRAPH 25: Ramp with handrails at the entrance plaza.



PHOTOGRAPH 26: Lawn area.



PHOTOGRAPH 27: View along the loggia.



PHOTOGRAPH 28: Historic boulder and vegetation by pathway.



PHOTOGRAPH 29: Planting bed on a berm.



PHOTOGRAPH 30: Typical curved concrete path.



PHOTOGRAPH 31: Boulder and vegetation in the planting circle.



PHOTOGRAPH 32: Curved vehicular driveway and pathway at the western parking area.



PHOTOGRAPH 33: Bermed and planted separation zone between parking areas.



PHOTOGRAPH 34: "Planting triangle" at the western parking area.



PHOTOGRAPH 35: Evergreen shrubs provide separation between the loop road and the western parking area.



PHOTOGRAPH 36: Bermed planting area with lawn at the western parking area.



PHOTOGRAPH 37: Earthen berm separating the two sections of the western parking area, with lights and rows of trees.



PHOTOGRAPH 38: Parking aisle at the western parking area.



PHOTOGRAPH 39: New bollards in the eastern parking area.



PHOTOGRAPH 40: New structural paving support for vehicles.



PHOTOGRAPH 41: New pathway from the western parking area to the building's north wing.



PHOTOGRAPH 42: Metal picket fence around the cafeteria terrace.



PHOTOGRAPH 43: Structured parking in the north wing.



PHOTOGRAPH 44: Gate to the cafeteria terrace.



PHOTOGRAPH 45: Elevated outdoor walkway near the cafeteria terrace.



PHOTOGRAPH 46: View into the cafeteria terrace.



PHOTOGRAPH 47: View to the pool at the cafeteria terrace.



PHOTOGRAPH 48: Structured parking entrances with ivy-covered walls.



PHOTOGRAPH 49: Ramp at structured parking entrance.



PHOTOGRAPH 50: Boulder and vegetation at the structured parking entrance.



PHOTOGRAPH 51: View west along the loop road.



PHOTOGRAPH 52: View of the building's north wing.



PHOTOGRAPH 53: Ramp to the structured parking.



PHOTOGRAPH 54: View north from the loop road.



PHOTOGRAPH 55: Trees, shrubs, and lawn to the east of the building.



PHOTOGRAPH 56: Pathway to the eastern parking area.



PHOTOGRAPH 57: Loggia on the northeastern side of the building's south wing.



PHOTOGRAPH 58: Eastern side of the building's south wing with new vegetation.



PHOTOGRAPH 59: New eastern parking area with new bollards and paving.



PHOTOGRAPH 60: Paving and site furnishings at the eastern parking area.



PHOTOGRAPH 61: Parking aisle at the eastern parking area.



PHOTOGRAPH 62: New concrete block retaining wall along S Street.



PHOTOGRAPH 63: Lawn-covered berm and vegetation along S Street.



PHOTOGRAPH 64: Historic railing to the right and new picket fence to the left.



PHOTOGRAPH 65: View to cafeteria terrace planting bed and concrete paving.



PHOTOGRAPH 66: Historic bench.



PHOTOGRAPH 67: Concrete retaining wall and slopes at cafeteria terrace.



PHOTOGRAPH 68: Large boulder and terracing at the cafeteria terrace.



PHOTOGRAPH 69: Vegetation and lighting in the cafeteria terrace.



PHOTOGRAPH 70: Cafeteria terracing showing former location of missing site furnishings.



PHOTOGRAPH 71: Wall cladding at cafeteria terrace.



PHOTOGRAPH 72: Glazed walls at cafeteria terrace.

APPENDIX D

Partial Historic Plants List

The following plants were specified on the 1961 As-Built Planting Plans. Other plant names were present on the plans, but illegible.

<u>Botanical Name in 1959</u>	<u>Common Name</u>
<i>Acer buergerianum</i>	Trident Maple
<i>Acer campestre</i>	Hedge Maple
<i>Albizia julibrissin*</i>	Silk Tree
<i>Arbutus unedo*</i>	Strawberry Tree
<i>Camellia japonica*</i>	Camellia
<i>Celtis australis*</i>	European Hackberry
<i>Cornus nuttallii</i>	Pacific Dogwood
<i>Crataegus lavalley*</i>	Lavalle Hawthorn
<i>Dianthus plumarius</i>	Pinks
<i>Dryopteris marginalis</i>	Eastern Woodfern
<i>Equisetum hyemale</i>	Snakegrass
<i>Eucalyptus polyanthemos*</i>	Silver Dollar Gum
<i>Eucalyptus viminalis*</i>	Ribbon Gum
<i>Fagus sylvatica</i>	European Beech
<i>Gaultheria shallon</i>	Salal
<i>Gledistia triacanthos inermis*</i>	Thornless Honeylocust
<i>Hedera helix*</i>	Ivy
<i>Juniperus horizontalis</i>	Creeping Juniper
<i>Lagerstoemia indica*</i>	Crape Myrtle
<i>Ligustrum lucidum*</i>	Glossy Privet
<i>Myrica californica</i>	Pacific Wax Myrtle
<i>Olea europea*</i>	Olive Tree
<i>Oxalis oregana</i>	Redwood Sorrel
<i>Peltiphyllum peltatum</i>	Umbrella Plant
<i>Photinia serrulata nova</i>	Chinese Photinia
<i>Pinus mugo mughus</i>	Mugo Pine
<i>Pinus muricata</i>	Bishop Pine
<i>Pinus murrayana</i>	Murrayana Lodgepole Pine
<i>Pinus pinea*</i>	Italian Stone Pine
<i>Pistacia chinensis*</i>	Chinese Pistache
<i>Platanus racemosa*</i>	California Sycamore
<i>Polystichum munitum</i>	Sword Fern
<i>Populus tremuloides</i>	Quaking Aspen
<i>Prunus serrulata "kelloggii"</i>	Kellogg's plum
<i>Prunus serrulata "kwanzan"</i>	Kwanzan Japanese Flowering Cherry
<i>Prunus lyonii</i>	Catalina Cherry
<i>Quercus suber*</i>	Cork Oak
<i>Rhododendron occidentale*</i>	Rhododendron
<i>Robinia pseudoacacia</i>	Black Locust
<i>Rosmarinus officianalis prostratus</i>	Trailing Rosemary
<i>Scirpus cernus</i>	Low Bullrush
<i>Sequoia semervirens*</i>	Coast Redwood
<i>Trachelospermum jasminoides</i>	Confederate Jasmine
<i>Tradescantia fluminensis</i>	Spiderwort
<i>Vinca minor</i>	Periwinkle
<i>Wisteria chinensis</i>	Chinese Wisteria
<i>Woodwardia chamissoi</i>	Chain Fern
<i>Zelkova serrata*</i>	Zelkova

*species still present at the site based on information in the 2014 landscape inventory

**APPENDIX D:
AIR QUALITY MODELING DATA**

SMUD HQ
Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	120.00	1000sqft	1.75	120,000.00	375
General Office Building	15.00	1000sqft	0.34	15,000.00	0
Enclosed Parking with Elevator	45.00	1000sqft	1.02	45,000.00	0
Parking Lot	250.00	Space	2.25	100,000.00	0
City Park	8.30	Acre	8.30	361,548.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.5	Precipitation Freq (Days)	58
Climate Zone	6			Operational Year	2017
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MW hr)	590.31	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Includes renovation of 120,000 square foot office, 45,000 square foot parking garage, addition of 15,000 square foot pavilion and 250 parking spaces.

City park land use included for project-related landscaping improvements.

Construction Phase - Construction schedule consistent with the project description

Trips and VMT - Assumes approximately 150 workers, or 300 trips, per day.

Haul trips based on 50,000 cubic yards of material and 20 cubic yards per truck.

Demolition - Assumes approximately 17,000 cubic yards of material. Converted using construction factors of 773 to 860 pounds per cubic yard of material.

Vehicle Trips - No operational emissions.

Energy Use - No operational emissions

Water And Wastewater - No operational emissions

Solid Waste - No operational emissions.

Off-road Equipment - grader added for site rehab

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	326.00
tblConstructionPhase	NumDays	300.00	326.00
tblConstructionPhase	NumDays	20.00	109.00
tblConstructionPhase	NumDays	20.00	42.00
tblConstructionPhase	PhaseEndDate	5/30/2018	2/28/2017
tblConstructionPhase	PhaseEndDate	4/27/2017	2/28/2017
tblConstructionPhase	PhaseStartDate	3/1/2017	12/1/2015
tblConstructionPhase	PhaseStartDate	3/1/2017	1/1/2017
tblEnergyUse	LightingElect	2.63	0.00
tblEnergyUse	LightingElect	4.21	0.00
tblEnergyUse	NT24E	0.19	0.00
tblEnergyUse	NT24E	5.75	0.00
tblEnergyUse	NT24NG	0.68	0.00
tblEnergyUse	T24E	3.92	0.00

tblEnergyUse	T24E	6.08	0.00
tblEnergyUse	T24NG	13.07	0.00
tblLandUse	LotAcreage	2.75	1.75
tblLandUse	LotAcreage	1.03	1.02
tblLandUse	Population	0.00	375.00
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	PhaseName		Building Construction
tblProjectCharacteristics	OperationalYear	2014	2017
tblSolidWaste	SolidWasteGenerationRate	0.71	0.00
tblSolidWaste	SolidWasteGenerationRate	125.55	0.00
tblTripsAndVMT	HaulingTripNumber	692.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	8.00
tblTripsAndVMT	WorkerTripNumber	15.00	300.00
tblTripsAndVMT	WorkerTripNumber	256.00	250.00
tblTripsAndVMT	WorkerTripNumber	51.00	50.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	2.37	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	0.98	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	11.01	0.00
tblWater	IndoorWaterUseRate	23,994,055.98	0.00
tblWater	OutdoorWaterUseRate	9,889,295.20	0.00
tblWater	OutdoorWaterUseRate	14,706,034.31	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	31.5402	55.3073	63.9683	0.0837	3.7149	3.1321	6.1833	0.8223	2.9418	3.7239	0.0000	8,015.905 4	8,015.905 4	1.2463	0.0000	8,042.078 0
2016	30.7365	51.6157	59.9813	0.0835	2.8994	2.9024	5.8018	0.7811	2.7242	3.5053	0.0000	7,878.653 7	7,878.653 7	1.0241	0.0000	7,900.160 1
2017	32.0584	67.7634	71.7718	0.1070	3.0157	3.7681	6.7839	0.8119	3.5147	4.3266	0.0000	10,099.52 64	10,099.52 64	1.7007	0.0000	10,135.24 01
Total	94.3351	174.6864	195.7214	0.2742	9.6300	9.8026	18.7689	2.4153	9.1806	11.5557	0.0000	25,994.08 55	25,994.08 55	3.9711	0.0000	26,077.47 81

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	31.5402	49.8684	63.9683	0.0837	3.7149	3.1321	6.1833	0.8223	2.9418	3.7239	0.0000	8,015.905 4	8,015.905 4	1.2463	0.0000	8,042.078 0
2016	30.7365	41.2687	59.9813	0.0835	2.8994	2.9024	5.8018	0.7811	2.7242	3.5053	0.0000	7,878.653 7	7,878.653 7	1.0241	0.0000	7,900.160 0
2017	32.0584	58.1526	71.7718	0.1070	3.0157	3.7681	6.7839	0.8119	3.5147	4.3266	0.0000	10,099.52 64	10,099.52 64	1.7007	0.0000	10,135.24 01
Total	94.3351	149.2898	195.7214	0.2742	9.6300	9.8026	18.7689	2.4153	9.1806	11.5557	0.0000	25,994.08 55	25,994.08 55	3.9711	0.0000	26,077.47 81

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	15.8080	4.3000e-004	0.0456	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004		0.0959	0.0959	2.7000e-004		0.1015
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	15.8080	4.3000e-004	0.0456	0.0000	0.0000	1.6000e-004	1.6000e-004	0.0000	1.6000e-004	1.6000e-004		0.0959	0.0959	2.7000e-004	0.0000	0.1015

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	15.8080	4.3000e-004	0.0456	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004		0.0959	0.0959	2.7000e-004		0.1015
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	15.8080	4.3000e-004	0.0456	0.0000	0.0000	1.6000e-004	1.6000e-004	0.0000	1.6000e-004	1.6000e-004		0.0959	0.0959	2.7000e-004	0.0000	0.1015

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2015	11/30/2015	5	109	
2	Building Construction	Building Construction	12/1/2015	2/28/2017	5	326	
3	Architectural Coating	Architectural Coating	12/1/2015	2/28/2017	5	326	
4	Paving	Paving	1/1/2017	2/28/2017	5	42	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 816,822; Non-Residential Outdoor: 272,274 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Graders	1	8.00	174	0.41

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	300.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	250.00	105.00	8.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	50.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.4328	0.0000	1.4328	0.2169	0.0000	0.2169			0.0000			0.0000
Off-Road	4.5083	48.3629	36.0738	0.0399		2.4508	2.4508		2.2858	2.2858		4,127.1934	4,127.1934	1.1188		4,150.6886
Total	4.5083	48.3629	36.0738	0.0399	1.4328	2.4508	3.8836	0.2169	2.2858	2.5027		4,127.1934	4,127.1934	1.1188		4,150.6886

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.1804	1.5055	14.6938	0.0256	2.2821	0.0176	2.2997	0.6054	0.0161	0.6215		2,185.8467	2,185.8467	0.1275		2,188.5241
Total	1.1804	1.5055	14.6938	0.0256	2.2821	0.0176	2.2997	0.6054	0.0161	0.6215		2,185.8467	2,185.8467	0.1275		2,188.5241

3.2 Demolition - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.4328	0.0000	1.4328	0.2169	0.0000	0.2169			0.0000			0.0000
Off-Road	4.5083	48.3629	36.0738	0.0399		2.4508	2.4508		2.2858	2.2858	0.0000	4,127.1934	4,127.1934	1.1188		4,150.6886
Total	4.5083	48.3629	36.0738	0.0399	1.4328	2.4508	3.8836	0.2169	2.2858	2.5027	0.0000	4,127.1934	4,127.1934	1.1188		4,150.6886

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.1804	1.5055	14.6938	0.0256	2.2821	0.0176	2.2997	0.6054	0.0161	0.6215		2,185.8467	2,185.8467	0.1275		2,188.5241
Total	1.1804	1.5055	14.6938	0.0256	2.2821	0.0176	2.2997	0.6054	0.0161	0.6215		2,185.8467	2,185.8467	0.1275		2,188.5241

3.3 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.7175	40.8633	23.7094	0.0331		2.7259	2.7259		2.5508	2.5508		3,344.5603	3,344.5603	0.8704		3,362.8378
Total	4.7175	40.8633	23.7094	0.0331		2.7259	2.7259		2.5508	2.5508		3,344.5603	3,344.5603	0.8704		3,362.8378

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.7000e-004	7.6700e-003	0.0110	2.0000e-005	4.7000e-003	1.2000e-004	4.8200e-003	1.1700e-003	1.1000e-004	1.2700e-003		1.8008	1.8008	1.0000e-005		1.8011
Vendor	2.0080	10.3605	23.6524	0.0220	0.6168	0.1676	0.7844	0.1756	0.1539	0.3295		2,202.2496	2,202.2496	0.0195		2,202.6599
Worker	0.9837	1.2546	12.2448	0.0214	1.9018	0.0147	1.9164	0.5045	0.0134	0.5179		1,821.5389	1,821.5389	0.1063		1,823.7701
Total	2.9926	11.6228	35.9082	0.0434	2.5232	0.1824	2.7056	0.6812	0.1674	0.8486		4,025.5893	4,025.5893	0.1258		4,028.2311

3.3 Building Construction - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.7175	30.0299	23.7094	0.0331		2.7259	2.7259		2.5508	2.5508	0.0000	3,344.5603	3,344.5603	0.8704		3,362.8378
Total	4.7175	30.0299	23.7094	0.0331		2.7259	2.7259		2.5508	2.5508	0.0000	3,344.5603	3,344.5603	0.8704		3,362.8378

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.7000e-004	7.6700e-003	0.0110	2.0000e-005	4.7000e-003	1.2000e-004	4.8200e-003	1.1700e-003	1.1000e-004	1.2700e-003		1.8008	1.8008	1.0000e-005		1.8011
Vendor	2.0080	10.3605	23.6524	0.0220	0.6168	0.1676	0.7844	0.1756	0.1539	0.3295		2,202.2496	2,202.2496	0.0195		2,202.6599
Worker	0.9837	1.2546	12.2448	0.0214	1.9018	0.0147	1.9164	0.5045	0.0134	0.5179		1,821.5389	1,821.5389	0.1063		1,823.7701
Total	2.9926	11.6228	35.9082	0.0434	2.5232	0.1824	2.7056	0.6812	0.1674	0.8486		4,025.5893	4,025.5893	0.1258		4,028.2311

3.3 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.4217	38.8533	23.4185	0.0330		2.5487	2.5487		2.3832	2.3832		3,316.634 2	3,316.634 2	0.8573		3,334.637 4
Total	4.4217	38.8533	23.4185	0.0330		2.5487	2.5487		2.3832	2.3832		3,316.634 2	3,316.634 2	0.8573		3,334.637 4

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.3000e-004	6.5700e-003	0.0100	2.0000e-005	5.1000e-004	9.0000e-005	6.0000e-004	1.4000e-004	9.0000e-005	2.2000e-004		1.7755	1.7755	1.0000e-005		1.7758
Vendor	1.6699	9.0417	21.6006	0.0219	0.6168	0.1403	0.7571	0.1756	0.1288	0.3044		2,173.125 5	2,173.125 5	0.0178		2,173.498 6
Worker	0.8741	1.1182	10.8902	0.0213	1.9018	0.0140	1.9157	0.5045	0.0128	0.5173		1,754.725 4	1,754.725 4	0.0966		1,756.752 9
Total	2.5447	10.1665	32.5008	0.0433	2.5190	0.1544	2.6734	0.6802	0.1418	0.8219		3,929.626 4	3,929.626 4	0.1143		3,932.027 2

3.3 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.4217	28.5063	23.4185	0.0330		2.5487	2.5487		2.3832	2.3832	0.0000	3,316.634 2	3,316.634 2	0.8573		3,334.637 4
Total	4.4217	28.5063	23.4185	0.0330		2.5487	2.5487		2.3832	2.3832	0.0000	3,316.634 2	3,316.634 2	0.8573		3,334.637 4

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.3000e-004	6.5700e-003	0.0100	2.0000e-005	5.1000e-004	9.0000e-005	6.0000e-004	1.4000e-004	9.0000e-005	2.2000e-004		1.7755	1.7755	1.0000e-005		1.7758
Vendor	1.6699	9.0417	21.6006	0.0219	0.6168	0.1403	0.7571	0.1756	0.1288	0.3044		2,173.125 5	2,173.125 5	0.0178		2,173.498 6
Worker	0.8741	1.1182	10.8902	0.0213	1.9018	0.0140	1.9157	0.5045	0.0128	0.5173		1,754.725 4	1,754.725 4	0.0966		1,756.752 9
Total	2.5447	10.1665	32.5008	0.0433	2.5190	0.1544	2.6734	0.6802	0.1418	0.8219		3,929.626 4	3,929.626 4	0.1143		3,932.027 2

3.3 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.0519	36.0164	22.9519	0.0330		2.3211	2.3211		2.1696	2.1696		3,275.3850	3,275.3850	0.8444		3,293.1183
Total	4.0519	36.0164	22.9519	0.0330		2.3211	2.3211		2.1696	2.1696		3,275.3850	3,275.3850	0.8444		3,293.1183

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.3000e-004	5.7600e-003	9.3800e-003	2.0000e-005	2.6200e-003	8.0000e-005	2.7000e-003	6.5000e-004	7.0000e-005	7.3000e-004		1.7453	1.7453	1.0000e-005		1.7455
Vendor	1.4266	8.0015	20.0268	0.0218	0.6169	0.1182	0.7351	0.1757	0.1086	0.2842		2,136.4806	2,136.4806	0.0166		2,136.8290
Worker	0.7717	0.9986	9.6735	0.0213	1.9018	0.0135	1.9153	0.5045	0.0125	0.5169		1,685.2450	1,685.2450	0.0881		1,687.0946
Total	2.1989	9.0059	29.7097	0.0432	2.5213	0.1318	2.6531	0.6808	0.1211	0.8019		3,823.4708	3,823.4708	0.1047		3,825.6692

3.3 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.0519	26.4057	22.9519	0.0330		2.3211	2.3211		2.1696	2.1696	0.0000	3,275.3850	3,275.3850	0.8444		3,293.1183
Total	4.0519	26.4057	22.9519	0.0330		2.3211	2.3211		2.1696	2.1696	0.0000	3,275.3850	3,275.3850	0.8444		3,293.1183

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.3000e-004	5.7600e-003	9.3800e-003	2.0000e-005	2.6200e-003	8.0000e-005	2.7000e-003	6.5000e-004	7.0000e-005	7.3000e-004		1.7453	1.7453	1.0000e-005		1.7455
Vendor	1.4266	8.0015	20.0268	0.0218	0.6169	0.1182	0.7351	0.1757	0.1086	0.2842		2,136.4806	2,136.4806	0.0166		2,136.8290
Worker	0.7717	0.9986	9.6735	0.0213	1.9018	0.0135	1.9153	0.5045	0.0125	0.5169		1,685.2450	1,685.2450	0.0881		1,687.0946
Total	2.1989	9.0059	29.7097	0.0432	2.5213	0.1318	2.6531	0.6808	0.1211	0.8019		3,823.4708	3,823.4708	0.1047		3,825.6692

3.4 Architectural Coating - 2015**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	23.2268					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177
Total	23.6334	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1967	0.2509	2.4490	4.2700e-003	0.3804	2.9300e-003	0.3833	0.1009	2.6900e-003	0.1036		364.3078	364.3078	0.0213		364.7540
Total	0.1967	0.2509	2.4490	4.2700e-003	0.3804	2.9300e-003	0.3833	0.1009	2.6900e-003	0.1036		364.3078	364.3078	0.0213		364.7540

3.4 Architectural Coating - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	23.2268					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209	0.0000	281.4481	281.4481	0.0367		282.2177
Total	23.6334	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209	0.0000	281.4481	281.4481	0.0367		282.2177

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1967	0.2509	2.4490	4.2700e-003	0.3804	2.9300e-003	0.3833	0.1009	2.6900e-003	0.1036		364.3078	364.3078	0.0213		364.7540
Total	0.1967	0.2509	2.4490	4.2700e-003	0.3804	2.9300e-003	0.3833	0.1009	2.6900e-003	0.1036		364.3078	364.3078	0.0213		364.7540

3.4 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Archit. Coating	23.2268					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332			282.1449
Total	23.5953	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332			282.1449

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.1748	0.2237	2.1780	4.2700e-003	0.3804	2.7900e-003	0.3831	0.1009	2.5700e-003	0.1035		350.9451	350.9451	0.0193			351.3506
Total	0.1748	0.2237	2.1780	4.2700e-003	0.3804	2.7900e-003	0.3831	0.1009	2.5700e-003	0.1035		350.9451	350.9451	0.0193			351.3506

3.4 Architectural Coating - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	23.2268					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	23.5953	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1748	0.2237	2.1780	4.2700e-003	0.3804	2.7900e-003	0.3831	0.1009	2.5700e-003	0.1035		350.9451	350.9451	0.0193		351.3506
Total	0.1748	0.2237	2.1780	4.2700e-003	0.3804	2.7900e-003	0.3831	0.1009	2.5700e-003	0.1035		350.9451	350.9451	0.0193		351.3506

3.4 Architectural Coating - 2017**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	23.2268					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	23.5591	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1544	0.1997	1.9347	4.2700e-003	0.3804	2.7000e-003	0.3831	0.1009	2.4900e-003	0.1034		337.0490	337.0490	0.0176		337.4189
Total	0.1544	0.1997	1.9347	4.2700e-003	0.3804	2.7000e-003	0.3831	0.1009	2.4900e-003	0.1034		337.0490	337.0490	0.0176		337.4189

3.4 Architectural Coating - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	23.2268					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.0721
Total	23.5591	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.0721

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1544	0.1997	1.9347	4.2700e-003	0.3804	2.7000e-003	0.3831	0.1009	2.4900e-003	0.1034		337.0490	337.0490	0.0176		337.4189
Total	0.1544	0.1997	1.9347	4.2700e-003	0.3804	2.7000e-003	0.3831	0.1009	2.4900e-003	0.1034		337.0490	337.0490	0.0176		337.4189

3.5 Paving - 2017**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.1404					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.0477	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0463	0.0599	0.5804	1.2800e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		101.1147	101.1147	5.2800e-003		101.2257
Total	0.0463	0.0599	0.5804	1.2800e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		101.1147	101.1147	5.2800e-003		101.2257

3.5 Paving - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473	0.0000	2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.1404					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.0477	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473	0.0000	2,281.0588	2,281.0588	0.6989		2,295.7360

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0463	0.0599	0.5804	1.2800e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		101.1147	101.1147	5.2800e-003		101.2257
Total	0.0463	0.0599	0.5804	1.2800e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		101.1147	101.1147	5.2800e-003		101.2257

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Enclosed Parking with Elevator	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
General Office Building	10.00	5.00	6.50	33.00	48.00	19.00	77	19	4
General Office Building	10.00	5.00	6.50	33.00	48.00	19.00	77	19	4
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504380	0.068251	0.178421	0.147199	0.044767	0.006294	0.020809	0.016358	0.002307	0.002286	0.006181	0.000572	0.002175

5.0 Energy Detail

5.1 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	15.8080	4.3000e-004	0.0456	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004		0.0959	0.0959	2.7000e-004		0.1015
Unmitigated	15.8080	4.3000e-004	0.0456	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004		0.0959	0.0959	2.7000e-004		0.1015

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.0745					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	13.7291					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.4000e-003	4.3000e-004	0.0456	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004		0.0959	0.0959	2.7000e-004		0.1015
Total	15.8080	4.3000e-004	0.0456	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004		0.0959	0.0959	2.7000e-004		0.1015

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.0745					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	13.7291					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.4000e-003	4.3000e-004	0.0456	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004		0.0959	0.0959	2.7000e-004		0.1015
Total	15.8080	4.3000e-004	0.0456	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004		0.0959	0.0959	2.7000e-004		0.1015

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

SMUD HQ
Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	120.00	1000sqft	1.75	120,000.00	375
General Office Building	15.00	1000sqft	0.34	15,000.00	0
Enclosed Parking with Elevator	45.00	1000sqft	1.02	45,000.00	0
Parking Lot	250.00	Space	2.25	100,000.00	0
City Park	8.30	Acre	8.30	361,548.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.5	Precipitation Freq (Days)	58
Climate Zone	6			Operational Year	2017
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MW hr)	590.31	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Includes renovation of 120,000 square foot office, 45,000 square foot parking garage, addition of 15,000 square foot pavilion and 250 parking spaces.

City park land use included for project-related landscaping improvements.

Construction Phase - Construction schedule consistent with the project description

Trips and VMT - Assumes approximately 150 workers, or 300 trips, per day.

Haul trips based on 50,000 cubic yards of material and 20 cubic yards per truck.

Demolition - Assumes approximately 17,000 cubic yards of material. Converted using construction factors of 773 to 860 pounds per cubic yard of material.

Vehicle Trips - No operational emissions.

Energy Use - No operational emissions

Water And Wastewater - No operational emissions

Solid Waste - No operational emissions.

Off-road Equipment - grader added for site rehab

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	326.00
tblConstructionPhase	NumDays	300.00	326.00
tblConstructionPhase	NumDays	20.00	109.00
tblConstructionPhase	NumDays	20.00	42.00
tblConstructionPhase	PhaseEndDate	5/30/2018	2/28/2017
tblConstructionPhase	PhaseEndDate	4/27/2017	2/28/2017
tblConstructionPhase	PhaseStartDate	3/1/2017	12/1/2015
tblConstructionPhase	PhaseStartDate	3/1/2017	1/1/2017
tblEnergyUse	LightingElect	2.63	0.00
tblEnergyUse	LightingElect	4.21	0.00
tblEnergyUse	NT24E	0.19	0.00
tblEnergyUse	NT24E	5.75	0.00
tblEnergyUse	NT24NG	0.68	0.00
tblEnergyUse	T24E	3.92	0.00

tblEnergyUse	T24E	6.08	0.00
tblEnergyUse	T24NG	13.07	0.00
tblLandUse	LotAcreage	2.75	1.75
tblLandUse	LotAcreage	1.03	1.02
tblLandUse	Population	0.00	375.00
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	PhaseName		Building Construction
tblProjectCharacteristics	OperationalYear	2014	2017
tblSolidWaste	SolidWasteGenerationRate	0.71	0.00
tblSolidWaste	SolidWasteGenerationRate	125.55	0.00
tblTripsAndVMT	HaulingTripNumber	692.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	8.00
tblTripsAndVMT	WorkerTripNumber	15.00	300.00
tblTripsAndVMT	WorkerTripNumber	256.00	250.00
tblTripsAndVMT	WorkerTripNumber	51.00	50.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	2.37	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	0.98	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	11.01	0.00
tblWater	IndoorWaterUseRate	23,994,055.98	0.00
tblWater	OutdoorWaterUseRate	9,889,295.20	0.00
tblWater	OutdoorWaterUseRate	14,706,034.31	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.6655	3.3414	3.4131	4.5800e-003	0.2304	0.1705	0.4010	0.0525	0.1593	0.2118	0.0000	399.7104	399.7104	0.0726	0.0000	401.2353
2016	3.9706	6.6976	7.2026	0.0110	0.3657	0.3786	0.7444	0.0988	0.3554	0.4542	0.0000	941.3723	941.3723	0.1212	0.0000	943.9177
2017	0.6679	1.4174	1.4103	2.2600e-003	0.0612	0.0791	0.1403	0.0165	0.0738	0.0903	0.0000	193.8035	193.8035	0.0324	0.0000	194.4838
Total	5.3039	11.4564	12.0260	0.0178	0.6574	0.6283	1.2857	0.1678	0.5884	0.7563	0.0000	1,534.8863	1,534.8863	0.2262	0.0000	1,539.6368

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.6655	3.2168	3.4131	4.5800e-003	0.2304	0.1705	0.4010	0.0525	0.1593	0.2118	0.0000	399.7101	399.7101	0.0726	0.0000	401.2350
2016	3.9706	5.3473	7.2026	0.0110	0.3657	0.3786	0.7444	0.0988	0.3554	0.4542	0.0000	941.3718	941.3718	0.1212	0.0000	943.9172
2017	0.6679	1.2156	1.4103	2.2600e-003	0.0612	0.0791	0.1403	0.0165	0.0738	0.0903	0.0000	193.8034	193.8034	0.0324	0.0000	194.4837
Total	5.3039	9.7797	12.0260	0.0178	0.6574	0.6283	1.2857	0.1678	0.5884	0.7563	0.0000	1,534.8854	1,534.8854	0.2262	0.0000	1,539.6358

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	14.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.8847	5.0000e-005	5.7000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0109	0.0109	3.0000e-005	0.0000	0.0115
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	23.5629	23.5629	1.1600e-003	2.4000e-004	23.6614
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.8847	5.0000e-005	5.7000e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	23.5738	23.5738	1.1900e-003	2.4000e-004	23.6730

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.8847	5.0000e-005	5.7000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0109	0.0109	3.0000e-005	0.0000	0.0115
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	23.5629	23.5629	1.1600e-003	2.4000e-004	23.6614
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.8847	5.0000e-005	5.7000e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	23.5738	23.5738	1.1900e-003	2.4000e-004	23.6730

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2015	11/30/2015	5	109	
2	Building Construction	Building Construction	12/1/2015	2/28/2017	5	326	
3	Architectural Coating	Architectural Coating	12/1/2015	2/28/2017	5	326	
4	Paving	Paving	1/1/2017	2/28/2017	5	42	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 816,822; Non-Residential Outdoor: 272,274 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Graders	1	8.00	174	0.41

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	300.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	250.00	105.00	8.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	50.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0781	0.0000	0.0781	0.0118	0.0000	0.0118	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2457	2.6358	1.9660	2.1700e-003		0.1336	0.1336		0.1246	0.1246	0.0000	204.0549	204.0549	0.0553	0.0000	205.2166
Total	0.2457	2.6358	1.9660	2.1700e-003	0.0781	0.1336	0.2117	0.0118	0.1246	0.1364	0.0000	204.0549	204.0549	0.0553	0.0000	205.2166

3.2 Demolition - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0615	0.0734	0.7684	1.4400e-003	0.1201	9.6000e-004	0.1210	0.0319	8.8000e-004	0.0328	0.0000	111.2430	111.2430	6.3000e-003	0.0000	111.3754
Total	0.0615	0.0734	0.7684	1.4400e-003	0.1201	9.6000e-004	0.1210	0.0319	8.8000e-004	0.0328	0.0000	111.2430	111.2430	6.3000e-003	0.0000	111.3754

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0781	0.0000	0.0781	0.0118	0.0000	0.0118	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2457	2.6358	1.9660	2.1700e-003		0.1336	0.1336		0.1246	0.1246	0.0000	204.0547	204.0547	0.0553	0.0000	205.2163
Total	0.2457	2.6358	1.9660	2.1700e-003	0.0781	0.1336	0.2117	0.0118	0.1246	0.1364	0.0000	204.0547	204.0547	0.0553	0.0000	205.2163

3.2 Demolition - 2015**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0615	0.0734	0.7684	1.4400e-003	0.1201	9.6000e-004	0.1210	0.0319	8.8000e-004	0.0328	0.0000	111.2430	111.2430	6.3000e-003	0.0000	111.3754
Total	0.0615	0.0734	0.7684	1.4400e-003	0.1201	9.6000e-004	0.1210	0.0319	8.8000e-004	0.0328	0.0000	111.2430	111.2430	6.3000e-003	0.0000	111.3754

3.3 Building Construction - 2015**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0543	0.4699	0.2727	3.8000e-004		0.0314	0.0314		0.0293	0.0293	0.0000	34.8925	34.8925	9.0800e-003	0.0000	35.0832
Total	0.0543	0.4699	0.2727	3.8000e-004		0.0314	0.0314		0.0293	0.0293	0.0000	34.8925	34.8925	9.0800e-003	0.0000	35.0832

3.3 Building Construction - 2015**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	9.0000e-005	1.1000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0188	0.0188	0.0000	0.0000	0.0188
Vendor	0.0193	0.1171	0.2220	2.5000e-004	6.8900e-003	1.9100e-003	8.8000e-003	1.9700e-003	1.7500e-003	3.7200e-003	0.0000	23.0916	23.0916	2.0000e-004	0.0000	23.0958
Worker	0.0108	0.0129	0.1351	2.5000e-004	0.0211	1.7000e-004	0.0213	5.6200e-003	1.5000e-004	5.7700e-003	0.0000	19.5611	19.5611	1.1100e-003	0.0000	19.5844
Total	0.0301	0.1301	0.3572	5.0000e-004	0.0281	2.0800e-003	0.0301	7.6000e-003	1.9000e-003	9.5000e-003	0.0000	42.6715	42.6715	1.3100e-003	0.0000	42.6990

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0543	0.3453	0.2727	3.8000e-004		0.0314	0.0314		0.0293	0.0293	0.0000	34.8925	34.8925	9.0800e-003	0.0000	35.0832
Total	0.0543	0.3453	0.2727	3.8000e-004		0.0314	0.0314		0.0293	0.0293	0.0000	34.8925	34.8925	9.0800e-003	0.0000	35.0832

3.3 Building Construction - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	9.0000e-005	1.1000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0188	0.0188	0.0000	0.0000	0.0188
Vendor	0.0193	0.1171	0.2220	2.5000e-004	6.8900e-003	1.9100e-003	8.8000e-003	1.9700e-003	1.7500e-003	3.7200e-003	0.0000	23.0916	23.0916	2.0000e-004	0.0000	23.0958
Worker	0.0108	0.0129	0.1351	2.5000e-004	0.0211	1.7000e-004	0.0213	5.6200e-003	1.5000e-004	5.7700e-003	0.0000	19.5611	19.5611	1.1100e-003	0.0000	19.5844
Total	0.0301	0.1301	0.3572	5.0000e-004	0.0281	2.0800e-003	0.0301	7.6000e-003	1.9000e-003	9.5000e-003	0.0000	42.6715	42.6715	1.3100e-003	0.0000	42.6990

3.3 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.5770	5.0704	3.0561	4.3100e-003		0.3326	0.3326		0.3110	0.3110	0.0000	392.6484	392.6484	0.1015	0.0000	394.7797
Total	0.5770	5.0704	3.0561	4.3100e-003		0.3326	0.3326		0.3110	0.3110	0.0000	392.6484	392.6484	0.1015	0.0000	394.7797

3.3 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-005	8.4000e-004	1.1100e-003	0.0000	6.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2105	0.2105	0.0000	0.0000	0.2105
Vendor	0.1830	1.1602	2.2578	2.8600e-003	0.0782	0.0182	0.0963	0.0223	0.0167	0.0390	0.0000	258.5826	258.5826	2.0700e-003	0.0000	258.6261
Worker	0.1094	0.1305	1.3681	2.8700e-003	0.2396	1.8200e-003	0.2414	0.0637	1.6800e-003	0.0654	0.0000	213.8424	213.8424	0.0114	0.0000	214.0824
Total	0.2925	1.2916	3.6270	5.7300e-003	0.3178	0.0200	0.3378	0.0861	0.0184	0.1044	0.0000	472.6355	472.6355	0.0135	0.0000	472.9190

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.5770	3.7201	3.0561	4.3100e-003		0.3326	0.3326		0.3110	0.3110	0.0000	392.6479	392.6479	0.1015	0.0000	394.7793
Total	0.5770	3.7201	3.0561	4.3100e-003		0.3326	0.3326		0.3110	0.3110	0.0000	392.6479	392.6479	0.1015	0.0000	394.7793

3.3 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-005	8.4000e-004	1.1100e-003	0.0000	6.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2105	0.2105	0.0000	0.0000	0.2105
Vendor	0.1830	1.1602	2.2578	2.8600e-003	0.0782	0.0182	0.0963	0.0223	0.0167	0.0390	0.0000	258.5826	258.5826	2.0700e-003	0.0000	258.6261
Worker	0.1094	0.1305	1.3681	2.8700e-003	0.2396	1.8200e-003	0.2414	0.0637	1.6800e-003	0.0654	0.0000	213.8424	213.8424	0.0114	0.0000	214.0824
Total	0.2925	1.2916	3.6270	5.7300e-003	0.3178	0.0200	0.3378	0.0861	0.0184	0.1044	0.0000	472.6355	472.6355	0.0135	0.0000	472.9190

3.3 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0851	0.7563	0.4820	6.9000e-004		0.0487	0.0487		0.0456	0.0456	0.0000	62.3990	62.3990	0.0161	0.0000	62.7368
Total	0.0851	0.7563	0.4820	6.9000e-004		0.0487	0.0487		0.0456	0.0456	0.0000	62.3990	62.3990	0.0161	0.0000	62.7368

3.3 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	1.2000e-004	1.7000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0333	0.0333	0.0000	0.0000	0.0333
Vendor	0.0253	0.1652	0.3322	4.6000e-004	0.0126	2.4600e-003	0.0150	3.6000e-003	2.2600e-003	5.8600e-003	0.0000	40.9102	40.9102	3.1000e-004	0.0000	40.9167
Worker	0.0156	0.0188	0.1964	4.6000e-004	0.0386	2.8000e-004	0.0388	0.0103	2.6000e-004	0.0105	0.0000	33.0501	33.0501	1.6800e-003	0.0000	33.0853
Total	0.0410	0.1841	0.5288	9.2000e-004	0.0512	2.7400e-003	0.0539	0.0139	2.5200e-003	0.0164	0.0000	73.9936	73.9936	1.9900e-003	0.0000	74.0353

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0851	0.5545	0.4820	6.9000e-004		0.0487	0.0487		0.0456	0.0456	0.0000	62.3989	62.3989	0.0161	0.0000	62.7367
Total	0.0851	0.5545	0.4820	6.9000e-004		0.0487	0.0487		0.0456	0.0456	0.0000	62.3989	62.3989	0.0161	0.0000	62.7367

3.3 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	1.2000e-004	1.7000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0333	0.0333	0.0000	0.0000	0.0333
Vendor	0.0253	0.1652	0.3322	4.6000e-004	0.0126	2.4600e-003	0.0150	3.6000e-003	2.2600e-003	5.8600e-003	0.0000	40.9102	40.9102	3.1000e-004	0.0000	40.9167
Worker	0.0156	0.0188	0.1964	4.6000e-004	0.0386	2.8000e-004	0.0388	0.0103	2.6000e-004	0.0105	0.0000	33.0501	33.0501	1.6800e-003	0.0000	33.0853
Total	0.0410	0.1841	0.5288	9.2000e-004	0.0512	2.7400e-003	0.0539	0.0139	2.5200e-003	0.0164	0.0000	73.9936	73.9936	1.9900e-003	0.0000	74.0353

3.4 Architectural Coating - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2671					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6800e-003	0.0296	0.0219	3.0000e-005		2.5400e-003	2.5400e-003		2.5400e-003	2.5400e-003	0.0000	2.9362	2.9362	3.8000e-004	0.0000	2.9443
Total	0.2718	0.0296	0.0219	3.0000e-005		2.5400e-003	2.5400e-003		2.5400e-003	2.5400e-003	0.0000	2.9362	2.9362	3.8000e-004	0.0000	2.9443

3.4 Architectural Coating - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1600e-003	2.5800e-003	0.0270	5.0000e-005	4.2200e-003	3.0000e-005	4.2600e-003	1.1200e-003	3.0000e-005	1.1500e-003	0.0000	3.9122	3.9122	2.2000e-004	0.0000	3.9169
Total	2.1600e-003	2.5800e-003	0.0270	5.0000e-005	4.2200e-003	3.0000e-005	4.2600e-003	1.1200e-003	3.0000e-005	1.1500e-003	0.0000	3.9122	3.9122	2.2000e-004	0.0000	3.9169

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2671					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6800e-003	0.0296	0.0219	3.0000e-005		2.5400e-003	2.5400e-003		2.5400e-003	2.5400e-003	0.0000	2.9362	2.9362	3.8000e-004	0.0000	2.9443
Total	0.2718	0.0296	0.0219	3.0000e-005		2.5400e-003	2.5400e-003		2.5400e-003	2.5400e-003	0.0000	2.9362	2.9362	3.8000e-004	0.0000	2.9443

3.4 Architectural Coating - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	tons/yr										MT/yr						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1600e-003	2.5800e-003	0.0270	5.0000e-005	4.2200e-003	3.0000e-005	4.2600e-003	1.1200e-003	3.0000e-005	1.1500e-003	0.0000	3.9122	3.9122	2.2000e-004	0.0000	3.9169	
Total	2.1600e-003	2.5800e-003	0.0270	5.0000e-005	4.2200e-003	3.0000e-005	4.2600e-003	1.1200e-003	3.0000e-005	1.1500e-003	0.0000	3.9122	3.9122	2.2000e-004	0.0000	3.9169	

3.4 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.0311					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0481	0.3096	0.2459	3.9000e-004		0.0257	0.0257		0.0257	0.0257	0.0000	33.3200	33.3200	3.9300e-003	0.0000	33.4025
Total	3.0792	0.3096	0.2459	3.9000e-004		0.0257	0.0257		0.0257	0.0257	0.0000	33.3200	33.3200	3.9300e-003	0.0000	33.4025

3.4 Architectural Coating - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	tons/yr										MT/yr						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0219	0.0261	0.2736	5.7000e-004	0.0479	3.6000e-004	0.0483	0.0128	3.4000e-004	0.0131	0.0000	42.7685	42.7685	2.2900e-003	0.0000	42.8165	
Total	0.0219	0.0261	0.2736	5.7000e-004	0.0479	3.6000e-004	0.0483	0.0128	3.4000e-004	0.0131	0.0000	42.7685	42.7685	2.2900e-003	0.0000	42.8165	

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.0311					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0481	0.3096	0.2459	3.9000e-004		0.0257	0.0257		0.0257	0.0257	0.0000	33.3199	33.3199	3.9300e-003	0.0000	33.4024
Total	3.0792	0.3096	0.2459	3.9000e-004		0.0257	0.0257		0.0257	0.0257	0.0000	33.3199	33.3199	3.9300e-003	0.0000	33.4024

3.4 Architectural Coating - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0219	0.0261	0.2736	5.7000e-004	0.0479	3.6000e-004	0.0483	0.0128	3.4000e-004	0.0131	0.0000	42.7685	42.7685	2.2900e-003	0.0000	42.8165
Total	0.0219	0.0261	0.2736	5.7000e-004	0.0479	3.6000e-004	0.0483	0.0128	3.4000e-004	0.0131	0.0000	42.7685	42.7685	2.2900e-003	0.0000	42.8165

3.4 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4878					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.9800e-003	0.0459	0.0392	6.0000e-005		3.6400e-003	3.6400e-003		3.6400e-003	3.6400e-003	0.0000	5.3618	5.3618	5.7000e-004	0.0000	5.3737
Total	0.4947	0.0459	0.0392	6.0000e-005		3.6400e-003	3.6400e-003		3.6400e-003	3.6400e-003	0.0000	5.3618	5.3618	5.7000e-004	0.0000	5.3737

3.4 Architectural Coating - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1200e-003	3.7500e-003	0.0393	9.0000e-005	7.7100e-003	6.0000e-005	7.7700e-003	2.0500e-003	5.0000e-005	2.1000e-003	0.0000	6.6100	6.6100	3.4000e-004	0.0000	6.6171
Total	3.1200e-003	3.7500e-003	0.0393	9.0000e-005	7.7100e-003	6.0000e-005	7.7700e-003	2.0500e-003	5.0000e-005	2.1000e-003	0.0000	6.6100	6.6100	3.4000e-004	0.0000	6.6171

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4878					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.9800e-003	0.0459	0.0392	6.0000e-005		3.6400e-003	3.6400e-003		3.6400e-003	3.6400e-003	0.0000	5.3618	5.3618	5.7000e-004	0.0000	5.3737
Total	0.4947	0.0459	0.0392	6.0000e-005		3.6400e-003	3.6400e-003		3.6400e-003	3.6400e-003	0.0000	5.3618	5.3618	5.7000e-004	0.0000	5.3737

3.4 Architectural Coating - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1200e-003	3.7500e-003	0.0393	9.0000e-005	7.7100e-003	6.0000e-005	7.7700e-003	2.0500e-003	5.0000e-005	2.1000e-003	0.0000	6.6100	6.6100	3.4000e-004	0.0000	6.6171
Total	3.1200e-003	3.7500e-003	0.0393	9.0000e-005	7.7100e-003	6.0000e-005	7.7700e-003	2.0500e-003	5.0000e-005	2.1000e-003	0.0000	6.6100	6.6100	3.4000e-004	0.0000	6.6171

3.5 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0401	0.4262	0.3093	4.7000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	43.4562	43.4562	0.0133	0.0000	43.7358
Paving	2.9500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0430	0.4262	0.3093	4.7000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	43.4562	43.4562	0.0133	0.0000	43.7358

3.5 Paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.4000e-004	1.1300e-003	0.0118	3.0000e-005	2.3100e-003	2.0000e-005	2.3300e-003	6.2000e-004	2.0000e-005	6.3000e-004	0.0000	1.9830	1.9830	1.0000e-004	0.0000	1.9851
Total	9.4000e-004	1.1300e-003	0.0118	3.0000e-005	2.3100e-003	2.0000e-005	2.3300e-003	6.2000e-004	2.0000e-005	6.3000e-004	0.0000	1.9830	1.9830	1.0000e-004	0.0000	1.9851

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0401	0.4262	0.3093	4.7000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	43.4561	43.4561	0.0133	0.0000	43.7357
Paving	2.9500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0430	0.4262	0.3093	4.7000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	43.4561	43.4561	0.0133	0.0000	43.7357

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Enclosed Parking with Elevator	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
General Office Building	10.00	5.00	6.50	33.00	48.00	19.00	77	19	4
General Office Building	10.00	5.00	6.50	33.00	48.00	19.00	77	19	4
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504380	0.068251	0.178421	0.147199	0.044767	0.006294	0.020809	0.016358	0.002307	0.002286	0.006181	0.000572	0.002175

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	88000	23.5629	1.1600e-003	2.4000e-004	23.6614
Total		23.5629	1.1600e-003	2.4000e-004	23.6614

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	88000	23.5629	1.1600e-003	2.4000e-004	23.6614
Total		23.5629	1.1600e-003	2.4000e-004	23.6614

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.8847	5.0000e-005	5.7000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0109	0.0109	3.0000e-005	0.0000	0.0115
Unmitigated	2.8847	5.0000e-005	5.7000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0109	0.0109	3.0000e-005	0.0000	0.0115

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3786					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.5056					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.5000e-004	5.0000e-005	5.7000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0109	0.0109	3.0000e-005	0.0000	0.0115
Total	2.8847	5.0000e-005	5.7000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0109	0.0109	3.0000e-005	0.0000	0.0115

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3786					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.5056					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.5000e-004	5.0000e-005	5.7000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0109	0.0109	3.0000e-005	0.0000	0.0115
Total	2.8847	5.0000e-005	5.7000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0109	0.0109	3.0000e-005	0.0000	0.0115

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

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



Addendum 1: Changes to the Draft IS/MND Text and Figures

Introduction

This summary presents minor corrections and revisions made to the Draft IS/MND initiated by the public, staff and/or consultants based on their on-going review. New text is indicated in underline and text to be deleted is reflected by a ~~strike-through~~. Text changes are presented in the page order in which they appear in the Draft IS/MND.

The changes identified below are clarifications or amplification of the information and analysis contained in the Draft IS/MND. None of the changes identified below results in a significant impact that was already identified in the Draft IS/MND. Furthermore, none of the impacts identified in the Draft IS/MND were found to be substantially more severe as the result of the following changes. For these reasons, recirculation of the Draft IS/MND is not warranted.

Page 2 of 207, last paragraph:

Pending public review and SMUD Board of Directors approval, this MND ~~will be~~was filed pursuant to State CEQA Guidelines Section 15075. Written comments ~~should~~were ~~requested~~to be submitted to SMUD at the address previously identified by 5:00 p.m. on February 16, 2015.

Page 10 of 207, Section 1.3 Public Review Process

This draft IS/MND ~~is being~~was circulated for a 30-day public review period to all individuals who have requested a copy, local libraries, and appropriate agencies. A notice of intent (NOI) ~~is~~was also ~~being~~ distributed to all property owners on record identified by the Sacramento County Assessor's office as having property within 500 feet of the project boundaries. The NOI identifieds where the document ~~is~~was available for public review and inviteds interested parties to provide written comments for incorporation into the final IS/MND. The NOI also inviteds interested parties to attend a public meeting on the proposed project, which ~~has been~~was scheduled for January 27, 2015. A copy of the NOI is included as Appendix A of this document.

A final IS/MND, including written responses to comments received on significant environmental issues, ~~will be~~has been prepared. Before SMUD's Board of Directors (Board) makes a decision on the proposed project, the final IS/MND will be provided to all parties commenting on the IS/MND.

Page 13 of 207, Section 2.2 Project Location

Added: Restroom trailers would be provided at each trailer location.

Page 35 of 207, Parking

Added: Additional parking is available at the Corporate Yard at 59th Street ([approximately 675 spaces total](#)), and along S Street. Site rehabilitation would add up to 250 employee spaces on the 13.66-acre headquarters site by enlarging and/or reconfiguring the west and east parking lots....

Added: During construction, sufficient parking for employees and visitors would be available on the SMUD campus ([especially the 59th Street Corporation Yard for employees temporarily relocating there](#)) and adjacent streets and would be accessed from Folsom Boulevard, [59th Street](#) or S Street, as under existing conditions....

Page 42 of 107, Removal and Remediation of Hazardous Materials

The project includes removal and remediation of hazardous materials within the Headquarters Building and on the site. Existing hazardous materials include but are not limited to sprayed fireproofing, cement plaster finishes, floor tiles and adhesives, pipe insulation, and roofing materials, all of which contain asbestos; lead-based paints; [PCBs in window case sealants](#), oil-type transformers; an underground hydraulic oil tank from an abandoned vehicle lift; and asbestos concrete transite pipe used for the existing irrigation system.

Demolition and abatement of hazardous materials would leave the building shell (e.g., structural columns, beams, decking, exterior wall systems) and selected building elements identified for deconstruction and storage for reuse in the building, or for protection in place, and free of hazardous materials. Lead-based paints and asbestos in some nonoccupied areas may be left in place, if determined to not pose a threat to employees and customers. All existing hazardous materials (with the exception of the aforementioned lead-based paint, ~~and~~ asbestos [and PCBs](#)) that are detected would be removed and disposed of in accordance with applicable federal, state, and local laws and regulations.

Pages 43 and 44 of 207; 2.5.5 Relocation of SMUD Employees

The Headquarters Building would be completely vacated before rehabilitation activities. Employees currently located in the Headquarters Building would be relocated on a temporary or permanent basis. Relocation sites include the following SMUD facilities:

- Field Reporting Facility
- Customer Service Center
- Corporate Yard at 59th Street
- Field Reporting Facility temporary trailer location

- 59th Street temporary trailer location
- East Campus-Operations Center (EC-OC)

With the exception of the EC-OC, the above relocation sites are shown in Figure 2-2. The EC-OC is located at 4401 Bradshaw Road, Sacramento, approximately 11 miles east of the project site and has ample capacity to house additional employees.

Temporary water, power, and sewer utilities would be installed to support the temporary trailers from existing on-site services. Domestic water, fire water, and sanitary sewer would be provided via provision of underground laterals from trailer connection points to existing underground services. [The trailer locations would include separate restroom trailers. The FRF temporary trailer location will be serviced by two restroom trailers while the 59th Street temporary trailer will be serviced by one restroom trailer.](#)

Temporary power and telecom would likewise be provided from existing services to trailer connection points via underground conduit. [The parking area to the north of the FRF trailer location adjacent to Folsom Boulevard will serve as a temporary staging area and access path for the trailers during the trailer construction process. Once construction of the trailers has been completed the staging area will be returned to its previous use as parking and the area adjacent to Folsom Boulevard as an equipment laydown area.](#)

A breakdown of anticipated employee relocations is provided below.

Relocations:

[There are currently 498 employees in the Headquarter Building. To allow SMUD staff to work efficiently during project construction, temporary relocations also involved some staff from the Customer Service Center. The exact numbers at each location are still to be determined, but are expected to be approximately as follows: }](#)

- [93 approximately 90](#) employees from the Headquarters Building to the Customer Service Center
- [approximately 75](#) employees from the Headquarters Building to the Field Reporting Facility
- [approximately 130~~109~~](#) employees from the Headquarters Building to Field Reporting Facility temporary trailers
- [approximately 25 employees from the Field Reporting Facility to the Field Reporting Facility Temporary Trailers](#)

- [91-approximately 100](#) employees from the Headquarters Building to the existing 59th Street Corporate Yard buildings
- [approximately 35](#) employees from the Headquarters Building to 59th Street temporary trailers
- [approximately 95-100](#) employees from the Customer Service Center to the existing 59th Street Corporate Yard buildings
- [65-approximately 20](#) employees from the Headquarters Building to the EC-OC

While the employees relocated to the EC-OC are expected to stay there permanently, ultimate long-term building occupancy at the Headquarters Building is expected to be similar to current numbers (approximately 498 employees) as staff grows over time. [The 59th Street Corporate Yard has approximately 675 parking spaces, and therefore has ample capacity to accommodate existing employees reporting there and temporarily relocated employees.](#)

Page 46 of 207, 2.6.2 State Permits and Approvals

Added:

[The California Department of Transportation issues permits for movement of oversized or excessive loads on State Highways.](#)

[If this permit would be required, the construction contractor would obtain it prior to project implementation.](#)

Page 47 of 207, 2.6.3 Local Permits and Approvals

minor edits:

- Encroachment permit (potential~~ly~~ S Street pipe improvement)
- Off-site improvement plans (potential~~ly~~ S Street pipe improvement, curb cuts, and entrances)

Page 114 of 207; Polychlorinated Biphenyls

Last sentence:

The window casing sealants are still in place and may be removed during rehabilitation [or left behind if sealed and not posing threats to employee safety.](#)

Page 122 of 207, Mitigation Measure HAZ-2



Sacramento Municipal Utility District Headquarters Building
and Site Rehabilitation Project
March, 2015

First sentence:

Before and during exterior and interior rehabilitation of the Headquarters Building, SMUD shall ensure that asbestos-containing materials are properly removed by a licensed abatement contractor in accordance with EPA and Cal/OSHA standards and [ARB-SMAQMD](#) Asbestos Rule 902.

Page 169 of 207, State

Added after last sentence:

[Caltrans also issues transportation permits for the movement of oversize or excessive loads on State Highways and encroachment permits for work affecting State Highway Right-of-ways.](#)