Board of Directors Meeting Agenda

Date: July 21, 2022

Time: 5:30 p.m.

Location: Virtual Meeting (online)

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•AMENDED AGENDA

Agenda Item 6 – Vendor Name Corrected.

SACRAMENTO MUNICIPAL UTILITY DISTRICT
BOARD OF DIRECTORS MEETING

Pursuant to Government Code section 54953(e) and the Emergency Board Meeting Procedures adopted by the SMUD Board of Directors, the regular Board meeting and other public meetings are currently conducted solely via virtual (online/teleconference) meeting to align with state, local, and federal guidelines for the containment of the coronavirus.

Live video streams and indexed archives of meetings are available at:
http://smud.granicus.com/ViewPublisher.php?view_id=16

Members of the public may register to provide verbal comments at an upcoming Board or Committee meeting by e-mailing a request to speak to PublicComment@smud.org. Please include the date of the meeting, name, and topic or agenda item the requestor wishes to speak on. The request may also be submitted while the meeting is in progress during the standard time for the agenda item or topic. **Pre-registration is strongly encouraged by no later than 3:00 p.m. on the day of the meeting.**

Members of the public may provide written public comments on a specific agenda item or on items not on the agenda (general public comment) by submitting comments via e-mail. Comments may be submitted to PublicComment@smud.org and will be placed into the record of the meeting.

Members of the public that are listening to or watching the live stream of a Board meeting and wish to submit written comments on a specific agenda item as it is being heard may submit their comments, limited to 250 words or less, to PublicComment@smud.org, noting the agenda item number in the subject line. The Board President may read comments for items on the agenda into the record, in his discretion, based upon such factors as the length of the agenda or the number of e-mail comments received. General public comment for items not on the agenda will not be read into the record but will be provided to the Board and placed into the record of the Board meeting if it is received within two hours after the meeting ends.

July 21, 2022 – 5:30 p.m.

Zoom Webinar Link: Join SMUD Board of Directors Meeting Here
Webinar/Meeting ID: 161 442 8605
Passcode: 712133
Phone Dial-in Number: 1-669-254-5252 or 1-833-568-8864 (Toll Free)

Call to Order.
a. Roll Call.

1. Approval of the Agenda.

Comments from the public are welcome when these agenda items are called.

Consent Calendar:

2. Approve Board member compensation for service rendered at the request of the Board (pursuant to Resolution 18-12-15) for the period of June 16, 2022, through July 15, 2022.

3. Approval of the minutes of the meeting of June 16, 2022.

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Discussion Calendar:

4. Make findings pursuant to Government Code section 54953(e) to continue holding meetings virtually during proclaimed state of emergency (recurring item, every 30 days).

   Presenter: Laura Lewis

5. Certify the **California Environmental Quality Act (CEQA) Cordova Park Underground Cable Replacement Project (Project) Final Environmental Impact Report (FEIR)**, including adoption of the **Findings**; adopt the **Mitigation Monitoring and Reporting Program** for the **Project**; and approve the **Project**. **(Frankie McDermott)**

   Presenter: Emily Bacchini

- 6. Approve Contract Change No. 4 to Contract No. 4600000965 with **Cooper Power Systems, LLC** to extend the contract expiration date by five years from March 20, 2023, to March 20, 2028, and to increase the contract amount by $70 million from $49.5 million to $119.5 million plus sales/use tax. **(Jennifer Davidson)**

   Presenter: Casey Fallon

7. Determine and declare that a "great emergency" exists and authorize the Chief Executive Officer and General Manager to enter into a direct procurement contract with one or more qualified suppliers to provide a secondary source of distribution transformers for a period of up to five years for a total aggregate contract amount not to exceed $30 million. **(Jennifer Davidson)**

   Presenter: Casey Fallon

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Informational Items:

8. Provide the Board with the financial results from the five-month period ended May 31, 2022.

   Presenter: Lisa Limcaco

9. Provide the Board with the summary of SMUD's current Power Supply Costs.

   Presenter: Lisa Limcaco

10. Audit Report: Status of Recommendations Report for Q2 2022.

Presenter: Claire Rogers

11. Board Work Plan.

Presenter: President Rose

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Public Comment:

12. Items not on the agenda.

Board and CEO Reports:

13. Directors' Reports.

14. President's Report.

15. CEO's Report.
    a. Board Video

Summary of Board Direction

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Board Committee Meetings and Special Meetings of the Board of Directors are held at the SMUD Headquarters Building, 6201 S Street, Sacramento

The SMUD Board of Directors is currently operating under Emergency Board Meeting Procedures. In accordance with findings made by the Board pursuant to Government Code section 54953(e), these meetings will be held virtually (online).

August 9, 2022	Strategic Development Committee and Special SMUD Board of Directors Meeting	Virtual Meeting (online)	5:30 p.m.
August 10, 2022	Policy Committee and Special SMUD Board of Directors Meeting	Virtual Meeting (online)	5:30 p.m.
August 16, 2022	Finance and Audit Committee and Special SMUD Board of Directors Meeting	Virtual Meeting (online)	5:30 p.m.
August 17, 2022	Energy Resources & Customer Services Committee and Special SMUD Board of Directors Meeting	Virtual Meeting (online)	5:30 p.m.

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Regular Meetings of the Board of Directors are held at the SMUD Headquarters Building, 6201 S Street, Sacramento

The SMUD Board of Directors is currently operating under Emergency Board Meeting Procedures. In accordance with findings made by the Board pursuant to Government Code section 54953(e), these meetings will be held virtually (online).

August 18, 2022	Virtual Meeting (online)	5:30 p.m.

Pursuant to Resolution No. 20-06-08 adopted on June 18, 2020, Emergency Board Meeting Procedures are in effect:

Members of the public may make either a general public comment or comment on a specific agenda item by submitting comments via email. Comments may be submitted to PublicComment@smud.org. Comments will be provided to the Board and placed into the record of the Board meeting if it is received within two hours after the meeting ends.

Members of the public that are listening or watching the live stream of a Board meeting and wish to comment on a specific agenda item as it is being heard, may submit their comments, limited to 250 words or less, to PublicComment@smud.org. The Board President may read the comments into the record, in his discretion, based upon such factors as the length of the agenda, the number of email comments received, and whether the Board is in danger of losing a quorum. Comments will be provided to the Board and placed into the record of the Board meeting if it is received within two hours after the meeting ends.

Members of the public may register to provide verbal comments at an upcoming Board or Committee meeting by emailing a request to speak to PublicComment@smud.org. Please include the date of the meeting, name, and topic or agenda item the requestor wishes to speak on. The request may also be submitted while the meeting is in progress during the standard time for the agenda item or topic. Pre-registration is strongly encouraged by no later than 3:00 p.m. on the day of the meeting.

ADA Accessibility Procedures: Upon request, SMUD will generally provide appropriate aids and services leading to effective communication for qualified persons with disabilities so that they can participate equally in this virtual meeting. If you need a reasonable auxiliary aid or service for effective communication to participate, please email Toni.Stelling@smud.org, or contact by phone at (916) 732-7143, no later than 48 hours before this virtual meeting.

2

DRAFT

RESOLUTION NO. _____

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

That this Board hereby approves Board member compensation for service rendered at the request of the Board (pursuant to Resolution 18-12-15) for the period of June 16, 2022, through July 15, 2022.

3

DRAFT

Sacramento, California

June 16, 2022

The Board of Directors of the Sacramento Municipal Utility District met in regular session via virtual meeting (online) at 5:31 p.m.

Roll Call:

Presiding: President Rose

Present: Directors Bui-Thompson, Fishman, Herber, Kerth, Tamayo, and Sanborn

Present also were Paul Lau, Chief Executive Officer and General Manager; Laura Lewis, Chief Legal & Government Affairs Officer and General Counsel and Secretary, and members of SMUD's executive management; and SMUD employees and visitors.

Vice President Sanborn shared the environmental tip.

President Rose called for approval of the agenda. Director Tamayo moved for approval of the agenda, Vice President Sanborn seconded, and the agenda was unanimously approved.

Director Bui-Thompson, Chair, presented the report on the Strategic Development Committee meeting held on June 7, 2022.

Director Tamayo, Chair, presented the report on the Policy Committee meeting held on June 8, 2022.

Director Fishman, Chair, presented the report on the Energy Resources & Customer Services Committee meeting held on June 15, 2022.

President Rose then called for public comment for items on the agenda, but none were forthcoming.

President Rose then addressed the consent calendar consisting of Items 3 through 9.

Vice President Sanborn requested that Agenda Item 3, Board Compensation, be revised to reflect that she attended the Crocker Art Museum event with Director Bui-Thompson.

General Counsel Lewis advised that Agenda Item 3 should be moved to Discussion Calendar or the Board could approve a revised version at the next meeting.

President Rose announced that Agenda Item #3 would be moved to Discussion Calendar and then asked if there was a motion to approve the consent calendar as revised. Director Herber moved for approval of the consent calendar as revised, Director Kerth seconded, and Resolution Nos. 22-06-01 through 22-06-05 were unanimously approved.

RESOLUTION NO. 22-06-01

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

This Board accepts the monitoring report for **Strategic Direction SD-4, Reliability**, substantially in the form set forth in **Attachment A** hereto and made a part hereof.

Approved: June 16, 2022

INTRODUCED: DIRECTOR HERBER				
SECONDED: DIRECTOR KERTH				
DIRECTOR	AYE	NO	ABSTAIN	ABSENT
ROSE	X			
BUI-THOMPSON	X			
FISHMAN	X			
HERBER	X			
KERTH	X			
TAMAYO	X			
SANBORN	X			

SACRAMENTO MUNICIPAL UTILITY DISTRICT

OFFICE MEMORANDUM

TO: Board of Directors **DATE:** May 31, 2022

FROM: Claire Rogers *CR 5/31/22*

SUBJECT: **Audit Report No. 28007426**
Board Monitoring Report; SD-04: Reliability

Audit and Quality Services (AQS) received the SD-04 *Reliability* 2021 Annual Board Monitoring Report and performed the following:

- A review of the information presented in the report to determine the possible existence of material misstatements;
- Interviews with report contributors and verification of the methodology used to prepare the monitoring report; and
- Validation of the reasonableness of a selection of the report's statements and assertions.

During the review, nothing came to AQS' attention that would suggest the SD Board Monitoring report did not fairly represent the source data available at the time of the review.

CC:

Paul Lau

Board Monitoring Report 2021
SD-4 Board Strategic Direction on Reliability

1. Background

Strategic Direction SD-4 states that:

Meeting customer energy requirements is a core value of SMUD.

Therefore:

a) SMUD will assure all customer energy requirements are met. This will be accomplished through the use of: (i) its generation resources and purchase power portfolio 100 percent of the time; and (ii) its transmission assets to assure an overall availability of at least 99.99 percent.

b) SMUD will achieve distribution system reliability by:

Limiting the average frequency of outage per customer per year to:

With major event: 0.99 – 1.33
Excluding major event: 0.85 – 1.14

Limiting the average duration of outages per customer per year to:

With major event: 67.5 – 93.3 minutes
Excluding major event: 49.7 – 68.7 minutes

Ensuring that no individual circuits exceed these targets for more than two consecutive years. For circuits that exceed these targets for two consecutive years, a remedial action plan will be issued and completed within eighteen months.

c) SMUD will maintain the electric system in good repair and make the necessary upgrades to maintain load serving capability and meet regulatory standards.

2. Executive Summary

Improving reliability is essential to meeting customer energy requirements and drives customer loyalty.

SMUD was in compliance for both generation and transmission availability. SMUD met all energy supply requirements 100% of the time through its generation resources and purchased power. At a peak load of 3,019 MW (which occurred on June 18), 39% of the generation was

provided by internal resources and 61% was provided by purchased power. The transmission availability was at 100% for the year.

SMUD was in compliance for both SAIDI and SAIFI (excluding major events). Reliability targets including major events were exceeded for both SAIDI (227.2 minutes) and SAIFI (1.54). The 2021 distribution system reliability performance is summarized in Table 1 below.

Table 1: 2021 Distribution System Reliability Performance

	With Major Events		Excluding Major Events	
	SD-4 Limit	**2021 Results**	**SD-4 Limit**	**2021 Results**
SAIFI	1.33	1.54	1.14	1.04
SAIDI (minutes)	93.3	227.2	68.7	60.4

Major events are those defined as events caused by earthquake, fire, or storms of sufficient intensity which result in a state of emergency being declared by the government. Absent the declaration of a state of emergency, any other natural disaster may be excluded only if it affects more than 15% of the system facilities or 10% of the customers, whichever is less.

Of the total number of distribution circuits, 97.9%, or 744 circuits, met the Board's reliability criteria. Twenty-three projects (primarily cable replacement) were issued to improve reliability, of which thirteen have been completed. The remaining ten projects are on schedule to be completed within the eighteen-month requirement. These projects include cable replacement, avian mitigation, targeted tree-trimming and other work.

3. Additional Supporting Information

Generation

Hydro Generation Facilities

The availability rate for SMUD's hydro generation system in 2021 was 89.72% and for the June 1st through September 30th peak period, hydro generation availability was 98.91%. SMUD's Upper American River Project (UARP) hydro system generated 551,358 MWh. The budgeted generation was 1,557,524 MWh.

Gas Pipeline Operations

SMUD's gas pipeline had a 100% availability rating in 2021 and provided a constant flow of gas to SMUD's thermal generation facilities. All necessary maintenance activities were successfully completed in accordance with our operations and maintenance plans and procedures.

Thermal Generation Facilities

The overall availability rate for SMUD's thermal generation facilities in 2021 was 92.80% and for the June 1st through September 30th peak period, thermal plant availability was 98.46%. SMUD's thermal generation facilities generated a net total of 5,708,495 MWh against the budgeted generation of 4,610,564 MWh.

Transmission and Distribution

SMUD has approximately 488 miles of transmission lines and 10,611 miles of distribution lines including 69kV. Approximately 40% of the distribution lines are installed overhead and 60% are installed underground. The transmission system is predominately overhead except for 19 miles of underground lines located in the Carmichael and downtown areas.

4. Challenges

There were two major events in 2021. The first major event occurred between January 26 – 29 consisting of 600 outages, a SAIDI contribution of 158.7 minutes, a SAIFI contribution of 0.40, and affecting over 250,000 customers while the second major event took place on December 13th consisting of 124 outages, a SAIDI contribution of 8.0 minutes, a SAIFI contribution of 0.10, and affecting over 68,000 customers. The storms brought very high winds and significant rainfall. Additionally, the rainfall from these storms saturated the soil and with the high winds, numerous trees were uprooted and fell into several of SMUD's overhead lines. These types of tree related outages take longer to resolve since the trees have to be removed prior to the start of the electrical repair work.

Staff monitors circuit reliability regularly to assess circuits that could potentially exceed the reliability limits. Outage causes, trends, and reliability impacts are analyzed to identify projects that will bring the reliability of these circuits within the acceptable range. This ongoing process ensures that circuit reliability impacts are identified and addressed as they occur throughout the year. The main drivers for the distribution system performance excluding major events, along with the mitigation measures for each, are summarized below.

Drivers for Reliability Performance

Vehicle Accidents

The number one reliability driver in 2021 was vehicle accidents. Overall, we saw a 2% increase in the number of vehicle accidents, a 22% increase in SAIDI minutes and 47% increase in SAIFI for 2021 when comparing with 2020.

In 2021, SMUD installed new visibility strips on 100 poles, installed a pole barrier system at one pole location and relocated five poles based on the analysis of car-pole incidents that identified assets that have been impacted multiple times. Staff regularly assesses car-pole incidents and develops appropriate mitigation. In 2022, SMUD plans to install pole barrier systems at two pole locations, new visibility strips on 200 poles, and relocate five poles.

Underground Cable Failures

In 2021, underground cable failures were the second leading driver of reliability performance. The number of outages due to cable failures decreased by 5% compared to 2020. Additionally, SAIDI and SAIFI values decreased by 20% and 41% respectively. Improved performance in this area is primarily driven by the increase in cable replacement from 273,000 circuit feet to 370,000 circuit feet as well as the completion of the project that replaced the 69kV cable on Carmichael Lines 3 & 4.

Equipment Failures

Equipment failures are associated with a wide variety of distribution line components, such as fuses, poles, wire hardware, broken connectors, broken jumpers, failed transformers, broken cutouts and more. Outages due to failed equipment continue to be evaluated to locate and address any systemic deficiencies.

Failed equipment was the third leading cause of outages in 2021. Outages due to equipment failures increased by 1% while SAIDI and SAIFI increased by 39% and 108%, respectively, when compared to 2020. Specifically, we experienced more 69kV equipment failures in 2021. There was only one 69 kV equipment failure in 2020 with a SAIDI of 0.09 minutes and SAIFI of 0.002 affecting 1,562 customers. Contrarily, there were six 69kV equipment failures in 2021 affecting 76,154 customers with a combined SAIDI of 3.6 minutes and SAIFI of 0.12. Although there were six 69kV equipment failures in 2021, each failure involved a different type of equipment. Therefore, there are no increasing failure trends for 69kV equipment that failed in 2021.

Correcting deficiencies on the 69kV system has a large reliability impact because 69kV circuits affect a larger number of customers than lower operating voltages. Staff is actively looking for ways to reduce equipment failures. Staff reviews outage reports for accuracy and failure trends. Through routine inspections, inspectors and troubleshooters make every attempt to identify deficiencies before they result in failure.

5. Recommendation: It is recommended that the Board accept the Monitoring Report for SD-4 Reliability.

6. Appendices

Appendix 1: Generation Supplementary Information

Hydro Generation Facilities

Major hydro generation maintenance and construction activities include:

- Union Valley and Ice House gates analysis, dam safety inspections and responses to FERC part 12D assessments
- 2kV power system undergrounding from Union Valley Powerhouse to Junction Dam
- South Fork backup generator design and installation
- Fresh Pond equipment cover installation
- Generator partial discharge monitoring system installation
- Jaybird Penstock flowmeter installation
- Jaybird Tunnel repair and rock trap cleanout
- Loon Lake chiller installation
- UARP battery system replacement at Slab Creek, Loon Lake and Jaybird powerhouses
- Jaybird penstock and access road stabilization
- Camino powerhouse unit breaker replacement
- Completed the contract for the 480V unit breakers in the UARP

Gas Pipeline Operations Capital improvements and major maintenance activities include:

- Completed Main Line Valve (MLV)-1 Station Rock replacement to improve personnel safety, prevent further erosion/soil migration, and improve aesthetics of a highly visible station.
- Completed Morrison Creek Pipe Support Replacement Project eliminating active corrosion on the pipe, evaluating the integrity of the effected pipe to be uninhibited, and preventing reoccurrence.
- Completed MLV actuator replacements for MLVs on Line 800C, eliminating unsupported products and installing latest design supported by industry using SMUD personnel and upskilling our internal workforce.
- Standardization of Polarization Cell Replacement (PCR) devices (symmetrical and asymmetrical) that offer protection against AC and protect our DC CP system.
- Completed MLV-8 station PCR Design Package.
- Completed Cosumnes Power Plant Meter & Regulating station PCR Design Package.
- Identified, corrected, catalogued, and as-built existing PCR installations along 800C.
- SMUD engineering conducted a thorough internal review of the pipeline risk analysis assessment with all GPO stakeholders as per the prescriptive integrity management method defined in ASME B31.8S. This evaluation identifies the highest risk areas along SMUD's gas transmission pipeline.
- Completed California Public Utilities Commission (CPUC) Damage Prevention Audit.

Completed Materials Verification Project, demonstrating that SMUD is compliant with the latest publication of regulations in DOT/PHMSA 49 CFR 192.

Thermal Generation Facilities

Major thermal generation maintenance and construction activities completed include:

Carson Power Plant:

- Steam controls upgrade
- Distributed control system (DCS) upgrade

Procter & Gamble Power Plant:

- Installation of a new centrifugal chiller
- Station Service Transformer and Auxiliary Unit were rewound prior to summer peak after internal failures due to a fault in the Station Service Transformer
- Combustion Turbine Engine 1B (185-183) overhaul; due to vibration issues the engine was shipped back to GE and installation is expected in 2022

Campbell Power Plant & McClellan Power Plant:

- McClellan Power Plant successfully completed an upgrade to the Generator Protection Panel

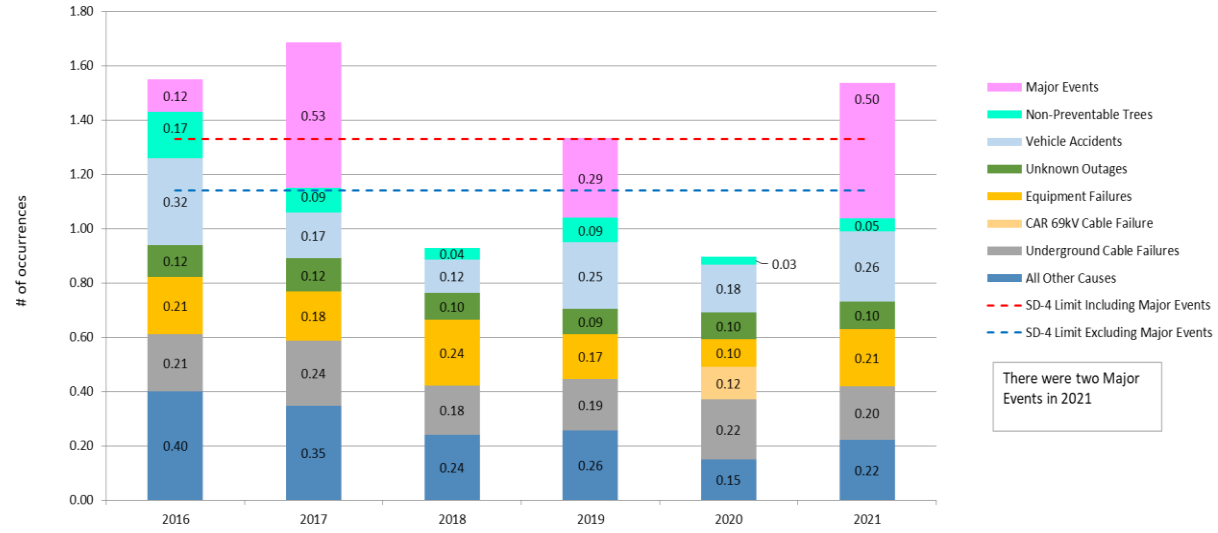
Cosumnes Power Plant:

- CT Generator Cutsforth Shaft Grounding Device
- Access Platform Improvements

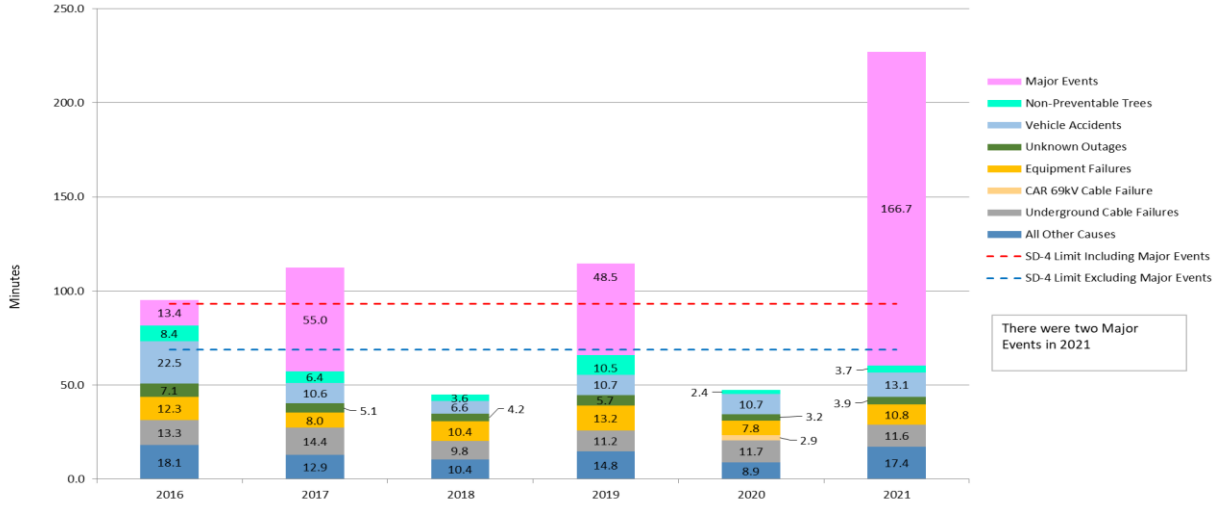
Appendix 2: Graphs

The graphs below provide a five-year comparison of the impacts of outage causes to the frequency (SAIFI) and duration (SAIDI) of outages.

Graph 1: Multi-Year Comparison
System Average Frequency Index (SAIFI)



Graph 2: Multi-Year Comparison
System Average Duration Index (SAIDI)



Appendix 3: Reliability Comparison

Table 2 below provides a comparison between SMUD's average distribution system performance compared to that of Pacific Gas and Electric's (PG&E)'s distribution system. PG&E defines its distribution system as operating voltages less than 60kV and uses IEEE 1366 standards to define major event days, while SMUD includes the 69kV operating

voltage as part of the distribution system and uses an alternate method to determine major event days. The information regarding PG&E's system average performance was obtained from the 2020 reliability report posted on the California Public Utilities Commission (CPUC) website. PG&E's 2021 Reliability Report has not been posted on the CPUC website.

Table 2: Distribution System Reliability Comparison (excluding major events)

Year	SAIDI (minutes)		SAIFI	
	SMUD	PG&E	SMUD	PG&E
2017	58.0	90.0	1.10	0.79
2018	44.7	90.7	0.80	0.84
2019	66.0	103.1	1.04	0.88
2020	47.6	111.2	0.90	0.93
2021	60.4	N/A	1.04	N/A

Notes:

1. Listed SAIFI and SAIDI numbers are based on outages greater than 5 minutes (CPUC criteria).

Appendix 4: Year-to-Date 2022 Reliability Update

Table 3: 2022 Year-to-Date Distribution System Reliability Performance

	Excluding Major Events		
	SD-4 Limit	Jan.1 – March 31, 2022	2022 YE Projection
SAIFI	1.14	0.26	1.06
SAIDI (minutes)	68.7	13.2	59.1

Barring Major Events we are forecasting year end distribution system reliability performance to be within the SD-4 limits.

RESOLUTION NO. 22-06-02

WHEREAS, SMUD is committed to preserving public access and participation in meetings of the Board of Directors and to the safety of meeting attendees; and

WHEREAS, all meetings of the Board of Directors are open and public, as required by the Ralph M. Brown Act (Gov't Code, §§ 5495054963) ("Brown Act"), so that any member of the public may attend, participate in, and watch SMUD's governing body conduct its business; and

WHEREAS, the newly enacted Government Code section 54953(e) authorizes a local agency's governing body, during a proclaimed state of emergency, to participate in its public meetings using remote teleconferencing without compliance with the requirements of Government Code section 54953(b)(3), under specified conditions; and

WHEREAS, a required condition is that a state of emergency is declared by the Governor pursuant to Government Code section 8625, proclaiming the existence of conditions of disaster or of extreme peril to the safety of persons and property within the state caused by conditions as described in Government Code section 8558; and

WHEREAS, another condition is that state or local officials have imposed or recommended measures to promote social distancing, or, the legislative body determines that meeting in person would present imminent risks to the health and safety of attendees; and

WHEREAS, on February 28, 2022, the California Department of Public Health rescinded the mask requirement effective March 1, 2022, for all individuals regardless of vaccination status and instead issued a strong recommendation that all persons, regardless of vaccine status, continue indoor masking; and

WHEREAS, the Sacramento County Department of Public Health on its Epidemiology COVID-19 Dashboard continues to show elevated case and death data, with the case rate increasing by approximately 10 times between the end of March 2022 and early June; and

WHEREAS, on June 1, 2022, Sacramento County returned to high community transmission rates for COVID-19 as defined by the Centers for Disease Control and Prevention, and all surrounding counties are also currently so classified; and

WHEREAS, on April 21, 2022, the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) re-adopted its workplace COVID-19 Emergency Temporary Standards (ETS), as modified, effective May 6, 2022, through December 31, 2022, including outbreak reporting; and

WHEREAS, SMUD is incrementally reintroducing staff to its administrative buildings, staff infections continue to be reported with some consistency, and, under the current schedule, the majority will not return to working on-site until August or September 2022; and

WHEREAS, SMUD Board and Committee meetings can last as long as four hours, with participants sitting in the same room sharing air the entire time; and

WHEREAS, it would be impractical for SMUD to take steps necessary to prevent imminent risks to the health and safety of attendees, such as by holding public meetings outdoors, ensuring public meeting attendees are vaccinated, have appropriate face coverings, and wear them consistent with public health guidance; and

WHEREAS, all meetings, agendas, meeting dates, times, and manner in which the public may participate in the public meetings of the SMUD Board and offer public comment by telephone or internet-based service options including video conference are posted on the SMUD website and physically outside of SMUD's Headquarters Building; and

WHEREAS, by Resolution No. 21-10-01 adopted on October 12, 2021, this Board made findings that requisite conditions exist for the SMUD Board to conduct remote teleconference meetings without compliance with paragraph (3) of subdivision (b) of section 54953; and

WHEREAS, by Resolution No. 21-10-03 adopted on October 21, 2021, this Board made findings that requisite conditions exist for the SMUD Board to conduct remote teleconference meetings without compliance with paragraph (3) of subdivision (b) of section 54953; and

WHEREAS, by Resolution No. 21-11-05 adopted on November 18, 2021, this Board made findings that requisite conditions exist for the SMUD Board to conduct remote teleconference meetings without compliance with paragraph (3) of subdivision (b) of section 54953; and

WHEREAS, by Resolution No. 21-12-04 adopted on December 9, 2021, this Board made findings that requisite conditions exist for the SMUD Board to conduct remote teleconference meetings without compliance with paragraph (3) of subdivision (b) of section 54953; and

WHEREAS, by Resolution No. 22-03-01 adopted on March 8, 2022, this Board made findings that requisite conditions exist for the SMUD Board to conduct remote teleconference meetings without compliance with paragraph (3) of subdivision (b) of section 54953; and

WHEREAS, by Resolution No. 22-03-03 adopted on March 17, 2022, this Board made findings that requisite conditions exist for the SMUD Board to conduct remote teleconference meetings without compliance with paragraph (3) of subdivision (b) of section 54953; and

WHEREAS, by Resolution No. 22-04-01 adopted on April 13, 2022, this Board made findings that requisite conditions exist for the SMUD Board to conduct remote teleconference meetings without compliance with paragraph (3) of subdivision (b) of section 54953; and

WHEREAS, by Resolution No. 22-04-03 adopted on April 21, 2022, this Board made findings that requisite conditions exist for the SMUD Board to conduct remote teleconference meetings without compliance with paragraph (3) of subdivision (b) of section 54953; and

WHEREAS, by Resolution No. 22-05-06 adopted on May 19, 2022, this Board made findings that requisite conditions exist for the SMUD Board to

conduct remote teleconference meetings without compliance with paragraph (3) of subdivision (b) of section 54953; **NOW, THEREFORE**,

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

Section 1. Risks to Health and Safety of Attendees. The Board has reconsidered the circumstances of the state of emergency and hereby finds that the state of emergency continues to directly impact the ability of the members to meet safely in person and holding SMUD Board meetings in person would present imminent risks to the health and safety of attendees.

Section 2. Remote Teleconference Meetings. SMUD staff are hereby authorized and directed to take all actions necessary to carry out the intent and purpose of this Resolution, including conducting open and public meetings in accordance with section 54953(e) and other applicable provisions of the Brown Act.

Section 3. Effective Date of Resolution. This Resolution shall take effect immediately upon its adoption and shall be effective until the earlier of (i) July 16, 2022, or (ii) such time the Board of Directors adopts a subsequent resolution in accordance with Government Code section 54953(e)(3) to extend the time during which the SMUD Board may continue to teleconference without compliance with paragraph (3) of subdivision (b) of section 54953.

Approved: June 16, 2022

INTRODUCED: DIRECTOR HERBER				
SECONDED: DIRECTOR KERTH				
DIRECTOR	AYE	NO	ABSTAIN	ABSENT
ROSE	X			
BUI-THOMPSON	X			
FISHMAN	X			
HERBER	X			
KERTH	X			
TAMAYO	X			
SANBORN	X			

RESOLUTION NO. 22-06-03

WHEREAS, SMUD has a long history of environmental leadership in our resource planning and procurement activities and has adopted greenhouse (GHG) reduction goals that exceed those set by the State of California; and

WHEREAS, California enacted the Clean Energy and Pollution Reduction Act of 2015 (SB 350, De Leon) to set new objectives in clean energy and pollution reduction for 2030 and beyond; and

WHEREAS, SB 350's objectives included an increase from 33 percent to 50 percent by 2030 in the procurement of renewable energy from eligible renewable resources, as well as achievement of carbon reduction targets established by the **California Air Resources Board (CARB)** for large local publicly owned electric utilities; and

WHEREAS, California enacted The 100 Percent Clean Energy Act of 2018 (SB 100, De Leon), which accelerates renewable energy procurement to 60 percent by 2030 and directs further study of how electric utilities like SMUD can ultimately supply 100 percent of their annual sales of electricity from zero carbon resources by 2045; and

WHEREAS, SB 100 further directed publicly owned utilities (POUs) to adopt integrated resource plans (IRPs) by January 1, 2019, in addition to a process for updating those IRPs at least once every five years; and

WHEREAS, by Resolution No. 18-10-11 adopted on October 18, 2018, this Board adopted SMUD's initial **Integrated Resources Plan (SMUD IRP)**, which included a process for updating the **SMUD IRP** at least once every five years; and

WHEREAS, SMUD filed the **SMUD IRP** with the **California Energy Commission (CEC)** on April 29, 2019, in compliance with SB 350; and

WHEREAS, on December 11, 2019, the **CEC** adopted the Executive Director's determination finding **SMUD's IRP** filing consistent with the requirements of Public Utilities Code section 9621; and

WHEREAS, by Resolution No. 20-07-05 adopted on July 16, 2020, this Board declared a Climate Emergency and directed the Chief Executive

Officer and General Manager (CEO/GM) to report on clear, actionable and measurable strategies, and plans to reach SMUD's climate emergency goals of carbon neutrality by 2030; and

WHEREAS, staff worked to identify a flexible pathway for SMUD to eliminate all of its power supply carbon emissions by 2030 thus developing a roadmap, SMUD's **2030 Zero Carbon Plan**, based on internal modeling, Board and stakeholder input, and extensive community outreach; and

WHEREAS, by Resolution No. 21-04-05 adopted on April 28, 2021, this Board accepted SMUD's **2030 Zero Carbon Plan** with clarifications; and

WHEREAS, since April 2021, SMUD has updated its **Renewable Energy Resources Procurement Plan (RPS Procurement Plan)** to align with SMUD's **2030 Zero Carbon Plan**; and

WHEREAS, because SMUD's **2030 Zero Carbon Plan**, as presented to this Board on June 16, 2022, meets or exceeds all requirements set forth in Public Utilities Code section 9621, staff recommends its formal adoption as SMUD's IRP Update, which, following adoption, staff will file with the **CEC**; **NOW, THEREFORE,**

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

Section 1. This Board adopts SMUD's **2030 Zero Carbon Plan** as SMUD's **Zero Carbon Integrated Resource Plan**, an update to SMUD's **Integrated Resources Plan (SMUD IRP)** adopted by this Board on October 18, 2018, substantially in the form set forth in **Attachment B**, in compliance with Public Utilities Code section 9621.

Approved: June 16, 2022

INTRODUCED: DIRECTOR HERBER				
SECONDED: DIRECTOR KERTH				
DIRECTOR	AYE	NO	ABSTAIN	ABSENT
ROSE	X			
BUI-THOMPSON	X			
FISHMAN	X			
HERBER	X			
KERTH	X			
TAMAYO	X			
SANBORN	X			

Attachment B
to Resolution No. 22-06-03
April 2021

2030 Zero Carbon Plan

SMUD's ambitious plan to reach zero carbon emissions in its power supply by 2030.

2030 Zero Carbon Plan

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2030 Zero Carbon Plan Clarifications

On March 26, 2021, we published our 2030 Zero Carbon Plan and invited public comments on the Plan. This additional public comment and consultation process followed an already extensive stakeholder process that began in December 2020 and is described in our later section on our Public consultation process.

During the March 26 to April 16, 2021 public comment period, we received 48 public comments and an additional nine general comments and recommendations. The input was provided by customers, local stakeholders, community organizations, individuals and other interested parties. We appreciate the thoughtful comments that were provided and used those to develop the six clarifications to our 2030 Zero Carbon Plan that are listed below. The 2030 Zero Carbon Plan was accepted by the SMUD Board at its April 28, 2021 meeting, including these clarifications.

1. Study and prioritize retirement of McClellan in 2024 and Campbell in 2025

As highlighted on pages 78-79 in the 2030 Zero Carbon Plan, our preliminary analyses suggest that McClellan could be retired in 2024 and Campbell in 2025. We wish to clarify that we intend to conduct detailed reliability studies in 2021 to confirm the feasibility of retiring McClellan in 2024 and prioritize this retirement. Similarly, for Campbell, we will conduct detailed reliability studies in 2021 or 2022 to confirm feasibility of its retirement in 2025 as an additional priority and then subsequently prepare detailed plans for the decommissioning of these plants and replacement of their capacity using suitable carbon free resources.

2. Eliminate the use of fossil fuels as soon as possible but no later than 2030

It is SMUD's intent to retire all our thermal gas fired power plants as soon as possible or repurpose these plants to utilize a clean fuel such as green hydrogen. Some of our generators may be able to burn 100 percent hydrogen with limited modifications once hydrogen becomes available at scale and a reasonable cost. Therefore, re-tooling and reinvesting in critical components of our plants may be more cost effective than full retirement and subsequent investment in brand-new clean energy technologies. Further detailed reliability studies will determine whether we will retool or retire the plants to ensure reliable and cost-effective operation of the system. If we were to retool the plants, there may be a period of time where a transition fuel such as biodiesel, biogas, or ethanol could be used until another zero carbon fuel like green hydrogen is cost effective and feasible for use with our generators. We will conduct life cycle emissions analyses of the potential clean fuels prior to committing to their use. In any case, our plan is to focus on renewables and storage to eliminate the need to run the plants for energy. This means that these re-tooled units will be used only during times when they are necessary to support reliability and keep the lights on. This will reduce their use by about 90% compared to today. For those limited hours each year when these plants are still needed, we plan to use renewable fuels such as renewable natural gas and biodiesel as transitional fuels until clean fuels such as green hydrogen become more available and more affordable.

In addition to exploring the use of clean fuels, we intend to conduct research into other new technologies that could ultimately allow us to retire some or all of our thermal fleet. We plan to study options for long duration storage, vehicle to grid technology and the use of virtual power

plants. Each of these technologies has the potential to help SMUD reduce the need and use of our thermal assets. We intend to maximize the use of these types of resources once we prove they are a safe and cost-effective way to maintain reliability of the system

3. Study the potential retirement of Carson, Procter & Gamble and Cosumnes prior to executing re-tooling strategy

Prior to making any decision on whether to re-tool or retire the remaining plants, SMUD will conduct detailed reliability and economic analysis to determine all feasible, reliable and cost-effective resources available that could reduce or eliminate the need for the plants. All feasible, reliable and cost-effective options will be pursued to both reduce our greenhouse footprint and limit our need for fossil fuel based generation resources.

4. The 2030 Zero Carbon Plan is flexible and will consider a variety of technologies

SMUD will continue to research or expand several additional zero carbon technologies beyond those specifically listed in the Plan. Among the resources to be considered are concentrating solar power, large scale thermal storage, microgrids and fuel cells. As stated in the 2030 Zero Carbon Plan, we believe flexibility is important. The Plan will be adjusted as we research or determine how these and other technologies may play a role in helping us reach zero carbon emissions without compromising reliability or affordability. In addition, as we progress with implementation the exact timing, size, location and types of resource additions we will leverage post 2025 will become more defined.

5. Maximize the value of SMUD's existing hydro facilities in the Upper American River Project (UARP).

We wish to clarify that in implementing the 2030 Zero Carbon plan, we will

- seek to optimize the operations of our hydro system to facilitate the integration of renewable resources within our service territory for both grid-scale and behind the-meter resources
- examine opportunities to pursue additional pumped storage or similar options within the existing physical boundaries of the UARP system

6. Behind-the-meter resources and virtual net metering

SMUD has a long history of supporting rooftop solar and other distributed resources. We see rooftop solar, behind-the-meter battery storage and other distributed energy resources as important resources in our 2030 Zero Carbon Plan. As highlighted in the Plan, we expect rooftop solar resources to grow from about 240MW today to as much as 500-750MW by 2030 and behind-the-meter batteries to reach 50-250 MW by 2030. The Plan calls for piloting, proving and scaling new technologies and business models that utilize customer assets to create virtual power plants, vehicle-to-grid applications and other flexible demand resources. As these programs are developed, they will be designed to offer benefits for the customer as well as for the grid.

The tariffs at which SMUD will buy and sell power to customers with rooftop solar and storage, play an important role in customers' decisions to invest in these technologies. However, tariff design and compensation levels for these resources are handled through our normal rate setting process that includes extensive stakeholder and public outreach. In addition, SMUD intends to offer a virtual net energy metering (or VNEM) program for income-qualified customers in the next rate setting process.

Executive summary

SMUD's goal to eliminate carbon emissions from our power supply by 2030 is more ambitious than already aggressive state mandates and is ahead of virtually all other utilities in the United States. Our 2030 Zero Carbon Plan is a flexible road map to achieve our zero carbon goal while ensuring all customers and communities we serve reap the benefits of decarbonization.

For more than a half century, SMUD has focused on growing the amount of carbon-free electricity we provide to the Sacramento region. Construction of our Upper American River Project (UARP), a 688-MW hydroelectric system in the Sierra Nevada Mountains west of Lake Tahoe, began in 1957. Today, the UARP supplies 16% of our energy needs with low-cost, carbon-free electricity. With a range of other clean energy resources in our portfolio, SMUD's energy supply is on average 50% carbon-free today.

It's in our DNA to lead the way in carbon reduction. We've consistently set renewable energy and carbon reduction goals that are ahead of and more aggressive than state mandates. We set these aggressive goals because it's the right thing to do.

Having ambitious goals helped SMUD become the first large California utility to have at least 20% of our energy come from renewable sources. We have a long list of notable firsts: The original green power pricing program for our customers, the first utility in California to make time-based rates standard for all customers and the first solar-powered electric vehicle charging station in the western United States. But we recognize these are not enough.

Globally, 2016 and 2020 were the hottest years on record and California has witnessed first-hand the devastating impacts of carbon on our climate, with devastating wildfires, rising temperatures and decreased snowpack. In 2018, SMUD set one of the most aggressive carbon reduction targets in the country with the goal of achieving net zero emissions by 2040, five years ahead of California's 2045 net zero goal. In July 2020, our Board of Directors declared a climate emergency and adopted a resolution calling for SMUD to take significant and consequential actions to become carbon neutral (net zero carbon) by 2030. The Board also directed SMUD staff to report by March 31, 2021 on clear, actionable and measurable strategies and plans to reach SMUD's climate emergency goals. Rapidly advancing clean energy technology and a collaborative and inclusive approach to carbon reduction has allowed SMUD to set the even more ambitious goal of zero carbon by 2030, with the 2030 Zero Carbon Plan being our strategy to achieve that goal.

Eliminating carbon emissions will deliver far-reaching benefits. It's the right thing to do for the environment, air quality, our children and grandchildren and for equity in communities that have traditionally been left out of decisions and discussions about carbon emissions. This ambitious goal puts the Sacramento Region on the map as an example to follow and a region where innovative, climate-friendly businesses want to be.

We have a track record of setting game changing goals and achieving them. Our 2030 Zero Carbon Plan details how we'll get to zero without compromising reliability or affordability. It comes with a commitment to keep rate increases within the rate of inflation. While nine years is

an aggressive timeline, we know the clean energy and clean technology sectors and customer preferences will change significantly between now and 2030, so flexibility is central to our Plan.

Going absolute zero carbon is a bold and ambitious goal -- one we believe we can and must achieve. We can't get there with today's technology and we can't get there alone. That's why innovation and partnership are key pillars of the Plan. Working in partnership with our customers and community, government agencies, community leaders and organizations, business leaders and the business community, legislators, regulators and others, we'll help align resources and programs for maximum impact in all communities. We know, for example, that widespread adoption of customer-owned distributed energy resources like electric vehicles and rooftop solar will be key to achieving zero carbon. Making these technologies accessible to all customers will be a central focus of our program development efforts over the coming years.

Our 2030 Zero Carbon Plan is our road map to eliminate carbon emissions from our electricity production by 2030 while maintaining a reliable and affordable service and partnering with our customers, communities and a wide-range of stakeholders on this journey.

Our commitment to our customers and community

As a community-owned, not-for-profit utility, our customers and community are at the heart of all we do. By pursuing zero carbon, we're helping create a cleaner and healthier region for all. Our goal of zero carbon by 2030 is anchored in our longstanding commitment to provide safe and reliable power with rates among the lowest in California. We won't compromise on this commitment.

Our customers, community and other partners are central to our vision and part of the solution to decarbonize our region. Their input and participation have helped us develop the 2030 Zero Carbon Plan. Ongoing communications and engagement with our customers and community will help ensure we continue to deeply understand their needs, which will be essential to enhance our programs to support zero carbon while meeting our customers' evolving preferences. Continuing to educate customers on the benefits of zero carbon and ways they can take action will also be critical to achieving our goal.

SMUD's zero carbon goal is best achieved by finding mutually beneficial solutions and we reaffirm our commitment to being inclusive, supporting regional innovation, clean tech jobs and attracting clean energy investments to the region through collaborative partnerships.

We have an opportunity to bring together a wide-range of stakeholders — businesses, elected officials, community leaders and organizations, think tanks, academia, regulators, start-ups, native tribes, venture capitalists and others to align resources for maximum impact. We'll partner with others to develop technology, healthy ecosystems, find innovative sources of funding and develop new business models. We will also need to work closely with regulators with respect to climate-friendly policies and regulations that encourage electrification in the building and transportation sectors, which are currently the largest emitters of carbon/greenhouse gases in California.

SMUD is committed to achieving our zero carbon goal in an inclusive way that leaves no communities behind. For decades, SMUD has supported low-income customers with innovative programs to make energy efficiency and other technologies accessible. In 2016, SMUD introduced additional energy saving pilots which expanded our reach and helped thousands of income qualified customers adopt carbon reduction measures in their homes and reduce their overall energy bill burden. Measures included replacing gas appliances with electric appliances, installing rooftop solar systems, insulation, heating and cooling systems, and lighting and/or other weatherization improvements. We'll continue to re-examine our programs and pilots to tailor them to supporting our goal and our customers' needs in all segments.

Our Sustainable Communities Initiative helps bring environmental equity and economic vitality to all communities in our service area, with special attention given to historically under-resources neighborhoods. We believe in the ability to make a greater collective community impact through partnerships. Through our Sustainable Communities Initiative, we collaborate with private industry, government agencies and nonprofits to invest in and implement programs that provide equitable access to indicators of sustainable community success, with a focus on social wellbeing, healthy environment, prosperous economy and mobility.

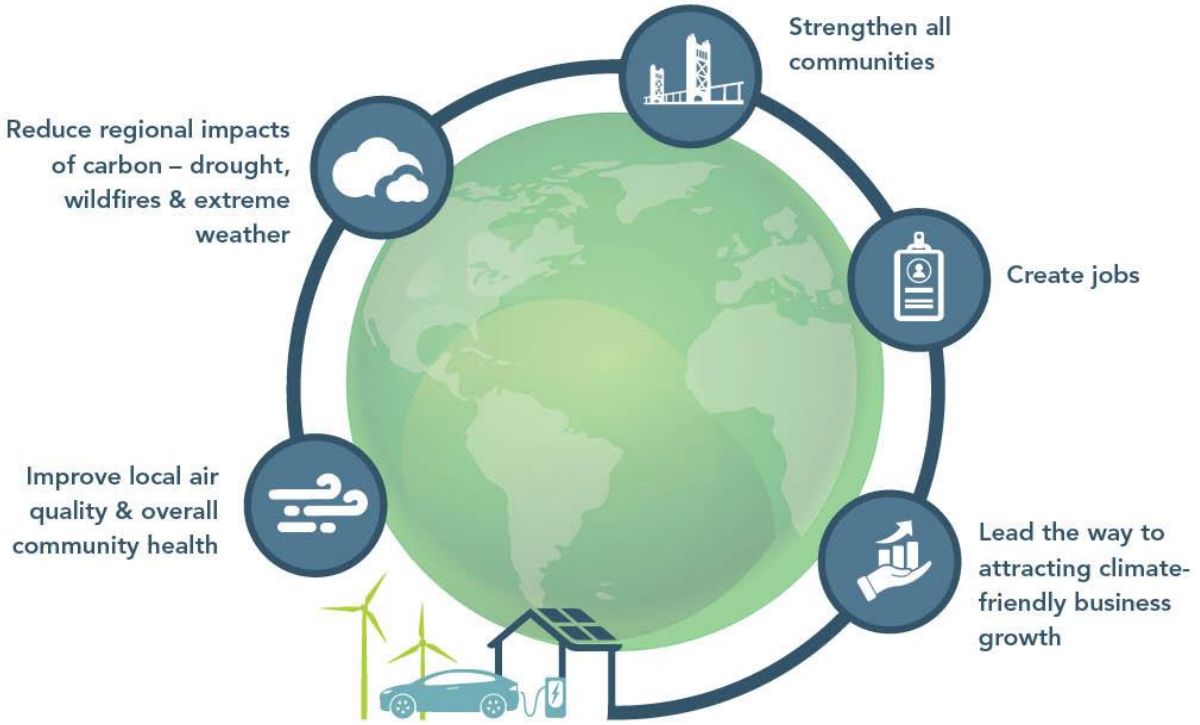
We're looking at other creative ways to support investment in underserved communities, including partnerships with financial institutions and other businesses and pursuing foundation and private investments to support decarbonization programs.

We'll continue working with our business customers to identify partnership opportunities to align resources, test technology, electrify buildings and transportation. Together, we'll develop tailored programs and pilots, while exploring co-development of new technologies and solutions. We plan to partner to seek funding for new initiatives that can help our region decarbonize faster and at lower cost.

Policy makers and regulators play an incredibly important role in shaping our zero carbon future. We plan to work collaboratively to promote cost-effective measures to reduce carbon emissions and support policy that encourages carbon reduction. We'll also work with government agencies to seek funding opportunities for new technologies and solutions that support SMUD's research and development efforts.

We have a history of partnering with our community and are excited to have broad support from our customers and community for our commitment to eliminating carbon from our power supply. We will build on what we're already doing – leading by example and engaging members of our community and industry – and together we can create and work toward a shared vision for the future. We'll continue to empower our communities to work with us to make sure Sacramento communities are livable, resilient and ready for a low-carbon future.

Community benefit



The road to zero: Four focus areas

As a community-owned, not-for-profit utility, our customers and community are at the heart of all we do. By pursuing zero carbon, we're helping create a cleaner and healthier region for all. Our goal of zero carbon by 2030 is anchored in our longstanding commitment to provide safe and reliable power with rates among the lowest in California. We won't compromise on this commitment.

Our customers, community and other partners are central to our vision and part of the solution to decarbonize our region. Their input and participation have helped us develop the 2030 Zero Carbon Plan. Ongoing communications and engagement with our customers and community will help ensure we continue to deeply understand their needs, which will be essential to enhance our programs to support zero carbon while meeting our customers' evolving preferences. Continuing to educate customers on the benefits of zero carbon and ways they can take action will also be critical to achieving our goal.

SMUD's zero carbon goal is best achieved by finding mutually beneficial solutions and we reaffirm our commitment to being inclusive, supporting regional innovation, clean tech jobs and attracting clean energy investments to the region through collaborative partnerships.

We have an opportunity to bring together a wide range of stakeholders — businesses, elected officials, community leaders and organizations, think tanks, academia, regulators, start-ups, native tribes, venture capitalists and others to align resources for maximum impact. We'll partner with others to develop technology, healthy ecosystems, find innovative sources of

funding and develop new business models. We will also need to work closely with regulators with respect to climate-friendly policies and regulations that encourage electrification in the building and transportation sectors, which are currently the largest emitters of carbon/greenhouse gases in California.

Our 2030 Zero Carbon Plan is a road map with the flexibility needed to adjust to changing technology and customer preferences to completely eliminate the use of fossil fuels in our electricity production by 2030. With the clean energy technology in our power supply today, we expect to be able to reduce our carbon emissions by 90%, without compromising reliability or our low rates. Eliminating the last 10% will be more challenging and will require SMUD to take bold actions and pioneer new game-changing technologies.

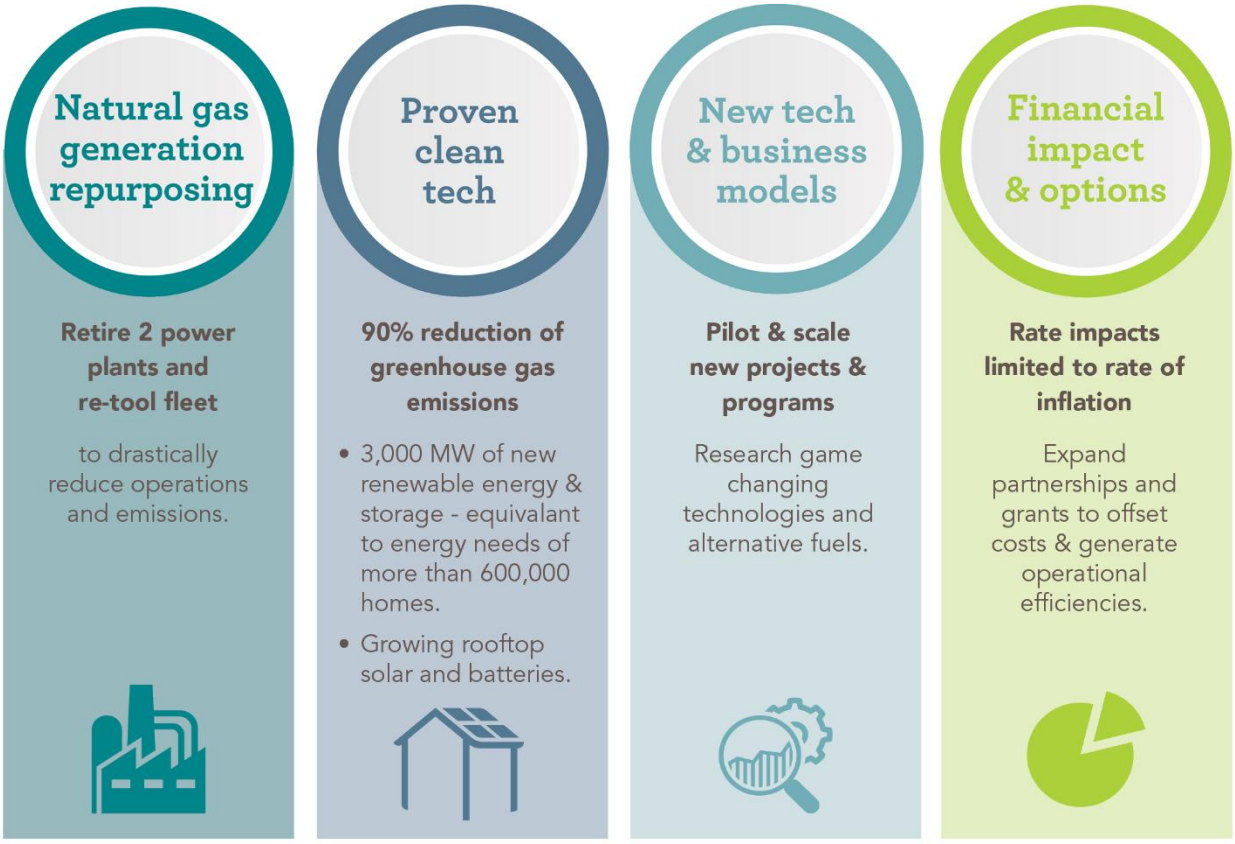
To achieve zero carbon, we're focused on four main areas:

- **Natural gas generation repurposing**. Eliminating greenhouse gas emissions from our power plants is essential to reach our goal of zero carbon. We're focused on reimagining our existing generation portfolio to eliminate greenhouse gas emissions through retirement, re-tooling and using renewable fuels.

- **Proven clean technologies,** which are carbon-free technologies available today, including solar, wind and geothermal energy and battery storage. We'll significantly expand our investments in these technologies and adjust our plan as we progress in the other three areas.

- **New technologies and business models**, which are technologies that are either currently unknown or are not ready for large-scale adoption due to price, reliability or other factors. We'll launch pilot projects and programs to test and prove new and emerging technologies and develop paths for prioritizing technology adoption and scaling.

- **Financial impact and options.** We're focused on making sure achieving our zero carbon goal is possible at a reasonable cost that minimizes rate increases for our customers. We'll do that by identifying savings and pursuing partnerships and grants that support the Plan.

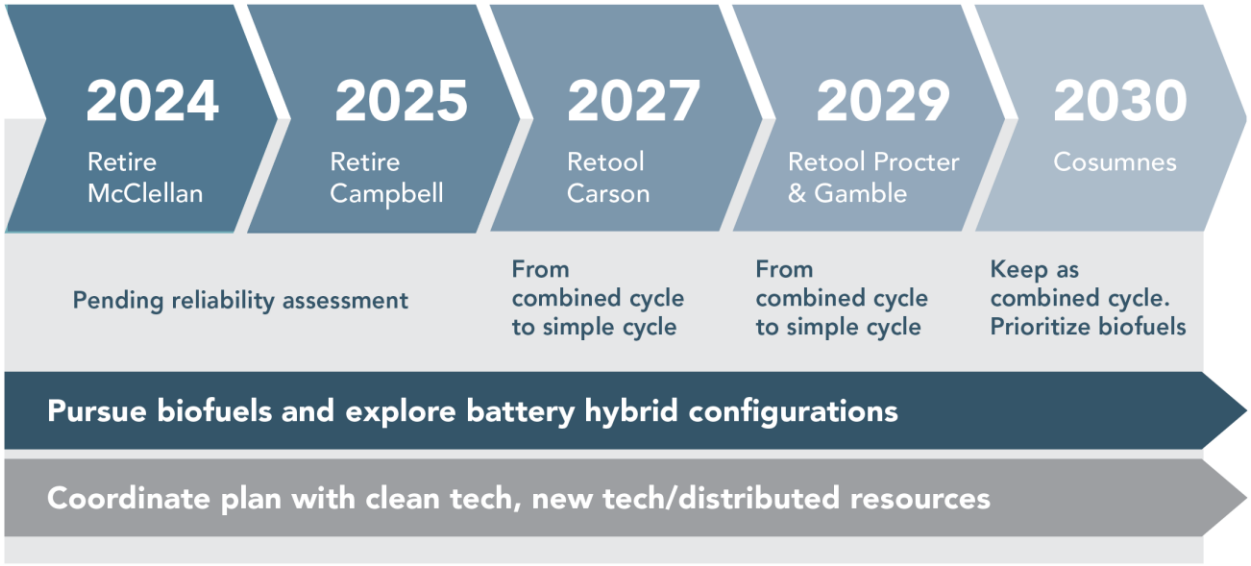


We're committed to eliminating carbon emissions in our power supply while recognizing flexibility is needed to adapt as new technology emerges, costs decline and our customers adopt more distributed energy resources and other technology. While pursuing each of the four areas will be important through 2030, activities may accelerate or decline in individual areas based on overall progress and advancements in specific areas.

Natural gas generation repurposing

Our gas power plants provide low-cost, reliable energy. While recent investments mean SMUD's Cosumnes Power Plant is the most efficient combined cycle gas plant in California, today our gas plants are our main source of greenhouse gas emissions, so retiring and/or refueling them is a significant part of how we'll reach zero emissions. We looked at a variety of options in developing our 2030 Zero Carbon Plan.

We believe our gas power plants can continue to play a vital role to support reliability without emitting greenhouse gases. By retooling two of our plants from constant operations to become more flexible peaking units, we can drastically reduce their use and carbon emissions while maintaining most of their capacity. We're targeting operating them on biofuels such as renewable gas from landfills, biodiesel or other renewable sources when they'll need to operate for reliability.



Our Campbell and McClellan gas plants are located in areas already affected by air pollution. Modifying or retiring these plants will bring air quality benefits to these historically under-resourced communities because they're located in areas of SMUD's territory with some of the highest environmental sensitivity scores. Based on our studies to date, we believe we can retire McClellan in 2024 and Campbell in 2025 and replace them with proven clean technologies. Final decisions about the retirement of these plants will be based on additional reliability studies and discussions and engagement with the community.

Our Plan, which includes retiring two power plant and retooling other, will reduce our emissions and improve air quality in Sacramento. Below is the summary of our plan to retire, retool and minimize the use of natural gas at our plants.

Power Plant	Generator Type	Unit	Capacity (MW)	Fuel Source
Sacramento Power Authority at Campbell Soup	**Retired***			
McClellan Gas Turbine	**Retired***			
Central Valley Financing Authority at Carson Ice	Combustion Turbine	1	50	Biofuels**
	Steam Turbine	2	**Retired**	
	Combustion Turbine	3	50	Biofuels**
Sacramento Cogeneration Authority at Procter & Gamble	Combustion Turbine	1	50	Biofuels**
	Steam Turbine	2	**Retired**	
	Combustion Turbine	3	50	Biofuels**
	Simple Cycle Peaking	4	50	Biofuels**
SMUD Financing Authority at the Cosumnes Power Plant	Steam Turbine	1	207	Waste Heat
	Combustion Turbine	2	207	Biofuels**
	Combustion Turbine	3	207	Biofuels**

**Final generator configurations are pending reliability assessment.*
***Final 2030 fuel mix is to be determined. Dependent on options available and may include one or more of the following: hydrogen, biogas, renewable natural gas, biofuels.*

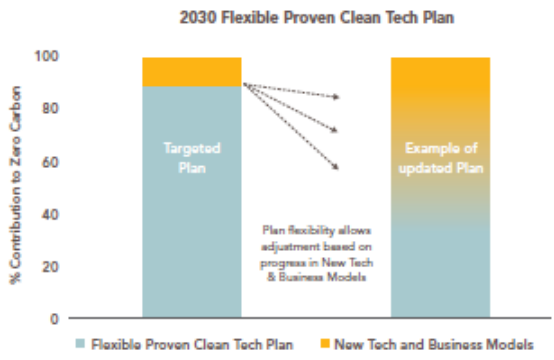
Proven clean technologies

Proven clean technologies are the relatively mature zero emission technologies available in the market today and have demonstrated reliability and cost benefits. Along with reimagining our natural gas power plants, proven clean technologies are the foundation of this Plan and we expect they'll help reduce our carbon emissions by about 90% by 2030, far exceeding the regulatory and legislative mandates in place today.

Proven clean technologies include utility-scale wind, solar, batteries, hydroelectric power, biomass, geothermal, as well as customer-owned solar and battery storage. Our Zero Carbon Plan includes a significant increase in investments proven clean technology over the next nine years, by SMUD and our customers.

Utility-scale investments (2021-2030)

- **Local solar:** 1,100 to 1,500 MW
- **Regional Solar:** 100 MW
- **Local battery storage:** 700 to 1,100 MW
- **Wind** (various locations): 390 to 590 MW
- **Geothermal** (various locations): 100 to 220 MW



These utility-scale investment ranges are based on current and expected market conditions and costs for new technologies, recognizing market conditions can change quickly, impacting resource availability and costs. External market factors such as changes in

California and western U.S. electricity market rules also play an important role in resource adoption, as do legislative and regulatory changes. If emerging technologies develop faster than expected, we will adjust our proven clean technology strategy accordingly. Similarly, if costs for new technologies decline slower than expected or if promising research areas don't yield the expected results, we may need to scale up our investments in other areas.

Customer-owned adoption of solar and storage (2021-2030)

- **Customer rooftop solar:** 250 to 500 MW
- **Customer battery storage:** 50 to 250 MW

We recognize our customers' investment in rooftop solar and battery technologies depend to a large extent on costs as well as overall customer sentiment about zero-carbon technologies. Investment estimates are based on today's forecast of probable adoption rates and the ranges reflect the uncertainty of costs associated with these systems over the next decade.

To safeguard reliability, it's also important that SMUD maintains a diverse resource portfolio that reflects different generation technologies and geographic diversity. So, our Plan includes intermittent renewable energy such as wind and solar as well as energy storage and geothermal resources that support reliability.

New technologies and business models

Emerging technologies play a critical role in our Plan, specifically to eliminate the remaining 10% of carbon emissions. We'll look to emerging distributed energy resource options and large-scale new technology innovations. This includes focusing on new applications for customer-owned distributed energy resources by assessing the attractiveness, costs and reliability of emerging technologies and business models. After launching and evaluating pilot programs and projects we will evaluate, prioritize and scale the technologies and programs we expect will have the largest impact reducing carbon in our 2030 resource mix, especially in terms of short duration generation capacity. To that end, we're focused on four main areas of technology:

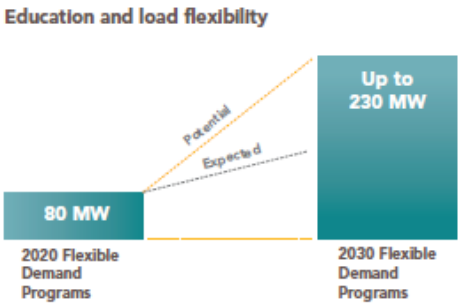
- Electrification.
- Education and demand flexibility.
- Virtual power plants (VPP) and vehicle-to-grid technology (V2G).
- New grid-scale technologies.

Taken together, we expect customer-owned resources and SMUD customer-focused programs will contribute between 360 and 1,300 MW of capacity to our grid by 2030, depending on the rate of customer adoption and the success of the programs and technologies we develop.

Electrification

Electrification of buildings and vehicles is a priority for SMUD today to support the decarbonization of these sectors, which are the largest carbon emitters in California. Our 2030 Zero Carbon Plan continues to prioritize electrification of transportation as well as new and existing buildings. In addition to piloting innovative electrification programs, we'll continue to engage under-resourced and low-income communities to achieve bill savings and ensure access to clean technologies. Examples of potential programs include:

- Electrifying multi-family homes, schools, commercial buildings, and under-resourced communities.
- New construction smart homes.
- Financing options.
- Turnkey EV charging solutions for residential and commercial properties.
- Incentives for used EVs.



Learnings from these pilot programs will help us identify the ones to scale. Pursuing external grants to help make these initiatives more affordable for all customers, we'll also advocate for regulatory changes and seek to collaborate regionally to accelerate the adoption of zero carbon technologies.

We're on an important journey with our customers and it's important to help ensure our customers understand the actions they can take to help support decarbonizing our region. Through pilot programs aimed at flexible energy use, we can help customers reduce their energy usage and bills at times when the stress on our grid is the highest. These types of universal customer programs reduce carbon emissions without requiring customers to spend money on advanced technologies. If successful, we'll scale our flexible demand programs as a lower cost alternative to large solutions such as utility-scale battery storage.

Customers will also have options to participate in programs that leverage the advanced and automation capabilities of their own devices, such as thermostats and electric vehicles, for deeper bill and carbon savings. We expect to develop about 165 MW of flexible load programs by 2030, but more could be possible as our programs continue to evolve to leverage advancing technology.

Virtual power plants (VPP) and vehicle-to-grid technology (V2G)

These programs seek to optimize the operation of our customers' equipment and distributed energy resources, balancing customer and grid needs to maximize benefits for both, while compensating customers for the energy they supply into SMUD's grid for use by other customers.

A virtual power plant consists of many small devices often owned by customers and located at their homes and businesses. When operated and managed together in a coordinated way, they can become an alternative to a conventional utility-scale power plant. VPPs can include electric vehicles, batteries, thermostats and electric water heaters. By aggregating their capacity and flexibility, a VPP can mimic a power plant and provide services that help reduce electric peak demand during hot summer days or cold winter nights, potentially reducing the need for SMUD to build or buy other resources freeing resources to more aggressively invest in renewable energy.

We will launch several VPP pilot programs between 2021 and 2024 to demonstrate and test their reliability, cost and value compared to alternative resources. This will inform selection of the best model for bringing VPPs to scale between 2025 and 2030. Our goal is to develop a flexible program where customers can bring a variety of devices that we use as one VPP to help reduce demand during key times of the year. Our approach will include working with third-party providers to jointly test VPP programs that can offer grid services such as resource adequacy and short-term energy.

Vehicle-to-grid technology is a key area of VPP innovation. Electric vehicle batteries can be connected to the grid to help stabilize the grid by either providing energy to the grid during periods of very high electric demand or by taking a portion of surplus renewable energy available on the electric grid to charge the grid-connected vehicle. We anticipate vehicle-to-grid advancements will offer some of the benefits of stationary battery storage without the added investment of a separate stationary battery.

New grid-scale technologies

While retiring and retooling our gas plants will drastically reduce emissions, the use of natural gas will not be completely eliminated unless we identify sufficient amounts of renewable fuels or develop alternative generation sources. Our initial studies indicate about half of our fuel needs after retooling can be met with renewable natural gas that we already have under contract. Additional fuel sources or technical advancements are necessary to close the remaining gap and fully eliminate our greenhouse gas emissions. We're looking at several options to address this:

- Biofuels and other clean fuels, including renewable natural gas, green hydrogen, biodiesel and ethanol.
- Long duration storage which could include technologies such as flow batteries, thermal storage and liquid air energy storage.
- Carbon capture and sequestration, including the Allam-Fetvedt cycle to assess the feasibility of this and similar technologies in the Sacramento region.
- Pumped storage hydro using our existing UARP dams and hydroelectric facilities.

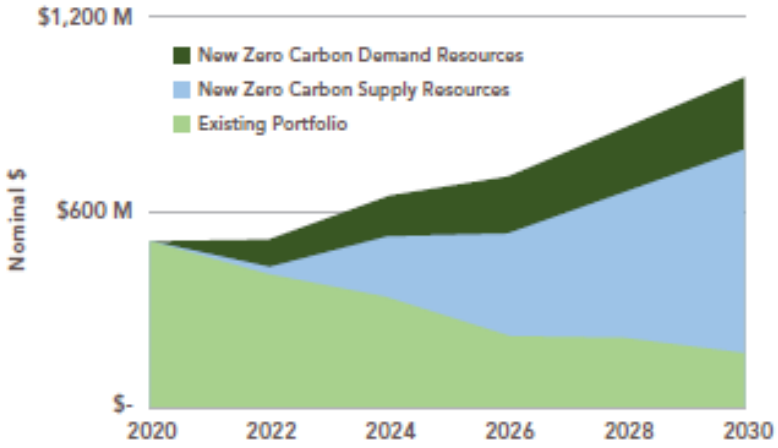
This research and the ability to secure sufficient volumes of biofuels will allow us to scale up the most promising technologies. We'll continue to evaluate and seek innovative options as new technologies emerge.

Financial impacts and options

SMUD's rates are significantly lower than those of neighboring utilities and are among the lowest in California. We believe eliminating carbon emissions from our power supply by 2030 is achievable with rate increases that don't exceed the rate of inflation, which is consistent with California utility rate increases over the past 25 years. While these low rate increases are achievable, they will be challenging to achieve.

We've identified the need for between $50 and $150 million in sustained and ongoing savings to help offset the costs of our Plan, which we'll deliver through operational savings and pursuing partnerships and grants. We expect to work closely with community organizations, industry partners, government agencies and regulators to jointly develop and finance innovative solutions and pave the way for cost reductions in new and emerging clean technologies.

Cost of SMUD's electricity supply 2020-2030, including Zero Carbon portfolio costs



The estimated costs and rate impacts discussed in this section represent one possible outcome based on our current expectations for market developments and costs. There are many factors that could cause the costs for achieving our zero carbon goals to go higher or lower than our initial estimates presented here. For example, if costs for technologies such as solar and battery storage decline faster or more significantly than expected, we may be able to accelerate the pace of our carbon reduction efforts without sacrificing affordability. Conversely, if costs are higher than expected or if some technologies fail to deliver on their projected potential, the overall pace and choices of technologies may need to be adjusted. We expect to revisit the 2030 Zero Carbon Plan regularly to adjust as necessary to these changing factors.

2030 zero carbon action plan

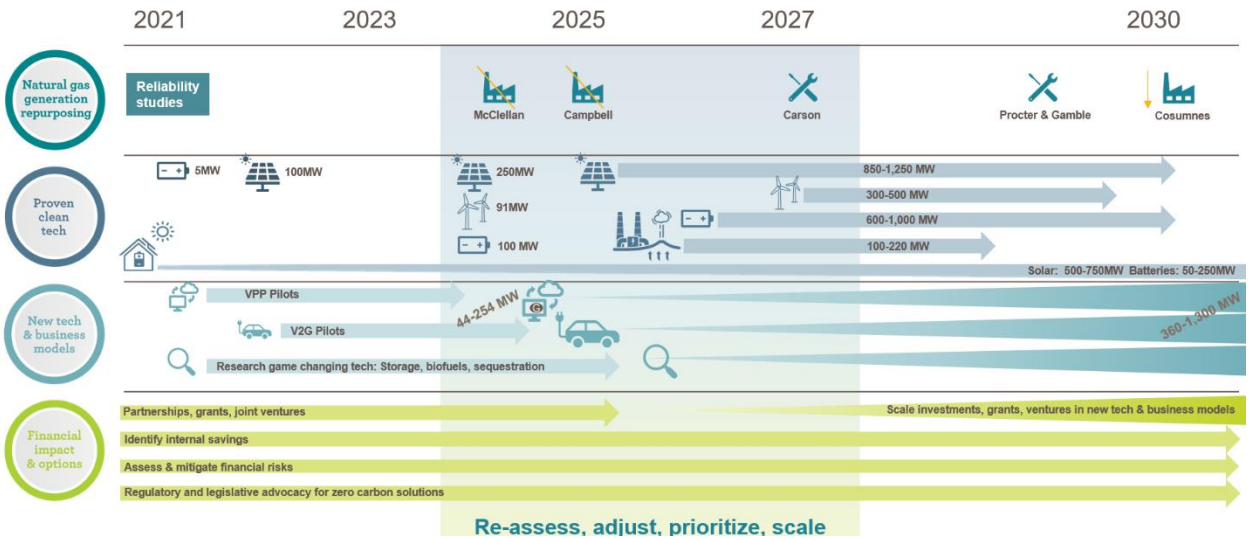
Our initial analysis indicates SMUD can reach zero carbon by 2030, while recognizing that there are a number of unknowns and risks and we'll adjust our Plan as technology, customer adoption and other factors change. While the specifics of our long-term activities to support decarbonization will be adjusted based on what we learn through the early implementation of

our Plan and the results of our research and pilot programs, we have a number of priorities for the first year of the Plan as summarized in the table below.

Year 1 Zero Carbon Plan implementation priorities
Implement plan for the Natural Gas Generator Repurposing Strategy, including • Perform detailed studies of reliability, economics and environmental impacts of retiring McClellan and Campbell. • Research new utility-scale technologies, fuels and options.
Implement plan for the Proven Clean Technology Strategy, including: • Conduct locational analysis, system impact study and economic valuation and solicit counterparty offers. • Study strategic new technology options complementing the Natural Gas Generator Repurposing Strategy. • Explore delivery options for out-of-area renewables. • Develop and issue competitive solicitation for new proven clean technology projects.
Implement plan for New Technology and Business Models Strategy, including: • Perform information technology system upgrades to enable DERs and VPPs. • Include DERs in operations, distribution and grid planning processes. • Launch new customer-partner pilot programs for VPP Involving thermostats, EVs, rooftop solar and batteries. • Launch pilots for behavioral demand response "Flex Alert", EV managed charging and vehicle-to-grid demonstrations.
Evaluate the 2030 Zero Carbon Plan for NERC reliability standards, system adequacy requirements, operational reliability requirements, and new reliability services contributions.
Assess system adequacy and reliability impacts, including: • Evaluate operational reliability requirements to manage the variability of solar and wind generation. • Evaluate grid reliability services contribution from virtual power plants, distributed energy resources, demand response and load flexibility. • Perform detailed studies of sub-transmission system impacts from the re-tooling of the Carson plant.
Set internal goals for operational efficiencies needed to manage risks to rate impacts.
Organize grant capture team to proactively seek opportunities for funding partnerships and research with manufacturers, vendors, government agencies, utilities and research institutions.
Engage government, agencies and policy makers • Brief policymakers on the 2030 Zero Carbon Plan. • Advocate for and support electrification policies. • Support cities' and county General Plans and Climate Action Plans. • Connect with federal agencies and policy makers on climate action and our 2030 Zero Carbon Plan.
Identify new workforce skills needed to support zero carbon technologies.

Year 1 Zero Carbon Plan implementation priorities
Develop and implement a comprehensive regional communications, marketing, outreach and educational effort.

High-level summary of the key elements and actions in our 2030 Zero Carbon Plan.



Introduction

In July 2020, Sacramento Municipal Utility District's (SMUD's) Board of Directors adopted a climate emergency declaration, prompting SMUD to develop a bold and ambitious plan for reaching zero carbon by 2030 while ensuring we continue to provide safe, reliable, affordable and inclusive power to our customers and community. This 2030 Zero Carbon Plan is a flexible road map to eliminate greenhouse gas emissions (GHG) from our power supply by 2030. It was developed following completion of several technical studies.

We have identified investments in local solar and large-scale batteries as well as a plan to repurpose and retire our natural gas power plants. We can achieve our goals most effectively through customer partnerships that embrace more distributed energy resources (DERs). Our studies found that new technologies and renewable fuels are needed to achieve our goals most cost-effectively.

This Plan was developed in collaboration with our stakeholders through several events and public meetings between December 2020 and March 2021. As we implement this flexible plan, we'll continue seeking inputs and ideas from our customers, community and other stakeholders.

This report is organized as follows:

- **SMUD's carbon reduction journey** is a retrospective look at the work SMUD has done so far to reduce our carbon footprint.
- **Building resilient customers and communities** is a snapshot of the work SMUD has undertaken to support under-resourced communities and low-income customers.
- **A history of planning for the future** is a brief summary of our previous long-term plan and aspects we're building upon in this 2030 Zero Carbon Plan.
- The **Energy system overview** provides a snapshot of our current energy delivery system, which is the foundation that we'll build our 2030 strategies upon.
- Then, we focus on the development of our 2030 Zero Carbon Plan. This includes an overview of our **2030 Zero Carbon Plan**, our **public consultation process** and describes the **plan structure**.
- Our plan is divided into four strategies – **natural gas generation repurposing**, **proven clean technologies**, **new technology and business models** and **finance** – that make up our flexible road map to eliminate GHGs from our power supply by 2030.
- Implementation of our plan will require close coordination with local, state and federal regulations. Our **government affairs** strategy provides a plan to ensure we're closely coordinated with many governing partners.
- Our report concludes with our **Action plan and risk mitigation strategy**.

About SMUD

SMUD is a community-owned, not-for-profit utility that generates, transmits and distributes electricity. SMUD began serving Sacramento in 1946 and is now the nation's 6th-largest community-owned electric utility, serving a population of over 1.5 million people and providing services to about 640,000 residential and commercial customers. Our service territory is nearly

900-square-miles and includes California's capital city, most of Sacramento County and small slices of Placer and Yolo counties.

Our vision is to deliver clean energy with zero carbon emissions while maintaining our commitment to reliable service, sustainable communities and affordable rates.

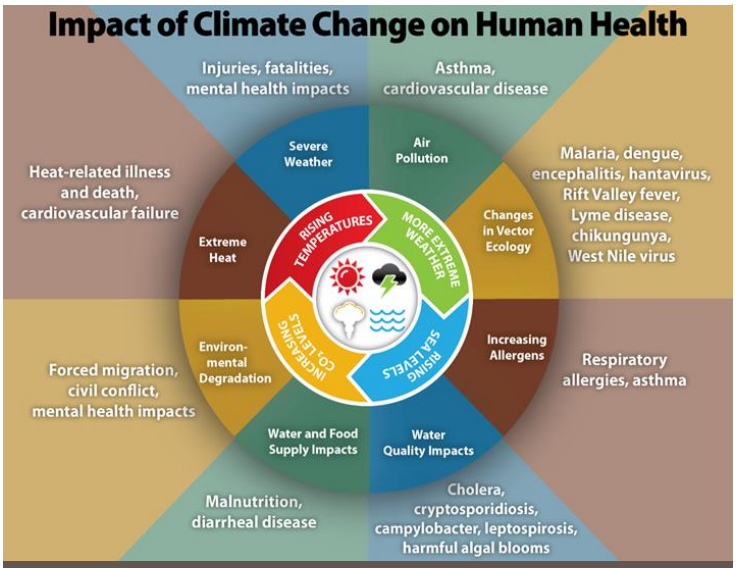
As a community-owned utility, SMUD is governed by a 7-member Board of Directors elected by voters to serve 4-year terms. Our Board of Directors determines policy direction and appoints our Chief Executive Officer & General Manager, who is responsible for SMUD's day-to-day operations.

Climate change

Temperatures around the world are rising and 2020 tied with 2016 as the hottest years on record. [1] Climate science has shown that fossil fuel combustion and land use changes disrupting carbon sinks[2] have greatly increased atmospheric concentrations of GHGs, resulting in climate change and a wide range of cascading impacts to ecosystems and economies around the world. The changing climate is already impacting SMUD's operations, employees, customers, communities and plans for the future.

Locally, the impacts of climate change include extreme heat, droughts, wildfires, flooding, species loss, rising sea levels and human displacement. Research suggests that the number of extreme heat days (days when the highs exceed 95°F) in the Sacramento Valley will increase and, by the end of the century, could include four months each year.[3] Rising temperatures are anticipated to impact the productivity of nearly 20% of our region's workforce that work in high climate risk industries, such as manufacturing, construction and agriculture. These industries may experience labor productivity decreases between 1% and 2.2% by the late century. [4]

Figure 1. Impact of climate change on human health



Source: Federal Centers for Disease Control & Prevention

[1] https://www.noaa.gov/news/2020-was-earth-s-2nd-hottest-year-just-behind-2016#:~:text=It's%20official%3A%202020%20ranks%20as,an%20analysis%20by%20NOAA%20scientists.
[2] Carbon sinks that occur in nature include plants, soil and the ocean, which naturally absorb atmospheric carbon.
[3] Risky Business Project. *From Boom to Bust? Climate Risk in the Golden State.* April 2015. Available online: https://riskybusiness.org/site/assets/uploads/2015/09/California-Report-WEB-3-30-15.pdf. Last access: 05 Jan. 2021.
[4] ibid

In the past, correlation in historical weather patterns, such as average temperatures or snowpack, could be used as reasonable predictors of customer electricity load and generation from SMUD's Upper American River Project (UARP) hydroelectric system. However, we're in a period of uncertainty where historical data is no longer a reliable indicator of the future. Prolonged droughts and lower-than-average snowpack results in less water available to generate hydroelectric power, which is one of the cleanest and most economical power sources we have. These challenges also present opportunities to accelerate our pursuit of sustainable, resilient and cost-effective solutions. SMUD is committed to evolving our operations and business practices to keep pace with these changes.

Climate emergency

In recognition of the severity of the global climate emergency, in July 2020, SMUD's Board of Directors adopted a Climate Emergency Declaration requiring SMUD to work toward our most ambitious carbon reduction goal — carbon neutrality in our electric power supply by 2030. Through the declaration, the Board acknowledged a climate emergency within its jurisdiction and signaled that:

- The planning process will be open, transparent and will be explored in a public process with the Board.
- SMUD will collaborate with local cities, counties, agencies, businesses and other organizations.
- SMUD affirms its commitment to environmental justice principles and leadership through our Sustainable Communities Initiative.
- SMUD has made a strong commitment to find additional opportunities to accelerate decarbonization.
- By March 31, 2021, the CEO & General Manager will report on clear, actionable and measurable strategies and plans to reach SMUD's climate emergency goals.

Our accelerated carbon reduction journey builds on previous efforts and our latest resource plan: the 2040 Clean Energy Plan, which was accepted by the California Energy Commission (CEC) in 2019. Rapidly advancing clean energy technology and a collaborative and inclusive approach to carbon reduction has allowed SMUD to set the even more ambitious goal of zero carbon by 2030, with this 2030 Zero Carbon Plan being our strategy to achieve that goal.

To achieve our 2030 zero carbon goal, we must address our reliability needs, for which new and emerging technologies such as energy storage, flexible load, carbon capture and storage and renewable gas technologies will be needed. We'll also need to increase investment in new clean energy supplies, new and emerging technology and pursue new business models and partnerships.

Global efforts to decarbonize energy supply

This Plan lays out an aggressive, flexible and inclusive clean energy pathway, with a goal of zero carbon that SMUD cannot and should not achieve alone. By working with other pioneering utilities, governments, businesses, agencies, community leaders and organizations, academia, start-ups and others, we will align resources to maximize carbon emission reductions with broad

and long-lasting impact. Our 2030 Zero Carbon Plan is part of a growing body of work that's necessary to combat this climate change emergency. As part of our climate emergency, our Board set a goal of achieving carbon neutrality by 2030.

Other, smaller utilities, such as City Light (Seattle) and the San Francisco Public Utilities Commission's Hetch Hetchy Power System (City and County of San Francisco) have already achieved carbon neutral operations. Both utilities have resource portfolios built around access to large swaths of hydroelectric power. At City Light, over 80% of delivered power is generated from hydroelectricity and Hetch Hetchy, 100% is from hydroelectricity.[5,6] Hetch Hetchy does have a small amount of non-hydro renewable generation, representing about 2% of the system (11 megawatt (MW) of solar, wind, and biogas). But, for utilities without access to significant hydro resources, like SMUD, achieving carbon neutrality will not be as straightforward. As shown in Table 1, SMUD's carbon reduction goals are among the most ambitious globally. More details are available in Appendix D: Global energy decarbonization efforts.

Table 1. Global carbon neutrality and net zero goals

Location	Target Year	GHG Reduction Goal
SMUD	2030	Carbon neutrality
Sacramento County	2030	Carbon neutrality
Puget Sound Energy	2030	Net zero GHG (carbon neutrality by 2045)
Lincoln Electric (Nebraska)	2040	Net zero GHG
Portland General Electric	2040	Net zero GHG
California	2045	Carbon neutrality
LADWP	2045	100% renewable electricity
Sweden	2045	Net zero GHG
Arizona Public Service Electric	2050	100% carbon free electricity
Madison Gas & Electric	2050	Net zero GHG
Ameren	2050	Net zero GHG
PSE&G	2050	Net zero GHG
Dominion	2050	Net zero GHG
Southern Company	2050	Net zero GHG
Orlando Utility Commission	2050	Net zero GHG, proposes carbon offsets for EVs
Alliant (Wisconsin)	2050	Net zero GHG, allows carbon offsets
Entergy	2050	Net zero GHG, allows carbon offsets
Duke Energy	2050	Net zero GHG, allows carbon offsets
DTE	2050	Net zero GHG, allows carbon offsets
Consumers Energy	2050	Net zero GHG, allows carbon offsets

[5] https://www.seattle.gov/city-light/energy-and-environment#:~:text=Over%2080%25%20of%20the%20power,Skagit%20and%20Pend%20Oreille%20Rivers.&text=*City%20Light%20does%20not%20have,in%20its%20power%20supply%20portfolio. Last Accessed: 24 March 2021

[6] https://sfwater.org/modules/showdocument.aspx?documentid=16653. Last Accessed: 24 March 2021

Engaging with our under-resourced communities

Climate change is a critical public health issue which disproportionately impacts our under-resourced communities. The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity, now and into the future. It includes 17 sustainable development goals, which are an urgent call for action by all countries in a global partnership. They recognize that ending poverty and other deprivations go hand-in-hand with strategies that improve health and education, reduce inequality and spur economic growth – all while tackling climate change and working to preserve our oceans and forests.[7] Similarly, the United Nations Declaration on the Rights of Indigenous Peoples recognizes that indigenous knowledge, cultures and traditional practices contributes to sustainable and equitable development and proper management of the environment. These global agreements have relevance to SMUD, our operations, our employees and our customers.

Closer to home, our under-resourced communities lack equitable access to many essential community components that we attribute with a high quality of life, including living wages and training opportunities, affordable housing, access to transportation and connectivity, health care access, nutrition, education opportunities, computer and internet access and a healthy environment. Our neighbors in these communities feel the physical impacts of climate change more acutely than wealthier communities while bearing little responsibility for the crisis, and history has shown that these communities often suffer unintended consequences when new social policies or strategies are introduced.

Involvement of all our communities is foundational to this plan and we recognize that, too often under-resourced communities are excluded from the process and conversation when goals and implementation plans are developed. SMUD recognizes the importance of partnering with all the communities we serve. We commit to reaching impacted communities as we work toward our goal of zero carbon.

If designed well and with citizens and communities in mind, climate action can avoid green gentrification and displacement and can help address some of the pre-existing social and economic inequalities in our region. Additionally, collaborative reexamination of indigenous practices that support healthy ecosystems can also help us build a more resilient region. The strategy for one city, one neighborhood, or even a single facility will not be a one-size fits all solution. We're committed to engaging all our community members so they may participate in building a plan that supports their community's vision for the future and may fully understand potential impacts of the plan.

[7] For a full list of the UN's sustainable development goals, see Appendix B.

SMUD's carbon reduction journey

For several decades, SMUD has been recognized nationally and internationally for our environmentally conscious and innovative renewable power and energy efficiency programs. Our commitment to zero emission and low GHG resources dates back decades, and in fact, began with the development of the UARP hydroelectric project in 1957. We continued clean energy leadership as we developed one of the first utility-scale solar photovoltaic power plants in 1984; our first solar-powered electric vehicle (EV) charging station in 1992 and our first community targeting net-zero energy in midtown Sacramento.[8]

SMUD strives to provide our customers with a sustainable power supply, which is defined as one that reduces SMUD's GHG emissions while assuring reliability of the system, minimizing environmental impacts on land, habitat, water quality, air quality and maintaining affordable rates relative to other California utilities. Our Board sets policy direction to for our sustainable power supply through Strategic Direction – 9 Resource Planning. The full text of SD-9 can be viewed here.

In the 1990s, we were already buying renewable energy from wind, geothermal and biomass sources. By 1997, we were offering our first voluntary green pricing program, Greenergy®, to our customers. And in 2001, we established our first renewables portfolio standard (RPS), with a combined energy supply goal for our RPS and Greenergy program of 12% by 2006 and 23% by 2011.[9] By 2008, we established a separate RPS goal of procuring 20% of our retail electricity sales from renewables by 2010. SMUD was the first large community-owned utility in California to achieve a 20% RPS goal, and has continued to grow our portfolio of non-emitting resources over the past decade, reaching 33% in 2020.

Our commitment to addressing climate change was brought to the forefront in 2003 when, as a precursor to setting GHG reduction targets, SMUD became the first utility to certify our emissions inventory (2002) under the newly formed California Climate Action Registry.[10] Soon after, we were one of the first utilities to support the passage of Assembly Bill 32, California's landmark climate change legislation. In 2008, we committed to reducing our emissions by 90% below our 1990 levels by 2050, exceeding the state target of 80% below 1990 levels by 2050. And in 2009, we received the first Climate Change Leadership Award from the Association of Climate Change Officers. We've continued to exceed our goals and expect to be nearly 15% below our 2020 GHG emissions goal.[11]

Historically, energy efficiency programs have significantly contributed to SMUD's carbon reduction efforts. Helping our customers use less electricity has effectively offset increasing demand, managed peak energy use and helped customers save on their utility bills. With growth

[8] For more information on our net-zero energy community in Midtown Sacramento, see https://www.youtube.com/watch?app=desktop&v=fW2YtZ1eDl8. Last Accessed: 24 March 2021.
[9] https://www.smud.org/-/media/Documents/Going-Green/PDFs/SMUD-RPS-Guidebook--FINAL-1.ashx. Last accessed: 14 December 2020.
[10] http://www.caclimateregistry.org/wp-content/plugins/carrot/carrot_reports/sacramento-municipal-utility-district-2002-ca.pdf last accessed 16 December 2020.
[11] Emissions values take some time to finalize. 2020 emissions values won't be finalized until Summer 2021.

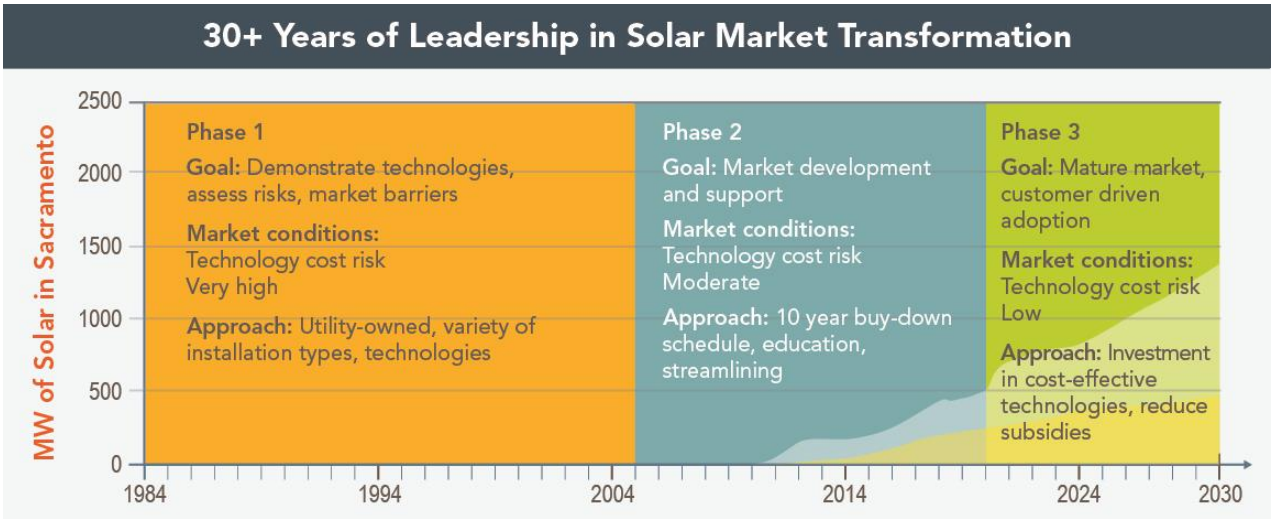
in renewable energy supplies and the imperative to reduce carbon emissions, our approach to energy efficiency has expanded and now integrates building electrification into our programs to help customers take advantage of clean, renewable electricity supplies. We've also developed innovative program offerings, allowing our customers a choice to voluntarily buy additional renewable energy.

By 2012, we reduced our normalized emissions by 30% below 1990 levels and by 2019, our normalized emissions were 45% below 1990 levels.[12] Accepted by the CEC in 2019, our 2040 Clean Energy Plan outlines a path to net-zero emissions by 2040. Read our 2018 Sustainability Report for more detailed information about our commitment to clean energy.

Pioneer in solar energy and market transformation

For over 30 years, SMUD has been promoted and encouraged the adoption of solar technologies, helping commercialize this important carbon-free resource. In the early 1980s we saw that solar photovoltaic systems (PV) – although very expensive at the time – had great potential for the future. With this understanding, we set out to overcome roadblocks to developing solar energy through a robust long-term market transformation strategy.

Figure 2. Leadership in the solar market transformation



By implementing these strategies, SMUD created a body of knowledge and experience that supported market development and growth, lowered costs and helped the solar market transition to the mature, profitable, large-scale global industry we have today.

[12] To assess our progress in achieving our GHG reduction targets, we "normalize" our emissions to ensure that beneficial weather or hydroelectric conditions do not understate or overstate our carbon reduction achievements. In 2019, these normalizations increased our reported normalized emissions by nearly 10%.

Bringing solar to our communities

In the early 1990s, SMUD was one of the first utilities to develop a rooftop solar program, installing hundreds of utility-owned solar systems on the roofs of customers' homes and businesses. Installations helped SMUD evaluate the technology and paved the way for a transition to a customer-owned program in the late 1990s. At this stage, SMUD made large purchases of modules and inverters, designed as solar system kits, and offered them at a discounted price to customers. We trained installers, which helped establish regional solar contractors who helped to scale the technology, giving a much-needed boost to the solar industry.

As part of our Solar Advantage Home program, launched in 2001, and our later SolarSmart Homes® program, we worked with local home builders to promote installation of solar coupled with efficient new homes exceeding building code requirements. By doing so, the program demonstrated how rooftop solar systems can be integrated into new home design and construction. Over the course of the program, 4,000 new SolarSmart Homes were built.

By 2007, we launched our part of California's Million Solar Roofs initiative. Through this ambitious program, we committed $125 million in incentives for the installation of solar at homes and businesses. The program was a success, reaching its goal of 130 MW, with solar on more than 15,000 homes and businesses in Sacramento, helping the market transition to a mature solar industry.

We've learned a lot from our 40-year experience with solar. Through the 1980s and 1990s, we found ways to reduce costs and improve performance. Our first utility-scale solar development was our Rancho Seco PV 1 plant in 1984, one of the first utility-scale PV plants in the world, which established Sacramento as an early leader in solar. By 2009, SMUD signed feed-in tariffs (FIT) with projects totaling 100 MW, powering on average over 20,000 homes per year. Earlier this year, we welcomed our newest solar project at Rancho Seco, a 160 MW solar PV project capable of powering over 36,000 homes per year.

Incorporating wind technology

Wind turbines are now one of the most economical energy generating technologies, and in most cases, are lower cost than fossil-fuel generators.[13] We also have access to a great wind resource region at our doorstep in Solano County. Our Solano Wind Farms produce enough electricity to power more than 63,000 homes per year.[14] We plan to expand these projects by replacing some older, less efficient turbines with larger and more efficient units. This expansion will reduce the footprint of our wind projects while increasing net output by over 70 MW, enough

[13] https://www.lazard.com/media/451419/lazards-levelized-cost-of-energy-version-140.pdf
[14] Based on 750 kWh/month average household electricity use.

to power more than 21,000 homes per year. In 2019, we began purchasing energy under contract for 200 MW of wind energy from a wind-rich region in New Mexico.

Hydroelectric power

We own and operate a hydro project in the Upper American River called the UARP. The UARP contains multiple powerhouses along the same waterway, which means the same "fuel" is used over-and-over as water flows downstream from one powerhouse to the next. Operating and maintaining our hydro facilities requires a license from the Federal Energy Regulatory Commission (FERC), which issued SMUD a new 50-year license in July 2014. [15]

An additional 6% of our power generation is provided by hydro power purchase contracts, allowing us to meet an average of about 20% of our total power needs with carbon-free hydro generation. Today, including our hydroelectric resources and other carbon free resources, our energy mix is on average 50% carbon free.

Investments in other renewables

Although solar, hydro and wind comprise the largest share of our zero GHG emission portfolio, our procurement of biomass and geothermal power adds diversified value to our portfolio. These resources generally provide constant generation over time. Some of these resources may also be able to respond to fluctuations in load and provide other reliability services.

Biomass resources

Biomass is a local renewable resource and abundant in nature. Biomass resources include residues from forestry (like dead and dying trees, vegetation materials from the UARP), urban wood wastes, food waste, agricultural residues, dairy wastes and other organic wastes. These biomass resources can be converted to bioenergy via thermochemical and biochemical processes for power, heating, cooling, fuels, chemicals, renewable natural gas (RNG), biogas, hydrogen and other value-added products with zero net and negative carbon emissions.

Occurring abundantly in nature, biomass can be a problematic waste if unmanaged and should be disposed of in a sustainable and environmentally safe manner. Ideally, some biomass can and should be composted for soil amendments. However, compost demand cannot address the full amount of the waste problem. Another solution is converting the left-over waste to renewable biomass energy.

Although bioenergy (biomass-derived energy) generally requires combustion technologies, the alternative dispositions of biomass are usually more harmful to the environment or public safety than the impacts of energy production. Bioenergy can also be a critical strategy to reduce potent climate pollutants, such as short-lived climate pollutants (SLCPs). According to the California Air Resources Board (CARB), increasing bioenergy – especially biogas production and use – is

[15] FERC's new license order for the UARP can be found here: https://www.smud.org/-/media/Documents/In-Our-Community/Recreational-Areas/UARP/Hydro-License-Compliance/License-and-Amendments/FERC-Project-No-2101-Order-Issuing-New-License-07-23-2014.ashx. Last accessed: 11 December 2020.

critical to reduce SLCPs, which can be tens to thousands of times more damaging to the climate than carbon dioxide.[16]

The decomposition of biomass at landfills, wastewater treatment plants and dairies create methane (essentially natural gas) and other pollutants that can be greatly mitigated through collection of the gases. Biomass collected through forest thinning and wildfire mitigation projects are beneficial because they provide revenue for thinning projects and avoid pile burning or catastrophic wildfires.[17]

SMUD has a long history of purchasing biomass energy, including from large generators in Washington state and small local dairies. Currently, we procure energy from Sacramento's Kiefer Landfill as well as landfills in Yolo county and biogas from Sacramento's Regional Sanitation District.[18] We have also supported the development of five digesters at local dairies.

Geothermal

Geothermal energy takes advantage of temperature differences within the earth's crust, such as areas hot enough to produce steam from water. This steam can be used in steam turbines – one of the oldest methods for powering machines. This resource is valuable because geothermal energy is a constant power source, unlike intermittent wind and solar energy.

There are ideal locations for geothermal development throughout California, including the Imperial Valley and Sonoma County as well as sources in Nevada that are accessible via our existing transmission line. We have been buying geothermal energy since the early 1980s and currently receive 52 MW annually through contracts in California and Nevada. That's enough to power more than 38,000 homes per year.[19]

Giving our community tools to confront climate change

Undisputedly, California is a national leader in addressing climate change, and SMUD's goals are even more ambitious than those set forth by the state. Our commitment to improving the quality of life for our customers and community is evident through our progressive policies and outcome-driven actions. We've demonstrated success in providing low carbon energy solutions to our customers and implementing robust, community-focused programs aimed at conserving energy and accelerating the transition away from a fossil-fuel based economy toward an economy that supports sustainable resources and sustainable communities.

Community partnerships and programs

We have a robust portfolio of customer programs that reduce GHGs by using or producing energy more effectively through energy efficiency, electrification, renewables, energy storage and EVs. Programs like Greenergy, SolarShares®, Shade Trees and a variety of incentives

[16] CARB. *Short-Lived Climate Pollutant Reduction Strategy.* March 2017. Available Online: https://ww2.arb.ca.gov/sites/default/files/2018-12/final_slcp_report%20Final%202017.pdf. Last accessed: 4 March 2021.
[17] https://www.placer.ca.gov/1810/Biomass. Last accessed 3 March 2021.
[18] https://www.regionalsan.com/biogas-recycling. Last accessed 23 February 2021.
[19] Based on 750 kWh/month average household electricity use.

support sustainable growth within our region by offering customers a choice of energy solutions that fit their unique needs.

Our workforce outreach programs help our community learn about and prepare for careers at SMUD. Programs include Career Ambassadors, paid high school and college internships and college scholarships. With an increased emphasis on zero carbon technologies, it's even more important that the workforce of the future is prepared for these new careers.

Finally, influencing the private sector to develop clean energy goals involves educating them about the impacts of climate change and highlighting opportunities to partner with SMUD in order to reach their goals. Through our Sustainable Communities program, we're facilitating collaborations by leveraging our entire partnership portfolio. Collective action is key to our success as climate change cannot be solved by any one stakeholder acting alone. Cross-sector collaboration is essential to holistically address systemic challenges, and partnerships are vital to incentivize businesses to take action to address this climate emergency.

Energy efficiency and electrification

SMUD has been offering programs to help our customers save energy for more than 50 years, delivering significant carbon reduction and billions of dollars of savings to SMUD and our customers. In the 1990's, we launched an initiative to fund and promote energy efficiency savings equivalent to the amount that could be produced by a 500 MW power plant annually, and we were recognized nationally for our energy efficiency leadership. In 2006, we adopted a goal of getting 1.5% of our annual retail sales forecast from energy efficiency programs and exceeded the resulting annual targets each year from 2009 through 2020. Recent efforts have helped our customers become more energy efficient. These programs include:

- **Express Energy Solutions:** Provides incentives to qualified contractors for high-efficiency equipment across a variety of end-uses: lighting; heating, ventilation, and air conditioning (HVAC); refrigeration and food-service equipment as well as supporting the conversion from gas to electric equipment.
- **Complete Energy Solutions:** Comprehensive energy audits of small- and medium-sized businesses with a customized report recommending energy improvements, estimated savings, estimated cost and payback. Then an administrator assists the customer in hiring a contractor to complete the project. The program also supports the conversion from gas to electric equipment.
- **Savings by Design:** Provides incentives to avoid natural gas consumption through electrification, along with incentives for classic energy efficiency measures. The program incentivizes efficient construction via two participation methods: A performance approach tailored to the customer's unique building or a simple prescriptive approach.
- **Residential new construction of all-electric homes:** Provides incentives to builders and their design teams for residential developments of all-electric homes and neighborhoods.
- **Advanced Home Solutions:** Encourages homeowners to improve their home's performance through insulation, sealing and conversion to all-electric, efficient equipment. Implemented as a contractor-driven program, customers are eligible to received incentives for HVAC, water heating and insulation improvements.
- **Appliance efficiency:** Our retail partnership program works with big box retailers to pay retailer incentives for all the energy efficiency items they sell in their stores.

- **Refrigerator/freezer recycling:** This program provides free pick-up and environmental recycling of old refrigerators and freezers.

In 2020, SMUD was the first utility in the country to adopt a carbon-metric for measuring in the impact of our efficiency programs, allowing us to define our success by the GHGs these programs reduce and embracing the use of energy during low GHG emission times. Our focus on electrification means we'll nearly triple the carbon savings impact of our energy efficiency programs by 2030, relative to an electricity efficiency-only framework.

Greenergy

Recognizing many of our customers wanted to power their homes with green energy, SMUD launched Greenergy in 1997. This first-of-its-kind program gave our residential customers the option of buying renewable energy to serve their home energy needs, up to 100% of their use, by adding a flat fee to their standard electricity bill. As one of the most successful utility green pricing programs, 13% of our customers participated in 2020.

SolarShares – a new model to expand access to solar energy

As we worked to develop a robust rooftop solar energy market in Sacramento, we recognized that some customers could not install solar on their homes, due to cost, home ownership, orientation of their home, tree shading or other factors. We also recognized that despite its high price, utility-scale solar was still far less expensive than rooftop solar. That's why in 2007, SMUD launched SolarShares. Initially, our SolarShares program was served by a 1 MW PV project located in Sacramento. Within 6 months, the program was fully subscribed, resulting in a waiting list for those customers who were interested in future opportunities to subscribe. In 2016, SMUD expanded SolarShares to commercial customers who were looking for new options to meet their sustainability goals. In 2019, our original residential SolarShares program closed to new participants.

Following our SolarShares program, in 2019, SMUD created a new community solar program that provides new home builders with an alternative option to meet California's mandate that new homes include solar. This program, Neighborhood SolarShares®, was approved by the CEC in 2020 as an alternative to rooftop solar systems in areas with dense trees or limited rooftop space.

Sacramento Shade Tree program

Beyond electricity, we've invested in carbon sequestration through our 30-year partnership with the Sacramento Tree Foundation. Not only do trees cool homes naturally and beautify our neighborhoods, they also produce oxygen and store carbon. Since 1990, the program has resulted in planting more than 600,000 trees, helping Sacramento maintain one of the leading urban tree canopies in the world. Our Sacramento Shade Tree program has evolved to address

climate change and the need for sustainable urban and community forests by expanding both the number and types of trees offered, including evergreen trees. Additionally, the program supports environmental equity by planting and stewarding trees in under-resourced communities.

Electric transportation incentive programs

SMUD has long been committed to the advancement of electric transportation and we currently offer incentives, expert advice and assistance to customers to help them transition to electric transportation. Our residential programs have been expanded to include online EV purchasing tools for our customers looking to purchase an EV. Customers also continue to receive an EV rate discount, which incentivizes them to charge their vehicles during off peak hours. Through the California Clean Fuel rewards program, we support customers in receiving up to $1,500 for the purchase or lease of a new Battery Electric or Plug-in-Hybrid vehicle.[20] Our commercial EV program offers workplace and multi-family customers incentives for EVs and charging equipment. Additionally, we are partnering with the CEC to offer incentives for the purchase and installation of fast charger infrastructure.

Customer engagement programs

We engage with our customers and community to inform them about our programs, rebates and incentives and other initiatives such as our 2030 Clean Energy Vision and 2030 Zero Carbon Plan, while encouraging their involvement and partnership. Our educational and awareness communications are critical to informing and including our customers in new programs and initiatives.

SMUD's Community Education and Technology Center provides energy efficiency and sustainability education, along with new energy technology evaluation, to areas students and our residential and commercial customers. Through workshops, events, videos and other channels, SMUD supports our commercial, residential and kindergarten through university students with the knowledge and ability to better control their energy expenses, be more sustainable in their energy consumption and get more value out of their energy use.

- **Residential and Commercial education**: We offer a range of seminars, webinars and other courses to educate commercial and residential customers on a variety of topics including EVs, energy efficiency, lighting, induction cooking, building standards and more.[21,22]
- **Outreach and awareness**: Annually, SMUD supports hundreds of low-income outreach and awareness presentations and education events with community partners. These events provide information about our low-income programs like our Energy Assistance Program Rate, our Medical Equipment Discount (MED) Rate and energy efficiency and electrification education.
- **Kindergarten through university education**: SMUD uses a variety tools to help train the next generation of energy leaders about sustainability and the environment. On a

[20] For more information on the Clean Fuel Rewards program, see: https://cleanfuelreward.com/
[21] Businesses can find our commercial education videos, interactive online courses and webinars on SMUD.org/Workshops.
[22] Available on SMUD.org/Learn

yearly basis, the Community Education and Technology Center offers regional science, technology, engineering and math competitions. [23]

Research and development pilots

A robust approach to research and development enables us to deliver innovative products, programs and services that provide solutions our customers care about. This allows us to test innovation in a controlled setting or with a modest number of customers, making refinements along the way as we expand the opportunity for the larger customer base. These efforts ensure that SMUD takes a measured approach at investigating viable alternatives to today's technology and business solutions in a low-risk setting. This is a core component preparing our organization for deeper decarbonization.

Our climate journey has benefited from the innovative solutions, products and services resulting from our investments in research and development projects. These projects integrate emerging technologies and new business models into our customer offerings in a way that benefits our customers and community. SMUD's research and development vision is rooted in achieving excellence and leadership in four foundational pillars.

Excellence in technology and services: Cultivate emerging technologies, advanced applications and innovative services to achieve operational excellence in delivery of products and services for our customers.

Safe and reliable grid integration: Enable safe and reliable integration, operation and visibility of DERs, grid-scale storage and large-scale renewables into the electric grid, and prepare for the migration to a distributed and transactive grid.

Leadership in sustainability: Further SMUD's environmental and sustainability leadership role in the energy industry by informing SMUD's strategy to reduce regional GHG emissions, advance sustainability technology and direct climate readiness planning.

Strength in economics and markets: Prepare for the delivery of customer products and services, enable customer participation in new energy business models and identify new approaches to SMUD's participation in energy markets to maintain financial strength.

Our research and development strategies focus our activities in areas that show the most promise for improving the delivery of our core business. This ensures our research strategies address existing goals defined by SMUD's Board of Directors as while keeping an eye on the horizon for energy industry uncertainties and technology advancements that could change the existing energy delivery paradigm. Maintaining strong research and advancement strategies that better meet customer needs has given SMUD a position of industry influence in progressive policy, advanced standards development, emerging business models and market transformation.

[23] More information can be found at SMUD.org/Education.

SMUD's commitment to research has demonstrated progress in areas once considered cutting edge that are now standard operations. We've strategically leveraged research to advance change in high-impact areas while simultaneously mitigating financial, operational and customer experience risks. For example, SMUD's Time-of-Day (TOD) rates were born out of the nation's most comprehensive time-of-use experimental research study exploring the impacts of default and opt-in time-based rates on customer engagement, peak load and customer bills.

SMUD is rethinking the systems and resources that we rely on for everything, from things like new sources of generation, building construction and how electricity-consuming devices in a building operate. We're looking at emerging technologies, alternative fuel sources and the evolution of grid operation and resource planning in a new way, creating opportunities for customers to be a partner in the grid of the future. Through our research and development, we strive to improve the efficiency of the grid and empower our customers to be active participants in an innovative, modern electric grid.

Our research and development group is home to seven technology innovation programs. The programs are highly interdependent and therefore most research efforts touch multiple programs. See our 2020 Innovation report to take a deeper look at recent projects. [24]

[24] SMUD's 2020 Innovation report can be found at https://www.smud.org/-/media/Documents/Corporate/About-Us/Energy-Research-and-Development/Innovations/Innovation-Brochure.ashx.

Building resilient customers and communities

Our customers and community are at the heart of all we do and we're recognized in our industry and by the customers as a leader in community involvement. As one of the region's largest and most influential employers, our goal is to enhance the quality of life for all our customers and improve vitality in all the communities we serve. Social, economic and environmental inequities exist in the in our region, impacting customers across our service territory. As a state, California ranks number one in power outages and rural and under-resourced communities are often at the margins of electrical grids.[25] Through strategic partnerships, focused investments, community engagement, diverse educational strategies and targeted programs that help our customers in greatest need, we'll ensure all our communities and customer households are partners with us in creating a clean energy future today, and for future generations to come.

Growing together, embracing a low-carbon future

"The nation is still in the early stages of urban environmentalism, a complex subject with intricate and important histories. The potential for unintended consequences for people, for place, and for policy is great. […] Citizens living in urban, poor, and people-of-color communities are currently threatened by gentrification, displacement and equity loss on a scale unprecedented since the Urban Renewal movement of the 1960s."[26] These communities are often the hardest hit in economic downturns and continue to be left behind in periods of economic boom. These same communities often suffer from significant environmental disparities including poor air quality and negative carbon emission impacts.

With federal policies and programs, municipalities, urban planners and developers are able to undertake "revitalization" projects. On the surface, these projects are beneficial, beautifying a sometimes-blighted area and improving the overall environmental conditions. But from the perspective of residents and small businesses, these efforts can be seen as non-inclusive and destroying what remains of the original community and neighborhood culture. In the absence of other policies (e.g., housing-based), rising property values that can accompany these "revitalization" projects can result in original residents being priced out of the market, displacing the very community the project was designed to help.[27] Often, this displacement is unintentional; the gentrification and displacement associated with federal reuse, redevelopment and revitalization programs may not be conscious or intentional, but local implementation of these programs often has that effect.[28]

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[25] League of California Cities. *Energy Resiliency and Independence for Rural Cities Webinar.* March 2020.
[26] National Environmental Justice Advisory Council. *Unintended Impacts of Redevelopment and Revitalization Efforts in Five Environmental Justice Communities.* August 2006. EPA. Available online: https://www.epa.gov/sites/production/files/2015-02/documents/redev-revital-recomm-9-27-06.pdf. Last accessed: 12 February 2021.
[27] Coppinger, Kaitlin, Douglass Lee, Sari Radin, and Catherine Taylor. *Economic Development and Highway Right-Sizing: White Paper.* November 2018. FHWA. Available Online: https://rosap.ntl.bts.gov/view/dot/38931.
[28] National Environmental Justice Advisory Council. *Unintended Impacts of Redevelopment and Revitalization Efforts in Five Environmental Justice Communities.* August 2006. EPA. Available online: https://www.epa.gov/sites/production/files/2015-02/documents/redev-revital-recomm-9-27-06.pdf. Last accessed: 12 February 2021.

A 2018 Brookings Institute Report − Charting a Course to the Sacramento Region's Future Economic Prosperity − found that between 2006 and 2016, the Sacramento metropolitan area ranked in the bottom-third of the 100 largest metro areas in composite rankings measuring improvements in growth, prosperity and inclusion, three critical elements of regional economies that work for everybody. These long-term trends reflect the downturn during the Great Recession and suggest it was deeper and more sustained in Sacramento than in other parts of the nation, particularly in our historically under-resourced areas.

In the five years after the Great Recession, we made some progress as a region; however, 34% of Sacramento's residents still live-in households that do not earn enough to cover their basic expenses. These struggling families are disproportionately made up of people without a high-school degree as well as 47% and 42% of our region's Black and Hispanic residents, respectively.[29] Moreover, households in under-resourced communities spend a significant share of their income on energy bills. Households that earn less than $50,000 annually, on average, for a family of four, spend around 16% of their income on energy costs. For families earning over $100,000, the energy-to-income share drops to 3.5%.[30]

SMUD is at the center of both the climate crisis and the search for solutions. We need to act quickly to protect and provide for all customers, especially those most impacted and least represented. SMUD is already leading the way. Our Sustainable Communities partnership and low-income customer strategies collectively meet the unique needs of our customers where they are by acknowledging the intersectionality between the need for a zero carbon future and the need for economic equity, with the goal of creating a high-quality of life for all of our customers. . We work collaboratively with community organizations to deliver concrete practices such as delivering electric car sharing programs to under-resourced communities and increase portions of zero or low carbon affordable housing.

Low-income programs, helping our neighbors

Simply stated, the objective of our low-income strategy is to help our customers most in need by providing them individualized solutions at the household-level that provide a feeling of control and a reduction to their energy burden. Our low-income strategy focuses on the distinct individual needs of our customer households by providing rate assistance and dwelling assistance programs for those customers in greatest need, as qualified based on income requirements (up to 200% of the Federal Poverty Level).

Although SMUD has been offering low-income weatherization for many years, our holistic low-income strategy launched in 2016, targeting households with high energy burdens to provide education and energy efficiency upgrades. These upgrades provide our customers greatest in need a feeling of control, reduces their energy burden and creates bill savings. We provided solar as part of an energy saver bundle in partnership Grid Alternatives where we targeted

[29] Parilla, Joseph, Sifan Liu, and Marek Gootman. *Charting a Course to the Sacramento Region's Future Economic Prosperity*. April 2018. Brookings Institute. https://www.brookings.edu/wp-content/uploads/2018/04/sacramentoregioneconomicprosperity_fullreport.pdf. Last accessed: 3 February 2021.
[30] https://www.politico.com/news/agenda/2021/02/01/you-want-environmental-justice-look-to-energy-efficiency-463839.

households as described by Senate Bill 535.[31] Additionally, our energy assistance program rate was changed in 2018 to provide those greatest in need the appropriate discount and dwelling solutions to address energy burden disparities.

We also offer low-income energy retrofits. These are complete energy retrofits for qualifying low-income households through four offerings: Weatherization, Energy Saver Deep Retrofit, Energy Saver House Bundle and Energy Saver Apartment Bundle. Through these programs, we've provided education and energy efficiency improvements to more than 24,000 low-income households since 2016, resulting in a reduction in energy burden and savings on customer bills. Since 2019 as part of our retrofits, we've replaced over 800 natural gas appliances with efficient electric appliances, saving on customers' bills, saving carbon and reducing air pollution from natural gas combustion. This effort is ongoing and will ensure our vulnerable populations are not left behind as we work toward our overall carbon reduction goals.

Looking to the future, our approach is three pronged:

1. **Increase** program offerings that align with participants' lifestyles to address energy usage and provide them greater feeling of control over their energy usage.
2. **Improve** sustainability and integrity of the low-income program by helping those most in need
3. **Strengthen** the safety net for Sacramento's under-resourced populations through strategic partnerships to positively impact customers in a more holistic manner.

Between 2020 and 2022, we have extensive plans to continue and increase our investment our low-income communities.

- We're proactively providing carbon reduction measures (via electrification) to ensure low-income customers aren't the last ones to adopt electrification.
- We're leveraging community partners like Habitat for Humanity to expand our reach, working to bring electrification, rooftop solar and the opportunity for EV home charging to all our customer households.
- We're refining our analytic approaches to ensure we're recruiting those most in need, and those with the highest energy burdens to prevent anyone from falling through the cracks.
- We're linking our efforts with local healthcare providers, improving access to carbon reduction measures that may impact medical-related outcomes and using our MED Rate to provide discounts to those that have a qualifying medical device.

We're always looking for creative ways to partner with our communities. One example is our partnership with Sacramento Housing & Redevelopment Agency to provide energy efficient refrigerators in their affordable housing complexes. Mutual Housing is another great example where we provided capital funding for energy efficiency upgrades before the affordable housing upgrades were completed. When planning for the Mutual Housing partnership, we solicited their

[31] SB 535 requires the state to direct at least 25% of state cap-and-trade revenues to go to projects that benefit disadvantaged communities. It provides a very specific definition of disadvantaged communities as the top 25% scoring areas from CalEnviroScreen along with other areas with high amounts of pollution and low populations. For more information on this definition, see CalEPA's report on Designation of Disadvantaged Communities.

feedback on a list of properties that they wanted to upgrade. We developed load shapes for each of the buildings and identified those that were most likely to benefit from the upgrades. Based on this information, we prioritized and selected complexes that could be upgraded and deliver more of an impact, leveraging SMUD and Mutual Housing funds. This capital allowed Mutual Housing to identify matching funds and justify some significant upgrades to 168 units' HVACs and 91 units with energy star refrigerators. After the upgrades were completed at one multi-family housing unit, the average energy usage fell by 39% during peak hours.

Sustainable communities, strengthening our neighborhoods, together

The Brookings report was the catalyst for SMUD's Sustainable Communities program, launched in 2018, and builds on the significant work we've done to support under-resources communities for decades. We're bringing attention to our historically under-resourced neighborhoods through our Sustainable Communities program, which aligns our partnerships, goals and investments around supporting healthy, vibrant and economically sustainable neighborhoods for all customers. In 2020, we launched an interactive Sustainable Communities Resource Priorities Map that identifies out which areas in our region need our help the most. The map helps analyze current data to indicate the local areas most likely to be underserved or in distress due to lack of community development, income, housing, employment opportunities, transportation and more. This information helps align our region's investments toward the goal of creating and supporting healthy, vibrant and economically sustainable neighborhoods.[32]

By partnering with policy makers, transit leaders, technology companies, health care providers and other community-based organizations, SMUD can maximize its impact and collaboration with community members to solve real problems for real people. We're leveraging our existing efforts, employees' skills and expertise and partnerships across the community to maximize our collective impact to help those most in need.

To promote workforce and equitable economic and community development, SMUD has invested in programs targeting economic development, community/environmental health and neighborhood outreach activities in vulnerable and under-resourced communities throughout the Sacramento region. To date, SMUD has invested over $5 million into this effort, leveraging partnerships to increase impact in these areas of need. We have several workforce development programs and work with a variety of partners to support the development of solar and renewable energy across the greater Sacramento region.
Our Sustainable Communities program works strategically to establish long-term partnerships with community-based organizations and businesses, working together on projects helping our

[32] Learn more at smud.org/SustainableCommunities.

under-resourced communities, with the goal of increasing inclusion and closing the disparity gap in the Sacramento region. These partnerships create trusted relationships and serve as a foundation for the community outreach, engagement, collaboration and education needed to build livable, diverse and resilient communities. We've invested more than $5 million in 130 local organizations to work on projects aligned with our Sustainable Communities program, many of which are advancing historically under-resourced populations closer toward our zero carbon future goal.

One such partnership is with Habitat for Humanity, Greater Sacramento, which we support through Sustainable Communities and our low-income programs. Together, we've brought solar and new energy solutions to hundreds of new and existing homes for low-income families, which will continue over the next few years. By adding EV plug-ins at most Habitat homes, SMUD is supporting the electric transportation revolution. Through these partnerships, we can help all our communities – from rural to suburban to urban – to be part of a zero carbon future.

One of the most promising aspects of a zero carbon future is the new jobs and careers that will be generated by building electrification, advanced storage strategies, energy management and increased EV usage and infrastructure needs. Healthy communities rely on a strong workforce where residents have opportunities to thrive economically and our 2030 Zero Carbon Plan will help create jobs and ensure that all communities are included in this economic development strategy. SMUD's Sustainable Communities program has developed an inclusive Regional Workforce Development strategy that ensures that all communities have access to job training, internships and pathways to careers needed to power our zero carbon future. We're working with partners like the Greater Sacramento Urban League, La Familia and Asian Resource Inc., to understand the challenges communities face in pursuing zero carbon careers and remove such barriers with programs and organizations like the California Mobility Center training program, the Energy Careers Pathways Program with Baker Energy and Grid Alternatives and our online STEM careers curriculum.

Looking to the future, we'll identify new skills needed and partner with community organizations to develop upskill or entry level training programs to support new zero carbon technologies. We'll develop customized strategies to attract and retain residents from under-resourced communities to these stable, economically mobile careers.

Embracing zero carbon, together

The 2018 Brookings Institute Report, mentioned above, identified significant gaps in our community, prompting us to acknowledge that we have a duty to do more to intentionally address the disparities of the under-resourced communities we serve. By investing in under-resourced neighborhoods and working with community partners, SMUD is part of a larger regional mission to deliver energy, health, housing, transportation, education, workforce and economic development solutions to support sustainable communities.

As we implement our plan, we will be nimble and flexible while working to support customized solutions for all customers and communities. Our processes will be rooted in genuine engagement with a broad and diverse set of stakeholders, particularly those suffering from

inequality and the impacts of climate change. We will adopt policies actively designed with people, fairness and justice at the center of decision-making. Finally, we will work to ensure clear mechanisms exist – or can be put in place – for measuring, monitoring and evaluating the direct impacts of our 2030 Zero Carbon Plan.

We have a history of partnering with our community, but with our 2030 Zero Carbon Plan, it's time to build on what we we're already doing – leading by example and engaging members of our community–and together we can create and work toward a shared vision for the future. We don't want to just "bring others along" with us, rather we want to empower our communities to work with us and take the lead in developing place-based strategies –to make sure that Sacramento communities are livable, resilient and ready to embrace a low carbon future. This can only be achieved by recognizing that our communities are diverse, and we need to develop strategies that respect and build upon our local, unique qualities and listen to the input of our communities.

A history of planning for the future

SMUD's long history of affordable rates, reliable power and environmental leadership stems from innovation and our communities' desire to be cleaner and greener than the rest of California. When we plan for the future, SMUD must balance environmental considerations, customer rates and safety and reliability impacts. Like other utilities, we rely on an integrated resource planning (IRP) process to develop our long-term strategic environmental objectives to create resources and programs.

Charting our future

Our low-carbon future is not limited to electricity supply, it also includes decarbonizing homes, businesses and transportation. This will take a coordinated effort, including our local partners, to decarbonize the region. To achieve our ambitious goals, we must work on the leading edge as we conduct research, deploy new technologies and develop innovative programs to consistently reduce GHGs in Sacramento.

As we look ahead, we must consider the role that solar, wind and other renewables will play in decarbonizing our power grid. These resources provide opportunities and some risks. We embrace these opportunities and will develop new strategies to mitigate the risks and achieve our goals. Some possible strategies include, storing energy, developing renewable fuels and aggregating customer devices to mimic a power plant.

In preparation for new DERs, we're working to develop a Distributed Energy Resource Management System (DERMS) to enable us to aggregate distributed resources like solar and storage to provide grid services and enhance shared benefits of these resources with all customers.

We're rolling out several energy storage programs for residential customers aimed at maximizing shared value between system owners and the broader SMUD customer base. Programs like our Smart Energy Optimizer program that launched in 2019 offer up-front and ongoing incentives in exchange for access to a portion of a customer's battery to provide these grid services. Our commercial customers will see new shared investment programs like StorageShares that give participating commercial customers financial benefits similar to onsite storage, but the storage will be located in areas where our transmission and distribution systems are nearly at maximum capacity. This could displace investments we might otherwise need to make to increase grid capacity, and can provide additional value by participating in energy markets whenever transmission and distribution support is not needed.

We're expanding and further aligning our SolarShares and Greenergy programs to reduce carbon emissions in Sacramento in the most cost-effective way. These programs have the potential to scale quickly without financially impacting other SMUD customers. We're also developing programs to increase access to solar and renewable energy at a reasonable cost for all residential customers.

As we look to the future, we're considering the successor to our net energy metering (NEM) rate for customers with rooftop solar, which is now our largest annual customer program expense, exceeding the combined cost of our entire portfolio of energy efficiency programs. In 2020, we completed a Value of Solar and Solar + Storage Study as a precursor to proposing more equitable rates that balance our collective desire to reduce carbon with the imperative that we do so in the most cost-effective manner possible for all customers.

2040 Clean Energy Plan

In 2018, the Board adopted our latest IRP, also referred to as the 2040 Clean Energy Plan, which put SMUD on an aggressive path to decarbonizing the greater Sacramento region with the ultimate goal of achieving net-zero GHG emissions electricity by 2040. As part of this plan, our GHG emissions strategy embraced supply and demand-side solutions and accelerated GHG reduction targets, including net-zero by 2040.[33]

This 2030 Zero Carbon Plan builds on the strategies in our 2040 Clean Energy Plan, our commitment to community-wide decarbonization and continued investment in electrification, energy efficiency and DERs. The 2040 Clean Energy Plan was, and still is, an aggressive and diverse investment strategy to minimize local GHG emissions while keeping our system reliable and our rates affordable.

Electrification plan

Our 2040 Clean Energy Plan includes goals for electrifying buildings and transportation, and was one of the most ambitious and holistic carbon reduction pathways considered at the time. These goals called for electrifying approximately 80% of natural gas end uses and 70% of transportation end uses by 2040. For buildings, with these goals, SMUD would achieve carbon reductions by 2030 that were three times more than that of an equivalent plan focused only on energy efficiency.

Despite the many benefits of electrification – cleaner, cheaper, healthier, safer, better performing appliances – customer awareness remains relatively low. As we look to our 2030 Zero Carbon Plan, boosting awareness is critical to achieving both our IRP and zero carbon goals. To this end, SMUD will bolster communications about electrification to our customers through a comprehensive outreach and education program over the next several years that will last for decades. This includes introducing more online tools, expanding experiential "behind the wheel" events and launching more sophisticated direct, digital and broadcast marketing campaigns.

[33] https://www.smud.org/-/media/Documents/Corporate/Environmental-Leadership/Integrated-Resource-Plan.ashx

Energy system overview

SMUD delivers clean, reliable power to our customers thanks to our renewable energy portfolio, GHG-free hydro resources, efficient power plants and innovative customer-focused programs.

Our power is delivered via an integrated electric system that SMUD owns and operates, which includes generation, transmission and distribution facilities. We supply energy to our bulk power substations through a 230 kilovolt (kV) and 115 kV transmission system. This system transmits power from our generation plants and interconnects with Pacific Gas & Electric and the Western Area Power Administration (WAPA). Power is distributed throughout Sacramento and the entire SMUD territory with overhead and underground sub-transmission and distribution lines.

The following is a snapshot of our current energy delivery system, which is the starting point for our zero carbon journey. Understanding this system provides context to the challenges, complexities and opportunities in achieving a zero carbon future.

Participating in external markets: Imports and exports

Imports are the energy that we purchase from other entities to help serve our customer demand. Exports are the energy that we sell to other utilities or system operators. We get power from various sources within the SMUD territory and the rest is imported from elsewhere in California or the Western U.S. Currently, we have a scheduling import limit at a given time of over 1,300 MW with the California Independent System Operator (CAISO) and own and have access to over 500 MW of transmission rights from California-Oregon border on the California-Oregon Transmission Project. We receive additional transmission services from the WAPA, providing access to in-state hydro resources and additional energy from the California-Oregon border.

SMUD is one of several members of the Balancing Authority of Northern California (BANC). As the balancing authority, BANC is responsible for matching of generation to load and coordinating system operations with other balancing authorities. BANC is a partnership between public and government entities and is an alternative platform to other balancing authorities like the CAISO. BANC provides reliable grid operation consistent with standards developed and enforced by the FERC, the North American Electric Reliability Corporation (NERC) and Western Electricity Coordinating Council.

Being part of BANC benefits our customers. For instance, during the summer of 2020, an extreme heat wave encompassed much of the West. This unprecedented heat storm resulted in larger than average energy use across the Western Interconnection, and power generally available to be imported into California was suddenly needed in other states. The result was an energy supply shortage that left many Californians subject to rolling blackouts. Our customers did not experience these outages. Through proactive contracting for energy supply and prudent risk management, SMUD was able to avoid rotating outages for our customers and even helped our neighboring utilities by providing them with some of our energy supply.

Our commitment to reliable service

Reliability is foundational to our business and a robust reliability framework that has guided our current system architecture. Reliability is the ability of the power system to provide the services our customers expect when they want and need them, even under difficult circumstances. Our Board sets reliability metrics to measure our success under Strategic Direction 4 – Reliability.[34]

For more than 70 years, SMUD's been delivering reliable energy to our customers, and we'll continue maintaining all aspects of reliability while transitioning to zero carbon emissions.

Reliable operation means we operate the elements of the power system within thermal, voltage and stability limits. Operating within these limits allows our system to continue to operate when an unexpected event occurs, such as a sudden unanticipated loss of a generator or transmission line. In short, if we were not operating reliably, equipment could be damaged, or system instability, uncontrolled separation or cascading failures could result in a system-wide blackout. Reliably operating our power system needs the following three critical components:

Resource adequacy

Resource adequacy is a condition in which we have acquired adequate resources to satisfy our forecasted energy needs reliably. SMUD uses the same metrics as most other California utilities, which are defined by the California Public Utilities Commission (CPUC) – that is, we maintain enough resource capacity to cover the monthly peak load forecast plus an extra 15% margin. This extra 15% resource capacity is referred to as Planning Reserve Margin (PRM). With the recent system challenges, the CPUC is evaluating possible increases the PRM.

System adequacy

For system adequacy, we ensure we're capable of serving our load under extreme weather conditions and identify our system's energy import limits. Our load serving capability describes the maximum load that our transmission system can serve reliably. Our import limit is the maximum simultaneous energy that we can import from external entities without exceeding any operating limits. Together, these studies make sure that we have sufficient transmission and distribution infrastructure to reliably deliver energy to our customers under even extreme circumstances.

Reliability adequacy

Reliability adequacy means that we have adequate grid reliability services to keep the electricity flowing. These services are sometimes referred to as ancillary services and include additional generation capacity and generator capabilities that we need to respond to sudden changes in system conditions and system disturbances, frequency response, generation and load balancing and voltage control.

[34] https://www.smud.org/-/media/Documents/Corporate/About-Us/Directives/Strategic-Direction/SD-4.ashx Last accessed 2-9-2021.

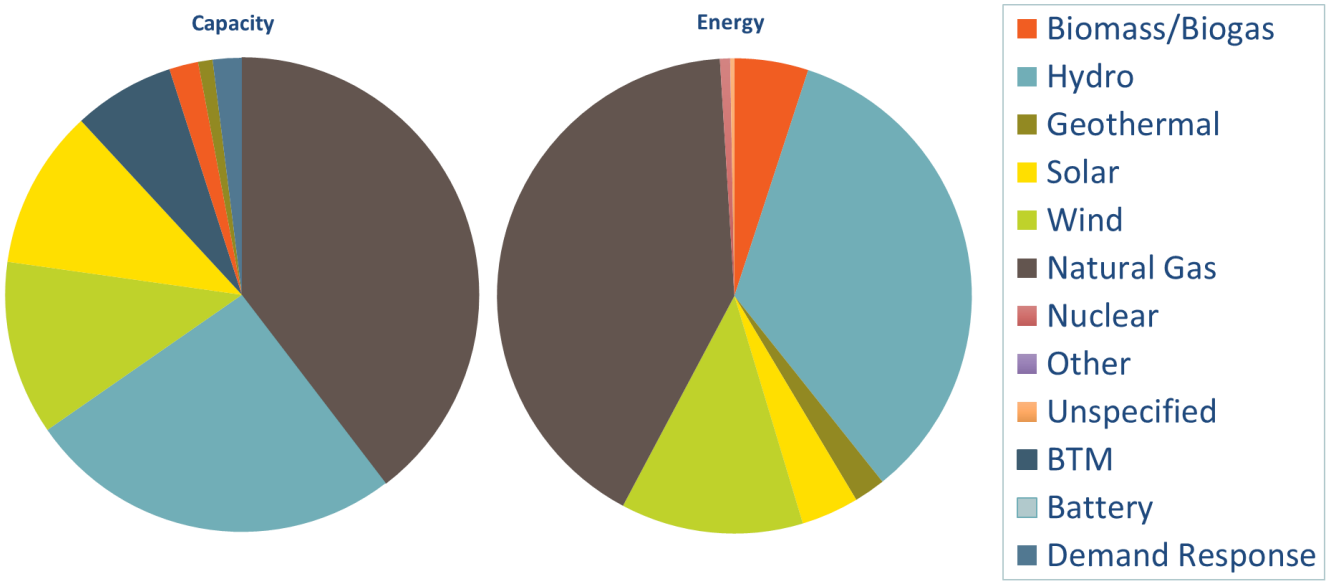
North America Electric Reliability Corporation (NERC) Reliability Standards

The Energy Policy Act, passed by U.S. Congress in 2005, authorized FERC to oversee the development and enforcement of the Reliability Standards with the purpose of improving reliability of the U.S. power system. In 2006, the NERC was approved by FERC to develop the Reliability Standards. In 2007, FERC approved the first 83 Reliability Standards developed by NERC and began to enforce them. To date, there are approximately 110 mandatory and enforceable NERC Reliability Standards.

Power supply

SMUD is a steward for our local community and economy. Unlike investor-owned utilities, we aren't driven by profits or investors. We're driven by our desire to offer our customers the most cost-effective energy with the lowest impact on our environment. This is evident in how we operate our thermal power plants and maximize zero emission procurement from hydro and renewables. For a full list of our current operating power plants, see Appendix A: Existing SMUD resources.

Figure 3. Capacity and energy of resources in the SMUD portfolio (current data)[35]



Thermal gas power plants

Today, gas power plants are an important part of the reliable foundation of SMUD's power supply. Our 1,103 MW of thermal generation are vital to maintaining our electric system reliability and to serving our growing system load. Integral to SMUD's long-range resource plan, Cosumnes Power Plant provides customers with a stable, cost-effective power supply. It can generate enough electricity to power more than 450,000 single-family homes per year. It's the

[35] Capacity is the maximum output an electrical generator can produce (i.e., MW), while energy is the amount of electricity a generator produces over a specific period of time (i.e., one hour – MWh).

most efficient combined cycle power plant in California[36] and, on average, 5% more efficient than similar power plants.[37] This also makes it one of the most inexpensive plants to operate, and the cleanest – less fuel burned per unit energy also means less GHGs emitted per unit energy. We maximize the economic operation of this power plant, which means that when solar energy is setting market prices, our Cosumnes Power Plant is operating at a minimum. When other less efficient resources are bidding into the market, we're displacing their emissions. Even with its notable efficiency, nearly two-thirds of our GHGs come from our Cosumnes Power Plant.

Our least economical resources are our peaking power plant units. We run them less often, which results in these units having a much smaller GHG footprint. As the name implies, our peaking units run in the few hours of the year when renewables, hydro, combined cycle and market power cannot meet our expected load without risking reliability. These plants generally run for a few hours at a time. Although these plants are often not running, being operational and grid connected allows them to provide needed ancillary services, resource adequacy and other energy and capacity reserves.[38]

Cogeneration is a part of SMUD's reliable power formula. The Carson, Procter and Campbell cogeneration plants add over 400 MW to our resource portfolio, brought one new manufacturing facility to the region and have reduced operating costs for the three-existing thermal "hosts." Natural gas-fired cogeneration plants produce electricity and steam. The electricity is fed into SMUD's power grid while steam is fed into a factory for manufacturing use, often replacing steam produced by a less-efficient boiler plant at the facility. The low-cost steam helps keep manufacturing expenses low, providing an incentive for firms to keep their plants in Sacramento, and air quality improves relative to non-cogeneration factory operation due to use of advanced air pollution abatement technologies.

Hydroelectric power

SMUD owns and operates over 688 MW of large and small hydroelectric resources as part of the UARP. The UARP consists of 11 reservoirs and nine powerhouses. In a normal water year, the UARP provides roughly 16% of our electricity – enough to power about 180,000 homes per year. The UARP is able to provide operational flexibility, system reliability and economical power. The value of the UARP also extends beyond the boundaries of SMUD's service territory by helping to maintain the integrity of the Northern California electric transmission system.

We also contract for additional hydro electricity from the U.S. government through a long-term contract with the WAPA for 336 MW of small and large hydro capacity. While this generation is not as flexible as our UARP, it does provide consistent GHG-free electricity.

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[36] Analysis of publicly available data from the CEC-1304 Power Plant Owner Reporting Database. https://ww2.energy.ca.gov/almanac/electricity_data/web_qfer/Heat_Rates_cms.php. Last accessed 23 March 2021.
[37] Nyberg, Michael. 2020. Thermal Efficiency of Natural Gas-Fired Generation in California: 2019 Update. California Energy Commission. Publication Number: CEC-200-2020-03. Average heat rate 7.3, CPP, 6.9.
[38] Capacity is the maximum output an electrical generator can produce (i.e., MW), while energy is the amount of electricity a generator produces over a specific period of time (i.e., MWh). Generators typically do not produce their full capacity 100% of the time.

Renewable resources

Our existing renewable energy portfolio includes projects we own as well as contracted resources. Currently, we have a good balance between baseload and intermittent renewables. By the end of 2021, we'll have 285 MW of local solar and 160 MW of regional solar in operation. SMUD owns and operates a significant amount of wind generation in Solano County near Rio Vista. Energy from these wind resources is delivered into the CAISO and occasionally wheeled to SMUD. For a detailed list of our renewable portfolio, see Appendix A: Existing SMUD resources.

Load forecast

Our energy delivery system relies on internally developed forecasts of future electricity sales and demand. We don't rely on external forecasts, such as the CEC's electric demand forecast. Internally, we have a better understanding of our customer base and long-term growth potential. Use of internal forecasts also allows us to maintain consistency across the various planning and operational departments at SMUD.

Our demand model is based on expected (or normal) weather conditions, also known as a 1-in-2 load forecast. It includes economic impacts to the region and changes in customer end uses because of building code and technology changes. The forecast includes system energy, system peak, customer accounts and energy sales for SMUD's service territory. In the long term, our forecasts include affects from our outreach and other customer programs, electrification of buildings and transportation, customer-owned DERs (such as solar and energy storage) and energy efficiency improvements, all of which will change our energy demand.

Table 2 and Table 3 provide the annual energy and peak load forecast used in this Plan.

Table 2: SMUD's 10-year planning demand forecast (GWh)[39]

Year	Electric Demand Forecast	Energy Efficiency	Electric Vehicles	Building Electrification	Rooftop Solar	Customer Battery	Managed Electricity Demand[40]
2021	11,123	-94	16	7	-479	0.2	10,573
2022	11,268	-159	34	18	-524	0.4	10,637
2023	11,309	-215	61	33	-568	0.7	10,621
2024	11,410	-274	96	53	-610	1.0	10,676
2025	11,417	-334	158	80	-649	1.4	10,673
2026	11,472	-391	243	118	-688	1.9	10,756
2027	11,538	-451	355	169	-725	2.4	10,888
2028	11,643	-514	500	232	-762	2.6	11,102
2029	11,700	-556	676	315	-795	2.9	11,343
2030	11,747	-608	883	405	-828	3.0	11,602

Table 3: SMUD's 10-year planning demand forecast of peak load (MW)[41]

Year	Peak Demand Forecast	Energy Efficiency	Electric Vehicles	Building Electrification	Rooftop Solar	Customer Battery	Managed Peak Demand[42]
2021	3,036	-15	0.9	0.4	-149	-0.7	2,873
2022	3,068	-22	1.9	0.9	-165	-1.4	2,882
2023	3,075	-30	3.6	1.6	-179	-2.3	2,869
2024	3,100	-44	5.8	2.6	-192	-3.4	2,869
2025	3,107	-54	11.0	4.0	-200	-4.5	2,863
2026	3,114	-62	18.0	6.0	-198	-5.9	2,872
2027	3,140	-71	26.5	8.6	-226	-7.6	2,870
2028	3,151	-69	37.4	11.9	-241	-8.4	2,882
2029	3,173	-75	50.6	16.2	-251	-9.1	2,905
2030	3,201	-98	66.0	21.0	-262	-9.3	2,919

[39] The average household in Sacramento uses 9-megawatt hour (MWh) per year. 1,000 MWh = 1 gigawatt hour (GWh).
[40] Managed electricity demand is the total of the electricity demand forecast and contributions from new energy efficiency, EVs, building electrification, rooftop solar and customer battery.
[41] The average peak household load in Sacramento is 4.8 kilowatt (kW). 1,000 kW = 1 megawatt (MW).
[42] Managed peak demand is the total of the peak demand forecast and contributions from new energy efficiency, EVs, building electrification, rooftop solar and customer battery.

Within Sacramento, our electricity demand is expected to grow slowly over the next 10 years. This is due to expected local economic conditions, energy efficiency requirements for new homes, business activity in the region, SMUD's energy efficiency programs and the installation of customer-sited solar power and battery storage. While the region is building new homes, they are much more energy efficient than older homes, plus due to the zero net energy requirement, they are required to have rooftop solar so the net impact to load is smaller than in the past. The expected increase in the market penetration of EVs and an increased focus on building electrification are expected to increase electricity demand and offset the impact of otherwise slow load growth.

Long-term climate change impacts are not directly factored into this long-term forecast, but a climate trend is included to reflect changes in high and low temperatures, which increases energy use in the summer and decreases demand in the winter. Additional or accelerated climate changes could further increase long-term demand for electricity and impact daily and seasonal demand patterns. Extreme heat and storm events, which are projected to become more frequent, add additional uncertainty.

Distributed energy resources (DER)

DERs are energy solutions where customers implement technology that change how they use energy. DERs can include, among many others, rooftop solar, energy efficiency improvements, demand response and batteries. Energy efficiency, load flexibility and electrification are essential for our long-term mission to use energy more effectively and reduce GHG emissions. The importance of these resources is reflected in our existing programs as well as plans to expand these programs. Our demand-side programs help our customers manage energy use or generate their own energy through incentives, rate design and communication. We're also working to increase the electrification of transportation and buildings in our service territory, which is essential to achieving air quality and GHG reduction objectives in our community.

Energy storage

In 2016, SMUD adopted a DER strategy that included recommendations on battery storage. As part of that strategy, SMUD evaluated the value of energy storage dispatch under different control schemes as well as expected customer adoption of energy storage to gain a better understanding of the implications of the technology on our system. This strategy also calls for developing behind-the-meter business models and corresponding rate plans that can enhance the shared value of distributed energy storage between customer participants, the rest of the grid and non-participating customers.

In September 2017, the SMUD Board adopted a target of 9 MW of energy storage procurement by December 31, 2020, which we achieved. This target was largely met by residential and commercial energy storage pilots and a utility scale battery procurement coupled with a commercial energy StorageShares program.

We expect solar adoption will continue to grow in our service territory because of continued cost declines and regulatory mandates, such as Title 24, which requires rooftop solar for new buildings permitted under the 2019 Title 24 building standards. We also expect an increasing portion of these solar installations to include battery storage as battery costs decline. Through 2020, our customers have installed a total of over 260 MW of behind-the-meter solar.

Long-term success of energy storage and grid modernization in SMUD's service territory will continue to rely on external factors such as battery cost reduction and technology innovation from 3rd party businesses, but SMUD also recognizes that to maximize the potential of energy storage, proactive engagement from the utility, in advance of financial viability, is needed. We also need more information and field testing to evaluate the impact of extreme heat conditions on battery performance in our region. With SMUD being a member of BANC, we have a greater level of independence with grid operations, which uniquely positions SMUD to develop programs, incentives and partnerships in our service territory that will enable access to a broader set of benefits. Access to these system level economic or reliability services will enable further 3rd party innovation, allow SMUD to collaborate with innovators to align grid needs with technology solutions and help us provide products that create value for our customers.[43]

EVs and load flexibility

EVs will likely be one of the most flexible resources of our electrification efforts. In addition to EVs, there is also a proliferation of smaller devices being adopted today, including batteries, smart thermostats, water heaters and home management systems. The number and types of these devices is growing independently of utility support and represents a significant load flexibility opportunity for SMUD to partner with customers to improve overall system utilization and minimize costs associated with new infrastructure.

Through passive rate instruments like SMUD's nighttime plug-in EV discount, customers have been shown to be effective at changing seasonal system-wide load shapes. These load shape modifications could also be achieved with actively managed charging technologies. However, these technologies have only been piloted and demonstrated at small scale to date, largely due to relatively low EV adoption and a lack of standardized hardware and software interfaces for integrating between grid management systems and the vehicle charger. In an attempt to bring some standardization to the market, aggregator business models are emerging to pool different vehicles and chargers for utility access, entering custom integration agreements with many 3rd party systems working towards a single interface for utility integration. The aggregation model may be inefficient for the long-term, but is a near-term necessity as standardized programs, business models and communications pathways are slowly being developed and advocated for by utilities.

Demand response

Our system is developed to operate under the most stringent and difficult operating conditions. In practice, this means we strive to meet our customers' needs during all hours of the year. There are times when paying or otherwise signaling our customers to reduce usage is less expensive than turning on an additional power plant. Demand response initiatives are one kind of load flexibility program at SMUD and are primarily used for contributing toward our capacity reserves and reserve margin needs.

> **Peak Corps Program** is a residential air conditioning load management program that provides a summertime resource for emergency situations if the need arises. Currently,

[43] For a more detailed discussion of SMUD's energy storage goals, please see https://www.energy.ca.gov/sites/default/files/2019-05/AB_2514_Oct_1_2017_Report_UPDATED_91517.pdf. Last accessed: 11 December 2020.

the program has the capacity to reduce demand by 59 MW. The technology supporting this program is reaching the end of its technical life and the program is expected to end before 2030. A new NextGeneration Air Conditioning Load Management program is being planned to replace Peak Corp with updated technology for a launch as early as 2023.

PowerDirect Program is an automated demand response program for commercial customers available for use between June and September from 2 to 6 p.m. It's an operational resource for reliability and economic purposes. The program is planned to grow over the next few years reaching 30 MW by 2027 and is expected to maintain that level going forward.

Individual commercial customer agreements are comprised of individual curtailment agreements with some of our largest industrial customers that allow us to curtail load for reliability or economic purposes with the potential for up to 6.5 MW within 10 minutes' notice. SMUD can call on these customers throughout the year.

Our 2015 Demand Response Potential Study looked out over a 10-year period and estimated the capacity expected to be available during the peak hour of system demand as ranging from 189 MW to 471 MW across four scenarios considered, with the base scenario predicting 368 MW. This equates to 11.3% of SMUD's peak load. The load reduction potential would come from three sources: programs, dispatchable pricing and non-dispatchable pricing. Variation in the peak capacity across the various scenarios can be attributed to differences in pricing enrollment policy, technology cost forecasts and the degree of marketing and incentive levels. This study was key contributor to our load flexibility strategy.

Table 4. Dispatchable load flexibility programs 2021-2030 (MW)

Year	Peak Corps	PowerDirect	Curtailment Agreements	New Planned[44]	Total
2021	58	15.2	6.5	0.0	79.7
2022	57	17.7	6.5	1.0	82.2
2023	56	20.2	6.5	11.1	93.8
2024	55	22.7	6.5	26.0	110.2
2025	54	25.5	6.5	41.7	127.4
2026	53	27.7	6.5	58.1	145.3
2027	52	30	6.5	75.9	164.4
2028	51	30	6.5	94.5	182.0
2029	50	30	6.5	115.5	202.0
2030	0	30	6.5	128.2	164.7

[44] In addition to expanding on these existing programs, our 2030 Zero Carbon Plan will also focus on new programs and strategies for flexible loads.

Over the next few years, we're planning to launch new load flexibility initiatives, which have been informed by the results of SMUD's Demand Response Potential Study. These new programs are planned to be flexible and available to respond with very short notice. This will be helpful when we're trying to balance supply and load due to increasing amounts of intermittent renewable generation on the system.

Enhanced electricity rates

SMUD encourages energy efficiency and conservation through time and temperature dependent rate structures. These rates provide signals to our customers when energy costs are at their highest, and generally coming from the most polluting sources. These rates include our residential and commercial TOD and temperature dependent rates.

The TOD rate structure encourages customers to conserve energy by rewarding them for reducing their usage during peak hours. To encourage residential EV adoption, our TOD rate offers a plug-in EV discount of $0.0150/kWh on all electricity used between the hours of midnight and 6 a.m.

We also have industrial customers on our Temperature Dependent Rate, equivalent to 15 MW of capacity. During the summer when outdoor air temperatures exceed 100°F for a certain period, we can notify customers and provide them the option of curtailment or continued service at a higher cost.

2030 Zero Carbon Plan approach and overview

SMUD's carbon reduction journey has entered a critical juncture as we look toward to the next decade and plan to achieve our aggressive goal of eliminating GHG emissions from our power supply by 2030. The remainder of this Plan provides the foundation for our next steps as we address the challenge laid before us, to:

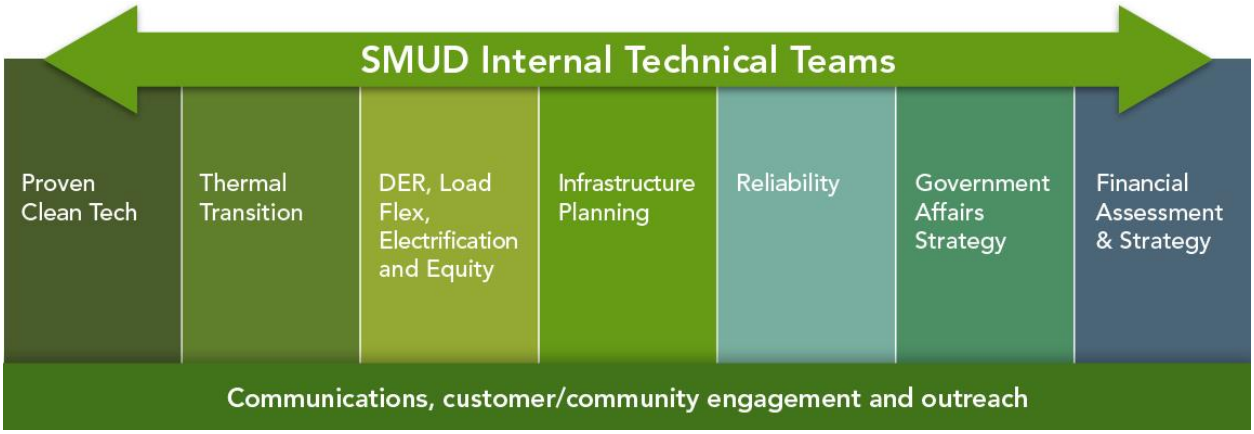
Reduce our stationary source carbon emissions to zero by 2030 while continuing to offer reliable electricity at affordable rates and maintaining our commitments to our community.

This Plan was developed in consultation with our community, experts in the utility industry and energy field and SMUD staff subject matter experts. To inform our Plan, we consulted with the engineering firms Black & Veatch, Energy + Environmental Economics (E3) and IEC Corporation. These firms conducted detailed analysis and studies on the status of proven clean technologies and the expected performance and costs of new and emerging clean technologies.

SMUD technical teams

Beginning in October 2020, eight technical teams of nearly 100 SMUD employees mobilized to investigate various methods to completely decarbonize our electricity supply. Developing a plan of this scope and magnitude is generally a process that is undertaken over years, not months. Our teams were formed quickly and worked collaboratively and creatively to develop a robust, fact-based plan to achieve zero carbon emissions by 2030. Each team had a specific focus, though constant coordination was required across all teams to develop a comprehensive and cohesive plan. Figure 4, below, shows the eight technical teams that contributed to developing the 2030 Zero Carbon Plan.

Figure 4. Technical teams contributing to 2030 Zero Carbon Plan development



Public consultation process

A key theme in the development of our 2030 Zero Carbon Plan is collaboration and public outreach. We know we cannot achieve ambitious climate goals alone and need to partner with our entire community to make sure we deliver solutions that are attractive, affordable and beneficial to our entire region, leaving no community behind.

While developing the 2030 Zero Carbon Plan, we engaged in extensive outreach to seek input from our customers, communities and other stakeholders. Our outreach process included four principal paths:

- **Three virtual presentations** to our customers and community organizations in December 2020.
- **An online survey** to collect feedback and views from our customers and community organizations on the development of the 2030 Zero Carbon Plan and their sentiments about their own climate investment plans and willingness to partner with SMUD.
- **Seven virtual stakeholder workshops** with selected groups and organizations. These workshops included participants from community organizations and nonprofits, environmental groups, the solar + storage industry and local business leaders.
- **Three industry expert panel discussions** to help our Board, SMUD staff and the public learn more about the latest technologies and ideas for decarbonizing our power supply.
- **Seven Board meetings** where members of the public had opportunities to learn about the progress of the 2030 Zero Carbon Plan and provide comments. All of SMUD's Board and Board Committee meetings are public and our customers and other members of the public will have ongoing opportunities to provide public comment on our 2030 Zero Carbon Plan and other topics.

The vast majority of people who attended our meetings expressed strong support for our 2030 Clean Energy Vision. While some expressed concerns over potential cost increases and emphasized the need for all communities and customers to be part of the solutions (including under-represented or under-resourced communities), most were enthusiastic and expressed interest in partnering with SMUD to support our goals.

In parallel with the meetings mentioned above, we developed a webpage, smud.org/ZeroCarbon, where interested participants could register for the meetings, learn more about our 2030 Zero Carbon Vision, sign up for future notifications, get answers to frequently asked questions and give SMUD input for the 2030 Zero Carbon Plan. The meeting recordings are posted on this webpage.

Figure 7. Community benefits of a zero carbon future

The interest from our customers and our communities has been outstanding. During our accelerated timeline of only about 3 months to develop the Plan, more than 500 participants provided their inputs and comments representing customers, businesses and community organizations in the region as well as national organizations. We have also received many comments and suggestions through our zero carbon webpage and our dedicated email ZeroCarbon@smud.org.

Customer and community presentations

In December 2020, we held two virtual meetings for residential customers and one meeting for community organizations. The objective was to introduce the 2030 Zero Carbon Plan and collect feedback. We sent email invitations to the meeting to a representative cross-section of our residential customers. We also invited every not-for-profit organization we are connected to in the Sacramento region, as well as subscribers to our listservs, and we announced the meetings via social media. This outreach resulted in 415 participants in the two residential customer meetings and 82 participants in the community meeting.

Online survey results and insights

Customers who participated in our customer and community meetings in December 2020 were also invited to provide their views and input through an online survey. A full summary of the survey results is posted on smud.org/ZeroCarbon. Table 5 provides a high-level summary of the survey results.

During the sessions, customers asked many questions about our energy resource mix, our investment plans and what the 2030 Zero Carbon Plan means for our communities. These questions, many of which were answered directly during the customer and community meetings, have been converted into a frequently asked questions (or FAQ) section that's available at smud.org/ZeroCarbon.

Table 5: Summary of online survey results

	The vast majority of residential and community group attendees feel that it's extremely or very important to improve air quality in the Sacramento area.
	The majority of residential and community group attendees indicated that they "loved" SMUD's Zero Carbon goal.
	The top 3 ways attendees felt SMUD should support the community were to provide: 1) Affordable electricity options 2) Reliable energy 3) Achieve zero carbon in a way that benefits all communities.
	60% of residential and 77% of community group attendees indicated that they are very willing to partner with SMUD by personally taking action to reduce Sacramento GHG.
	39% of residential customer attendees say they are very likely to purchase smart home technologies in the next 12 months. Almost one-fourth are very likely to purchase/lease EVs or rooftop solar, while slightly fewer (17%) are very likely to purchase/lease a battery.
	When asked how much they would be pay voluntarily, almost half of residential customer attendees claimed they are **willing to pay up to $10 more per month** to support the 2030 Zero Carbon plan. However, almost one-fourth were not willing to pay any more.
	Almost 6 of 10 residential customer attendees claimed they are very likely to respond to tips from SMUD to reduce their GHG emissions. 43% said they are very likely to participate in a Demand Response program and 30% to replace their gas appliances with electric.

Stakeholder meetings

We organized meetings to solicit input from a wide range of key stakeholders. Each group met twice – once at the beginning of our 2030 Zero Carbon Plan development process in mid-December 2020 and once at the end of February 2021 to learn about the results of our studies and key recommendations we intended to include in the Plan. Meetings were held targeting four stakeholder groups: solar + storage industry, environmental organizations, community organizations and business leaders.

Each meeting was scheduled for 90-120 minutes and included a brief presentation from SMUD followed by a discussion session with the participating stakeholder groups with the objective for SMUD to learn as much as possible about these groups' views on our 2030 Zero Carbon Plan. The meetings were facilitated by the Smart Electric Power Alliance (SEPA), a not-for profit organization focused on helping utilities and other energy companies decarbonize their energy supply chain and work with their communities and stakeholders to achieve those goals. As a result of these meetings, the following key themes emerged:

Support. Across all sessions and groups, strong support was expressed for SMUD's goals. All groups indicated interest in partnering with SMUD, ranging from offering to communicate our 2030 Clean Energy Vision to their respective communities to expressing interest in new customer incentives. Several stakeholders also emphasized the need to partner with technology

and solutions providers to find innovative solutions. Some stakeholders also expressed support for specific technologies, in particular support for rooftop solar, batteries and EVs.

Costs. Concerns over the costs for eliminating carbon emissions were raised by multiple stakeholders, particularly community organizations and business leaders. Community organizations also highlighted the importance of all communities getting access to clean energy options and that no communities are left behind in the process.

Outreach and education. All stakeholder groups expressed the need for education and outreach about how our 2030 Zero Carbon Plan will help address climate change. Several community organizations also offered to provide outreach on these efforts in their communities.

Repowering gas plants. Several, but not all groups, expressed support for repowering or re-purposing our gas plants to carbon free alternatives to avoid costs associated with prematurely retiring our gas-fired plants, which would result in stranded costs.

Stakeholders also provided general appreciation for the opportunity to be involved in the development of the 2030 Zero Carbon Plan and provided support for the preliminary draft that was presented at the second set of meetings in February 2021. While supportive, several stakeholder organizations and groups reiterated their continued emphasis on key issues, such as community involvement, the value of electrification, cost concerns and their willingness to partner with SMUD to help support our zero carbon goals.

Industry expert panels

With the support of SEPA, we convened leading experts from around the nation to help inform the SMUD Board and our staff of the latest technology developments, research, products and services that should be considered when aiming to be a zero carbon utility by 2030. We hosted a total of three industry expert panels over the course of three Board meetings that included 11 experts. These meetings were open to the public and some members of the public also provided comments during the process. Each panel meeting had a specific theme.

- **January 12, 2021: Vision, solutions and technology for a carbon free future.** In this panel, experts from Vibrant Clean Energy, Rocky Mountain Institute (RMI), Electric Power Research Institute and National Renewable Energy Lab provided an overview of the latest developments and research, including the future role of customer-located generation and storage and the potential of a closely coordinated and operated electric distribution grid to reduce the cost of renewable integration.
- **January 26, 2021: DERs and the edge of the grid.** Experts from Lawrence Berkeley National Lab, Sunrun, Olivine and Schneider Electric provided their views on the role of DERs in a zero carbon future. Panelists highlighted the potential for virtual power plants (VPPs) to supplement grid resources and reduce costs. The panel also emphasized the importance when power is used, suggesting that initiatives and technologies capable of changing when energy is used can contribute to a more stable and reliable grid. Panelists suggested that the aim is not perfection, but to test and improve technology to find solutions that work best for communities.
- **February 9, 2021: Grid scale solutions for a carbon free SMUD.** Experts from General Electric, Ameresco and Green Hydrogen Coalition focused on large-scale zero carbon supply options that could be available by 2030. The experts highlighted that

today, there are already many options for energy and alternative fuels. Hydrogen was identified as a fuel with the potential to provide long-duration storage options and support reliability in an otherwise mostly renewable energy powered grid, noting that we're still some time away from having a reliable supply of affordable hydrogen or other biofuels in volumes that are sufficient to fully replace SMUD's natural gas use.

SMUD Board and committee meetings

SMUD staff has provided updates to the Board and its committees at virtual meetings from December 2020 through March 2021. At these meetings, we presented the status of work performed and next steps. We also received guidance from the Board on their desired direction of our work as well as inputs from the public through public comments during the meetings. The views expressed in this forum have helped to shape the scope and the analysis of our work on this 2030 Zero Carbon Plan.

Innovation Leadership Team (ILT)

SMUD solicited innovative ideas from the public and our employees to help develop this Plan. Our ILT reviewed and prioritized ideas to into the Plan. The most promising opportunities were studied further. Information and analysis from our contractors and vendors, along with staff expertise were used to prioritize options for inclusion in the 2030 Zero Carbon Plan. Table 6 highlights key factors used to prioritize ideas. For a list of non-confidential submissions from the public, see Appendix C:

Table 6. Key factors for considering innovations

Category	Criteria
Benefits	Helps meet 2030 goal
	Fills portfolio need
	Flexible/Adaptable to changes
	Innovation prospects
	Opportunities for collaboration
Costs	Projected costs (capital, operations & maintenance, procurement)
	Certainty of cost projection
Risks	Public safety
	Siting, permitting, and environmental impact
	Political/regulatory
	Technology maturity, commercialization, scalability for deployment
	Dependency on other projects and investment climate

Carbon accounting

There are many valid methods for accounting for GHG emissions, however, they don't all measure the same thing, which makes comparison difficult. In framing our 2030 Zero Carbon Plan, it's important to recognize that a 100% renewable generation procurement target does not guarantee corresponding GHG emissions reductions.[45] At its most basic level, carbon accounting is challenging to reach consensus on the application of valid approaches. Complicating this is the fact that once electricity enters the grid, it's impossible to distinguish the source, making it difficult to estimate our emissions footprint if one generation source is indistinguishable from the next. Generally, accounting methods can be broadly grouped in terms of timescales, such as annual and hourly accounting. For this Plan, we used an hourly accounting framework.

Annual accounting methods are the basis for many GHG accounting frameworks and disclosure regulations in California.[46] In this approach, we count as ours all zero-emission energy we buy or generate, generally at a higher price or cost, and we consider the energy we sell to be from our GHG-emitting sources. This methodology is widely accepted because it appropriately attributes the extra cost of zero emission resources to the purchaser. It also acknowledges that power bought in the open market is indistinguishable from other electrons, therefore market power purchases are treated as carbon emitting resources unless the buyer can show otherwise.

The drawback of annual accounting is that, as we're seeing today, the value of renewable energy can exceed the market value. This can cause market inefficiencies and negative energy prices during high solar producing periods. One method to guarantee the most emissions reductions from renewable energy is to match power consumption with renewable generation on an hourly basis. [47] In practice, this means whenever we draw power from the grid, we need to be simultaneously injecting or buying an equal amount of renewable power. As more information becomes available and increasingly accurate, consumers can shift flexible consumption to portions of the day where grid power is cleanest, further reducing emissions. With a 100% renewable energy supply, customers can reduce the carbon footprint of the entire grid in addition to their own footprint.[48] A summary on these methods, as used by SMUD, is in Table 7.

For this Plan, we used an hourly accounting methodology. This accounting framework is more stringent than most mainstream utility and regulatory programs and, more importantly, it's also most closely aligned with our Board's direction and SMUD's 2030 Clean Energy Vision.

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[45] de Chalendar, Jacques and Sally M. Benson. *Why 100% Renewable Energy Is Not Enough.* June 2019. Joule 3, 1389-1393. Available Online: https://www.cell.com/action/showPdf?pii=S2542-4351%2819%2930214-4. Last accessed: 25 January 2021.

[46] Our 2040 Clean Energy Plan also layered on an additional accounting framework to measure programmatic successes for our energy efficiency and electrification strategy, and identified GHG reduction from electrification to include in our net-zero accounting.

[47] de Chalendar, Jacques and Sally M. Benson. Why 100% Renewable Energy Is Not Enough. June 2019. Joule 3, 1389-1393. Available Online: https://www.cell.com/action/showPdf?pii=S2542-4351%2819%2930214-4. Last accessed: 25 January 2021.

[48] Ibid.

Table 7. Accounting methodology

	Annual Accounting	Hourly Accounting
SMUD Thermal Sales – Credit for exports/sales	Emission Intensity (EI): 0.39t/MWh or linked to the average EI of operating thermals	
Undelivered Renewable Energy (Sold into the CAISO)	Energy displaces unspecified imports (on an energy basis) one-for-one, in terms of annual accounting. Renewable sales in excess of this value provide no additional GHG value.	Energy displaces unspecified imports (on an energy basis) one-for-one, in terms of hourly accounting. Renewable sales in excess of this value provide no additional GHG value.
Unspecified Imports	EI: 0.428t/MWh	EI: 0.428t/MWh
	Only applied to import in excess of renewables in the CAISO (under annual accounting)	Only applied to import in excess of renewables in the CAISO (under hourly accounting)
Specified purchases and imports	EI of the known resource. If unavailable, assume all are gas resources emitting 0.428 t/MWh. Renewable procurement should not be able to displace specified contracts.	

System modeling

The industry standard practice for planning studies is to develop and analyze several options that are capable of offering reliable electric service, subject to our policy, environmental, physical and economic limits. We conduct these studies using a series of computer simulations that model building new resources, operate the system over several years and test the system's ability to meet our needs in the most difficult circumstances. Although these models are powerful tools, they're time-consuming data-intensive processes. To assist our efforts, we hired E3 to support the modeling for this Plan.

This Plan relies upon two resource planning models developed by E3 and tailored towards analysis of electric systems at high penetrations of renewable generation to develop and analyze a range of scenarios to explore potential options for carbon reductions in the SMUD system portfolio:

- ***E3's Renewable Energy Capacity (RECAP) model*:** A loss-of-load-probability model that provides a detailed and statistically robust perspective on electric systems that rely on a combination of conventional, renewable, storage and demand-side resources.
- ***E3's Renewable Energy Solutions (RESOLVE) model***: A capacity expansion model that uses optimization techniques to identify a least-cost portfolio of resource investments to meet future reliability and clean energy objectives.

These two tools complement one another in their application, together providing a strong foundation to analyze and understand implications of long-term transitions towards low carbon and carbon free portfolios. These models are used together: first, the Plan uses RECAP to characterize potential contributions of different technologies toward system resource adequacy needs; this, in turn, serves as an input to RESOLVE, to ensure that the least-cost portfolio outcome meets reliability goals.

The following sections will address key questions and considerations for achieving zero carbon by 2030. Our goal in this report is to provide data and information to answer the following questions:

- What role can our thermal assets play in this Plan?
- How close can we come to meeting our goals using currently available proven clean technologies?
- What new and emerging technologies show promise for filling the remaining gap to zero carbon?
- What are possible scenarios for achieving these goals? How will these scenario results later inform our strategy discussion as elements of our plan become more concrete?

The 2030 Zero Carbon Plan

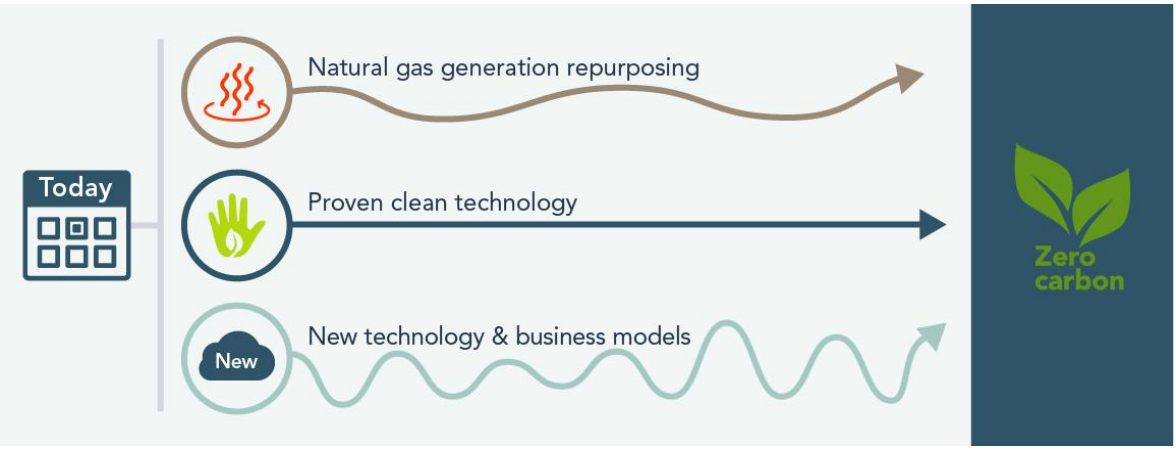
Achieving our goals requires eliminating fossil fuel GHG emissions, either by displacing natural gas use from our power plants or capturing our emissions before they reach the atmosphere. Informed by expert consultations, system modeling and supplemental studies, we've developed four strategies to guide our initial decisions on our journey toward eliminating carbon emissions from our power supply. Each group is comprised of options and decision points. Although there is not a single path to achieve our objective, this Plan has helped identify strategies that will help us along the way. We'll continually revisit our strategies and planned path along the way and course correct as needed. In the end, we'll have traveled our unique pathway to reach the end of our 2030 zero carbon journey.

SMUD's 2030 Zero Carbon Plan is a flexible pathway to eliminating carbon emissions from our power supply by 2030.

Developing our flexible pathway to zero carbon

Each strategy addresses distinct challenges. The decisions we make will take us one step closer to our goal but may also require that we reassess our next decision. Our flexible pathway to zero carbon is based on what we know today, and our pathway will evolve as new technologies are developed and we learn from our experiences. Some strategies, like proven clean technologies, are more straightforward, and we have a clear understanding of the risks and the costs. Other strategies are not as well understood and are more complex. As technology and business models evolve, we may reevaluate previous decisions and reconsider our decarbonization plan to align with new information. These strategies are interdependent, but each element of our plan will require a unique strategy complete with different resources, milestones and risks. In our flexible pathway, we'll need all three strategies to contribute, and understanding how each will ultimately contribute by 2030 will be refined over time.

Figure 5. Illustrative flexible plan



Natural gas generation repurposing: The future of our natural gas-fired thermal power plants is a critical component of our energy delivery system. These power plants are economic and reliable sources of both energy and non-energy services to the system. This strategy challenges us to consider what role these units could play in our zero carbon future. Elements considered include retirement or retooling of thermals, using alternative fuels such as renewable hydrogen, RNG, or renewable diesel or developing new technologies, such as carbon capture and long-duration storage.

Proven clean technologies: These are mature zero emission technologies available in the market today. Mature technologies, such as solar and wind, are economical resources with a known track record for performance. Coupled with storage and DERs (rooftop solar and customer-owned batteries), proven clean technologies are expected to form the foundation for our clean energy goals. This strategy also provides the replacement attributes needed to support our natural gas generation repurposing strategy. As part of this strategy, we considered technologies such as wind, solar, lithium-ion batteries, hydroelectric power, biomass and geothermal.

New technology and business models: There are exciting technology advancements that are currently evolving in the electricity market. Building on the alternative fuels studied as part of our natural gas generation repurposing strategy, we're also exploring how our customer relationship can evolve as we work to integrate additional distributed energy and demand response resources into our system. As we achieve greater success in this strategy, our strategies above would be less necessary, possibly allowing us to achieve our goals at lower costs.

Financial impacts and options: We're committed to achieving the 2030 Zero Carbon Plan while keeping rates affordable. While the plan represents significant new investments, there are several opportunities to manage the impact to customer bills. This strategy depends on regional, national and international partnerships to share the costs of common goals and fund the development and acceleration of new technologies. We'll continue to expand new revenue sources, such as Low Carbon Fuel Standard (LCFS) credits, U.S. EPA electric Renewable Identification Number and carbon credits. This strategy also focuses on leveraging use of our low-cost of capital, mechanisms such as green bonds and commodity prepays that may lower costs and improving efficiency in delivery of our core services. As technologies progress, we'll regularly review the financial impact and manage our finances to keep rate increases low and stable.

In the following sections, we'll explore the pathway options of our road map to decarbonization and discuss plausible implementation scenarios that will allow us to realize our 2030 Clean Energy Vision. Our previous studies have shown that renewables are an economical resource; however, all of our studies to date show that renewables, even with today's battery technologies, cannot get us to zero carbon reliably and affordably. To keep our commitments to our customers, we'll need to embrace the leading edge of technology, innovation, research and development, and deploy groundbreaking and sometimes counter-intuitive solutions.

Natural gas generation repurposing strategy

Natural gas generation repurposing

- Reimagine thermal fleet as peaking plants.
- Study the retirement of McClellan in 2024.
- Study the retirement Campbell in 2025.
- Retool Carson and Procter & Gamble from combined cycle operations to simple cycle peaking units.
- Eliminate carbon emissions and minimize operating hours.
- Research and scale alternatives to natural gas.

Our Plan starts with our thermal power plants, which currently depend on natural gas for generation. This section takes a detailed look at our thermal fleet and our commitments in this area. This includes our electricity delivery system, which for decades has been built and maintained around the continued operation of our natural gas power plants. In this analysis, we look to these resources not as an impediment to our 2030 goals, but as an opportunity. These thermal power plants represent existing assets that can be leveraged to achieve our goals at lower cost and greater reliability, while considering neighboring communities, particularly under-resourced areas.

To study how our existing thermal power plants can play a role in our carbon reduction journey, we scanned the industry for technologies and strategies that could decarbonize SMUD's natural gas-fired thermal fleet. For this analysis, we assessed the following topics.

- Technology options for their maturity and future potential.
- The cost and availability of alternative fuel sources.
- Location of thermal power plants to under-resourced communities.

Our goal of this analysis was to find tools that can be used to:

- Protect grid reliability during the transition to zero carbon.
- Provide a baseline reference point for comparison of replacement options.
- Minimize the adverse impacts on under-resourced and sensitive communities.

As we studied this strategy, we considered our under-resourced communities, health impacts and reliability of our system. We looked at three broad options for our thermal plants, including retirement, retooling or a hybrid approach.

Thermal power plants and our communities

When considering the future of our natural gas power plants, we must understand how these plants operate and acknowledge that these resources provide more than energy to our system. These plants are also fixtures in our communities, for better or worse, and we must consider and include our neighbors in these decisions, to fully weigh the impacts of retiring or changing the operations of these power plants.

SMUD owns and operates five power plants within Sacramento. Our power plants are fueled by using natural gas and two locations are also supplemented by RNG. Excluding McClellan, our power plants are designed as either combined cycled or cogeneration power plants. These systems allow each power plant to capture the waste heat from the combustion turbine in energy efficient ways. In general, our thermal power plants operate like this:

- A gas turbine burns fuel and air is compressed and mixed with gas that is heated to a very high temperature. The hot gas mixture exhausts through the gas turbine blades, making them spin, rotating a generator and producing electricity.
- In combined cycle and cogeneration plants, a heat recovery system captures the gas turbine exhaust waste heat that would otherwise escape through the exhaust stack and instead creates steam.
    - In a combined cycle power plant, the steam is delivered to a steam turbine that makes additional electricity. As shown in the table below, a steam turbine can generate about 50% more electricity from the turbine's captured waste heat.
    - In a cogeneration power plant, the steam is delivered to a neighboring facility for use in their production. Our steam deliveries are regulated via formal "Steam Sales Agreements" with our steam customers.

Historically, we've operated our power plants as baseload plants, designed to be online for long periods of time, operating at a consistent level, with little downtime for annual maintenance and repairs. As larger amounts of low-cost solar power have become available, we now find ourselves "cycling" the power plants from high load to minimum load and in some cases even shutting units down for extended periods. Although combine cycle power plants are very efficient when running, the internal mechanics and thermodynamics of the system restrict how quickly and how often the plant can start up and shut down. In many cases, if we expect to need the plant the next day, it's more efficient and economical to keep it running. These engineering and economic factors drive operations at the Cosumnes and Campbell power plants.

We've also operated cogeneration power plants that use the exhaust heat to produce steam for industrial customers. In particular, our steam host obligations are one of many factors we must consider as we operate the Procter & Gamble and Carson power plants. Similar to combined cycle plants, these steam turbines take time to warm up and cannot be shut down quickly. We must also consider our obligations to our steam customers when considering daily operations.

Table 8 provides an overview or the current configurations of our thermal power plants.

Table 8. SMUD thermal power plant overview today

Power Plant	Generator Type	Unit	Capacity Rating (MW)	Fuel Source
Sacramento Power Authority (SPA) at Campbell Soup	Combustion Turbine	1	116	Natural Gas
	Steam Turbine	2	62	Waste Heat
McClellan Gas Turbine	Combustion Turbine	1	72	Natural Gas
Central Valley Financing Authority (CVFA) at Carson Ice	Combustion Turbine	1	48	Natural Gas and Biogas
	Steam Turbine	2	20.6	Waste Heat
	Combustion Turbine	3	42.5	Natural Gas and Biogas
Sacramento Cogeneration Authority (SCA) at Procter & Gamble	Combustion Turbine	1	52.4	Natural Gas
	Steam Turbine	2	42.5	Waste Heat
	Combustion Turbine	3	48.3	Natural Gas
	Simple Cycle Peaking	4	50	Natural Gas
SMUD Financing Authority at the Cosumnes Power Plant (CPP)	Steam Turbine	1	207	Waste Heat
	Combustion Turbine	2	207	Natural Gas and Biogas
	Combustion Turbine	3	207	Natural Gas and Biogas

Reliability considerations

As noted earlier, reliability services are needed to maintain a reliable grid. Some of these services can be provided by proven clean technologies, like batteries or hydro, but during expected compounded weather events such as multiple days of adverse conditions like low-wind, cloudy days, heavy fog, heavy smoke and long periods of drought, our operational experience has shown that renewables struggle to meet our immediate needs consistently and reliably. As part of developing this Plan and during the next steps to implement it, we'll keep reliability at the forefront of our decision-making. The following operational characteristics are currently provided by our thermals and must also be provided in our 2030 Zero Carbon Plan.

- **Fast and flexible dispatchability:** Dispatched by Automatic Generation Control every 4-seconds over a wide output range.
- **Sustained operating reserves:** Operating reserves are required to be fully deployable in 10 minutes and can sustain for 60 minutes.
- **Quick frequency response following a disturbance:** Respond to system frequency deviation within 10 seconds and sustained for at least a few minutes.
- **Dynamic voltage control:** Dynamically adjust reactive power[49] based on system voltage swings.

[49] Reactive power isn't used for mechanical work and is relationship between the phases of AC current and voltage. The more out-of-phase current and voltage are the less efficiently power is being transmitted.

- **Inertia:** Physical resistance to frequency changes in the first few seconds following a system disturbance before generator frequency response kicks in. This resistance to change (typically from large rotating generators) gives automated control devices needed time to respond.
- **System oscillation damping:** Stabilize generator oscillation quickly within 10- to 20-seconds by providing additional damping through generator control.
- **Black-start capability:** Capability of a generator to start up without support from external power sources, which is needed in the event of a system blackout to energize other equipment and restore the system.

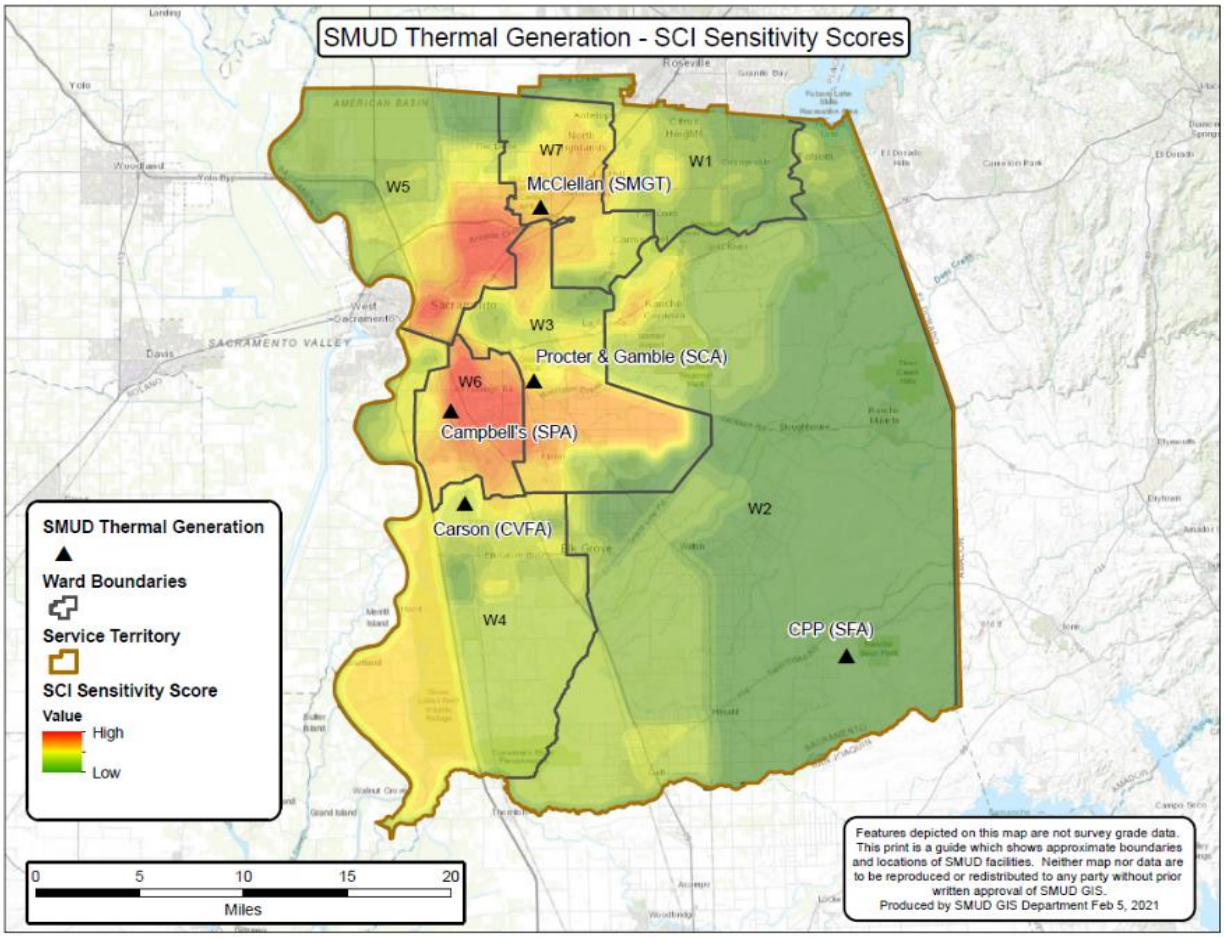
Thermal power plants have been integrated into our grid for decades and our electrical system has been built around them. As we change how these plants operate, we need to analyze all aspects of our system, including our ability to import power. While this Plan provides a high-level look at import and load serving capabilities, additional studies are required to examine each resource option and their capabilities and shortfalls. In terms of reliability, our preliminary analysis suggest that retirement of a power plant may be possible if initial steps can be taken to add generation and dispatchable capacity where needed before retiring a thermal unit. These considerations are plant- and solution-specific and must be evaluated at each location.

One particular challenge exists at our Carson (CVFA) power plant. This facility directly serves a portion of our 69kV sub-transmission system that is expected to see significant load growth over the next five years and beyond. Without this generator, the sub-transmission system will no longer be adequate to serve existing and forecasted demands in the area. Detailed studies need to be performed to fully assess the impacts of CVFA's retirement on the adequacy and reliability of the local sub-transmission system. These detailed studies will include an assessment of mitigation options such as infrastructure upgrades, utility-scale renewable generation, DERs, demand response or a combination of these options. It's important to note that the combined solutions must provide the same services this power plant currently offers.

Under-resourced communities

Our Campbell plant (SPA) and the McClellan Gas Turbine thermal power plants are located in areas with a sensitivity score of high or moderately high on our Sustainable Communities Priority Map. In terms of our community, modifying or retiring McClellan and Campbell would have the greatest impact on our under-resourced communities relative to our other thermal plants because they're located in areas of SMUD territory with some of the highest sustainable communities' sensitivity scores, see Figure 6. Decisions about the future of these plants will include discussions and engagement with the community.

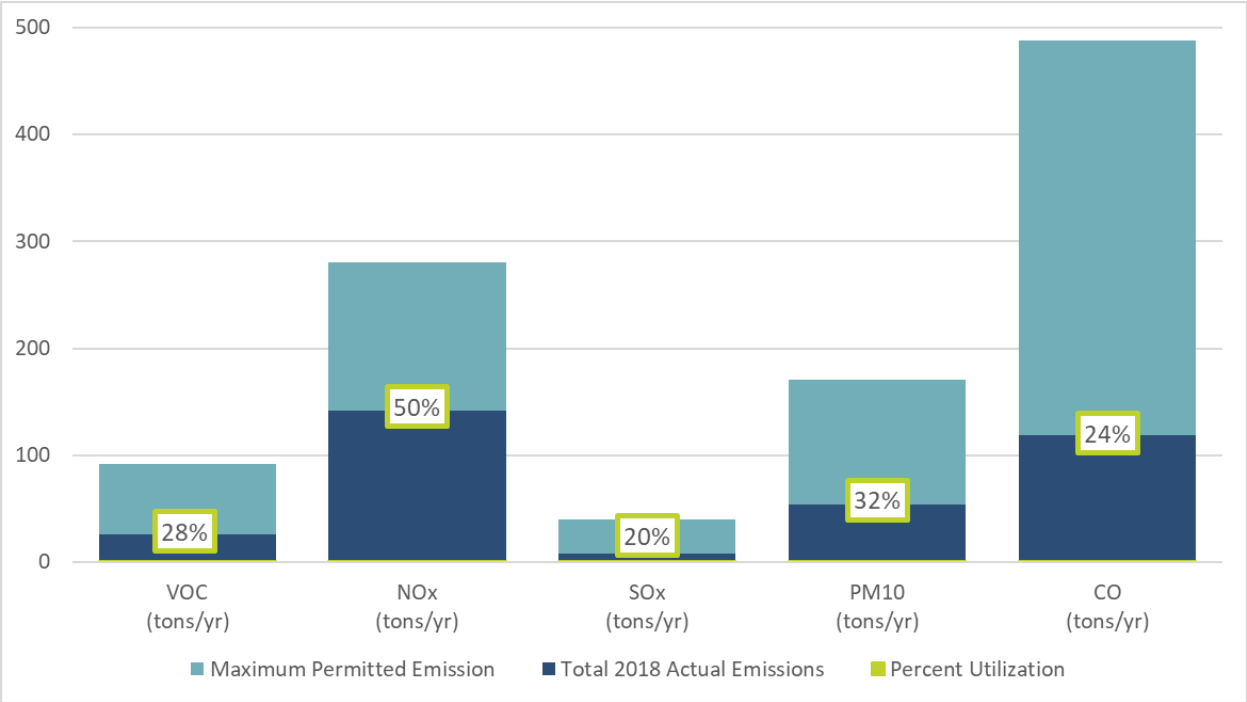
Figure 6. Thermal power plant locations



Air quality considerations

Currently, we operate our thermal power plants far below their permit limits and will continue to look for opportunities to reduce our emissions. Our utilization rates are shown in the boxes below in Figure 7, a comparison of the power plants' maximum permitted emissions and their actual 2018 emissions as regulated by the Sacramento Metropolitan Air Quality Management District (SMAQMD) and the U.S. EPA. Studies show that criteria pollutant emissions, such as Nitrogen Oxide (NOx), from fuel combustion in buildings and light-duty passenger vehicles present higher health risk concerns in Sacramento than SMUD's power plants. Electrifying homes and buildings will result in significantly improved regional air quality.

Figure 7. Comparison of maximum permitted emissions and 2018 actual emissions



The best way to determine the impact of air pollutant emissions on nearby communities is to perform a refined health risk assessment of each thermal power plant. Health risk assessments calculate the potential health risk to individuals over time using various real-life data, such as the height of the power plant's stack, temperature of the pollution release and proximity of neighborhoods, schools, hospitals and other work sites. Impacts on health risk can be looked at in terms of the potential to increase one's cancer risk[50].

In 2018, SMUD submitted to SMAQMD separate health risk assessments for the Carson Ice, Proctor & Gamble and Campbell cogeneration power plants. The assessments were based on individual facility 2016 operating data. We found the cancer and non-cancer risks associated with each power plant are below the thresholds indicating any significant health impacts to our neighboring communities. This includes the South Sacramento/Florin Community, which is actively working with SMAQMD to implement a Community Air Monitoring Plan under Assembly Bill 617 (Community Air Protection Program).

In 2018, SMUD submitted a separate health risk assessment for the Cosumnes Power Plant. While the plant's cancer risk is above the 1.0 threshold limit, the risk level is determined based on the plant's maximum *permitted* emissions rather than *actual* emissions, and is mitigated because the power plant is in a sparsely populated area with no sensitive receptors, such as K-12 schools or hospitals.

[50] Cancer Risk is the theoretical probability of contracting cancer when continually exposed for a lifetime (70 years) to a given concentration of a substance. The risk is presented as the number of chances in a million of contracting cancer.

For comparison, the SMAQMD lists several types of facilities with cancer risks well above our assessed risks. These other facilities include a dry cleaner, two chrome plating shops and over 200 diesel-fired internal combustion engines. Although not updated by the Air District since 2004, it's expected that a majority of retail gas stations will continue to have cancer risks above the one in a million-cancer risk threshold.

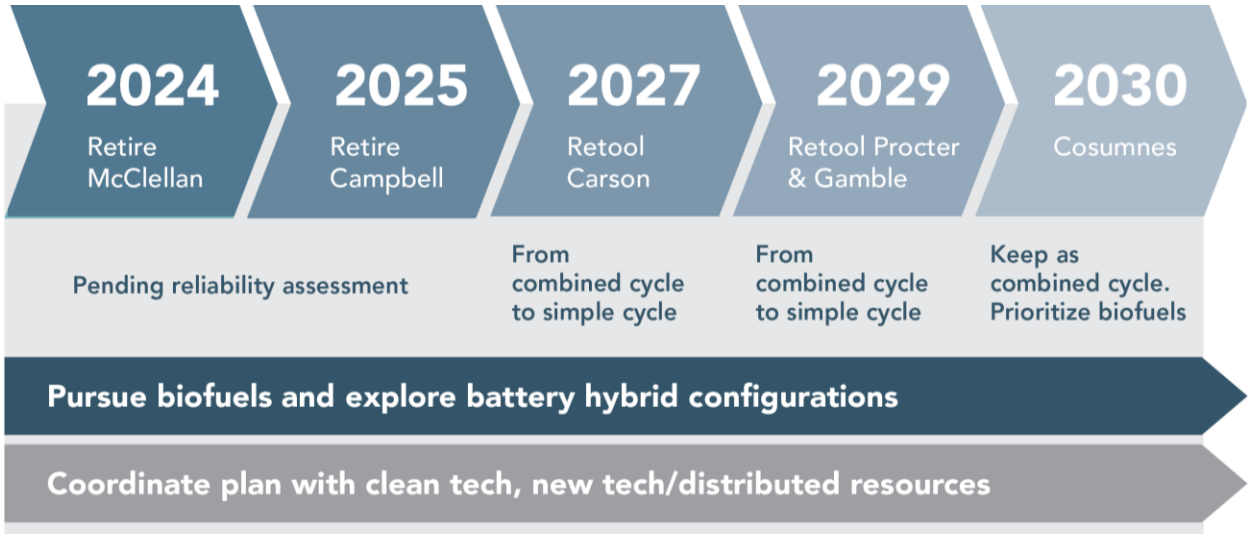
Thermal transition options considered

To inform our Plan, we consulted with IEC Corporation to identify the latest technologies available for our thermal power plants and Black & Veatch to provide the status of new resources and alternative fuels. Listed below, our study focuses on three broad options for decarbonizing our thermal power plants by 2030.

1. **Thermal power plant retirement:** Under this scenario, by 2030 we'll retire our thermal fleet and completely eliminate our reliance on fossil-fuel derived energy and reliability services from neighboring markets, including all energy purchased and sold.
2. **Refueling with zero carbon fuels:** As part of this scenario, we'll evaluate the technology landscape and feasibility of replacing all fossil fuel used at our thermal power plants with renewable or carbon-free fuels by 2030.
3. **Reimaging our thermal fleet:** We'll continue to leverage the reliability and cost-effectiveness of our thermal fleet and reimagine operations under fuel and emissions constraints. The thermal power plants would become flexible peaking units, providing short runs with lower capacity factors and ancillary services thereby eliminating their cogeneration status and greatly reducing their GHG footprints to absolute minimums.

Each of these options were considered under similar assumptions, included any steam sales obligations with our neighboring manufacturing facilities, and the schedule shown below in Figure 8. As we make and implement decisions, this Plan will be revised and expanded to account for on-the-ground conditions and advancements in technology and infrastructure.

Figure 8. Thermal retooling schedule



Evaluation of thermal power plant retirement

We also studied retiring our thermal units and relying solely on proven clean technologies to provide reliability services and energy for our customers. What's challenging under this option is replacing reliability services with non-carbon emitting resources in all hours throughout the year. The results of our analysis were similar to our previous studies: Retiring our thermal power plants and relying completely on proven clean technologies is possible, but it's an expensive option that may not be reliable under every weather scenario.

Beyond building for annual energy needs, our updated analysis of this option found the need to build over 3,000 MW of 4-hour duration batteries coupled with 5,000 MW of additional local solar generation (total resource build calls for 8,000 MW of solar).[51] These additional 8,000 MW of resources, beyond our base resource build in this scenario, are needed to minimize risks that could result in local blackouts similar to the outages faced by California customers during the heat storm of 2020. Again, these resources are needed to achieve only minimum reliability standards in 2030. If this option is considered further, we'll need to do an intra-hour analysis to identify additional firming resources such as batteries to address intra-hour variability, where momentary cloud cover can reduce the output of a solar field by over 50% in a matter of seconds.

This scenario also requires over 3,200 MW of resources to be built and operated outside our service territory. This means, an increased reliance on energy imports. There are significant economic risks to developing energy within a neighboring balancing authority such as CAISO. In particular, within California, solar is already dominating the market and flooding solar generating hours with low-cost energy. This is currently causing the market price for energy to be negative, meaning we must pay someone to take the energy if we cannot deliver it to our customers. This flood of generation is also starting to fill up available transmission lines, meaning there are times when we may not be able to access the generation we need. Our most economic decision during these instances could be to curtail our utility-operated solar and wind generators, essentially paying our generators to stop generating. In the study of this option, solar and wind were curtailed 7.5%. Batteries and other storage technologies mitigate this issue, somewhat. Lastly, additional analyses will also be needed to assess the impacts to our transmission and distribution system under this continuous high-import scenario.

Long-duration energy storage

To help overcome reliability challenges associated with high penetrations of renewables and make thermal retirement more viable, long-duration energy storage (LDES) is one potential opportunity worth continued exploration. While still an emerging market, long-duration storage such as flow batteries and thermal storage may one day be available to help us overcome multi-day weather events impacting renewable generation, as identified in our 2040 Clean Energy Plan and our studies to support this Plan.

[51] Longer duration, 8-hour, batteries could be used to meet this need, but for consistency, this measure uses equivalent 4-hour batteries.

Although many consider batteries with a duration longer than 4-hours as “long-duration,” we use the following classifications to differentiate our LDES needs.

- Short-duration: 4-hours or less
- Intra-day duration: 5 to 12-hours
- Inter-day duration:13 to less than 48 hours
- Multi-day duration: 48 hours to 168 hours (1 week)
- Long-term or seasonal energy storage: beyond 168 hours (For example, technologies that can store energy for use in a later “season” such as from summer to winter.)

In this Plan’s technology selection and evaluation, we explored “multi-day duration.” However, existing and proven technologies do not meet the 48-hour minimum.

- Compressed Air Energy Storage has a proven duration of 3-24 hours.
- Flow batteries have a proven duration of 2-12 hours.
- Lithium-ion batteries have a proven duration of 0.5-8 hours.
- Molten salt thermal storage has a proven duration of 6-7 hours.
- Pumped hydro storage has a proven duration of 6-24 hours.

Black & Veatch concluded that, while short-duration energy storage is a well-established equipment supply area, multi-day LDES is not. The largest gap for these technologies is the successful integration and sub-sequence control of the minimally required demonstration prototype that’s capable of being scaled up. At this time, the development of these technologies is not assured and there are questions about their performance in extreme weather conditions. Therefore, they were not included as a specified element in our plan. With additional research, development and commercialization, these emerging technologies may be feasible for inclusion in our resource portfolio by 2030. We must also allow for flexibility in the implementation of our plan to allow for breakthroughs in these and other viable technologies before 2030.

Evaluation of refueling with zero-carbon fuels

We also considered augmenting, or fully replacing, fuels with renewable fuels. There is a wide-range of fuel options and levels available. Given the nature of this Plan, we did not attempt to model every permutation of the resources. We did however, set some benchmarks for additional analyses based on our evaluation of the most promising fuel sources. We considered the viability, availability and cost of the options and the technical feasibility of using each fuel at our power plants, including the need to switch out generation equipment.

Renewable hydrogen

Hydrogen is one of the most abundant elements in the universe and can be found in the fuels we use as well as our air and water, making it an attractive resource option. Hydrogen can be used as a fuel source either through direct combustion or non-combustion technologies. For the Plan, we considered using renewable hydrogen at our existing power plants or building new facilities. Our evaluation included an assessment of the hydrogen in natural gas blending limits at each site as well as the technical performance, cost considerations and the market availability of renewable hydrogen. We did not consider options to blend hydrogen with fossil natural gas as these are carbon *reduction* strategies and would not *eliminate* our GHG emissions.

Hydrogen use

With IEC Corporation, we began by analyzing the current technology configurations and turbines at our existing power plants. Unfortunately, the turbines available today cannot burn 100% hydrogen. We also explored using hydrogen as a fuel supplement, where hydrogen is co-fired with natural gas or RNG. Some of our turbine models can currently use a fuel blend of up to 50% hydrogen.

We're proactively reaching out to others in the industry to assess their efforts in advancing hydrogen technology and seeking opportunities to potentially partner on hydrogen demonstration projects. Some of the turbine manufacturers, such as General Electric, Siemens and others are studying the future potential of direct hydrogen combustion within their turbines. We'll stay active in this space to ensure that any technology developments that make this option feasible by 2030 are considered and will updates our plan as needed.

Market availability, storage and transport

The most promising process for renewable hydrogen is electrolysis, which is the process of splitting water into hydrogen and oxygen using electricity. Most hydrogen today is produced by a steam methane reforming process using fossil natural gas. RNG may also be used, but the costs and technical challenges will be compounded with that fuel option.

Electrolysis produces a zero carbon fuel when the electricity used for the process is renewable or zero carbon. Excess solar may be the ideal candidate for hydrogen production, resulting in hydrogen stored for later use.

Currently, the hydrogen fuel market is highly dependent on a small number of distribution facilities. In 2019, a Northern California plant was down for several months, reducing the available supply by nearly half for the San Francisco Bay and Sacramento regions.[52] This challenge may also be an opportunity to explore partnerships or joint ventures for local development of a hydrogen infrastructure. Currently, large-scale renewable hydrogen production is not available in our region. As such, the fuel would need to be either shipped via trucks or freight trains. The amount of hydrogen required would also require semi-constant deliveries of the fuel to each affected power plant.

Since hydrogen is the lightest element, it can be challenging to store large quantities because of the need for higher pressures or lower temperatures than natural gas. Intermediate storage of hydrogen could also become a blight on neighboring communities. Cosumnes, as a remote site, could host a possible pilot hydrogen production facility and storage tanks. Some storage options for hydrogen are described below.

> **Compressed hydrogen storage** is the most common method used by industrial hydrogen consumers. Depending on the amount of hydrogen being stored, pressures can range from 2,000 to 10,000 psia (pounds per square inch absolute) with the high end of this range more suitable for small cylinders used in transportation rather than large bulk tanks.

[52] California Energy Commission staff. 2020. Final 2019 Integrated Energy Policy Report. California Energy Commission. Publication Number: CEC-100-2019-001-CMF. Page 99.

Hydrogen liquefaction may be a feasible option, depending on the amount of hydrogen storage needed. Storing hydrogen in this fashion requires energy, more complicated auxiliary equipment, and extremely cold temperatures (i.e. -423°F) need to be maintained. The storage volumes for liquefied hydrogen would be much smaller than that for compressed storage and depending on the scale of storage required, therefore liquefaction can still be more economical than compressed hydrogen storage, particularly at large scales. An additional consideration with the liquefaction equipment is the thermal cycling and ramp time. Cycling from ambient to the extremely low temperature thermally stresses the equipment.

Geophysical hydrogen storage takes advantage of existing geological formations such as salt caverns, rock caverns, and depleted gas fields. These formations are an opportunity to store large volumes of hydrogen. Conceptually, hydrogen is compressed and stored in an existing geological formation and then withdrawn for later use. The details of this concept are extremely site specific and would require extensive geological study to locate an appropriate site.

Pipeline hydrogen storage may also be feasible as pipelines are the most cost-efficient way to transport large quantities of hydrogen over long distances. There are currently approximately 1,600 miles of hydrogen pipelines installed in the U.S., primarily in the Gulf Coast region, which are predominantly operated by major industrial gas companies. Hydrogen pipelines are considered mature technologies and can typically cost up to 10% more than a traditional natural gas transmission pipeline. Hydrogen will tend to permeate through metal over time, resulting in gas loss and pipeline embrittlement.

Potential role in SMUD's future portfolio

We found that while hydrogen production and storage is technically feasible using commercially available technology, renewable hydrogen has many challenges and definitive use before 2030 cannot be assured. The Black & Veatch study also found that blending 50% renewable hydrogen with 50% natural gas would yield only a 20% reduction in GHG emissions. This is due to the combustion characteristics of hydrogen where molecules are too small and flame speed is too high to properly consume all fuel within the turbine. Similarly, NOx emissions from our turbines would also increase requiring additional emission controls and mitigation.

While this strategy is valid to reduce our carbon emissions, it will not get us to zero by 2030 on its own. We believe that this is an option to keep in consideration for possible use with RNG. For our 2030 Zero Carbon Plan, renewable hydrogen should be considered an emerging fuel, with the potential option of utilizing one of our thermal power plants as a demonstration site. In the long-term, our Cosumnes Power Plant may be a reasonable site to consider fully replacing with hydrogen production coupled with a combustion power plant.

RNG: Biogas and biomethane options

Of particular interest, RNG can be used as direct replacement for the fossil natural gas we currently use. Although RNG is relatively common, the production of these fuels is generally much more expensive and less accessible than fossil fuels. There are regional sources of biogas and it can also be sourced from landfills and municipal wastewater treatment plants,

which can be refined into RNG. As part of our studies, we evaluated the current production levels and the resource potential for future local production.

RNG is a term used to describe biogas that has been conditioned and purified to become pipeline quality to replace fossil natural gas. RNG can be produced via biochemical means like anaerobic digestion of dairy wastes, food wastes, wastewater, landfill wastes and other organic wastes. RNG can also be produced thermochemically via gasification (partial combustion) and methanation processes. Natural gas in the interstate pipeline system is generally 85% to 95% methane, the predominant energy carrying molecule in natural gas. Raw biogas typically has a methane content between 45% and 65% and must go through a series of refining steps to replace natural gas. Refinement includes removing moisture, carbon dioxide and trace-level contaminants and other impurities. Once purified, the gas can be injected into a natural gas pipeline or used as a substitute for fossil natural gas.[53] We currently have a long-term contract to buy RNG.

Black & Veatch found that the most accessible local sources of biogas resources are from landfills and wastewater treatment plants in the broader Sacramento region. Their assessment found that while the local supply is too limited to replace the *full* fuel use of our power plants, we identified opportunities to develop an additional supply of local biogas that could be used at our power plants. Further study is needed to quantify the gas potential available, assess the viability and develop these resources.

RNG: Emerging solid-fuel biomass conversion opportunities

The conversion of woody biomass to biogas via thermochemical conversion technologies is an emerging energy conversion pathway to produce RNG. We expect that biogas production could act as an energy supply and a viable disposal option of wood waste from forest thinning or wildfire mitigation projects, like in our UARP transmission corridor. Although the economic viability and total resource availability of this option is currently uncertain and complex due to inherent nature of catastrophic wildfires, the availability and pricing of woody biomass from wildfire thinning activities could improve over the next 10 years. With new wildfire management initiatives in California, Black & Veatch expects the amount of wood fuel available in the broader Sacramento region, when compared to the supply of sustainable forest-based wood estimates in prior studies, to increase significantly. This biomass is anticipated to be partly used by existing biomass power plants competing for this resource. There are three biomass power plants in the Sacramento region that are strong candidates for use of this “high hazard zone” woody biomass to meet contract opportunities.

Renewable diesel

We studied the technological specification of our existing power plants and found that most of our turbines are already capable of firing “#2 Fuel Oil,” which is essentially diesel fuel. Following air quality permitting and licensing approvals, our power plants would then need minor physical modifications to allow them to burn renewable diesel.

[53] For more background information on sources for RNG, see: An Overview of Renewable Natural Gas from Biogas. U.S. EPA, July 2020. EPA 456-R-20-001. https://www.epa.gov/sites/production/files/2020-07/documents/lmop_rng_document.pdf. Last accessed 2-9-2021.

Renewable diesel is fuel that is made from plant oils and animal fats. Renewable diesel is currently being developed commercially for some truck transport applications. IEC Corporation and SMUD staff have reached out to several renewable diesel producers to gauge the feasibility of this approach. We were not able to identify sufficient supply at an affordable cost for power generation. This option will continue to be evaluated in the future as the production technologies mature and additional supply is available in the market.

Reimagining the operations of our thermal fleet option

Our analyses repeatedly show that the most expensive hours to deliver energy are during our peak hours and during low solar and wind production periods. These periods are generally constrained to a few hundred hours a year. Additionally, high-level analyses indicate that most large electricity systems can support up to 80% to 90% proven clean technologies if existing gas resources are left online.[54] Within this option, we consider reimagining operations at our thermal power plants such that we do not emit GHGs.

Carbon capture and sequestration

One option for eliminating carbon reduction at our thermal power plants is to capture the carbon before it's released into the atmosphere. The main post-combustion carbon dioxide separation techniques and technologies considered include amine-based chemical absorption, solid sorbents and membranes. Although solid sorbents and membrane technologies hold great potential and are promising for the future, the team found that post-combustion capture technique based on chemical absorption using amine-based absorbents is the most proven technology and commercially available at this time to effectively remove carbon dioxide from flue gas emissions.

Black & Veatch found that carbon capture technology could be integrated into our system. However, there are challenges including cost, implementation and viable storage options. The carbon capture technology alone will require a substantial capital commitment of over $800 million for our Cosumnes Power Plant. However, the technology could reduce our carbon dioxide emissions by over 90%, and coupling it with renewable fuels, could help us realize carbon free operation. Although capturing our thermal GHG emissions is technically possible, we must consider this option holistically. This option will require locating permanent geological storage and a commitment to long-term debt that ties us to natural gas.

We're currently evaluating NET Power's power plant design, which have no stacks. Instead, they use the Allam-Fetvedt Cycle.[55] These plants burn fossil fuel with oxygen instead of air to generate electricity without emitting any carbon dioxide or NOx, the main atmospheric and health contaminant emitted from gas plants. This is a new, high-pressure, oxy-fuel, supercritical carbon dioxide cycle that generates low-cost electricity from fossil fuels while producing near-zero air emissions. All carbon dioxide that is generated by the cycle is produced as a high-pressure, pipeline-ready by-product for use in industrial processes, or that can be sequestered

[54] California Energy Commission. *SB 100 Joint Agency Report: Charting a path to a 100% Clean Energy Future.* March 2021. Available online: https://efiling.energy.ca.gov/EFiling/GetFile.aspx?tn=237167&DocumentContentId=70349. Last accessed: 16 March 2021.
[55] https://netpower.com/technology/. Last accessed 23 March 2021.

underground in tight geologic formations. The challenge of determining how to dispose of the carbon is unsolved.

The technologies we studied do capture carbon dioxide, but for this technology to be zero carbon, we must find approaches to sequester the carbon such as long-term geological storage where carbon is stored in permanent geologic formations, for instance, a deep saline reservoir. There is a growing body of research regarding sequestration in the greater Sacramento area. Industry research has found that there is space in California to store carbon dioxide underground safely and permanently.[56] Thinking about SMUD assets, one study from Lawrence Livermore National Laboratory found a potential carbon dioxide sink just over 16 miles away from our Cosumnes Power Plant. This sink is near a saline aquifer in the Sacramento Basin, one of California's larger marine basis with potential sequestration opportunities.[57] As our 2030 Zero Carbon Plan continues to evolve, we'll seek opportunities to partner with industry to further explore carbon capture and sequestration potential in the greater Sacramento area.

Retooling and RNG

As we studied the options, interestingly and somewhat counter intuitively, it became obvious that the very things that made most of our power plants so efficient was limiting their ability to integrate into our zero carbon future. Due to start up and shut down restrictions and steam host obligations, many of our plants are held online even during the most expensive hours to deliver energy or during high-solar and wind production periods. With that in mind, we reimagined our thermal fleet operations to be as flexible as possible, generating power when needed for shorter durations and thus significantly reducing GHG emissions. This option was shown to be the most viable way forward and was studied in depth.

As previously discussed, the heat recovery systems make these plants efficient and valuable resources, but these systems can also be damaged if cycled too quickly. Disconnecting our power plants from their heat recovery systems will make them less efficient, but it'll also make them incredibly flexible, able to be turned on and off quickly and able to sit idle for long-periods of time. In this configuration, batteries can also be added to the peaking plants making the gas turbine appear to be online without burning any fuel. Understanding that solar and wind energy resources need flexible power plants that respond in seconds, it seems to follow that making these plants more flexible would allow for greater adoption of proven clean technologies. One tool to achieve this is to retool our thermals to make them as flexible as possible.

When we look through our past studies, we find that the periods we most need our thermals are usually constrained to a few hundred hours a year. This may make it possible to leverage our existing RNG contracts to fuel our gas plants. We currently have a long-term agreement in place for RNG at a maximum limit of 12,800 dekatherms (dth) per day. This gas is currently nominated/delivered to the Cosumnes Power Plant for RPS credit. Foregoing RPS credit, we can renominate this gas to any of our power plants. In this case, we're using RNG that is produced to pipeline specifications and delivered via intrastate pipeline and is a drop-in replacement that all our existing power plants can use without modification. The next challenge

[56] https://www.smud.org/-/media/Documents/Corporate/About-Us/Board-Meetings-and-Agendas/2020/July/1-Dr-George-Peridas--Achieving-Carbon-Neutrality-in-California.ashx
[57] https://www.westcarb.org/pdfs/geologic_co2_sequestration%20_potential_hq.pdf

is that RNG, including our current agreements, is injected into the pipeline as soon as it is produced. For this option to work, we need to store the gas until it's needed.

We currently have contracts with two natural gas storage fields capable of storing 2 million dth of natural gas. These contracts are set to expire within the next couple of years. Our daily burn averages approximately 110,000 dth per day. Between both storage contracts, we're able to withdraw up to a maximum of 40,000 dth per day. Our storage arrangements allow us to balance supply and demand during operational challenges as well as help mitigate financial risks from periods of extreme price fluctuation. A large part of our storage capacity is set aside to support running our plants during event where natural gas becomes scarce. This, and other storage options, may be useful as we consider relying less on natural gas.

Operationally this would mean managing our thermal units like our hydroelectric system. We manage our hydro system to ensure that we meet minimum flow requirements for fish and recreation. Additionally, we must manage our water releases to ensure we have adequate water for generation during the late summer and early fall, before reservoirs are refilled. In essence, we manage a limited fuel source for maximum benefit to our system. For our RNG, we'd need to adopt a similar strategy where we store our gas in offsite storage fields and only use this gas when we need it.

As briefly mentioned above, General Electric has developed a battery designed to augment the operations of their engines and intended to reduce the need to turn on the power plant during short duration peak energy needs. These batteries would increase the flexibility and operability of our power plants, reduce our need for spinning reserves, and most importantly, reduce the need for RNG.

Our thermal transition plan

Following the studies, we prepared the following strategy to transition our natural gas generators to flexible renewable peaking plants. We've drawn on many different studies and data for this Plan and note that other options may prove more viable in the future. As we move to implementation, we'll need to remain flexible and open to new ideas and strategies. The following recommended natural gas generation repurposing strategy, coupled with the proven clean technologies and new technologies and business models strategies, will help us achieve our 2030 Zero Carbon Plan.

Preliminary analysis shows that McClellan and Campbell plants could be retired in 2024 and 2025, respectively. Prior to committing to retirement, we'll perform a detailed reliability assessment in 2021. Carson Ice and Procter & Gamble will be converted to simple cycle peaking plants in 2027 and 2029, respectively, and considering steam host obligations and staggering the time between retooling efforts. Cosumnes, while the most efficient and largest of the thermal plants, is not as nimble. Currently, we plan to keep Cosumnes as a combined cycle plant and locate additional sources of RNG to buy and store. Our reimagined power plants in 2030 are shown in Table 9.

Table 9. SMUD thermal power plant overview in 2030

Power Plant	Generator Type	Unit	Capacity (MW)	Fuel Source
Sacramento Power Authority at Campbell Soup	**Retired***			
McClellan Gas Turbine	**Retired***			
Central Valley Financing Authority at Carson Ice	Combustion Turbine	1	50	Biofuels and TBD**
	Steam Turbine	2	**Retired**	
	Combustion Turbine	3	50	Biofuels and TBD**
Sacramento Cogeneration Authority at Procter & Gamble	Combustion Turbine	1	50	Biofuels and TBD**
	Steam Turbine	2	**Retired**	
	Combustion Turbine	3	50	Biofuels and TBD**
	Simple Cycle Peaking	4	50	Biofuels and TBD**
SMUD Financing Authority at the Cosumnes Power Plant	Steam Turbine	1	207	Waste Heat
	Combustion Turbine	2	207	Biofuels and TBD**
	Combustion Turbine	3	207	Biofuels and TBD**

**Pending reliability assessment.*
***Final 2030 fuel mix is to be determined. Dependent on options available and may include one or more of the following: hydrogen, biogas, RNG, biofuels.*

Planning for a possible retirement

Ultimately, we may choose to refuel some plants, retire others, or retool them all. As we transition toward our zero carbon goal, we'll carefully evaluate all possible options and will retire units only when we can do so reliably. Before making any decisions, thorough analysis and thoughtful planning will be needed with robust testing and additional studies completed. We may also consider cases where the solution or replacement generator is operated in parallel until we have confidence that the replacement system is reliable. When we commit to retire a power plant, we may opt to have the plant remain in place unused until the replacement generator demonstrates reliability over several years before deciding to fully decommission the plant.

Researching grid-scale solutions

As part of our analysis, we identified several tools that we can use as part of our 2030 Zero Carbon Plan. These include retirement, refueling and reimagining as well as new technologies such as alternative biofuels, long duration storage, renewable hydrogen and carbon capture. As we implement this plan, we may find that the tool we employ for one thermal asset may not be the right tool for another. We'll focus on place-based strategies and work with our communities where these assets are located to design solutions that ensures Sacramento communities are livable, resilient, and ready to embrace a low carbon future.

While retiring and retooling our gas plants will drastically reduce emissions, the use of natural gas will not be completely eliminated unless we identify sufficient amounts of renewable fuels or develop alternative generation sources. Initial studies indicate about half of our fuel needs after retooling can be met with RNG that we already have under contract. Additional fuel sources or

technical advancements are necessary to close the remaining gap and fully eliminate the use of natural gas. We're looking at several options to address this:

- Biofuels and other clean fuels, including RNG, green hydrogen, biodiesel and ethanol.
- Long duration storage which could include technologies such as flow batteries, thermal storage and liquid air energy storage.
- Carbon capture and storage, including the Allam-Fetvedt cycle to assess the feasibility of this and similar technologies in the Sacramento region.
- Pumped storage hydro using our existing UARP dams and hydroelectric facilities.

This research and the ability to secure sufficient volumes of biofuels will allow us to scale up the most promising technologies. We'll continue to evaluate and seek innovative options as new technologies emerge.

As we approach 2030, it'll be important that we remain nimble and ready to integrate these new technology models as they become available ready over the next decade.

Proven clean technologies strategy

Proven clean technologies

- This strategy, when implemented with the natural gas generation repurposing strategy, will reduce our emissions by at least 90% of 2020 levels by 2030.
  - We'll exceed the State 60% RPS target by 30%.
- Continue aggressive customer DER programs.
  - Demand response and flexible load
  - Rooftop solar
  - Customer batteries
  - Transportation electrification
  - Building electrification
  - Energy efficiency
- Develop a robust portfolio of local and regional utility-scale renewables and batteries to complement our thermal retooling plan.
  - Local utility-scale solar 1,100 to 1,500 MW
  - Local 4-hour batteries 700 to 1,100 MW
  - Regional wind 300 to 500 MW
  - Regional geothermal 100 to 200 MW
  - Regional solar 100 MW

As our next strategy, we explored the landscape of proven clean technologies. These are additional zero carbon emission resources that can be developed by 2030 using proven, commercially available technologies. Our 2030 Zero Carbon Plan will rely heavily on proven clean technologies, such as solar and wind.

As we continue to rely more on resources whose output are dependent on weather conditions, there will be increases in variability and uncertainty related to available supply. This will require us to carry more reserves or backup resources to maintain the same level of reliability.

This challenge exists when we have either too much or not enough supply. For example, we must account for how much our solar and wind generation could vary from forecasts within the hour, and ensure that we're carrying enough supply that has the flexibility to increase to meet shortfalls and decrease in order to accommodate excess generation at any given time.

Although these challenges cannot be solved with today's available technology, some of the things that can help alleviate them include:

1) **Diversification of resources**: To avoid over-reliance on any one fuel source, it'll be important to build our portfolio of resources from different technologies. Together, resources from various technologies and geographic locations can complement each other and mitigate some of the weather, timing and over/under-supply risks. To accomplish this, we must continue to research and explore the different resource types and be thoughtful about how we formulate our supply portfolio.
2) **Evolution of energy markets**: Depending on how energy markets continue to evolve, they may be an important to helping us meet carbon reduction goals. Grid

regionalization could accelerate expansion of planning and operations over a larger footprint, which would enhance the grid's ability to efficiently match supply and demand and reduce curtailment of renewable energy. Some of these benefits can be seen in market re-designs such as the Energy Imbalance Market and potentially in initiatives like Enhanced Day Ahead Market. It'll be important for us to monitor these changes and act to influence them accordingly.

3) **Demand side management**: Historically, supply has been responsible for chasing demand and it is our responsibility at SMUD to ensure that this balance is maintained continuously. As the cost to maintain the same level of reliability increases as the proportion of variable and intermittent resources rise, it may make more sense for customers to have a more proactive choice in how this balance is maintained and how costs are allocated. This means understanding customer preferences and staying engaged with our customers will be critical.

The resource build expands SMUD's current resource portfolio and achieves all current environmental commitments and internal directions. The following resources were considered as additions to our portfolio by 2030.

- **Short-term reliability resources**: Short-term market contracts for capacity are generally from gas generators. However, by 2030, batteries may be a market option.
- **Energy storage:** Short duration (4 hours or less) energy storage batteries and pumped hydro.
- **Non-local renewable resources**: Renewable resources outside of SMUD's territory (solar, onshore wind, offshore wind, biogas/biomass and geothermal).
- **Local renewable resources**: Renewable resources inside of SMUD's territory, limited by resource availability (solar and biogas/biomass).

Our proven clean technology scenarios were layered onto the thermal transition options, exploring the limitations of the technologies over the full range of available technologies. Below is a more technical discussion of our findings and includes detailed information on our proven clean technology strategy, information on why we considered prospective technologies, as well as specific information on the technology considered as part of our 2030 portfolio and some potential locations.

Capabilities of today's proven clean technologies

Achieving our ambitious carbon reduction goals without sacrificing reliability and affordability will be challenging. We need to understand how far these technologies can get us. In this section, we highlight the status of mature zero emission technologies available today and comparatively analyze how far these technologies have come since our 2040 Clean Energy Plan.

Our natural gas generators have characteristics that provide valuable energy and reliability services to our power grid. For many of our customers, our natural gas plants are synonymous with energy delivery, but our gas plants do more to keep the lights on than deliver electricity. They're also dispatchable by power system operators and associated real-time control systems to provide grid reliability services. Our gas resource, coupled with our robust hydroelectric system, is why we've been able to deliver energy to our customers at some of the lowest rates in the state with a strong reliability record.

Transitioning to zero carbon emission does not change the need for a reliable grid (see the section on Our commitment to reliable service). As we reimagine our energy system, we must also consider how to replace non-energy products provided by the gas plants such as, capacity, voltage support and reactive power. While there is a wide variety of clean resources, solar and wind are the most economic and abundant resources in California today. However, these resources are highly dependent on the weather. On most days, we can be reasonably confident they'll produce at least some energy, but sometimes thick fog, cloud cover, too little or too much wind or smoke and ash from wildfires unexpectedly reduce energy production. Additionally, generation from these resources do not *precisely* match the timing and shaping of our customer's demand for electricity.

Knowing that there are times when we cannot count on solar and wind like we do our traditional generation resources creates uncertainty. This uncertainty and the underlying intermittency make it difficult to balance our energy supply with demand. The strategies to address these limitations are limited by available technologies. Proven technologies currently require that we build more resources than we need, make sure there is sufficient supply, use energy storage to shift the energy to other times or some combination there between.

Thinking about the average household, most of their electricity use is in the morning when we are getting ready for work and kids ready for school, and in the early evening when we've finished work, are cooking dinner and heating or cooling the house. But in the early morning hours and evening, the sun is low on the horizon or completely set. Also, there are many occasions when the wind isn't blowing during these times. Currently, we fill these "gaps" when solar and wind aren't available with traditional generation resources (such as our gas plants or hydroelectric resources), but as we move toward zero carbon, we'll need to have other options.

Resources included as proven clean technology

The following are the known proven clean technologies. Not all of these technologies are currently accessible due to limitations on development, cost and geographic considerations. With each section, we discuss the technology and the ability of these resources for our plan. The resource potential, or the amount of developable resource, was estimated using SMUD's internal expertise and consultation with Black & Veatch and E3.

Black & Veatch performed a variety of resource assessments, primarily focused on specific geographical areas. E3's analyses were informed by the 2019-2020 CPUC IRP process, and more specifically, the adopted Reference System Plan. Assumptions for the first available year of candidate renewables resource types in the 2019-2020 IRP cycle reflect feasible timelines for bringing resources online based on the current interconnection queue and typical development timelines.

The CPUC IRP assumptions on the technical potential of candidate renewable resources were based on data developed by Black & Veatch for the CPUC's RPS Calculator v.6.3.[58] The Black

[58] Black & Veatch, *RPS Calculator V6.3 Data Updates*. Available at: http://www.cpuc.ca.gov/uploadedFiles/CPUC_Website/Content/Utilities_and_Industries/Energy/Energy_Programs/Electric_Power_Procurement_and_Generation/LTPP/RPSCalc_CostPotentialUpdate_2016.pdf. Note that although the data was developed with the intention of incorporating it into a new version of the RPS Calculator, no version 6.3 was

& Veatch study includes an assessment of potentially viable sites and resource potential within those sites to determine an overall technical potential for each renewable technology. The Black & Veatch study uses geospatial analysis to identify potential sites for renewable development in California and throughout the Western Interconnection. Table 10 summarizes the potentials by region, which in some cases may change depending on new transmission, resource preference, or our assumed willingness to pay more for new resources.

Table 10. Summary of proven clean technology resource potential ranges (MW)

Resource	Location	Potential (MW)
Hydro	N/A	0
Biomass	Sacramento and surrounding	270-900
Solar PV	Sacramento	1,500-3,764
	Southern CA	22,800
	Northern CA	1,900
Onshore Wind	Sacramento	0
	California	468
	Out-of-state	1,054-1,554
Off-shore Wind	California	1,600
Geothermal	California	41-92
	Out-of-state	183
Storage – Battery	Sacramento	Not limited
	California	

Hydro

SMUD's existing hydro resources will be an integral part of the zero carbon plan as carbon free and flexible assets that are capable of mitigating some intermittency from solar and wind. Although hydro will continue to be a vital part of our system, we did not include new resource potential in this Plan. In our experience, new hydro resources, including pumped hydro, are not likely to be built in California due to the cost, permitting challenges and environmental concerns. We also see a broader trend to reduce the number of existing dams. However, we'll continue to study options to increase efficiencies and the capabilities of our hydro resources as well as procure new small hydro projects as appropriate.

Solar photovoltaics

Solar energy has the largest potential for resource development in California and into the southwest U.S. Solar is the lowest cost proven clean technology available and has potential for local development. Advances in battery technologies make co-locating solar with battery storage a cost-effective option for most projects.

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developed. This is because the IRP system plan development process replaced the function previously served by the RPS Calculator.

Through years of development efforts and feasibility studies, we've identified local areas best suited for solar development considering available land, environmental impacts, transmission access and system reliability. Within Sacramento, we estimate nearly 1,500 MW of utility scale solar could be developed with little or no major system upgrades and environmental impacts. Up to 3,764 MW of solar development may be developed locally, at higher cost. More studies are needed to assess the precision of this added cost, including land-use concerns, transmission and electricity system studies.

We also considered the procurement of solar energy resources from other balancing authority areas, including the CAISO. Given the large resource potential available in Southern California, additional out-of-state resources were not considered in this study. E3 assumed we could access to 5% of the CA statewide development potential for solar, yielding access to 22,800 MW of solar in Southern California and 1,900 MW of solar in Northern California, not including SMUD's service territory.

Rooftop solar was also considered as a proven clean technology. Capital costs to build or install these resources exceed three times the price of utility solar. Additionally, SMUD's energy purchase costs for rooftop solar are much greater that the power purchase price of utility-scale solar. In many cases, utility-scale solar can take advantage of scaling for labor and material costs, resulting in a unit cost of nearly $1 per watt (direct current). However, in most residential applications, this cost can exceed $3 per watt (direct current).[59] In addition, utility-scale projects can be oriented to maximize production, whereas rooftop systems are generally limited to the orientation of the house and roof. For example, a 50 MW utility scale PV project could power 15,000 homes, whereas the equivalent rooftop system would only power about 9,500 homes.

Onshore wind

Wind was once the commercially dominant renewable resource in California. However, wind development in California has slowed to a trickle as many prime wind resource areas have already been developed, have new transmission needs or, increasingly, state or local prohibitions are restricting new development. There are no viable locations for wind development within SMUD's service territory.

Solano wind resource area

Typically, during the summer, our Solano area wind resources produce generation that is complementary to our solar generation. As the sun is setting in July, most evenings the Delta Breeze comes through the region, increasing wind generation. As such, our Solano wind resources are especially valuable to SMUD. These resources have the potential to be fully delivered to our service territory and studies on repowering showed the new larger turbines have a complementary shape to our solar resources. Even though delivery of Solano wind resources to SMUD's territory has not been fully studied as part of this analysis, this potential will be a great option for our zero carbon future.

Black & Veatch reviewed the potential of fully repowering all turbines within Solano County, California. Solano County has been heavily developed with wind for several years. Many turbines are of sufficient age to be worth repowering given advances in technology. Black &

[59] https://eta-publications.lbl.gov/sites/default/files/tracking_the_sun_2019_report.pdf

Veatch reviewed existing wind project locations across the county. Sites already developed were assumed to be available for repower. They concluded that repowering and replacing older operating projects in the region could increase energy production in the region with fewer turbines.

California wind resource potential

E3 assumed we could access nearly 10% of the remaining wind resource potential throughout California, in addition to the wind potential identified in Solano, as estimated for the latest CPUC IRP modeling effort. This results in the potential for an additional 468 MW of wind, located within the CAISO.

Out-of-state wind potential

There is vast untapped wind potential in Wyoming and New Mexico. However, much of this potential remains undeveloped due to a lack of existing transmission. E3 assumed we could gain access for up to 1,000 MW of wind in those regions, provided we would be willing to develop new transmission.

Additionally, there is still undeveloped wind potential in Oregon, southern Washington and parts of Idaho. E3 assumed we could access 5% of the remaining potential, as identified in the latest CPUC IRP proceeding. This results in the potential for 554 MW of wind resources.

Offshore wind

The wind potential off the Pacific coast is an untapped and valuable resource. The depth of the sea floor makes developing these resources challenging, which would necessitate floating applications. Many of these areas lack adequate transmission. Despite these challenges, offshore wind is expected to be a viable future resource. Black & Veatch studied offshore wind development off of Humboldt Bay and identified the potential for 1,600 MW of developable wind with the earliest operational year estimated to be 2030. Black & Veatch studied two options, one with new transmission to deliver power to SMUD (a higher cost option) and the other relying on CAISO transmission to access the power.

Geothermal

Geothermal is a baseload resource operating at an 80% to 90% capacity factor. As one of the few resources that is both essentially GHG-free and available to serve baseload needs, geothermal resources can be an attractive future resource option. E3 estimated that we could have access to 10% of California's potential as calculated for the CPUC IRP, or 364 MW. Known locations with geothermal potential include Salton Sea, areas of Nevada and the Wilbur Hot Springs area. The geothermal resources in our 2030 Zero Carbon Plan include existing and new projects located in Northern and Southern California and Nevada. Black & Veatch's assessment indicated there is up to 50 MW of developable locations in Northern California, at higher cost than the resources identified by E3.

Biomass, RNG and biogas

Biomass resources within Sacramento County and the other 15 surrounding counties could generate 270 MW to 900 MW, with the high end of this range costing more because it will cost more to collect and deliver that biomass to a power plant. Black & Veatch identified several

challenges limiting the long-term viability of biomass resources. These include lack of long-term feedstock supply contracts for woody biomass resources, opposition from environmental groups regarding existing biomass power plants and competition and pricing of biomass supplies in the Sacramento region. Despite some of these issues and challenges, significant progress has been made in evaluating and documenting carbon intensity issues and benefits for a variety of high-moisture waste biomass feedstocks, particularly in the case of animal manure such as dairy manure.

Research and development activities focused on lowering the cost of biogas upgrading equipment, biomass gasification and synthesis gas cleaning/methanation equipment are needed to make RNG costs competitive with fossil-based natural gas. These focus areas may provide some opportunities for SMUD to obtain research funding.

RNG derived from landfills and wastewater treatment plants appears to be economically feasible for use at our thermal power plants. Black & Veatch estimated that the resource potential for this gas is about 270 MW. However, future study will be needed to identify these locations and assess the viability of collecting the gas.

Energy storage

Today's proven energy storage technologies can address many of our short-term balancing needs. These technologies help store energy for later use improving the flexibility and resiliency of our grid. Excess solar power produced on a particularly sunny day could be stored for use later in the evening when the sun isn't shining. Alternatively, energy storage can help less flexible baseload resources respond to changes in demand, by quickly injecting or extracting energy to match supply to demand.

The current limitations of lithium-ion based battery storage include lower duration, initial cost, lack of tax incentives, battery degradation and state of charge limitations. Many of these limitations such as cost, or lack of tax incentives could change in the near future. These limitations may be offset by avoidance of fuels cost exposure, simple maintenance and operations costs from fewer mechanical parts and the ability to arbitrage negative prices in the energy market or reduce curtailment of renewable generation.

For this Plan, we assumed that our potential for current battery storage is effectively unlimited.

Proven clean technologies complement thermal transition

The most economical proven clean technologies are solar and wind, which are variable and weather-dependent. Generally, on their own, these technologies can provide only limited grid reliability services. Repeatedly, our past studies show that reliance on only current proven clean technologies would be very expensive and would not pass basic reliability tests.

Our studies showed the same results. Aside from the cost, there could be physical impacts and blight on our local communities from the development of thousands of MW of local batteries plus thousands of additional MW of solar PV. That's the 8,000+ MW mentioned as part of our earlier Evaluation of thermal power plant retirement section. A 100% proven clean technology option is untenable with today's technologies. That said, our analyses also repeatedly showed that

renewable development costs continue to decline, and in fact, solar PV has declined by more than 30% since we last studied these resource costs as part of our 2040 Clean Energy Plan.

The takeaway is, we need to find a complementary balance of proven clean technologies with the other resource strategies.

With significant reliance upon variable energy resources (VERs), strategies for both periods of abundant and insufficient energy supply will continue to be evaluated and mitigated to ensure sufficient operational flexibility. Part of this analysis will include further enhancements of forecasting technology for VERs as well as the control systems to manage the variability of their power output.

One of our zero carbon solutions will be energy storage. However, while today's storage technology is capable of addressing some of the short-term energy or variability needs, we'll need other solutions to ensure we can maintain reliability. Hydro resources will continue providing support, while being mindful of water supply, as well as environmental and licensing requirements. Continued exploration into the options of LDES will help us identify ways to maintain reliability and reach zero carbon emissions.

Initial reliability assessment

We ensure the long-term ability to serve our customers under all conditions by following federal, state and NERC requirements for reliability and operations. For planning purposes, we plan to have the resource capability to meet load plus a 15% PRM. We conducted a series of studies to evaluate our ability to serve load with only proven clean technologies.

Currently, we rely on 1,380 MW of thermal generation (some imported) to serve load and ensure sufficient capacity reserves are available at all times. We evaluated the impact of removing all thermal generation during the summer peak. Our initial assessment indicated that without SMUD's internal thermal generation, our capability to serve load would be reduced by approximately 1,000 MW (equivalent to peak energy needs of 200,000 homes). In addition, our capability to import power could also be reduced by approximately 200 MW (or 10,000 homes). We also found an opportunity where adding 1,000 MW of proven clean technology at the location of our thermals could increase our load serving and import capability to the current levels, allowing us to continue meeting system demands and ensure reliability and adequacy for our customers. It's important to note that this 1,000 MW must be capable of delivering during summer peak to maintain the load serving capability and import capability required to meet the summer peak demand in year 2030.

Our flexible proven clean technology study informs our plan

Proven clean technologies will be instrumental to achieving our zero carbon goal, especially because energy from solar and wind have become relatively inexpensive. We can easily imagine a world where we can buy enough energy from renewables to meet our load. The challenge is, too much of this energy will come when we do not need it, and conversely, not

enough when we do. The tools identified in this scenario analysis will help up address this challenge.

Energy storage looks like it will be the economic choice to shift this generation around so that, on average, we'll have enough energy. We can also build our portfolio with a variety of proven clean tech resources to take advantage of diversity benefits. For example, solar and wind are complementary with wind ramping up in the early evening as solar drops off. The scenario presented here is one of many plausible ways to achieve our objectives. We'll need to explore the reliability of the resources proposed in this Plan within the context of our plans and objectives for our thermal generators.

Under this study scenario, the portfolio build, in terms of nameplate capacity rating (the maximum instantaneous generation rating) is expected to represent nearly 6,400 MW.

Table 11. Proven clean technology resource selection (nameplate capacity MW by 2030)

Resource	Type	Location	Capacity (MW)
Solar PV	Customer	Sacramento	250-500
	Utility	Sacramento	1,100-1,500
	Utility	CAISO	100
On-Shore Wind	Utility	Solano	90
	Utility	CAISO and PNW	300-500
Off-Shore Wind	Utility	CAISO	-
Biomass/biogas	Utility	Sacramento	-
Geothermal	Utility	CAISO/NV	100-220
Battery Storage 4-hour or less	Customer	Sacramento	50-250
	Utility	Sacramento	700-1,100

Scenario modeling results

Our studies found that thermal retooling has a dramatic positive impact on reliability and costs when compared to similar high-renewable energy scenarios. Without the retooled resources, we were only able to develop a resource portfolio that, on average, serve our retail sales with 80% carbon-free resources and reduce our GHG emissions 25% lower than our SD-9 goal (and adopted IRP) by 2030. When the retooling scenario is included, our zero carbon generation (including RPS-eligible renewables, hydro generation and thermal generation from RNG) is approximately 105% of our retail energy sales. RPS-eligible renewables is 90% of our retail sales, 30% more than the current state mandate is 60% in 2030.

This scenario requires a portfolio that generates more energy than we use, mostly excess solar that can be sold to neighboring utilities or curtailed. Our thermal generation has been reduced to only the hours vitally needed for reliability. Although we're currently assuming that the market will be able to absorb or purchase most of this generation from us, our modeling indicates that by 2030, over 15% of the solar PV generation we need to purchase must be curtailed due to the

lack of available buyers when the solar is generating. If batteries or alternative storage costs decline faster than expected, additional batteries may mitigate the need for curtailment.

To maintain reliability, our existing RNG contracts must be supplemented by other fuels. Assuming we continue using natural gas for this, our carbon footprint under this scenario is reduced by 90% from today's level. In terms of generation, natural gas comprises under 6% of the total generation we procure. In fact, we are expecting to curtail more solar power than is generated by natural gas in 2030. This does not mean that we can use the solar energy with today's proven clean technologies to displace our gas use. However, this does indicate that there are opportunities for new technologies, such as long-duration storage or renewable hydrogen production, that could absorb our excess solar energy and store it until we need it later in the year.

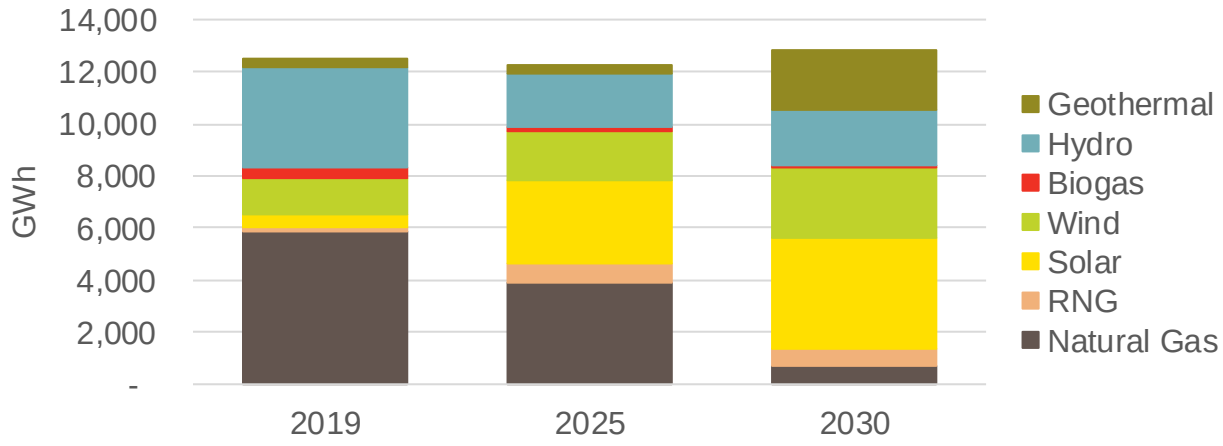
Our reliance on natural gas, compared to 2019, is reduced by nearly 90%. This is the result of retooling of our gas plants, limiting fuel use, and procuring proven clean technologies. In terms of capacity factor (a percentage measure how much a power plant is used), the thermal retooling scenario reduces the average capacity factor from 60% in 2019 to 21% in 2030. Of the 21% capacity factor, 8% is from RNG.

The resource mix that makes up our annual energy use is highly dependent on fluctuations in hydro availability. In 2019, our hydro resources performed above average and we were also able to procure additional zero carbon resources under short-term agreements from the Pacific Northwest. For our 2030 Zero Carbon Plan, we assumed hydro would generate according to average conditions and that we would not have long-term access to short-term agreements from the Pacific Northwest. Future analysis is needed to determine the resource mix needed under low hydro conditions and the impact to renewable curtailment during high hydro years. Additional zero carbon fuels will need to be procured and stored for use during low-hydro years to avoid the need to procure GHG emitting market power.

Figure 9 summarizes the annual generation from the modeling scenario compared to the latest generation data available, 2019. This generation mix includes generation used for retail sales, transmission and distribution losses, and sales to external utilities. This detail is consistent with our hourly carbon accounting methodology, which essentially requires that we eliminate all carbon emissions from our generation mix, whether sold into the market or used locally.

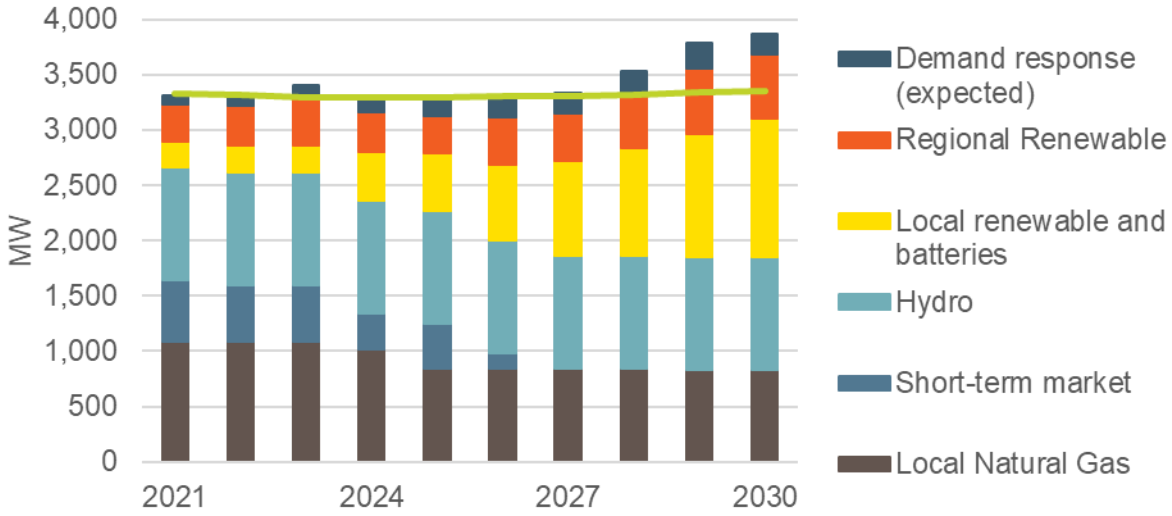
Additionally, this option preserves our power plants in the scenario where our solar is minimum, wind is low and we are in a drought. Even under these conditions, we have an obligation to meet customer electricity needs. If the weather persists, batteries will quickly get depleted and our dams will quickly empty.

Figure 9. Annual generation scenario results compared to actual 2019



The RESOLVE model selected 620 MW of 4-hour duration batteries, for a total of 724 MW of operating batteries in 2030. These batteries, with our flexible thermal and hydro system, will meet most reliability concerns longer than one hour in duration. Figure 10 shows the resource adequacy of the build compared to the PRM. However, intermittent resources, like solar and wind, can vary greatly over a few minutes (or even seconds), something which this model does not solve for.

Figure 10. Resource adequacy and PRM



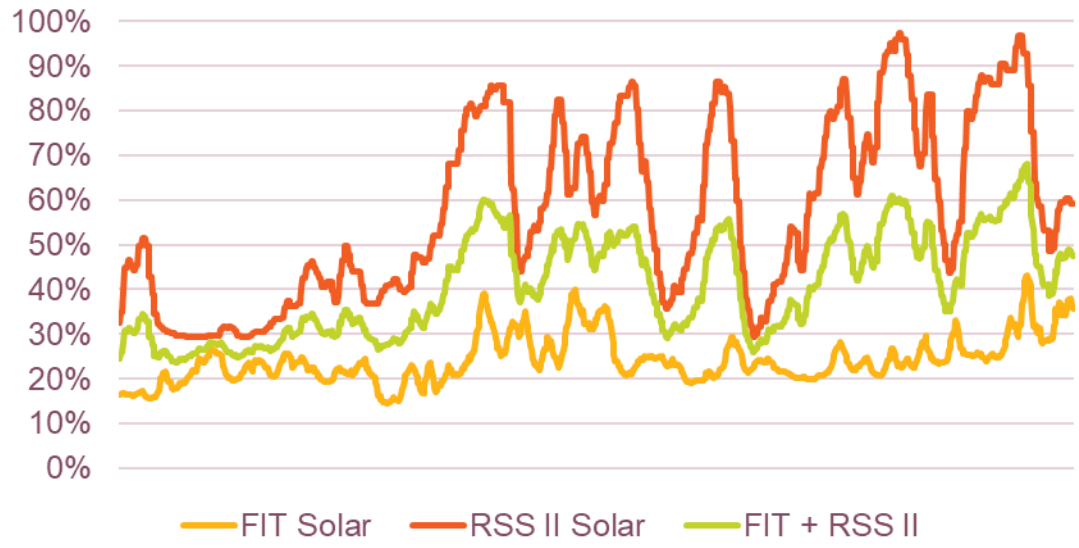
Intra-hour variability

Earlier this year, we began operating our new 160 MW solar power plant at Rancho Seco. This project gave us an opportunity to observe real-time fluctuations on a cloudy day for a large local solar project. Figure 11 shows actual output over a one hour period for our Rancho Seco 2 (RS2) solar project (red line). During this hour, RS2 experienced numerous significant output fluctuations over several minutes with the maximum fluctuation of more than 55%. Each time

this occurs, other power plants must either generate more or less to accommodate these changes. As we build more solar within our service territory, we expect to see this occur more and at a greater magnitude.

To mitigate some of these intra-hour variations, we can ensure that there is enough geographic diversity, meaning projects are not located in close proximity. This allows for a time delay as clouds pass over each array. To demonstrate this, we also plotted our FIT projects, which is comprised of several smaller PV systems with some geographic diversity (yellow line). These projects, FIT with RS2, plotted together (green line), represents a possible scenario for solar in 2030, where there is good geographic diversity among most plants, but we have a couple of large projects grouped together. Under this scenario, we still expect to see regular intra-hour variability of 30% to 40% of the total rated capacity.

Figure 11. RS2 and FIT projects output over one hour[60]



Within our natural gas generation repurposing strategy, we identified the location of 400 MW of 1-hour battery storage. The intent is to further reduce the reliance on thermals for sub-hourly needs, such as the solar variation we expect on cloudy days. This, with the resource build identified by RESOLVE, results in a battery capacity of 1,124 MW by 2040. This capacity is on the low-end of what we expect to need to cover intra-hour variability. We'll need a more detailed analysis of the impacts of solar PV deployment on the larger system and the benefits of geographic diversity.

Takeaway for evolving our Plan

Our transition away from natural gas generation with proven clean technologies is the foundation of our 2030 Zero Carbon Plan. These two strategies alone can eliminate 90% of our GHG emissions, possibly more with the development of new technologies. The final 10% will be

[60] Data represent actual metered output in February 2021 between 10:00-11:00 am

challenging to eliminate and will require leveraging partnerships and collaboration with local government, industry and academia as we explore new technologies and business models. These two strategies cannot meet the 2030 Clean Energy Vision on their own. Combined with advanced DER programs and successes in emerging technologies and business models, SMUD has charted a plausible and flexible pathway to being 100% carbon free.

Takeaway: Our 2030 carbon goal is achievable with flexible strategies and innovations in DERs, fuels and technology.

New technology and business models strategy

New technology and business models

- Identify and scale cost-effective DER solutions.
- Develop tools, programs and partnerships that align customer benefits with grid needs.
- Accelerate DER reliability and grid integration to establish operational confidence in advance of major thermal plant transitions.
- Enable DERs to become a standard grid service solution.
- Develop a customer-partner strategy for Virtual Power Plants (VPP).
- Continue providing support to our low-income customer-households and explore additional programs as our DER and electrification efforts evolve.

In the preceding sections, we shared a flexible strategy for a reimagined and highly flexible thermal fleet allowing for maximum integration of proven clean technologies, based on extensive studies. Using these strategies, we found that today's technologies can reduce about 90% of our carbon emissions while maintaining our commitment to providing reliable service to our customers. Also identified in these strategies are new utility-scale technologies and opportunities to reduce carbon further, addressing the remaining 10% of emissions. We've also found that additional DERs will play a critical role in reducing the remaining carbon emissions, provide capacity, help integrate renewables, lowering implementation costs and engaging our customers as partners in achieving zero carbon for the benefit of our entire region.

In the past DERs has mainly focused on rooftop solar and heating and cooling technologies, but as technology advances, this classification group now includes EVs, water heaters, solar panels with smart inverters, batteries and more. Customers are making significant investments in these technologies to enhance their lifestyles, reduce monthly expenses and reduce their carbon footprint. The opportunity for SMUD, our customers and Sacramento is to align the investments in technology and DERs with grid needs so the benefits of DERs can scale beyond the individual to have a community-level impact.

To help meet our aggressive carbon goals we'll need to embrace new technology options by 2030 in concert with the reimagined thermal fleet and robust proven clean technology buildout. To be successful, this will require large-scale customer adoption of DERs, high customer program engagement and advancement in the visibility and reliability of these technologies as a flexible resource. We simply can't do it alone and will need to establish partnerships to accelerate success. We'll focus on collaboration with local government, industry, academia and others to explore and pilot new technology and business models.

Finally, in considering the implementation of any new technology or business model, we must consider the impact on our communities, including the cost of service, environmental impacts and new clean energy job opportunities. We want our communities and customers to be first in line to realize the local job creation and clean energy benefits from our 2030 Zero Carbon Plan, which is why developing community partnerships is so important to our implementation.

Customer-partner plan and other opportunities with DERs

DERs have benefits beyond generating power or reducing load. They can also empower our customers to take charge of their energy use and join us as partners on our carbon reduction journey. New DERs and technologies give us the opportunity to work directly with customers to maximize the benefits of these devices on SMUD's system.

This strategy is our customer-partner plan, which brings SMUD and our customers together as active participants to study and learn from new technology and proactively reduce carbon.

Customer investment in DERs can create considerable opportunities to support the electrical grid, but most often helping our grid services is not the primary reason customers get DER-related devices. For example, smart thermostat settings can be managed by SMUD to control when energy is consumed from the grid, but customer comfort may be impacted. EV charging can be curtailed by SMUD to minimize grid impacts from coincident EV charging within a community, but the time required to charge the vehicle to full is increased. Accessing the potential of DERs requires balancing customer comfort and choice with economic benefit and reliable performance.

The new technology and business model strategy envisions a suite of solutions that engage with customers at a level they are comfortable with.

- **Electrification and energy efficiency**
  - Ongoing efforts, aligned with the 2018 IRP, to accelerate electrification and energy efficiency. Engagement with all customers to provide a seamless transition into an all-electric future.

Behavioral demand desponse
- Education and behavior based opportunities that empower customers to be informed energy consumers.

Bring your own device (BYOD) VPP
- Solutions that encourage customers to utilize the load flexibility of household devices to provide grid services through aggregation.

Contracted capacity VPP
- Suite of DER program offerings that deliver wholesale and location based system services such as energy, RA and ancillary services with powerplant-equivalent reliability.

Electrification and energy efficiency

One of the foundational elements of our 2030 Zero Carbon Plan is our continued focus on and investments in electrification. Recognizing the paramount importance of equity, we will also continue to prioritize under-resourced communities to help reduce the energy bill burdens of our low-income customers and ensure they aren't left shouldering the legacy costs of stranded fossil fuel infrastructure.

New all-electric program offerings that address lack of funds and other issues faced by renters will be critical to achieving our goal of helping low-income customers and under-resourced communities early. We'll expand our partnerships with local agencies and community-based organizations to raise awareness, bring in new sources of funds and accelerate adoption. In addition to bill savings, these electrification programs bring immediate public health benefits by reducing the significant indoor and outdoor air pollution from gas appliances that lack any emissions controls.

When considering electrification of transportation, scaling the charging infrastructure to meet fleet, workplace and multi-unit residential needs presents significant challenges. Large upfront investment is required for charging equipment and it'll take time for them to be used on a regular basis to get a return on investment. Additionally, transportation electrification may require costly upgrades to utility infrastructure.

To address these challenges, the Plan calls for ramping up our program investments in these spaces as well as engaging our business customers with streamlined solutions to overcome barriers, accelerate adoption and unlock access to electric transportation benefits. We'll similarly expand solutions for residential customers to make the switch to EVs simple and easy. We'll further collaborate with our regional partners to coordinate and align efforts for maximum impact. This Plan also includes workforce development to ensure equity in community benefit from the transition to electric transportation.

As more customers electrify their homes, buildings and vehicles, they'll add to Sacramento's overall electricity needs. Because much of this electrification will happen as technologies are advancing, we'll work to ensure flexible load while at the same time, minimize negative impacts by developing DER load flexibility programs. Investments in electrification will also provide a strong foundation for enabling integration of new renewable resources and displacing the need for additional utility-scale storage to accomplish this.

Behavioral demand response

Customer and technology contributions supporting grid decarbonization are not limited to "smart devices" or cutting-edge technology. Significant benefits can come from educating customers on ways to use energy that supports higher levels of renewable generation integration. SMUD's recent transition to TOD rates for residential customers is an important step in this direction. The TOD rate provides daily guidance to customers about when electricity usage is more and less expensive. Customers can adapt their consumption patterns in ways that change the load profile of the community and helps reduce overall grid costs.

On an individual basis, behavioral demand response has a minimal impact. However, this approach is widely accessible and can allow all customers to participate regardless of technology or circumstance.

Small contributions like delaying a load of laundry or turning on a ceiling fan instead of turning down a thermostat can really add up at the community level. When the community is acting in a coordinated way and everyone is doing what they can, the small contributions of individuals have the ability to fundamentally support the grid.

Virtual power plants

DERs provide an opportunity to enhance the capabilities of the existing distribution system, which can enable more cost-effective electrification of transport and buildings. As we explore new business models involving customer DERs, we'll assess their reliability and potential for cost-effective integration. We'll also consider our ability to scale these solutions in place of planned utility-scale proven clean technology investments, such as utility-scale solar and storage.

To build confidence in DERs as equivalent options to utility-scale resources, we'll need to test the operational capabilities and ensure the solutions are cost-competitive with other zero carbon alternatives. This will require proving our ability to layer dispatch to solve distribution capacity constraints simultaneously with economic optimization and reliability constraints from the bulk electric system.

Bring your own device VPP

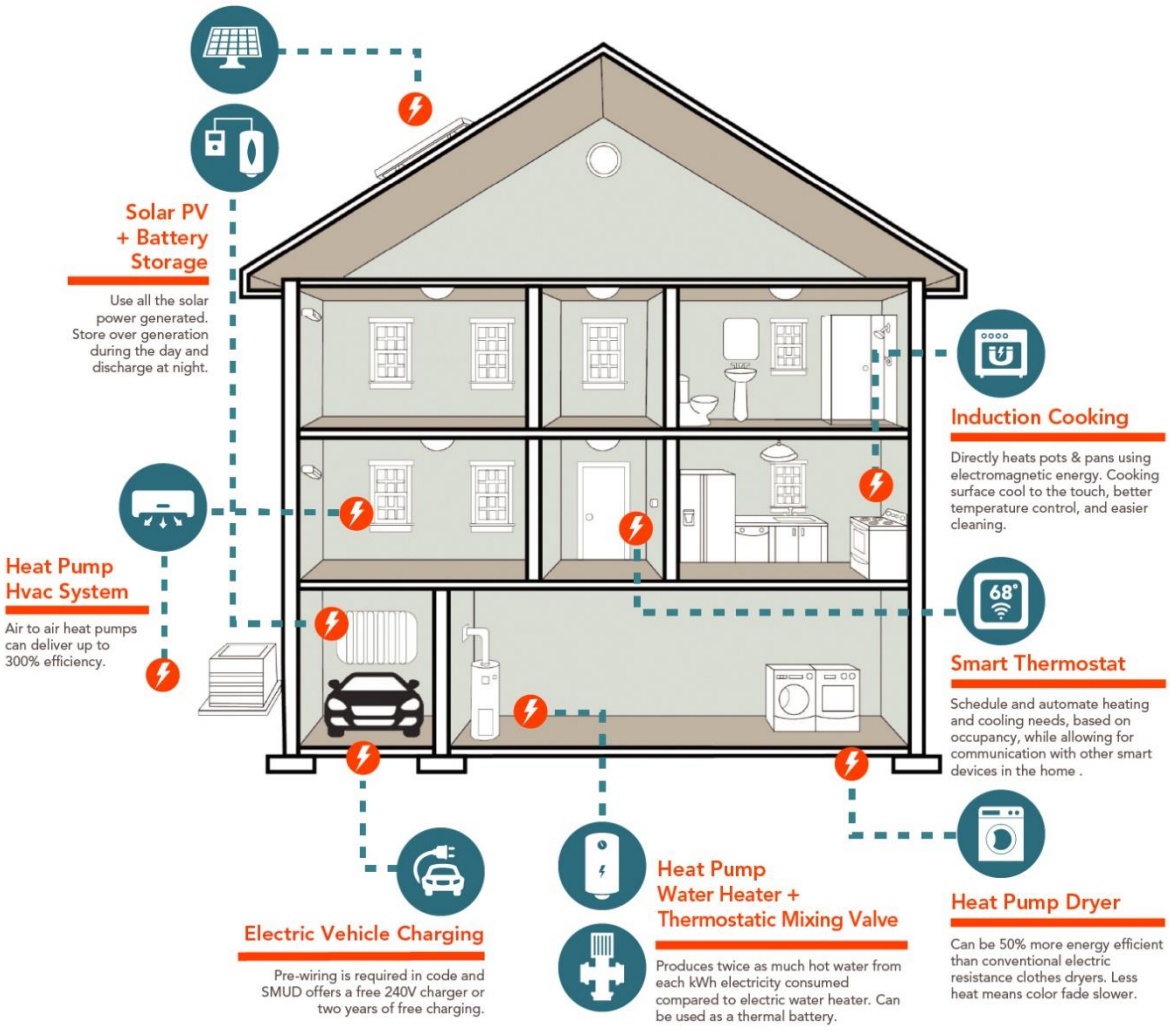
Early demand response programs depended on direct electricity load control of a customer's device, where one-way communication from the utility to the device was used to shed load. These programs were typically focused on air conditioning, but technology limitations meant it was difficult to understand the impact on individual customers. As a result, many customers experienced significant discomfort and would rightfully complain or request removal of a device when activated to support a grid reliability need on a hot day.

Since those early demand response programs, DER technology has evolved to cover a broader range of technologies capable of shifting load rather than simply curtailing it. These programs introduced two-way communication and the ability to manage events in aggregation.

More recently, utilities have started implementing "bring your own device" (BYOD) business models, which leverage the fact that customers are installing smart thermostats, water heaters and EV chargers that can be aggregated to provide energy management services to help meet grid needs.

In Sacramento, more than 85,000 smart thermostats have been installed to date, representing a significant existing potential resource. Thermostat-based programs allow standardized setbacks (e.g., 3 degrees setback from preferred setpoint), which ensures no customers are subjected to unexpected or significant discomfort. Aggregation is not limited to single types of technologies and DERs capable of participating in a BYOD VPP can now be found throughout the house.

Figure 12. Electrification and VPPs



One of the opportunities for this type of aggregation is the ability to leverage the customer's existing wi-fi connection to engage many of these devices. While dependence on this communication path can introduce connectivity risks, the overall cost is far lower than a dedicated cellular connection. This is one of the aspects of the reliability of this type of aggregation that needs to be proven out. A related challenge that we'll need to work on with partners is the fact that many lower income customers may lack both the technology and the basic internet access to be able to participate. Expanding access to both will be important from an equity standpoint.

The BYOD platform will use standardized communication and control interfaces to enable a broad range of technologies to participate. BYOD capacity will be used to provide load-shaping and other grid services as a complementary component to the reimagined thermal fleet.

Solar + storage based VPP

There is significant growth in solar in our service territory and we expect this growth to continue through 2030, much of which we anticipate being paired with storage. Thus, this VPP will look to accelerate the cost-effective deployment of storage with solar and maximize the shared benefits of this technology to both the purchasing customer and to the community.

Not all DERs will be able to provide grid services at a level comparable to a traditional power plant. Thermostats are reliant on temperature, EVs move from location-to-location and energy storage can only provide a finite amount of energy before needing to recharge. However, higher levels of operational confidence will create higher levels of grid benefits. The solar + storage contracted capacity VPP focuses on engaging with leading technologies to provide the most reliable grid services possible from DERs.

Initially, the focus of this VPP will be on solar + storage since these devices are highly reliable and their primary application is energy services. In the future, the intent is to expand into a broader set of technologies including EVs and potential home or building energy management systems.

The platform will contract with aggregators for the dispatch rights to fleets of behind the meter solar + storage systems. DER capacity contracts will be intended to mirror the structure of traditional power plant contracts in addition to consider the unique attributes of DERs. The utilization of the resources may target local grid constraints, providing seasonal capacity, absorbing excess renewable generation or any other grid services needed to support reaching zero carbon while providing reliable energy. Demonstrating success with these approaches could lead to the displacement of hundreds of MWs of future utility-scale solar + storage investments and help lower the cost of shifting away from our existing thermal plant operations.

DER progression plan

Including highly reliable load flexibility programs in our resource portfolio is key to the success of this strategy. These programs must perform similarly to a generator with performance characteristics that are known and can be planned against. This is even more critical if these programs participate in the electricity market. Realizing more value from DERs will allow the incremental value to be shared with customers through low rates and direct payments to customers for their participation. While inclusion of DERs in SMUD's grid operations can lead to immediate operations and maintenance (O&M) benefits, there may also be times when DER services are valued higher in energy markets such as CAISO.

Figure 13. DER progression plan

For DERs to provide the envisioned benefits, they need to transition from their current promising state to a level of high operational confidence. The goal is for DERs to be fully integrated and optimized as part of normal grid operations. The 2030 Zero Carbon Plan is investigating several technology opportunities to deliver these grid benefits. A key element of the plan is evaluating the programs, determining which elements are effective and scaling those up, while stepping back from components that are not cost effective.

The overall contribution of DERs is dependent upon the types of devices enrolled and the level of collaboration between SMUD and our customers. The result is a range of potential capacity that could be enrolled into load flexibility programs. The expected trajectory will be within that range. The capacity will increase to levels that ensure we establish operational confidence by 2024. As we transition beyond operational confidence, we expect DERs to be evaluated based on cost effectiveness and performance.

Table 12. DER development trajectory

Electrification & decarbonization	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Building electrification	Implementation & pilots			Scale up & expand						
Transportation electrification	Implementation & pilots			Scale up & expand						
Cumulative equivalent all-electric homes (thousands)	54	57	60	65	71	81	93	119	131	154
Cumulative electric vehicles (thousands)	23	29	39	51	70	94	127	170	224	288

DER technology	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Energy education & behavioral DR	Implementation & pilots			Consolidation of offerings	Behavioral DR operation					
BYOD VPP	Implementation & pilots			Scale up & expand	BYOD VPP operation					
Contracted capacity VPP	Implementation & pilots			Scale up & expand	Contracted Capacity VPP operation					
Zero Carbon Base Case Capacity (MW)	7	15	27	44	64	95	141	201	275	364
Expected Trajectory (MW)	8	26	51	80	To Be Determined Based on Cost Effectiveness.					
High DER Potential Capacity (MW)	22	74	164	254	384	529	724	919	1,114	1,325

Key DER initiatives

Rates & programs

As a community-owned-utility, SMUD's journey to a zero carbon future is a partnership with our customers and community. Utility investments in proven clean technologies and customer investments in DERs are mutually beneficial. Although proven clean technologies directly reduce carbon footprint, new customer technologies play a complementary role in the 2030 Clean Energy Vision through rate and program offerings. The following recent or new initiatives in partnership with customers are proposed as part of the 2030 Zero Carbon Plan:

Energy efficiency & electrification

As part of this Plan, SMUD is further increasing its commitment to energy efficiency and electrification programs. By leveraging a carbon metric to measure outcomes, we're realigning our portfolio to maximize its climate benefit. Some of the new program models will introduce midstream marketing/incentives and turnkey "service" offerings so that customers can adopt or transition to new technologies with a lower level of effort. Examples include a revamp of SMUD's Express Energy Solutions and Complete Energy Solutions for building technologies, a turnkey EV charging infrastructure buildout service for commercial customers for fleet and employee workplace charging and a turnkey water heater replacement program that will provide a 1-to-2-day turnaround on a heat pump water heater to replace an existing gas water heater that has failed.

Behavioral demand response - "Flex Alert" pilot

We'll pursue a behavioral demand response pilot project to evaluate load reduction opportunity using customer messaging. Participation will not be prescriptive of devices or require device automation. This is expected to be a one- to two-year project starting in 2021.

BYOD load flexibility - Smart Energy Optimizer and PowerMinder

These projects are currently active. SolarEdge batteries are eligible for enrollment in Smart Energy Optimizer and GE and Rheem controllable heat pump water heaters are eligible for enrollment into PowerMinder. In both offerings, the aggregator optimizes device response to minimize utility supply-side energy and capacity costs. Customers are billed off their existing TOD rate while the device automation courtesy of the aggregators is only responsive on event days. The program terms and conditions allow for 120 events per year. Customers receive an upfront incentive and ongoing bill credit for sharing use with the utility on event days. More than a year of data is currently available from these pilots with the evaluation in progress for Smart Energy Optimizer and soon to begin for PowerMinder. Both programs address a portion of the research needs for the BYOD VPP program model/platform.

BYOD load flexibility & Contracted Capacity VPP- multi-DERs pilot

This pilot focuses on comparing different rate and program groupings. More specifically it'll evaluate a critical peak pricing rate, dynamic pricing rate and an incentive-based aggregator-managed load shifting program (VPP). This project will encompass three DERs types – smart thermostats, EVs and residential battery storage in a BYOD fashion. A Request for Proposals is planned for 2021 targeting a system-wide scale that is relevant to economic operation of SMUD's electrical system (10s of MW). In addition to exploring rate and program models, data

will be collected to build confidence on the firmness of load reduction response. This project will address research needs from both the BYOD VPP program model/platform and the Contracted Capacity VPP program model/platform.

Contracted Capacity VPP – Solar + Storage VPP

Programs for solar and battery storage systems will have to be designed with consideration of the successor rate to replace our NEM rate, which is expected to be an element in the upcoming rate process in 2021. Another VPP pilot is proposed, staggered after the multi-DERs pilot with more focused attention on the successor rate. This project will focus exclusively on the research needs of the Contracted Capacity VPP program model/platform with the intent of accelerating the benefits from behind the meter solar + storage.

Managed EV charging

One of the primary interests in utility management of EV charging is to reduce the need for service transformer upgrades due to coincident EV charging when many people are charging at the same time. Service transformer protection allows SMUD to accommodate a greater number of EVs at a lower cost. For customers to enroll in such a program and continue participation, they need assurance that their EV range confidence is not impacted. This assurance may be via a guarantee of a full charge or some minimum rate of charge is provided to the vehicle. Such a program needs to be piloted to evaluate mutual benefit and scalability. Research projects should span both the BYOD VPP and contracted capacity VPP program models/platforms.

Smart inverters

Under SMUD's Rule and Regulation 21[61] (also referred to as Rule 21), new solar interconnections are required to use smart inverters. One of the benefits to smart inverters is access to real time solar generation data which uncovers hidden behind-the-meter loads which is important for grid operations for switching and understanding contingency needs. Smart inverters also offer other functionality such as generation curtailment, reactive power and autonomous modes of operation. Further pathway analysis and modeling for the 2030 Zero Carbon Plan may uncover other priority use cases for smart inverters. Smart inverter utilization and program models are recommended for evaluation and eventual piloting.

Vehicle-to-grid

Vehicle-to-grid (V2G) involves EV batteries capable of discharging energy to the grid. This can act as a low-cost alternative to stationary battery storage. It's estimated that at scale this technology could provide over 250 MW/400 MWh of energy storage. There are two industry barriers to this technology: 1) Warrantied support today is limited to electric school buses only and 2) Vehicles and chargers are lacking hardware interoperability and compliance with utility interconnection standards.

Customer experience is a greater challenge for V2G. Customers will need assurance that utility draw/battery depletion does not impact vehicle use and range confidence. Beyond rate or incentive-based bill savings, in the future V2G could provide backup during outages, which would be an added benefit to customers. Instead of a pilot, smaller scale demonstrations are

[61] https://www.smud.org/en/Business-Solutions-and-Rebates/Interconnection-Information.

proposed. Partnering with industry leaders in demonstrations will help accelerate technology development and create pull for utility interconnection standards and EV supply equipment (EVSE) interoperability to displace stationary storage investments.

Research projects should span both the BYOD VPP and Contracted Capacity VPP program models/platforms. School districts that benefit from CEC and CARB grants are aggressively converting their bus fleet to electric and already require some V2G compatibility. The incremental cost to operationalize V2G with these school districts presents a relatively small barrier compared to other segments.

Equitable access

Bill savings from energy efficiency, building electrification and transportation electrification can benefit low-income customers and under-resourced communities that face socioeconomic challenges or are disproportionately burdened by pollution. The barriers for this segment being able to access energy efficiency, building electrification and transportation electrification are complex and individually unique. The barriers are often a combination of up-front technology cost, lack of information, lack of time or interest to invest in switching technology or a multiple party building change approval process such as tenant-property manager-owner. Variations to programs will need to be available to address this spectrum of challenges for this customer segment. Financing programs could play an important role in this portfolio of program offerings.

IT back office for customer-facing functionality

For load flexibility programs to scale, they must be convenient for customer participation. This means customer-facing functions such as program enrollment, device registration, event messaging, event opt out selection and performance-based incentives/billing all need to be automated. In small scale pilots, many of these functions are manually processed. A road map for automating functionality with determination of what will be supplied by IT partners versus SMUD back office systems needs to be established.

Grid operations

For the full value of load flexibility to be realized, it must be integrated with SMUD's operational procedures and tools. SMUD's implementation of our DERMS will be a significant step toward embedded DERs as part of normal grid operations. The DERMS will unleash economic value from aggregated DERs by displacing a portion of generator operation (namely utility battery storage) and energy market purchases and avoiding a portion of operational resources being reserved for transmission and distribution services or reliability.

Financial strategy and options

Financial strategy

- Explore opportunities for savings and cost reductions.
- Pursue grants, innovative financing and other funding opportunities.
- Cultivate new partnerships and collaborations.
- Connect with clean technology investors.

To maintain rate stability and access to credit markets, SMUD manages its finances to meet or exceed several target financial metrics. Some of the externally reported metrics include:

- **Days cash**: A measure of how much cash we have on hand to pay for ongoing expenses.
- **Fixed Charge Coverage Ratio**: A measure of how much cash comes in each year, compared to the principal and interest payments on debt.
- **Net Income**: SMUD's revenues less expenses.

Building the infrastructure, modifying current assets and acquiring the necessary resources to get to zero carbon will require a significant investment. It'll be important to continue meeting or exceeding our financial metric targets to ensure we have access to the capital needed to implement our 2030 Zero Carbon Plan, and protect against larger rate increases in the future.

Our financial strategy is based on taking action across many areas to help ensure that the goals of our 2030 Zero Carbon Plan can be achieved while keeping annual rate increases at or below the rate of inflation. This will require a mix of strategies, which are the focus of this section.

Proposed portfolio rate impact

The proposed resource portfolio represents a significant investment over what was planned before our commitment to zero carbon by 2030. Relative to our 2040 Clean Energy Plan, annual commodity costs are expected to increase from about $60M dollars in 2023 to more than $450M in 2030.

In the short term, these increases are driven by additional wind and solar contracts and resource development. Longer term, increases are driven by large deployments of batteries and geothermal. In addition to these commodity costs, we're planning to make significant investments in DERs and in electrification for under-resourced communities. These investments will help achieve needed changes to patterns of energy usage, while ensuring costs are born equitably among all our customers.

When evaluating these costs, keep in mind the forecast includes expected cost levels for proven technologies which are uncertain and may ultimately be higher or lower than shown here. However, there are steps we can take to reduce costs below these expected levels, such as:

- Working with staff and vendors to minimize cost increases for recurring programs and services.

- Identifying opportunities to streamline processes and reduce costs.
- Creating innovative rate structures to partner with customers on distributed energy investments and incentivize use of technology that supports adoption of renewables.
- Capturing grant funding to offset costs for innovative zero carbon R&D projects, demonstration of new technology and integration of existing technologies.
- Identifying partnerships with energy suppliers, technology companies, governments and academic institutions to create new business models that share the costs equitably and lead to a healthy marketplace.
- Identifying alternative financing mechanisms that provide for partnership funding, grants and/or lower debt service and commodity costs.

Additionally, new technologies are expected to continue improving, and as they're adopted, price and performance will become more certain. Many may achieve significant cost improvements relative to current planned assets, and therefore lower the cost of the portfolio. However, the scale and timing of these improvements are unknown, and therefore are not currently modeled.

Financial strategy

Our financial modeling results are preliminary and subject to change with fluctuations in commodity markets, changes in the economic landscape and advances in technology. As we progress towards our zero carbon goal, we'll continue to seek out opportunities to accelerate benefits by reducing commodity and borrowing costs, increasing operational efficiencies and optimizing partnership and grant funding strategies. Some strategies we may employ are:

- **Identifying priority projects, programs and technologies**: Prioritizing projects and programs across the enterprise, optimization of individual projects and monitoring technologies and costs to control spending.
- **Optimizing and seeking out partnership and investment opportunities**: Seeking Public Private Partnerships for acquiring or divesting of assets. Additionally, we can use our low cost of capital to finance projects that meet our risk profile at cheaper rates than may be included in modeled costs.
- **Identifying additional funding sources**: Seeking partnerships for grants and co-funding, as well as developing business models that leverage LCFS credits, U.S. Environmental Protection Agency (EPA) electric Renewable Identification Number and carbon credits.
- **Employing alternative financing structures and opportunities**: By employing alternative financing structures, such as renewable prepays, we could potentially lower commodity costs. Additionally, if cost effective and available, we could use direct subsidy bonds such as Clean Renewable Energy Bonds and Qualified Energy Construction Bonds. We could also implement a grant capture policy and process to influence awarding agency budgets and align with SMUD projects. All funding opportunities available to SMUD for both zero carbon and non-zero carbon grants should be explored to create as much of a positive impact on SMUD's budget as possible.
- **Managing financial metrics**: Metrics can be adjusted to manage fluctuations in costs, and to smooth out rate impacts over time.

Partnerships

Getting to zero carbon is a task that's larger than any single organization can achieve alone. As such, we're exploring ways to partner with the community at large to pool resources and mitigate risks as we explore new technologies and pursue large-scale projects. Community partners could include businesses, governments, academic institutions, financial/corporate institutions, native tribes, non-profit and philanthropic organizations, other utilities and investors. Each stakeholder brings new resources and perspectives to the challenge facing us, but together we're stronger and more capable of ushering in a zero carbon world.

We'll continue to explore opportunities to partner with others. These partnerships will likely be technology-specific. Some opportunities we're exploring include:

- **Partnering with other energy providers**: These partnerships could help facilitate construction of large-scale proven clean technology projects while achieve cost savings from economies of scale, as well as achieving regional decarbonization goals.
- **Partnering with manufacturers**: These partnerships could result in cutting-edge demonstration projects for technologies such as hydrogen fueled generators, biomass, biogas and biodiesel.
- **Enhancing investment in under-resourced communities**: By leveraging relationships with financial institutions and other businesses, we can work to enhance investment in under-resourced communities. Moreover, we can explore foundation and private investment funding to identify mission-related investments that support our goal of ensuring that no community is left behind in our 2030 Zero Carbon Plan. Examples of these possible funding sources include the Bill & Melinda Gates Foundation, William and Flora Hewlett Foundation and the MacArthur Foundation.

A key element of our partnership strategy is taking a more proactive stance towards identifying and developing potential partnerships. The "One Sacramento" initiative is a key example of this shift, bringing together local governments, academia, regional organizations, industry, under-resourced communities, healthcare organizations and investors. In the past, some of these groups have missed out on potential benefits and valuable partnership opportunities may have been overlooked. By creating a forum to discuss our shared goals, we can expand the array of potential partnerships, streamline planning processes and maximize the regional impact of expected new funding from stimulus and recovery packages and possible Green New Deal funding.

One Sacramento regional partnership

As we decarbonize, we must comb the market for strategic partners that are focused on solving the same problems. Collaboration with government, environmental agencies and private organizations will expand ideas, tackle common barriers to accelerate timelines and co-invest in solutions to lower total decarbonization costs in a coordinated and efficient way. Our grid and customer base can be a platform for innovation, where key partners can gain access to end users and a network of industry and regional collaborators.

SMUD is in the unique position to be a powerful convenor in our region to align resources to maximize our decarbonization efforts. Specifically, we will lead the formation of a "One

Sacramento" regional initiative. This initiative will mobilize a coalition of customers, researchers, civic leaders and private sector partners to advance healthy, affordable and sustainable building, mobility and community solutions and to propose and implement demonstrations of what can be implemented in the Greater Sacramento region's under-resourced communities, serving as a model for the rest of California and across the U.S.

SMUD maintains a unique leadership position in electrification for buildings and mobility, which are supported by our Sustainable Communities program, 2040 Energy Plan, recent climate emergency declaration and involvement with the California Mobility Center. We'll work to prepare the greater Sacramento region to definitively respond to the expected Biden Administration Green New Deal stimulus funding, climate adaption-focused Federal Emergency Management Agency (FEMA) funding opportunities and other opportunities likely to encompass environmental justice, infrastructure to support decarbonization and resiliency and equitable deployment of clean tech to our customers. This intersection of community vision, funding, political will and evolving policies will likely bolster our ability to attract private investment from industry stakeholders.

Our "One Sacramento" initiative will work to attract funding and resources to equitably and affordably decarbonize the current environment and mobility services, and improve community health and resiliency in the Greater Sacramento region. The goal is to achieve zero carbon by 2030 while simultaneously advancing social equity and economic prosperity for the region.

Regional partnerships supporting economic mobility

We also plan to expand partnership pilots to support the goals of our low-income and community engagement and Sustainable Communities programs. In expanding partnership pilots, we plan to:

- Leverage Sustainable Communities investments to identify opportunities to reach communities that are not already represented in the partnership portfolio and/or have limited representation.
- Incentivize current community partners to assist SMUD in achieving our 2030 Zero Carbon Plan through outreach, education, job training, etc.
- Implement additional training programs similar to Energy Careers Pathways that bring needed zero carbon job skills to under-resourced communities.

We're also looking to establish additional partnerships to leverage federal funds to invest in under-resourced communities. With these funds, we intend to ensure that under-resourced communities will have access to the new technologies that will reduce GHG emissions without increasing their energy costs. We'll also continue to work to incentivize companies to bring new companies to bring resources (e.g., new energy efficient businesses and technologies) to under-resourced communities. We're learning about models that other communities are using that can be implemented in Sacramento to bring new energy technologies to under-resourced communities, adding new job opportunities and economic development opportunities for these communities.

We'll leverage our involvement in the California Mobility Center as a conduit to potential innovation partners to accelerate managed charging and V2G technologies. It can also provide

a model that could be replicated to attract and build collaboration with stakeholders in the load flexibility and VPP domains.

SMUD must invest in training and hiring to ensure that strategic alignments are formed with well-vetted strategic partners and that ongoing exchange of mutual value is negotiated tactically in order to track and realize benefits for SMUD, our partners and our customers.

Grant funding

We analyzed current and past grant opportunities to develop a forecast of grants that SMUD has a good chance of getting over the next five years. This analysis only includes grants that support the 2030 Zero Carbon Plan and primarily awarded by the Department of Energy (DOE) and CEC because those agencies would be the source for the majority of zero carbon grants. Based on our analysis, awarding agencies will provide the opportunity to capture more than $150 million in grant funding over the next five years.

SMUD has extensive experience applying for and receiving grant funding that make innovative projects and customer programs possible. The recently completed Slab Creek Powerhouse grant started with the Power Generation team responding to a DOE request for information (RFI) and subsequent discussions with DOE on the need for this and the Iowa Hill Pumped Storage projects. Our most recent example is the awarding of $750,000 from California's Department of Resources Recycling and Recovery grant for the North City Landfill where the Environmental Services team engaged with the state to allocate funding in alignment with one of our SMUD projects by educating them on our project needs and timeline. SMUD's Research and Development department has a Grant Acquisition Management team to respond to RFI's, engage with awarding agencies, vet opportunity announcements and respond to funding announcements with grant applications and proposals for emerging technology funding opportunities.

In a similar climate of grant funding to support presidential administration goals, the 2009 American Reinvestment and Recovery Act (ARRA) provided several significant grants for SMUD from 2010-2015. SMUD was awarded over $150 million in federal funding for the SmartSacramento® project, the Home Performance Program through the California State Energy Program, Low Income Weatherization, Community Renewable Energy Deployment, Anatolia energy storage and the General Motors and Chrysler fleet grants. These projects were considered shovel ready and immediately generated jobs in the community. These projects moved SMUD toward zero carbon and have laid the foundation and given us the experience needed for our grant work as part of the 2030 Zero Carbon Plan.

SMUD has the potential to capture grants for the 2030 Zero Carbon Plan in two ways. First, the new Biden Administration has indicated that a new recovery act will be developed soon. Second, the DOE and CEC has a history of awarding grants for development, demonstration and research and development projects similar to those discussed in the partnership section of this plan. Research into grant awards shows the history of DOE grant funding to be stable and consistent across both the Obama and Trump Administrations. This trend is expected to continue under the Biden Administration.

To capture a similar level of grant awards with a new recovery act, we'll be ready to apply with shovel ready projects that align with the administration, DOE and CEC goals. Projects identified in the 2030 Zero Carbon Plan appear to align with these goals. Our successful capture of ARRA grants was related to SMUD's great reputation that enabled us to unite our community behind our ARRA projects such as SmartSacramento®. We've worked hard to maintain our positive reputation with the local community by educating and including local organizations in the ARRA projects. Our has built a reputation of successful implementation and grant management by placing the right amount of policy and procedures with the right controls. This ensured that the many audits we received resulted in positive reports to the awarding agencies and no give back of grant funds.

Approach

In anticipation of our zero carbon grant needs, we have implemented new approaches to improve the efficiency of our internal grant identification and application process. This includes taking proactive steps to build relationships with new partners, such as establishing regional forums on shared goals, as well as internally structuring our processes and teams to have streamlined and coordinated approaches to managing grant opportunities. This will allow us to be prepared with quick, yet comprehensive, responses as new funding is announced. Because grant funding opportunities typically require a 30-to-45 day response, we must be ready with shovel ready projects defined, sub-recipients or other partners identified and vetted, and teams with the capability and capacity to build a winning proposal.

Building on this momentum, we can capture grant funding by implementing a grant capture team focused on our 2030 Zero Carbon Plan goals. This team will leverage our current capture process to do three things:

1. Leverage industry partnerships to help define and align agency funding with SMUD projects.
2. Leverage our Government Affairs team and external partners to advocate for zero carbon grant funding.

Government affairs strategy

SMUD's 2030 Zero Carbon Plan will require close coordination across multiple agencies at all levels of government to enable near-term transformation. Governments are serious about addressing climate change, and their investment in SMUD's success will inform policies and pathways for other utilities to follow.

Key objectives

Already, certain policy goals emerge as critical to the success of the 2030 Zero Carbon Plan. As specific projects and technical needs emerge, SMUD's advocacy team will be prepared to advance policies that support those changes and investments.

Partner with Governments on innovation

As the nation's leader in emissions reduction, SMUD will become the partner of choice for government investment in innovative research and commercialization of utility applications for emissions reductions, including public-private partnerships, grants and specific projects.

SMUD is well-positioned to partner with federal and state governments to receive funding for existing and planned carbon reduction projects, with an eye toward achieving shared goals. Many of the projects we'll pursue are likely to be transformative projects that have a public policy nexus, such as electrification of cars and buildings, reduced energy consumption through energy efficiency and demand response and developing additional zero emission generation resources and energy storage.

Accelerate beneficial transportation and building electrification

Building and transportation electrification projects have the ability to promote environmental equity, health and safety benefits for our customers as well as improve load factor in a cost-effective manner to ensure continued affordability. Central to this approach is achieving policy changes that encourage the electrification of buildings and transportation, which will also contribute to further emissions reductions in those sectors.

In 2018, Governor Brown signed an executive order calling for the state of California to be carbon neutral by 2045. Also that fall, the mayors of Sacramento and West Sacramento adopted a joint-city carbon zero goal by 2045. Both of these goals will require electrification of most if not all end uses in buildings and much of on-road transport. To achieve these levels of electrification, gas appliances will need to be phased out in retrofit applications by 2030, and for new construction, the state energy code will have to require all-electric buildings by 2026. On the transport side, phasing out the sale of gasoline or diesel vehicles will need to be done by 2035. These types of policies will require many years of education and promotion of the technologies and their benefits to reach acceptance, both amongst the public and policymakers.

Improve technology standards and permitting processes for infrastructure

Robust efficiency standards must play a role in ensuring the power SMUD generates is not going to waste. After years of inaction on standards at the federal level, new requirements are likely to be proposed under the new administration. SMUD will support strong standards and engage on requirements that impact grid-enabled devices.

As SMUD identifies and begins construction on key projects required to affect the transition to zero carbon, policy support for deployment of renewable generation, storage technology and transmission infrastructure will also be crucial. This may come in the form of streamlined permitting processes, monetizing credit for early action in broader emissions reductions regimes or reducing unintended barriers to deployment.

Strategies

SMUD's objectives are ambitious, so our approach must be determined and focused. The decade of transformation has already begun, and SMUD is vaulting to the forefront of change by building strong relationships with elected officials and decision-makers who will help us succeed.

Educate policymakers

Our first order of business is to tell our key government stakeholders and external partnerships about our goal and strategy for achieving it, which is already underway. In addition to introducing our 2030 Zero Carbon Plan to policymakers in 2021, we'll inform coalition partners, trade associations, environmental advocates and the public about our plans to achieve zero carbon by 2030.

We'll develop an outreach plan for direct, regular and consistent interaction with decision-makers and influencers, utilizing grass-roots mobilization to engage a strong base of supporters and organizational allies to encourage change. Through this Plan, we'll promote our work to key federal agencies that can deliver funding for demonstration and deployment projects aimed at deep decarbonization.

Working across departments, we'll develop and disseminate consistent company-wide talking points and issue papers, provide training on critical issues and execute a strategic campaign to raise awareness of the 2030 Zero Carbon Plan and associated policy initiatives.

Promote beneficial regulation

We'll be highly visible as a champion of policy efforts to reduce carbon emissions, including drawing upon and sponsoring studies, offering technical support and feedback for policy development and partnering with government agencies on physical projects. We'll endorse and support policy proposals that facilitate utility actions to reduce emissions, including government research and development programs in emerging technologies like power-to-gas technology, hydrogen and methane, long-duration batteries and compressed air storage.

We'll identify, evaluate and maintain a list of beneficial programs, projects, rulemakings and legislation that enhances and/or facilitates the clean energy transition, with the highest support for those efforts that specifically facilitate our efforts. we'll work to raise awareness of, and

support for, these initiatives through briefings, social media, correspondence and other activities.

We'll also work with policymakers to provide constructive feedback on legislation and regulations, leveraging our technical expertise and engineering capabilities. We'll work individually and through coalitions and associations to shape climate and clean energy efforts, including financial support for and participation in organizations dedicated to clean energy transformation.

Actively work toward reforming outdated policy barriers

We'll proactively identify barriers to the clean energy transition that may be embedded in existing law, and work for their reform. We'll call for pragmatic changes to existing policies that inhibit a speedy transition to clean energy, such as permitting processes and requirements that do not appropriately balance the urgency of climate change against other objectives.

We'll continue to cultivate policy support for necessary reform of existing law when it becomes evident that such policy is an impediment to the 2030 Zero Carbon Plan.

In addition, we'll seek to reframe narratives from our industry and others that discourage ambitious goals or entrench the status quo. SMUD will be an advocate within advocacy groups, and counter opposition or indifference within those organizations. We'll be a voice for what's possible and will challenge assertions that policies should protect existing industries at the expense of emissions reductions.

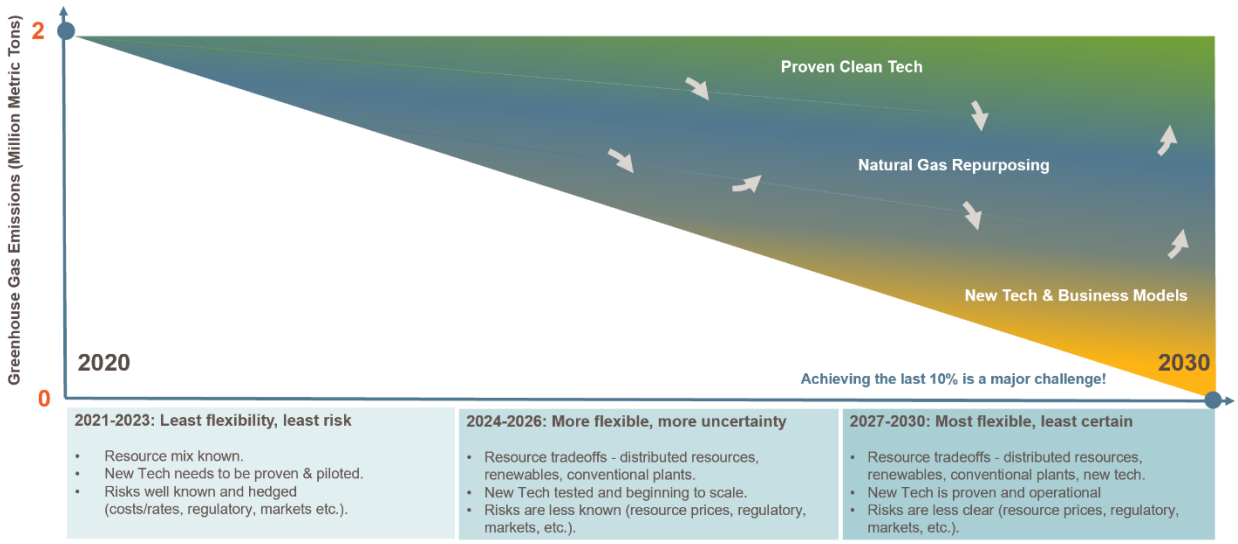
Conclusion

One of the defining features of our 2030 Zero Carbon Plan is that we're seeking to reduce emissions associated with all our electricity generation, not just our retail sales emissions. This exceeds the scope and timing of California's 2045 zero emissions goal as well as virtually all United States utility targets. Our all-encompassing goal will require removing natural gas from our portfolio, which most utilities identify as needed for reliability.

Our strategies support our core values, including maintaining reliability and affordable rates. We'll work with all our communities to ensure that Plan benefits sensitive groups and our under-resourced communities and that it's affordable for all. We'll use a thoughtful, data-based approach to study the reliability of these options before proceeding.

We've identified a broad and flexible road map to get us to zero carbon by 2030. This Plan will, and must, remain flexible to be successful. As we implement one element, we'll need to reassess the system, technology landscape and customer preferences. Clean energy technologies are evolving quickly, and we must ensure we're providing our community with the right solutions over the next decade and beyond.

Figure 14. Illustrative flexible pathway to zero carbon



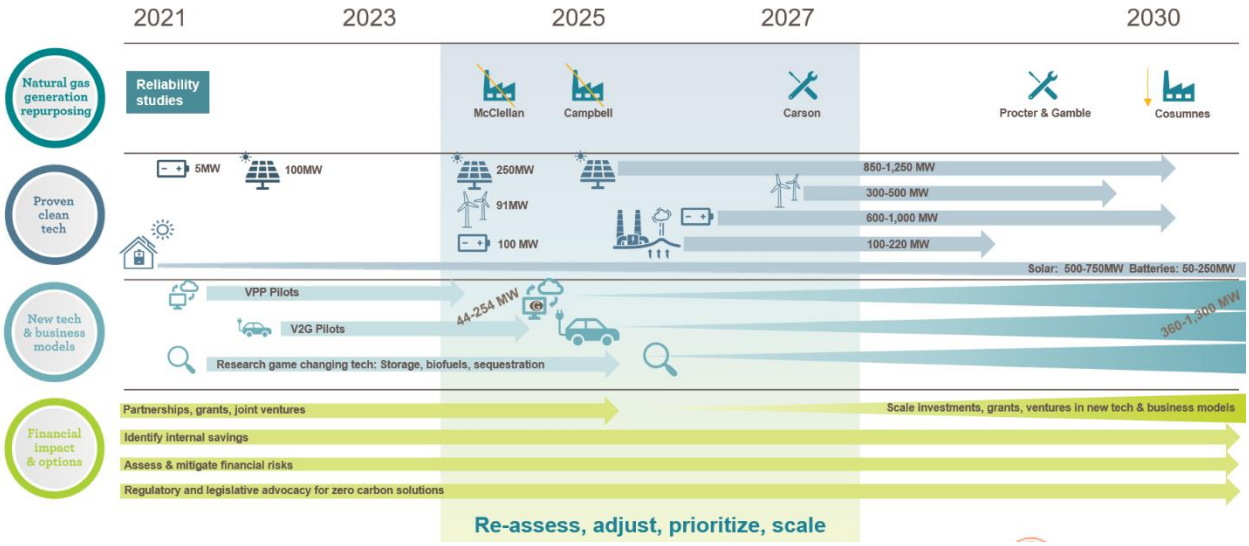
Flexible pathway to decarbonization

What we have discussed in previous sections is not a rigid plan of action, but rather an exploration of scenarios that have and will continue to inform our strategy discussion as elements of our plan become more concrete. As part of our strategy discussion, we modeled a variety of scenarios, each employing different tools available to SMUD as we continue our journey toward zero carbon. As we continue down this journey, we must approach each decision point decisively and educated with the best available information. Through the

implementation of this plan, we'll define our pathway and create a comprehensive resource portfolio that, by 2030, will allow us to reach zero carbon.

There is no single portfolio that will help us achieve zero carbon and it will not be a one-time optimization task. Instead, it will be up to us to create a resource mix that balances a variety of sometimes evolving objectives – cost, reliability needs and land-use, among others. We'll revisit these tools often as our priorities evolve and new technologies or business models become commercially available. Figure 15 is illustrative and suggests several possible ways that SMUD could balance the various tools we have at our disposal to reach zero carbon by 2030.

Figure 15. Possible ways to reach zero carbon by 2030



One view of our road map to 2030

While the future is far from certain, we know our power supply in 2030 will be significantly different than it is today. More options will be available, and while we don't know exactly which ones will be in place in 2030 and to what extent, this Plan is the foundation that will get us to zero carbon, with the flexibility to adjust as circumstances change.

The Plan assumes our generating capacity will increase. Under today's technology assumptions, our portfolio, in terms of nameplate capacity rating (the maximum instantaneous generation rating), is expected to grow from around 3,500 MW today (including short-term market capacity) to nearly 6,400 MW in 2030.

Figure 16 shows the capacity break out compared with today. Figure 17 shows one potential breakout of where our renewable resources could be located (local and remote).

Figure 16. 2030 Zero Carbon Plan

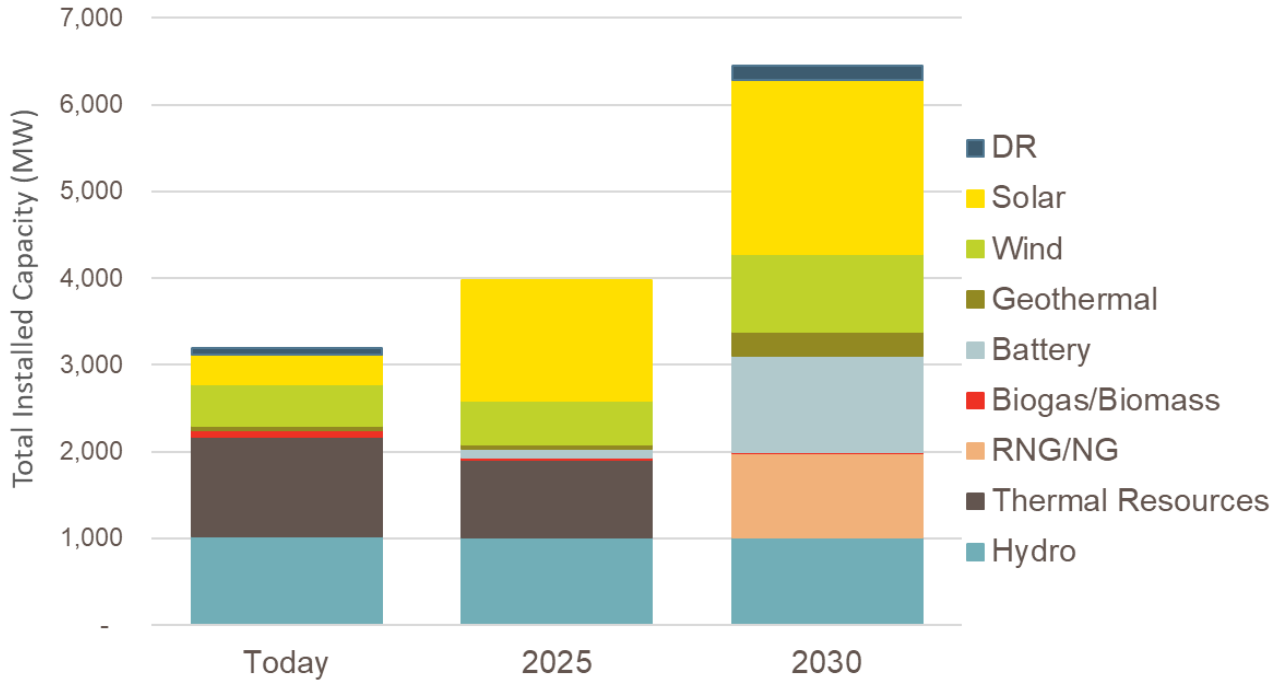
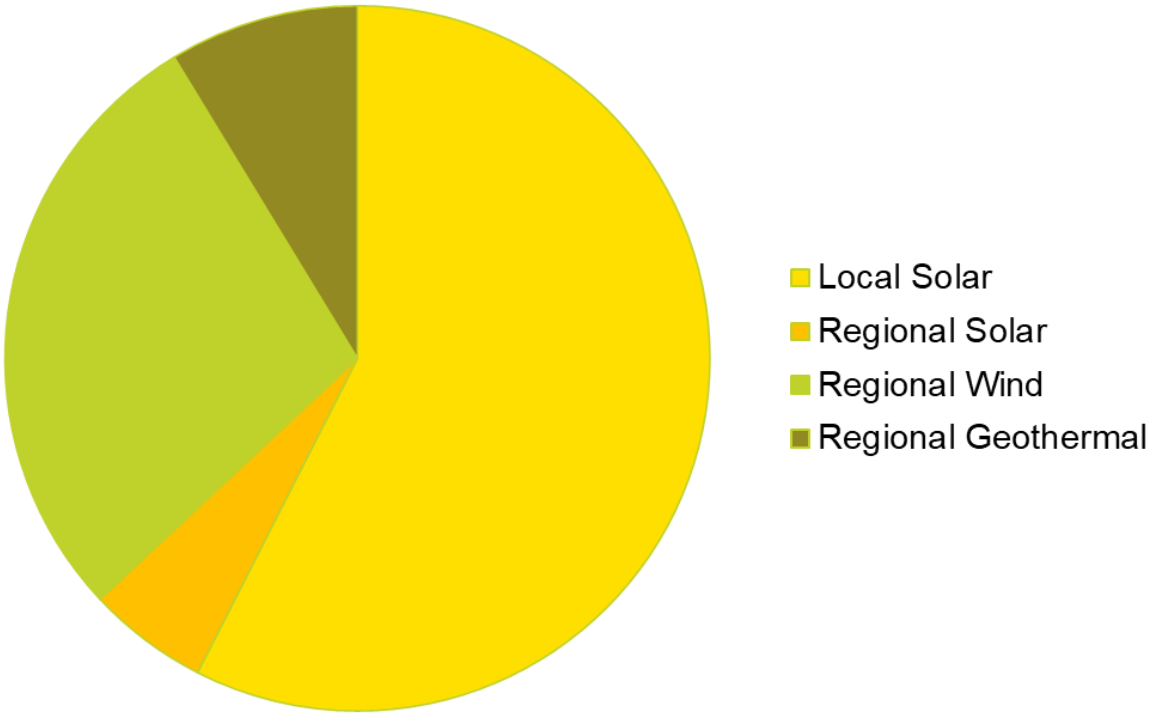


Figure 17. Where might our new renewables be located?

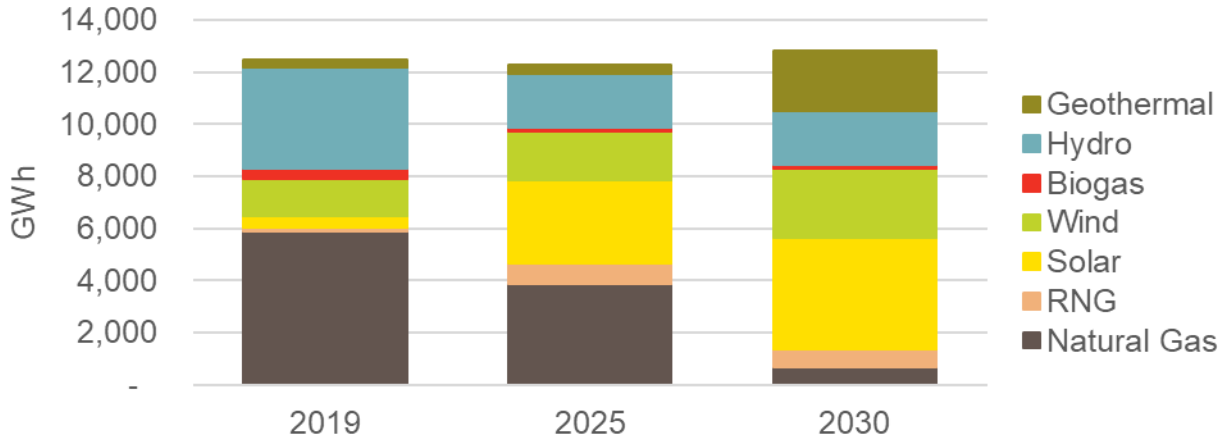


In terms of generation, natural gas comprises under 6% of the total generation. In fact, we expect to curtail more solar power (over 15%) than is generated by natural gas in 2030 in this model. While this does not mean that with today's proven clean technologies we can use the solar energy to displace our thermal assets. It does suggest that there are opportunities for new technologies, such as long-duration storage or renewable hydrogen production, that could absorb our excess solar energy and store it until we need it later in the year.

As compared to 2019, our reliance on natural gas is reduced by nearly 90%. This is mostly due to the retooling of our gas plants to operate as peakers. When used as such under the thermal retooling scenario, the average capacity factor drops from 60% in 2019 to 21% in 2030. Of the 21% capacity factor, 8% is from RNG.

The resource mix that makes up our annual energy use is highly dependent on fluctuations in hydro availability. In 2019, our hydro resource performed above average and we were also able to procure additional zero carbon resources under short-term agreements from the Pacific Northwest. For our 2030 Zero Carbon Plan, we assumed that hydro would generate under average conditions and that we would not have long-term access to short-term agreements from the Pacific Northwest. See Figure 18 for the annual generation break down by technology. Future analysis is needed to determine the resource mix needed under low-hydro conditions and the impact to renewable curtailment during high hydro years.

Figure 18. Annual generation for 2019 and 2030



Customer-partnerships: The road to VPP

Adoption and flexibility of DERs are gaining momentum and show promise as a valuable resource in our 2030 Zero Carbon Plan. Advancements in technology and declining costs are laying the foundation for promising business models that will provide customers with an opportunity to participating in resource programs and share in the benefits. Our building and vehicle electrification efforts are foundational elements to community-wide carbon reductions. Additionally, rooftop solar continues to decline in cost and batteries are reaching market parity with other capacity resources, creating an attractive financial proposition for customers interested in these types of investments. Taken together, we see great potential for technology aggregation to create a VPP.

The capabilities of such a configuration remains to be tested and refined to optimize overall performance and customer experience. We expect that aggregated DERs will have potential and capability to mimic the operations of up to 490 peak MW of the equivalent thermal power plant. The actual resource potential is uncertain until we develop the infrastructure, increase customer adoption of smart technologies and transition local vehicle sales to EVs.

Action plan and risk mitigation strategy

Based on extensive studies, we concluded there is a feasible pathway to achieve zero carbon by 2030, however, there are a number of unknowns and risks that we must be prepared to mitigate. We addressed many of these in the preceding sections, such as development risk, technology uncertainty and cost controls. Other challenges are likely to arise during implementation. Our flexible pathway allows for may mitigation efforts and complementary actions that we can undertake to achieve our goal on time.

Our plan of measurable actions is divided into near-term and mid-term. Long-term actions will be developed as we complete the near-term actions and update the plan in our mid-term review.

Below are our short- and medium-term action plans, subject to change based on new information, economics and technology readiness. These are the areas we'll focus on through March 2024, with ongoing updates to this Plan based on progress and factors that have changed since this Plan was created.

2030 Zero Carbon Action Plan

Near term action items, to be completed by March 31, 2022
Implement plan for the Natural Gas Generator Repurposing Strategy, including • Feasibility study of the reliability, economics and environmental impacts, focusing on solutions for McClellan and Campbell. • Community outreach, communication and engagement inclusive of all segments. • Study of new complementary utility-scale technologies, fuels and options.
Implement plan for the Proven Clean Technology Strategy, including: • Schedule and options for developing and deploying new resources. • Conduct locational analysis, system impact study and economic valuation and solicit counterparty offers. • Study strategic new technology options complementing the Natural Gas Generator Repurposing Strategy. • Explore delivery options for out-of-area renewables. • Develop and issue competitive solicitation for new proven clean technology projects.
Implement plan for New Technology and Business Models Strategy, including: • Perform information technology system upgrades to enable DERs and VPPs. • Include DERs in operations, distribution and grid planning processes. • Launch new customer-partner pilot programs for VPP Involving thermostats, EVs, rooftop solar and batteries. • Launch pilots for behavioral demand response "Flex Alert", EV managed charging and V2G demonstrations. • Quantify co-benefits in healthcare, mass transit, construction, internet service providers, etc.

Near term action items, to be completed by March 31, 2022
Evaluate the 2030 Zero Carbon Plan for NERC Reliability Standards, system adequacy requirements, operational reliability requirements, and new reliability services contributions. • Transmission system studies are completed, and a mitigation strategy is proposed for any identified violations. • Operational recommendations for mitigating intra-hour variability. • Data on expected grid reliability contribution based on New Technology and Business Strategy modeling.
Perform reliability assessments • Evaluate operational reliability requirements to manage the variability of solar and wind generation. • Evaluate grid reliability services contribution from VPPs, DERs, demand response and load flexibility. • Perform detailed studies of sub-transmission system impacts from the re-tooling of the Carson Ice generation plant.
Set internal goals for operational efficiencies needed to manage risks to rate impacts.
Organize grant capture team to proactively seek opportunities for funding partnerships and research with manufacturers, vendors, government agencies, utilities and research institutions.
Engage government, agencies and policy makers • Brief policymakers on the 2030 Zero Carbon Plan. • Advocate for and support electrification policies • Support cities' and county General Plans and Climate Action Plans • Connect with federal agencies and policy makers on climate action and our 2030 Zero Carbon Plan
Identify new workforce skills needed to support zero carbon technologies. Determine if these are net new jobs or upskilling of existing workforce. Careers can span zero emission vehicles, building electrification, etc.
Develop and implement a comprehensive regional communications, marketing, outreach and educational effort.

Medium term action items, to be completed by March 31, 2024
Update and implement Natural Gas Generator Repurposing Strategy, including • Finalize solution for McClellan and Campbell replacement. • Conduct comprehensive reliability analysis and retooling (or retirement) plan for each thermal generator location and update retooling plan annually as necessary. • Update our research and development plan for new large-scale technologies. Seek expertise and opportunities to partner, research and fund projects.
Update and implement the Proven Clean Technology Strategy, including: • Identify and develop the next set of renewable resources and storage needs locally and regionally with plausible delivery options. • Identify and solicit additional clean tech resources. • Update feasibility study of the reliability, economics and environmental impacts, focusing on solutions for retooling Carson and Proctor & Gamble.

Medium term action items, to be completed by March 31, 2024
Update and implement plan for New Technology and Business Models Strategy, including: • Accomplish planned system upgrade. • Accomplish future rates development • Continue to refine new programs and pilots and nurture partnership & grant opportunities. Collaborate with utility peers to support common interfaces to technology and program innovation.
Continue to study and monitor the impact of the plan on both distribution and transmission system. Perform transmission reliability studies to comply with the NERC reliability standards, load serving capability and import capability studies.
Continue to evaluate VER impact on operational practices and system conditions.
Set 2022 budget and 2022/23 rate increases with initial plan limits. Determine optimal borrowing strategy to meet plan and make necessary adjustments as part of the biennial Rate Case process.
Focus project outreach on residents within the recommended radius of each thermal plant based on key findings from scope study and partner feedback Identify community partners to develop training programs (upskill or entry-level) to support new zero carbon technologies. Develop strategies to attract (marketing, career pathways etc.) under-resourced communities to these stable, economically mobile careers.
State-level Actions: • Maximize CARB Cap-and-Trade allowances. • Protect LCFS revenue. • Support agency implementation of Governor's Executive Order on EV-only sales. • Protect against legislation that creates barriers to implementing our 2030 Zero Carbon Plan, such as costly mandates and funding of non-zero carbon transportation fuels. • Advocate for legislation that aligns with zero carbon priorities, including transportation, building electrification and zero emission technology funding and research.
Regional and local activities: • RMI SMAQMD NOx standards campaign. • City of Sacramento Electrification Ordinance adoption and support. • City of Sacramento Climate Action Workplan. • Building electrification and EV permit data and streamlining. • City of Sacramento EV Blueprint Phase II Implementation.

Risks and mitigation strategy

As was the case with our 2040 Clean Energy Plan adopted by the Board in 2018, any long-term market outlook carries significant uncertainty and there are many factors that could cause us to re-evaluate and adjust our plans by 2030. For example, a downturn in the economy may slow load growth as well as customers' willingness to invest in new technologies or programs intended to help meet our goals. Similarly, if costs for battery storage, solar PV or other emerging technologies decline faster than currently expected, there may be cause for SMUD to accelerate investments in these technologies or add them to the solutions to meet the 2030 goals.

Key risks

We have identified the following risks and developed a high-level risk mitigation strategy to that will allow for us to adapt as challenges occur.

Technology

Even proven clean technologies may experience negative impacts to performance due to factors such as the impacts from climate change on weather or other long-term changes beyond 2030 in load or customer behavior. Given this, knowing which technology will prevail in cost and performance is impossible.

Many utilities are wary of defining an inflexible strategy too soon and limiting their options. They don't want to presume the best technology before absolutely necessary. SMUD's carbon reduction goal is the most ambitious goal of any large utility in the U.S., so these considerations are of even greater importance for us. Some utilities are choosing to defer decision-making, while others approach their goals through investments in research and development but given each utility's small size relative to the market, it's difficult to have a meaningful impact. However, paralyzing indecision is also untenable and costly.

Our strategy for overcoming these hurdles is to embrace flexible planning that regularly assesses risks and opportunities, new technology advancements and applications of new business models that advance SMUD toward zero carbon.

Climate change

In recent years climate scientists have emphasized the interrelated nature of cascading and compound events, such as years of drought followed by extreme precipitation leading to excessive vegetation, wildfire and then mud slides resulting from new storms. As climate changes progress, California's already variable climate is expected to experience even greater extremes in the years to come. SMUD's infrastructure, our outdoor employees and our customers are vulnerable to these conditions, which will likely demand system hardening and other changes to adapt to shifts in electrical demand and working conditions.

As SMUD prepares to make significant additional investments in our zero carbon pathway, we must also consider how a host of new technologies and approaches to supplying electricity could be enhanced or constrained by the projected changes in the climate, both within our region and throughout the western United States. As such, each proposed investment in new technology or service delivery included in the 2030 Zero Carbon Plan must undergo customized evaluation or stress testing with consideration of the climate projections that could impact the end user and the operational conditions, performance and the life of the asset or measure.

Additional, solution-specific and location-specific climate research will be conducted as the plan is further developed. This research must encompass not only conditions anticipated in Sacramento County but in all the regions where we may source electricity, critical equipment and supplies. And we can act on new findings related to regional urban heat island[62] and

[62] https://climatereadiness.info/uhi-project/.

actually reduce ambient temperatures by investing in cool roofs, cool pavements and walls and urban greening in targeted areas.

Facilitating the awareness and incorporation of projected climate changes into SMUD's research, planning, design, operations and emergency response efforts is essential to prolong the life of our non-emitting resources, avoid additional stranded investments, increase the likelihood of new technology performance to expectations and to minimize unnecessary cost to our customers. It'll demand broader engagement throughout SMUD's management and the organization than has been the case in the past, to better connect operational knowledge with information about likely future conditions that will continue to shift over time. Implementation of the California Public Utility Commission's recent decisions[63] related to climate adaptation, which specify cross-functional and executive involvement in addition to specific data and planning criteria, will be an important step in this direction. This is also an area of great potential for collaboration throughout the region to build or evolve social and physical infrastructure that can address immediate needs and help us prepare for the future.

Regulatory

California's environmental regulations are continually evolving as the state pursues its low carbon goals, which in turn could have a significant impact on our costs of generating and distributing power. For example, RPS goals through 2030 have been revised higher to 60% by SB 100 just after passage of an increase in RPS from 33% to 50% by 2030, set under SB350 in 2015. Currently, numerous laws have been introduced to further require decarbonization of electricity. While we support these laws in general, we'll need to watch closely as new limitations are imposed and our options are restricted.

For us to reach our 2030 goal, we will continue to target programs and infrastructure supporting electric transportation and buildings. We must also be working on the leading edge of research, experimenting and deploying new technologies and customer programs. Although we anticipate regulatory changes to support electrification, this will take time to implement.

Development and land-use concerns

Our 2030 Zero Carbon Plan relies heavily on proven clean technologies to decarbonize our energy system. Currently, the most economical resources are wind and solar. These systems have large geographic footprints that require thoughtful development strategies, including alternative technologies, like rooftop solar and bioenergy. However, the local potential for other technologies is highly limited in the Sacramento region.

Economics

Solar and wind costs have steadily decreased in recent years to historic lows. These resource costs are susceptible to land value, incentive expiration (investment tax credit/production tax credit), political climate, environmental regulations and the cost of material to create them. Resources such as battery storage used to balance renewables are projected to decrease significantly over the next 10 years, which would allow for lower cost deployment of these valuable balancing resources when needed.

[63] https://www.cpuc.ca.gov/climatechangeadaptation/.

Economic downturns, pandemics or factors that slow growth in regional jobs and population could change relative costs of goods and services that could warrant adjustments of our plan. Additionally, higher than forecasted market prices could create upward pressure on costs and rate projections and dampen the adoption of transportation and building electrification.

Infrastructure planning

We completed preliminary studies assessing the impact that removing all of our thermal generation during summer peak would have on the load serving capability and import capability for our transmission grid. The study results indicate that without SMUD's internal thermal generation, our capability to serve load would be reduced by approximately 1,000 MW (equivalent to 200,000 homes in the middle of summer). In addition, our capability to import power would also be reduced by approximately 200 MW (or 10,000 homes). The studies also indicate that 1,000 MW of renewable generation would need to be added to SMUD's transmission system at ***specific locations*** to return our load serving capability and import capability to the current levels.

When the 2030 Zero Carbon Plan is refined, additional studies will be performed to ensure the adequacy and reliability of SMUD's transmission and distribution systems.

Reliability

As our portfolio includes more solar resources, we'll need to account for the intra-hour variability and carry additional flexible resources. Solar resource output can widely swing due to local cloud cover and smoke, reducing output by over 60% in minutes. We must continue assessing this and developing our operating reserves structure to evaluate any needed changes.

Risk mitigation

This plan defines four flexible strategies to achieve our 2030 Zero Carbon Plan. We have chosen flexible approaches because a significant amount of work and additional analysis is needed to ensure we continue to provide safe, reliable and affordable power to our customers while advancing toward our ultimate goal of zero carbon.

There are methods for developing dynamic road maps to ensure achievement of the optimal strategy in the long run given changing circumstances. One such planning regime that avoids indecision is an adaptive road map utilizing a least-regrets decision analysis framework. These strategies allow us to use the information we know today to make the best possible decision, while considering all known unknowns, allowing for course correction and maintaining cost and reliability constraints.

To further address uncertainty and risks associated with changing regulatory framework, we have proposed a robust government affairs strategy. As part of this, we will work with regulators and policy makers to encourage flexible policies to support carbon reductions.

Flexible and adaptive strategies

Adaptive planning uses decision-tree analyses where each branch represents one possible version of the future and each decision node denotes where there are forks along the tree. This

method can provide insight into the sequencing of actions over time, potential lock-ins and path dependencies.

An adaptive plan can be thought of as a series of possible actions optimized to achieve some objective under the given scenario conditions, where there are several scenario conditions (e.g. future technology cost uncertainty) and therefore several pathways. Each possible strategy along the plan can be linked, to a certain extent, to capture strategy interdependencies and allow for changing contributions by each strategy as needed. Initially, any strategic path can be chosen, but as one moves down a selected path, moving to another path, or adapting to changing conditions outside of the particular scenario conditions optimized for, becomes more difficult.

This challenge is known as lock-in or path dependency. Typically, the more actions taken along a particular strategy, the more difficult it will become to adapt to future changes. Central to adaptive plans are tipping points, which are the conditions under which a pathway no longer meets the clearly specified objectives which trigger an evaluation and path transition. The key point of tipping points is to avoid costly ramifications from lock-in on a non-optimal path.

Least-regrets decision analysis is a method which could be used in tandem with an adaptive road map to determine decisions at each node or fork that minimize regret-costs. This method analyzes each decision along an optimal path (e.g., plant retirement or resource investments in our 2030 Zero Carbon Plan) under a set of different future trajectories to test the robustness of each decision to changing conditions. The analysis is used immediately prior to a decision being made, or in the case of a new initiative, on the first set of initial decisions required.

The first step is to determine no-regrets decisions, which are decisions made in every possible version of the future analyzed (e.g., solar investments are made in every scenario for SMUD's carbon neutrality analysis). These are decisions which can be made immediately if need be and represent little to no risk. The next step is to determine the set of initial decisions beyond the no regrets decisions and choose the option with the least-regrets costs. To calculate regrets costs, each decision, in turn, is "made" in the model and the model is run to determine possible cost impacts of this decision given uncertain futures. The decision that minimizes cost across various versions of the future is the least-regrets decision.

Board reporting schedule and check-ins

To ensure our Plan is taking advantage of technology advancements and addressing changes in market conditions, we'll conduct biannual IRP updates, which will incorporate changes needed to meet our 2030 zero carbon goal. In addition to biannual IRP updates, the Board will be updated on progress through our annual Strategic Direction reporting.

Glossary

Ancillary services: Services that are necessary to support the transmission of capacity and energy from resources to loads while maintaining reliable operation of the transmission system in accordance with good utility practice. The Ancillary Services include system balancing and control, frequency response, regulating reserve, contingency reserve, energy imbalance and voltage control.

Balancing Authority Area: The generation, transmission and loads within the boundaries of a balancing authority. The balancing authority is responsible for maintaining load-resource balance within this area.

Black-start capability: Capability of a generator to start up without support from external power sources, which is needed in the event of a system blackout to energize other equipment and restore the system.

California-Oregon Border: Trading hub for the transfer of power from the Pacific Northwest and California.

California-Oregon Transmission Project: Transmission project connecting the Balancing Area of Northern California with the California-Oregon border trading hub.

Capacity: the maximum output an electrical generator can produce (i.e., MW)

Carbon accounting: the processes used to quantify the amount of carbon dioxide an entity (such as an organization or a country) emits.

Carbon sink: a reservoir able to accumulate and store carbon dioxide for an indefinite period of time; it absorbs more carbon than it releases

Days cash: A measure of how much cash we have on hand to pay for ongoing expenses.

Distributed energy resources: energy solutions where customers implement technology that change how they use energy. They can include, among many others, rooftop solar, energy efficiency improvements, demand response and batteries.

Energy: the amount of electricity a generator produces over a specific period of time (i.e., one hour – MWh).

Fixed charge coverage ratio: A measure of how much cash comes in each year, compared to the principal and interest payments on debt.

Frequency response reserve: The amount of the reserve that is online and can automatically respond to system frequency change.

Inertia: Physical resistance to frequency changes in the first few seconds following a system disturbance before generator frequency response kicks in. This resistance to change (typically from large rotating generators) gives automated control devices needed time to respond.

Market price: The price at which supply equals demand for the day-ahead or hour-ahead markets. Market-based pricing is set in open market systems of supply and demand under which prices are set solely by agreement as to what buyers will pay and sellers will accept. Such prices could recover less or more than full costs, depending upon what the buyers and sellers see as their relevant opportunities and risks.

Net income: SMUD's revenues less expenses.

Operating reserves: The total capacity above the load demand required to provide regulation and to cover the load forecasting errors, planned and unplanned equipment outages and system emergencies. It includes regulating reserve, contingency reserve, frequency response reserve and other reserves that a utility decides to preserve for unexpected situations.

Planning reserve margin (PRM): Additional reserve margin for long-term planning equal to 15% of SMUD's load.

Reliability adequacy: we have adequate grid reliability services to keep the electricity flowing. These services are sometimes referred to as ancillary services and include additional generation capacity and generator capabilities that we need to respond to sudden changes in system conditions and system disturbances, frequency response, generation and load balancing and voltage control.

Reliability: the ability of the power system to provide the services our customers expect when they want and need them, even under difficult circumstances.

Renewables Portfolio Standard (RPS): a regulatory mandate designed to increase production of energy from renewable energy sources. In California, it sets renewable energy procurement requirements for load-serving entities.

Resource adequacy: a condition in which we have acquired adequate resources to satisfy our forecasted energy needs reliably.

Short-lived climate pollutants: potent climate pollutants that have relatively short atmospheric lifetimes (relative to carbon dioxide). These pollutants include methane, hydrofluorocarbons, and anthropogenic black carbon.

Sustainable community: a community with a healthy environment, a prosperous economy, and equitable access to the multiple essential community components necessary to ensure a high quality of life including livable wage employment and training opportunities, affordable housing options, transportation and connectivity, health care access, nutrition, education opportunities, and digital access.

System adequacy: we're capable of serving our load under extreme weather conditions and identify our system's energy import limits.

System peak: Maximum annual energy demand within SMUD's service territory.

Under-resourced community: these communities lack equitable access to the multiple essential community components necessary to ensure a high quality of life, including but not limited to livable wage employment and training opportunities, affordable housing options, transportation and connectivity, health care access, nutrition, education opportunities, digital access and a healthy environment.

Variable energy resource (VER): a generation resource where the output is not perfectly controllable by a transmission operator and is dependent upon a fuel resource that cannot be stored/stockpiled, and availability is uncertain. Examples include solar and wind.

Acronyms

ARRA – American Reinvestment and Recovery Act
BANC – Balancing Authority of Northern California
BYOD – bring your own device
CAISO – California Independent System Operator
CARB – California Air Resources Board
CEC – California Energy Commission
CO – carbon monoxide
CPUC – California Public Utilities Commission
CVFA – Central Valley Financing Authority
DERMS – Distributed Energy Resource Management System
DERs – distributed energy resources
DOE – Department of Energy
dth – dekatherms
E3 – Energy + Environmental Economics
EI – emission intensity
EPA – U.S. Environmental Protection Agency
EV – electric vehicles
EVSE – electric vehicle supply equipment
FEMA – Federal Emergency Management Agency
FERC – Federal Energy Regulatory Commission
FIT – feed-in-tariffs
GHG – greenhouse gas emissions
GWh – gigawatt hours
HVAC – heating, ventilation, and air conditioning
ILT – Innovation Leadership Team
IRP – Integrated Resource Plan
kV – kilovolt
kW – kilowatt
LCFS – Low Carbon Fuel Standard
LDES – long-duration energy storage
MED – Medical Equipment Discount Rate
MW – megawatt
MWh – megawatt hours
NEM – net energy metering

NERC – North American Electric Reliability Corporation
NOx – Nitrogen Oxide
O&M – operations and maintenance
PM10 – particulate matter smaller than 10 micrometers in diameter
PRM – Planning Reserve Margin
PV – photovoltaic systems
RECAP – E3's Renewable Energy Capacity model
RESOLVE – E3's Renewable Energy Solutions model
RFI – request for information
RMI – Rocky Mountain Institute
RNG – renewable natural gas
RPS – renewables portfolio standard
RS2 – Rancho Seco 2 solar project
SEPA – Smart Electric Power Alliance
SLCPs – short-lived climate pollutants
SMAQMD – Sacramento Metropolitan Air Quality Management District
SMUD – Sacramento Municipal Utility District
SOx – sulfur dioxide
SPA – Sacramento Power Authority
TBD – to be decided
TOD – time-of-day
UARP – Upper American River Project
V2G – vehicle-to-grid
VER – variable energy resource
VOC – volatile organic compounds
VPP – virtual power plant
WAPA – Western Area Power Administrator

Appendix A: Existing SMUD resources

Table 13. Description of SMUD resource capacity as expected available in July 2021[64]

Resource	Resource Type	Fuel	Nameplate Capacity (MW)	Summer Capacity (MW)
Campbell	Combined Cycle	Natural Gas	178	170
Carson	Combined Cycle, Cogen	Biogas & Natural Gas	111	103
Cosumnes	Combined Cycle	Biogas & Natural Gas	621	576
McClellan	Gas Turbine	Natural Gas	72	72
Proctor & Gamble	Combined Cycle, Cogen	Natural Gas	193	166
UARP	Hydroelectric	Water	688	675
Southfork PH	Hydroelectric	Water	2.7	1
Chili Bar	Hydroelectric	Water	8	8
Camp Far West	Hydroelectric	Water	9	3
WAPA Hydro	Hydroelectric	Water	331	328
New Hope	Dairy digester	Biomass	0.45	0.4
Kiefer Landfill	Landfill gas	Biomass	14	12
Santa Cruz Landfill	Landfill gas	Biomass	1.6	1.3
Simpson Biomass	Biogas/Biomass	Biomass	55	42
Van Steyn Dairy	Dairy digester	Biomass	0.2	0.1
Van Warmerdam Dairy	Dairy digester	Biomass	0.6	0.5
Yolo	Landfill gas	Biomass	2.7	2.4
Cal Energy	Geothermal	Geothermal	30	25.5
Patua	Geothermal/PV	Geothermal/Sun	22	11.8
Feed-In Tariff Projects	Solar PV	Sun	98	57
Rancho Seco PV	Solar PV	Sun	11	5.4
Rancho Seco II	Solar PV	Sun	160	72.4
Recurrent PV	Solar PV	Sun	60	34
Wildflower	Solar PV	Sun	13	4.7
Grady	Wind	Wind	200	31.5
High Winds	Wind	Wind	50	14.4
Solano	Wind	Wind	230	52.7

[64] Nameplate rating is the maximum simultaneous rated capacity output of the project. Summer capacity is the rated availability during the summer for thermal and hydro resources and the statistical probable output of wind and solar. Summer capacity values are representative of our resource adequacy plans for July 2021.

Appendix B: UN Sustainable Development Goals[65]

The United Nations has identified 17 sustainable development goals to transform our world on three levels: Global leaders should pursue strong leadership, more resources and smarter solutions. At the local level, they should lay the foundation for needed transitions in policies, budgets, institutions and regulatory frameworks. As for people, everyone needs to take action to generate momentum and push for necessary transformations.

The 17 sustainable development goals are:
GOAL 1: No Poverty: Economic growth must be inclusive to provide sustainable jobs and promote equality.
GOAL 2: Zero Hunger: The food and agriculture sector offer key solutions for development and is central for hunger and poverty eradication.
GOAL 3: Good Health and Well-being: Ensuring healthy lives and promoting the well-being for all at all ages is essential to sustainable development.
GOAL 4: Quality Education: Obtaining a quality education is the foundation to improving people's lives and sustainable development.
GOAL 5: Gender Equality: Gender equality is not only a fundamental human right, but a necessary foundation for a peaceful, prosperous and sustainable world
GOAL 6: Clean Water and Sanitation: Clean, accessible water for all is an essential part of the world we want to live in.
GOAL 7: Affordable and Clean Energy: Energy is central to nearly every major challenge and opportunity.
GOAL 8: Decent Work and Economic Growth: Sustainable economic growth will require societies to create the conditions that allow people to have quality jobs.
GOAL 9: Industry, Innovation and Infrastructure: Investments in infrastructure are crucial to achieving sustainable development.
GOAL 10: Reduced Inequality: To reduce inequalities, policies should be universal in principle, paying attention to the needs of disadvantaged and marginalized populations.
GOAL 11: Sustainable Cities and Communities: There needs to be a future in which cities provide opportunities for all, with access to basic services, energy, housing, transportation and more.
GOAL 12: Responsible Consumption and Production: Responsible Production and Consumption
GOAL 13: Climate Action: Climate change is a global challenge that affects everyone, everywhere.
GOAL 14: Life Below Water: Careful management of this essential global resource is a key feature of a sustainable future.
GOAL 15: Life on Land: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss.
GOAL 16: Peace, Justice, and Strong Institutions: Access to justice for all, and building effective, accountable institutions at all levels.
GOAL 17: Partnerships to achieve the Goal: Revitalize the global partnership for sustainable development.

[65] Adopted from https://sdgs.un.org/goals

Appendix C: Innovation

As part of the process to develop our 2030 Zero Carbon Plan, SMUD asked the public, stakeholders and its staff to submit innovative ideas to help achieve our goal of zero carbon by 2030. The table below includes a list of all the ideas that were submitted and accepted after evaluation by our ILT. This list includes ideas that are incorporated into this Plan plus others that will be explored after adoption of the Plan because additional analysis and studies are needed or insufficient time to properly assess the idea before the Plan is released in March 2021.

Table 14. Ideas submitted to and considered by the ILT

Title	Idea Description
Utility-scale photovoltaic generation maximization	Maximize in-service territory utility-scale photovoltaic generation (GWh) with high density reliable solar energy coupled with battery energy storage system.
Creating small and medium business (SMB) zero carbon advocates	Many SMB customers are not willing to make the initial investment in energy efficiency and/or zero carbon technologies that have perceived long payback periods. By performing journey mapping and looking at the end-to-end value chain, we can identify opportunities that can turn SMB customers into zero carbon advocates.
"Strategically located and right sized" battery storage	Strategically placed battery storage systems on our grid can help us achieve carbon reduction goals gradually ahead of 2030. This technology is already being used by the market as evidenced by the amount of solar + storage and stand-alone storage that are being developed in the CAISO interconnection queue. Many of the technologies that will help us reach absolute zero do not exist yet or are too expensive and unproven at this point. This approach allows us to realize some of these benefits without overcommitting and putting our customers at risk of rate increases.
Hydrogen fuel cells for long-term storage[66] [67]	Create hydrogen gas through electrolysis and store in tanks when energy is cheap or when there is excess from PV. Use the hydrogen with a fuel cell to dispatch that energy when needed. This has a very long-term storage potential since the hydrogen can be stored indefinitely without degradation.

[66] *Optimizing Renewable Energy Storage With Hydrogen Fuel* Cells, BALLARD (Dec. 17, 2020), https://blog.ballard.com/renewable-energy-storage?utm_campaign=Automatic%20Blog%20Email&utm_medium=email&_hsmi=103925816&_hsenc=p2ANqtz-9ogrcEKYF9CyBTuDyIhIdVtQni_MYcOI6i_O_T5qL0LGZZrc2ZHDPvaVODLrOAEoNSAsgqK4_G1qmre654BgcCuKi5XA&utm_content=103925816&utm_source=hs_email.

[67] *To batteries and beyond: With seasonal storage potential, hydrogen offers 'a different ballgame entirely'*, UTILITY DIVE (Oct. 12, 2020), https://www.utilitydive.com/news/to-batteries-and-beyond-with-seasonal-storage-potential-hydrogen-offers/584959/.

Title	Idea Description
Incentives to vendors and community partners[68] [69]	Provide incentives to SMUD vendors and community partners to join in the zero carbon effort similar to what Walmart is doing with its supply chain. This suggestion would expand on the Walmart idea to include our Community Based Organization partners.
Reform grid architecture to support aggressive zero carbon goal[70]	This idea expands on previous ideas already mentioned. SMUD could focus priorities and resources towards creating a new foundation for the distribution grid to better utilize and integrate DERs; solar, batteries, microgrids, EVs, combined heat and power, RNG, hydrogen, fuel cells, etc. The grid management system would ensure the distribution grid is balanced and fully maximized before importing or exporting power to/from the transmission grid. The bottom-up approach would also involve the community and incentivize the customer to support more DERs to reach the new zero carbon goal.
Government relationship and lobby for favorable energy policies	Actively lobbying state and federal government on energy policies that are favorable to electric utilities. Forming coalitions with other utilities to shape policies and legislations regarding DERs.
Profit-sharing with VPP aggregators[71]	It is expected that VPP will become a major supply side resource in the future grid. Given the distributed nature and potential market risk of VPPs, the operations will likely be handled by third-party aggregators. In order to balance the risk and profitability, SMUD should carefully design contracts and evaluate different profit-sharing schemes with these aggregators.
Liquid air energy storage - Highview power[72]	Liquid air energy storage is a long-duration storage technology that stores renewable energy in the form of liquid air (-196degC) and then expand that air through a turbine to re-generate electricity. The technology is very scalable (4 hours to 4 weeks).
Malta electro-thermal energy storage system[73]	Long-duration energy storage that leverages a heat pump with a chilled liquid cold reservoir and a molten salt heat reservoir. Process is reversed through a heat engine. Process sometimes referred to as a Carnot battery.

[68] *See* https://corporate.walmart.com/newsroom/2019/05/08/walmart-on-track-to-reduce-1-billion-metric-tons-of-emissions-from-global-supply-chains-by-2030. Last accessed 22 March 2021.
[69] *The challenge of climate change*, MCKINSEY & COMPANY (Dec. 11, 2020), https://www.mckinsey.com/business-functions/sustainability/our-insights/the-challenge-of-climate-change#.
[70] Lorenzo Kristov, *The Bottom-Up (R)Evolution of the Electric Power System*, IEEE POWER & ENERGY MAGAZINE (March 20, 2019), https://cleanpowerexchange.org/wp-content/uploads/2019/05/IEEE-PE-1903-Kristov.pdf.
[71] *See* Leslie Nemo, *New York approves utility revenue sharing for battery storage systems*, UTILITY DIVE (Jan. 29, 2021), https://www.utilitydive.com/news/new-york-approves-utility-revenue-sharing-for-battery-storage-systems/594207/?utm_source=Sailthru&utm_medium=email&utm_campaign=Issue:%202021-02-02%20Utility%20Dive%20Storage%20%5Bissue:32234%5D&utm_term=Utility%20Dive:%20Storage.
[72] *Technology*, HIGHVIEW POWER, https://highviewpower.com/technology/. Last accessed 22 March 2021.
[73] *Our Solution*, MALTA INC., https://www.maltainc.com/our-solution. Last accessed 22 March 2021.

Title	Idea Description
EV managed charging (V1G)	Manage charging times or throttle the rate of charging. Managed EV charging can reduce the scale of impact and need to upgrade service transformers and eventually (with higher EV adoption) upstream distribution infrastructure such as feeders and substations which will reduce the cost exposure to broad EV adoption. Managed EV charging also can help with the consumption of excess renewable generation supply (i.e. day time solar overgeneration via workplace or at-home charging) that reduces the need to curtail renewable generation, export to the market at a discounted price or make additional investments in energy storage resources.
EV Vehicle-to-grid (V2G) and/or Vehicle-to-home	Vehicle sends electricity back to grid/home. Manage charging times or throttle the rate of charging including potential reverse power flow (discharge of the vehicle battery). V2G from a functional standpoint is a superset of V1G. V2G-enabled EVs can mimic stationary battery storage. As a result, each V2G-enabled EV offers a greater amount load flexibility than a V1G-enabled EV.
DER aggregation / Virtual Power Plant	Including use of supply side renewables. Focus on larger scale - battery and rooftops directly controlled by DERMS. VPP technology is a longer-term solution further down the road. Confirm difference between this and load flexibility.
Load flexibility	Thermostat/Water Heater. Set and forget type systems on customer side.
Carbon capture and sequestration (CCS)	Run carbon from our thermal plants through chemical process to remove carbon dioxide to pure gas/liquid form and transport and store in underground geologic formations (such as spent gas fields). Currently viable technology, but there is no place to store or off-taker for this product in Sacramento. It would be expensive to pipe somewhere else.
Power-to-gas technology (Electrolysis + hydrogen)	Long-term solution that is the hot topic across the industry. Complexities around storage, transport, infrastructure permitting and safety. Very expensive, like 10x to 16x the cost of natural gas today. One hundred percent hydrogen turbines do not exist today, but turbines that can burn up to 30-40% hydrogen exist today (mixed with natural gas).
Long-duration storage	Could be multiple technologies (pumped hydro, flow batteries, etc.)
Drop-in carbon free fuels at existing gas plants	Drop-in carbon free fuels at existing gas plants (biogas, biomethane, or biodiesel). Fuels that can be burned in our existing gas plants with little to no capital expense on the generation set. This is a near- to mid-term solution with complexity in how to transport the carbon free fuels without emitting additional carbon during transportation. Options can be expensive.

Title	Idea Description
2030 Zero Carbon Hack-a-Thon[74]	In partnership with universities (Sacramento State, UC Davis, community colleges) and/or Code for Sacramento and Women Who Code meet up groups, host a single or multi-day opportunity for the best and brightest students in our region to come together and develop technology/software solution as an idea-generating event resulting in project ideas localized to our community. Provide a purpose-driven program that could result in valuable ideas and potential innovation.
Heliogen[75]	Modular Concentrating Solar Power. New innovations in tracking technology substantially reduce commissioning and O&M costs while increasing performance. Eighty-five percent solar-only CF using molten salt storage. Formed out of Idealab with key contributions from SolarReserve and eSolar. Two projects under development, 5 MW each. Current full-scale modular size is a 5 MW plant and can add multiple to tens of multiples together. Either build locally to tap into world-class summertime DNI in Sacramento or build in Mojave and wheel power.
Bioeconomy Development Opportunity Zone (low-risk feedstock conversion)[7677]	Establish bioeconomy facilities in Opportunity Zones which will bring high-value careers to under-resourced communities. There are no bioeconomy facilities in OZs currently so these communities are not easily able to take advantage of related careers. Focus would be on low-risk feedstock (*e.g.* The Wonderful Company). Research shows great potential.
Long term "Collab-etition" with storage and traditional infrastructure manufacturers to enable a zero carbon grid[78]	The baseline assumption for this idea is that in order to reach our zero carbon goal, we will need large-scale adoption of electrification measures such as EVs & EVSE, DERS, and a customer base that has been enabled to be responsive to SMUD's ADR+ signals. To provide a grid that is capable of easily interconnecting and interacting with these technologies while maintaining high reliability scores, investments in infrastructure improvements may be necessary. Investing in energy storage is an alternative to infrastructure improvements due to capacity restraints. The primary scope of this idea is to transform SMUD's grid to be ready for the 2030 zero carbon goal and to do so with an open relationship with one storage and one "traditional" infrastructure manufacturer at the planning table and jobsites.

[74] This idea is similar to Western Washington University's Institute for Energy Studies annual Carbon Hackathon . See the following for more information. https://energy.wwu.edu/carbon-hackathon. Last accessed 22 March 2021.
[75] *See How it Works*, HELIOGEN, https://heliogen.com/. Last accessed 22 March 2021.
[76] *See* https://bdozone.org/. Last accessed 22 March 2021.
[77] Jordan Soloman, *BD Zones and BDO Zones: Driving Bio-Based Investment in Opportunity Zones*, ENVTL. AND ENERGY STUDY INST.,https://www.eesi.org/files/073020_Ecostrat_Driving_Bio-Based_Investment.pdf. Last accessed 22 March 2021.
[78] Similar to the idea published by Kristen Coyne, 4 January 2016. https://nationalmaglab.org/news-events/feature-stories/collaborate. Last accessed 24 March 2021.

Title	Idea Description
Rail energy storage[79][80]	Develop a portion of private land near UARP facilities with a rail-based gravity energy storage scheme. An electrically-powered railroad would be built between a high elevation point and a low elevation point on land out of the way from public access. Rail cars of heavy weight would run unattended on this line, connected into a train. Rail cars would be equipped with motor-generator units. This rail line would be sited adjacent to and existing UARP transmission line. During times of excess generation, the train would receive energy and run uphill, consuming energy from the grid. When load is needed, the train would run downhill, contributing energy to the grid. An example site is the region between Big Hill and Union Valley Reservoir.
Biomass power at the Sierra Pacific Industries (SPI) facility in Camino[81]	Seems like the technology is improving to make these facilities more efficient and we have this massive supply of materials just outside our service territory, in the mountains surrounding Sacramento. Many of these projects may not pencil out due to cost of transporting the materials to the facility but there are other benefits of having these facilities, namely reducing the build-up up of fuels from non-merchantable wood byproducts. We have a potential location in Camino at the old SPI mill site and this could be a joint venture with them, as they own a lot of land in the area and are regularly harvesting.
Liquid metal long-Term duration storage battery – Ambri[82]	Co-founded by MIT materials chemistry professor Donald Sadoway in 2010 and part-funded to get off the ground by Bill Gates, Ambri has designed a battery that uses a liquid calcium alloy anode, molten salt electrolyte and a cathode made of solid particles of antimony. The company claims this enables a low number of steps in the cell assembly process while the materials are low-cost. Ambri also integrates the batteries into a containerized energy storage system solution of 1 MWh and up to 250 kW.
Collaboration or co-development opportunity with Sacramento-based startup, Infinium[83]	Potential collaboration or co-development opportunity with Sacramento-based startup, Infinium. About Infinium: The company is commercializing a process that uses renewable electricity to release hydrogen from water and mix the hydrogen with waste carbon dioxide to make synthetic gas.

[79] Advanced Rail Energy Storage, LLC. UTILITY SCALE ELECTRIC ENERGY STORAGE SYSTEM, Patent No.: US 8.593,012 B2.
[80] *GravityLine*, ARES, https://aresnorthamerica.com/gravityline/.
[81] *See* https://www.spi-ind.com/. Last accessed 22 March 2021.
[82] *Technology*, AMBRI INC., https://ambri.com/technology/. Last accessed 22 March 2021.
[83] *Technology*, INFINIUM, https://infiniumco.com/technology/ Last accessed 22 March 2021.

Title	Idea Description
Utility solar in high country areas	Consider installing utility-scale solar in our UARP service area. There are lots of open area, burn scar acreage from the Kings fire and other fires that have been cleared and could be potential sites. Solar panels operate more efficiently at higher elevations where it is cooler and the air quality is better. Transmission lines are in the vicinity to import power into SMUD's power grid. Roads are available for site access too.
Thermal energy grid storage	MIT[84] is working on a very high temperature long-duration storage technology that leverages Graphite Thermal Storage Units to store electricity in the form of a liquid tin working fluid. The energy is extracted using a multi-junction PV power block. The liquid tin is transferred to the power block using a patented liquid tin pump. The liquid tin is heated to >2000degF using excess renewables, and converted back to electricity using the multi-junction PV power block, which can be inserted and removed from a cavity containing the molten tin to modulate power production. The tin, when heated to these temperatures, emits a bright white light that is used to capture the stored energy. The technology makes use of common very low cost materials, aside from the small amount of multi-junction PV cells, which are readily available, making it very scalable and low-cost.
Rancho Seco industrial area use	Use the Rancho Seco site to implement and test chosen ideas and technologies. Facility siting will need to be addressed, and a site that was home to a nuclear power plant should be able to house battery banks, H2 storage and many other possible technologies. Its proximity to solar and our Cosumnes Power Plant also make Rancho Seco a favorable location.
Each change matters	Make all high capacity solar energy/battery storage auto dispatchable using EMS to better manage energy in the grid. SMUD needs to have rooftop solar control capability. Install/lease more solar plants all over the SMUD region. Thermal plant/hydro plant controller needs to be tuned further to overcome solar variation. Control EV charging as needed. Need more battery storage to overcome duck curve and smooth control of grid. Not only SMUD needs carbon FREE energy, but that needs to be manageable like any other existing generating plant.

[84] *Atomistic Simulation & Energy Research Group: Thermal Energy Grid Storage (TEGS) Concept*, MASS. INST. OF TECH., https://ase.mit.edu/projects/thermal-energy-grid-storage-tegs/. Last accessed 23 March 2021.

Title	Idea Description
Allam-Fetvedt Cycle[85] for up front carbon capture	Net Power is operating a new type of natural gas plant in LaPorte, Texas that uses the Allam-Fetvedt Cycle. The process involves burning fossil fuel with oxygen instead of air to generate electricity without emitting any carbon dioxide. Not using air also avoids generating NOx, the main atmospheric and health contaminant emitted from gas plants. This is a new, high-pressure, oxy-fuel, supercritical carbon dioxide cycle that generates low-cost electricity from fossil fuels while producing near-zero air emissions. All carbon dioxide that is generated by the cycle is produced as a high-pressure, pipeline-ready by-product for use in industrial processes, or that can be sequestered underground in tight geologic formations where it will not get out to the atmosphere for millions of years. The Allam Cycle also means the power plant is a lot smaller and can be sited in more areas than older plants can.
Concentrating Solar Power with Thermal Energy Storage. [86]	Concentrating energy storage can shift bulk generation like pumped hydro, but with lower energy losses. These technologies are complementary to battery storage however are longer duration than current battery storage installations. Dispatchable CSP enables greater penetration of inverter-based generation.

[85] *The Allam-Fetvedt Cycle*, NET POWER, https://netpower.com/technology/. Last accessed 23 March 2021.
[86] Dr. Fred Morse, President of Morse Associates, Inc,

Appendix D: Global energy decarbonization efforts

In setting a goal of reaching zero carbon by 2030, SMUD is laying out an aggressive clean energy pathway. Here's an overview of carbon reduction goals in other jurisdictions.

- **Sweden** is on an ambitious GHG reduction trajectory with a long-term climate goal that by 2045 Sweden will have net zero GHG emitted into the atmosphere and should thereafter achieve negative emissions. This translates to 2045 emissions being at least 85% lower than emissions in 1990. Sweden has already implemented several major climate measures such as the Klimatklivet initiative (the Climate Leap), the reduction obligation, a bonus-malus-system for new light vehicles, urban environment agreements and the industrial green investment aid program Industriklivet (the Industrial Leap). Moreover, within Sweden there is robust cooperation for the Fossil Free Sweden initiative across the business community, municipalities, regions, research institutions and civil society organizations. So far, 22 sectors (including some large emitting sectors like steel, mining and minerals and the automotive sector) have produced and submitted road maps for fossil-free competitiveness.[87]
- **Australia** has set a goal of reducing economy-wide GHG emissions between 26% and 28% below 2005 levels by 2030. [88] It plans to leverage $18 billion in government funds and an additional $50 billion in private investments to drive down the cost of deploying new and emerging technologies aiming for economic competitiveness with existing business models. Priority technologies are clean hydrogen, energy storage, low carbon materials (steel and aluminum), carbon capture and storage and soil carbon.
- The **European Union** (EU) has set a binding target for net domestic reduction of at least 55% by 2030 relative to 1990 levels.[89] Within the EU, fossil fuels are the largest source of GHG emissions and reforming the energy sector will play a central role in transitioning to a climate-neutral economy. It will also craft policies to improve energy efficiency such as strengthening the role of Eco-design standards and improve EU consumer access to energy efficient products. It'll also explore opportunities to review and revisit renewable energy sustainability criteria and the EU certification system for all renewable and low carbon fuels. Finally, the EU will tackle vehicle emissions by strengthening carbon dioxide standards for cars and vans, and reflecting on the phase-out target date for internal combustion engines.
- The **United Kingdom** has set an economy-wide target to reduce GHG emissions by at least 68% relative to 1990 levels by 2030.[90] The U.K.'s Climate Change Committee has recommended a comprehensive path including encouraging healthier diets with reduced consumption of beef, lamb and dairy products; extensive electrification measures; expanded use of renewable and other low carbon power generation and development of

[87] https://unfccc.int/sites/default/files/resource/LTS1_Sweden.pdf.
[88] https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Australia%20First/Australia%20NDC%20recommunication%20FINAL.PDF.
[89] https://ec.europa.eu/commission/presscorner/api/files/attachment/866232/EU%20Climate%20Target%20Plan%202030%20Key%20contributors%20and%20policy%20Tools.pdf.pdf.
[90] https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/United%20Kingdom%20of%20Great%20Britain%20and%20Northern%20Ireland%20First/UK%20Nationally%20Determined%20Contribution.pdf.

a hydrogen economy. Notably, its transportation sector recommendations move beyond passenger vehicles and heavy-goods vehicles to include marine vessels.[91]

- **Mexico** has set its GHG reduction goal at 50% of national GHGs by 2050 below its 2000 emissions level. For its energy transition, Mexico has established policies to direct action in five important areas: the clean energy transition, energy efficiency and sustainable consumption, sustainable cities, reduction of SLCPs and sustainable agriculture and protection of natural carbon sinks. It has also identified strategies for critical crosscutting issues including the need for market-based instruments to price carbon, increased innovation, more research and development of new technologies and the need to build a climate culture with mechanisms for social and private sector participation.[92]
- **Canada** has set a mid-century strategy consistent with net emissions falling by 80% by 2050, relative to 2005 levels. To do this, Canada has noted it will require substantial effort on the part of all Canadians and that there will need to be a fundamental restructuring of multiple sectors of the economy. Cost-effective abatement opportunities will be explored for virtually every GHG source and activity. Specific to the energy sector, Canada will pursue opportunities for enhanced energy efficiency and conservation, to find cleaner ways to produce and store electricity and to switch towards non-emitting electricity or other low-GHG alternatives.[93]

In the U.S., efforts to decarbonize energy supply are largely decentralized. Most of the gains within the U.S. are attributable to state-level action and the economics of solar and wind as well as the shale boom driving new development away from coal. Large U.S. corporations are also playing a role. For example, Microsoft has committed to be carbon negative by 2050. And, in its first sustainability report, it forecasts a 6% reduction in carbon emissions during the 2020 fiscal year. Moreover, Microsoft reinforced its commitment to sustainability by announcing that progress on sustainability goals will be included as a factor in executive pay. More recently, market forces have prompted General Motors to announce it would seek to be carbon neutral by 2040, which the company hopes to achieve, in part, by aiming to make all of its light-duty vehicles (cars, pickup trucks and SUVs) electric by 2035.

Cities and municipalities are also pledging to reduce their climate impacts.

- The **City of Sacramento** has adopted a climate emergency declaration that commits the city to carbon neutrality by 2045. The Mayors' Commission on Climate Change further identifies recommended actions to achieve net zero carbon emission by 2045. The City is in the process of updating its climate action plan to reduce community-wide emissions to 40% below 1990 by 2030 and is embarking on an electrification ordinance for new construction, with all-electric construction required for low-rise in 2023 and for buildings over three-stories in 2026.
- The **County of Sacramento** has adopted a climate emergency declaration that commits the county to carbon neutrality by 2030 and is in the process of developing a community-wide climate action plan to reduce emissions.

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[91] https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-The-UKs-contribution-to-stopping-global-warming.pdf.
[92] https://unfccc.int/files/focus/long-term_strategies/application/pdf/mexico_mcs_final_cop22nov16_red.pdf.
[93] https://unfccc.int/sites/default/files/resource/Canada's%20Mid-Century%20Long-Term%20Low-GHG%20Strategy.pdf.

- The **City of Palo Alto** has a plan to reduce its emissions by 80% by 2030. The road map for achieving carbon neutrality includes strategies such as advancing smart grids, incorporating a zero waste and a circular economy, partnering with the community and maximizing use of carbon sequestration and storage in the natural environment.
- The **City of Richmond** has a climate action plan built upon community input and cross-sector collaboration, which prioritizes actions and outcomes of greatest community benefit − initiatives to improve equitable services and overall quality of life. Past initiatives included a 'green' job training program and employment opportunities for local youth, more miles of bikeways and a 10.5 MW solar facility. Looking to the future, focus areas include energy-efficient buildings and facilities, increased use and generation of renewable energy and improved sustainability of transportation and land use.
- The **City of San Diego** has committed to 100% clean energy by 2035 and has set additional targets for transportation (50% of urban commutes via transit, walking and biking), tree coverage (35% coverage throughout the city) and waste reduction (zero waste by 2040). To achieve this, the City will work to educate consumers on energy and water efficiency; improve local public health and increase local control, reducing dependencies on imported water and energy. The City has also placed job creation at the forefront indicating a commitment to setting incentive-based policies to help create green jobs, such as those manufacturing and installing solar panels.

U.S. utilities are setting carbon reduction goals too, with many placing themselves on a trajectory toward carbon neutrality or 100% carbon free electricity. Below, we've summarized what a few utilities are doing, but this list is not exhaustive. See **Error! Reference source not found.** for additional high-level information on GHG reduction goals some additional utilities and other locations around the world have set.

- **Los Angeles Department of Water and Power (LADWP)** will supply 55% renewable energy by 2025, 80% by 2036 and 100% by 2045.[94] One way it will do this is with its Intermountain Power Project, which is a two-unit 840 MW combined cycle natural gas plant that will replace a 1,800 MW coal facility.
- **Xcel Energy** has set a target of reducing GHG emissions by 80% below 2005 levels company-wide by 2030, which it'll achieve through continued fleet transition, operational changes and by employing renewable, carbon free generation and energy storage technologies.[95]
- Virginia-based **Dominion Energy** had a plan to reach net zero carbon by 2050. However, that timeline has been accelerated by Virginia's Clean Economy Act, which requires Dominion Virginia to supply at least 30% of its electricity from renewables by 2030 and by 2045, they must shut down their carbon-emitting plants.[96] It's 2020 IRP indicates that efforts will focus on renewables, including a goal of 5.1 GW of offshore wind over the next 15 years, and eliminates previous plans to build new natural gas fired power plants.[97]

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[94] https://plan.lamayor.org/targets/targets_plan.html#:~:text=By%202050%2C%20L.A.%20will%20have,our%20progress%20in%20this%20fight.
[95] https://www.xcelenergy.com/staticfiles/xe/PDF/Xcel%20Energy%20Carbon%20Report%20-%20Feb%202019.pdf
[96] https://www.greentechmedia.com/articles/read/the-5-biggest-u.s-utilities-committing-to-zero-carbon-emissions-by-mid-century.
[97] Ibid.

- In January 2020, Arizona-based utility **Arizona Public Service Electric** set a goal to provide 100% clean, carbon free electricity by 2050. It plans to achieve this by working toward a 2030 resource mix that's65% clean energy with 45% of the generation portfolio coming from renewable energy. It's also accelerated the timeline to transition away from coal, ending all coal-fired generation by 2031 − seven years ahead of previous projections.
- **Portland General Electric** aims to achieve company-wide net zero GHG emissions by 2040. It plans on reducing emissions in its own operations by ending operations at coal plants and adding more renewables like wind, solar and battery storage.[98] It also plans to reduce emissions in the energy choices provided to its customers, continuing to create new, innovative programs that offer choices for customers looking for clean, green energy options.
- As the first carbon-neutral utility in the nation, over 80% of the power delivered by **City Light (Seattle)** is generated from carbon-free hydroelectricity.[99] It does not have coal or natural gas resources in its power supply portfolio, but it does make market purchases for balancing purposes. Emissions associated with those purchases are offset by the utility's GHG neutrality policy.
- The **Hetch Hetchy Power (City and County of San Francisco)** is comprised entirely of proven clean technology resources—385 MW of hydroelectric generation capacity and 11 MW of renewables (solar, wind and biogas). It powers all of the City's municipal facilities, residents and businesses in the San Francisco Shipyard, Treasure Island as well as other retail customers—nearly 20% of the City's electricity needs.

[98] https://portlandgeneral.com/about/energy-future/climate-goals.
[99] https://www.seattle.gov/city-light/energy-and-environment

RESOLUTION NO. 22-06-04

WHEREAS, Public Utilities Code section 399.30(a) requires each publicly owned utility (POU) to adopt and implement a renewable energy resources procurement plan that ensures procurement from eligible renewable energy resources pursuant to requirements set forth in in Public Utilities Code section 399.30; and

WHEREAS, Section 3205(a) of the **California Energy Commission (CEC)** *Enforcement Procedures for the Renewables Portfolio Standard for Local Publicly Owned Electric Utilities* **(CEC RPS Regulations)**, includes additional requirements applicable to POU renewable energy resources procurement plans; and

WHEREAS, by Resolution No. 13-11-09, adopted November 21, 2013, this Board approved and adopted SMUD's initial **Renewable Energy Resources Procurement Plan (RPS Procurement Plan)**; and

WHEREAS, by Resolution No. 19-04-04, adopted on April 25, 2019, this Board approved and adopted the updated **RPS Procurement Plan** to reflect the renewable additions included as part of SMUD's 2018 **Integrated Resources Plan (IRP)** and **CEC RPS Regulations**; and

WHEREAS, by Resolution No. 21-04-05 adopted on April 28, 2021, this Board accepted SMUD's **2030 Zero Carbon Plan**, a flexible path to eliminating carbon emissions from its power supply by 2030; and

WHEREAS, in 2022, SMUD will seek approval from this Board to formally adopt SMUD's **2030 Zero Carbon Plan** as its updated **IRP**, consistent with Public Utilities Code section 9621; and

WHEREAS, the **CEC RPS Regulations** were modified, effective July 12, 2021; and

WHEREAS, in consideration of the 2021 updates to the **CEC RPS Regulations** and SMUD's imminent update to its **IRP**, staff has developed an updated **RPS Procurement Plan**, substantially in the form of **Attachment C**, that meets the statutory requirements of Public Utilities Code section 399.30 and

the **CEC RPS Regulations**, and which illustrates SMUD's future compliance with RPS regulations through 2030; and

WHEREAS, Public Utilities Code section 399.30(f) and the *CEC RPS Regulations* require the SMUD Board of Directors to provide the public with notice, pursuant to Chapter 9, of Part 1 of Division 2 of Title 5 of the Government Code, whenever it deliberates in public on its **RPS Procurement Plan**; and

WHEREAS, SMUD provided such notice on June 10, 2022; **NOW THEREFORE,**

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

The Board hereby approves and adopts the updated **Renewable Energy Resources Procurement Plan (RPS Procurement Plan)**, substantially in the form of **Attachment C.**

Approved: June 16, 2022

INTRODUCED: DIRECTOR HERBER				
SECONDED: DIRECTOR KERTH				
DIRECTOR	AYE	NO	ABSTAIN	ABSENT
ROSE	X			
BUI-THOMPSON	X			
FISHMAN	X			
HERBER	X			
KERTH	X			
TAMAYO	X			
SANBORN	X			

Attachment C
to Resolution No. 22-06-04

SMUD Renewable Energy Resources Procurement Plan

June 2022

SMUD®

Table of Contents

Section 1: Introduction

The Sacramento Municipal Utility District (SMUD) is committed to the development and procurement of renewable energy for our customers. In order to grow renewable energy supplies for its customers, SMUD voluntarily created three separate programs: a green pricing program called “Greenergy”, a shared solar program called “SolarShares”, and a Renewables Portfolio Standard (RPS) Program (prior to legislation mandating the program).

In 1997, SMUD began Greenergy, which allows participating residential customers to select a 100% renewable product to serve 100% or 50% of their monthly electricity demand, respectively, in addition to their regular electricity bill. Commercial Greenergy customers pay an additional amount per kWh of electricity usage to serve all or a portion of their monthly electricity demand using renewables, on top of their regular rates. Commercial Greenergy customers can also purchase 1 MWh blocks of a 100% renewable product.

In 2008, SMUD launched a pilot program called SolarShares, which allowed customers to receive a portion of their electricity usage from an off-site solar system. Participants saw a SolarShares charge, and a credit associated with the solar generation. The initial 1 MW pilot was fully subscribed quickly. Since then the program has grown and now includes options for large commercial customers as well. In 2016, SMUD significantly expanded the SolarShares program by extending the SolarShares program to large commercial customers, signing agreements to deliver 150 MW. In 2020, SMUD added a new Neighborhood SolarShares option for new residential construction to meet the requirement of the updated building code standards.

These two voluntary programs result in SMUD customers engaging in renewable procurement beyond the current RPS mandates. State law (SB 350) recognizes this additional procurement by allowing electricity sales to these customers that are supported by specific renewable resources to be excluded from overall retail sales prior to calculating SMUD’s RPS obligation.

In 2001, SMUD established its initial RPS goals, and by 2008 had established goals of procuring 20% of its retail electricity sales from eligible renewable energy resources by 2010 and 33% by 2020 (SMUD’s RPS goals). In 2002 (and in later statutes modifying the initial law), the State of California established an RPS for retail sellers of 20% of retail sales served with electricity from eligible renewable energy resources by December 31, 2010. The RPS statutes at that time did not specifically obligate local publicly owned electric utilities (POUs) such as SMUD with percentage goals and deadlines, nor did the state law require POUs to satisfy state eligibility rules for renewable energy resources to count toward their RPS goals. Nevertheless, POUs were required to consider and implement an RPS that met the “intent of the Legislature”.

Senate Bill 2 in 2011 (SBX1-2) established an RPS goal of 33% by 2020 for POUs as well as retail sellers. SMUD achieved the 20% RPS in 2010, and 33% RPS in 2020

(pending verification from the California Energy Commission [CEC]) with resources meeting the state eligibility rules. Senate Bill 350 (SB 350, 2015) modified provision of the RPS and set a 2030 RPS target of 50%, which was further modified by Senate Bill 100 (SB 100, 2018) to establish a 60% RPS target by 2030 and a planning goal of serving 100% of retail sales with zero carbon and eligible renewable resources by 2045.

In July 2020, our Board of Directors declared a climate emergency and adopted a resolution directing SMUD to take significant and consequential actions to become carbon neutral (net zero carbon) by 2030. The Board also directed SMUD staff to report on clear, actionable and measurable strategies and plans to reach SMUD's climate emergency goals. In April 2021, SMUD's Board approved our *2030 Zero Carbon Plan* (*2030 ZCP*). SMUD's goal to eliminate carbon emissions from our power supply by 2030 is more ambitious than already aggressive state mandates and identified procurement of renewable resources far beyond what is necessary to meet current RPS obligations through 2030. SMUD is on target to easily meet the 60% RPS target by 2030 and serve 100% retail sales with zero carbon and eligible renewable resources – SMUD's *2030 ZCP* achieves the 100% target fifteen years ahead of the State's planning goal date.

SMUD's RPS policy is stated in SMUD Board Strategic Direction (SD) 9. Previous version of our SD9 included the RPS goals of 20% by 2010 – our current SD9 includes RPS goals of 33% by 2020, 44% by 2024, 52% by 2027, 60% by 2030, and our *2030 ZCP* goal of being carbon free by 2030[1]; it also sets policies for energy efficiency and electrification goals, clean distributed generation, and greenhouse gas reduction. Staff strives to reach the policy goals in SD9 in the most effective, efficient, and equitable way practicable. SMUD balances the multiple policies in SD9 with other Board policies including those established for high levels of reliability (SD4), competitive rates (SD2), access to capital markets (SD3), and the local environment (SD7). SMUD also undertakes research, development and demonstration (RD&D) activities (SD10) that contribute to the RPS and other SD9 goals. Balancing the achievement of SMUD's RPS and other policies involves an integrated resource planning (IRP) process.

As required by Public Utilities Code (PUC) § 399.30 (a), and by the *Enforcement Procedures for the Renewable Portfolio Standard for Local Publicly Owned Utilities (CEC RPS Regulations)*, Section 3205(a), SMUD adopted a Renewable Energy Resources Procurement Plan (Procurement Plan) in 2013 and updated that Procurement Plan 2019. Given the legislative changes to RPS requirements, SMUD's *2030 Zero Carbon Plan*, and the passage of time since the last plan adoption, SMUD is adopting a revised Procurement Plan – this document – describing how it will achieve its RPS procurement requirements for each compliance period established by law through 2030.

In accordance with requirements in the *RPS Regulations*, a copy of any adopted updates to this Procurement Plan shall be submitted to the CEC within 30 days of adoption.

[1] SMUD's SD9 goal was most recently revised in April 2021. This update, adoption of Resolution No. 21-04-04 updated the SD9 direction to align with the goal of 0 MT GHG emissions in our energy supply by 2030, put forth in *SMUD's 2030 Zero Carbon Plan*, the foundational document of our *2030 Zero Carbon Integrated Resource Plan* (IRP).

In December 2011, SMUD's Board approved SMUD's RPS Enforcement and Compliance Plan (Enforcement Plan), pursuant to SBX1-2. In November 2013, SMUD's Board adopted a revised Enforcement Plan to ensure compliance with the *CEC RPS Regulations*, and is adopting revisions concurrently with the adoption of this Procurement Plan. The Enforcement Plan confirms SMUD's commitment to comply with the *CEC RPS Regulations.*

Section 2: Renewable Procurement and RPS Compliance

SMUD has met its RPS compliance obligations for the following compliance periods, per *CEC RPS Regulations*, Section 3204[2]:

- Compliance period 1 (2011 – 2013)
- Compliance period 2 (2014 – 2016)
- Compliance period 3 (2017 – 2020; pending CEC verification)

SMUD is also well under way to meeting the established targets for compliance period 4 (2021-2024). Table 1 illustrates the RPS compliance targets for 2021 through 2030, as provided in PUC § 399.30 (c)(2) and the *CEC RPS Regulations*, Section 3204(a).

Table 1: RPS Compliance Targets

	Compliance Period 4				Compliance Period 5			Compliance Period 6		
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
RPS Target (% of Retail Sales)	**35.75%**	**38.50%**	**41.25%**	**44.00%**	**46.00%**	**50.00%**	**52.00%**	**54.67%**	**57.33%**	**60.00%**

Table 2 shows the expected procurement from contracted and planned eligible renewable contracts as well as owned resources that can be allocated and retired for SMUD's RPS compliance. This estimate is based on SMUD's load forecast used during development of our *2030 ZCP*. Note that this renewable energy procurement shows our estimated availability of resources but does not indicate that the associated Renewable Energy Certificates (RECs) will all be retired for the RPS. Most of these contracts reflect projects that are on-line and generating electricity, contracts that have been executed with an expected commercial online date, or expected contracts from an existing procurement process. The table excludes generation from resources that are allocated to meet SMUD's Greenergy and SolarShares retail sales. For resources that may be used to serve multiple programs, any generation not used to meet RPS requirements is excluded from Table 2. The values in Table 2 incorporate all future resources identified in Appendix A.

SMUD expects to retire RECs from existing and planned resources to fully achieve compliance for compliance periods 5 and 6 (through 2027). SMUD plans to extend

[2] For historical compliance in the first and second compliance periods, see CEC reports on POU RPS compliance.

contracts and/or contract for new resources to achieve compliance in subsequent compliance periods (see Additional Resources Needed in Table 2). Table 2 shows a deficit (Additional Resources Needed) for compliance period 6, but the table does not reflect the additional 13,000 GWh identified in our *2030 ZCP* as needed in order to meet our zero-carbon goal because we have not yet started the process to procure those resources.

Table 2: SMUD's Renewable Resources and Compliance Requirements[3]

	Compliance Period 4 2021 - 2024	Compliance Period 5 2025 - 2027	Compliance Period 6 2028 - 2030
RPS Compliance Period Target (GWh)	**15,063**	**13,927**	**17,023**
Category 1 Minimum	75%	75%	75%
Category 3 Maximum	10%	10%	10%
Procurement by Technology (GWh)			
Biomass/Biogas /Biomethane	1,201 GWh	232 GWh	422 GWh
Geothermal	3,082 GWh	3,569 GWh	3,555 GWh
Solar	3,804 GWh	5,431 GWh	5,123 GWh
Wind	5,991 GWh	4,839 GWh	4,781 GWh
Eligible Hydro < 30MW	300 GWh	265 GWh	265 GWh
Total Generation	**14,378 GWh**	**14,336 GWh**	**14,146 GWh**
Surplus Applied	685 GWh	0 GWh	920 GWh
Total Applied to RPS Target	**15,063 GWh**	**14,336 GWh**	**15,066 GWh**
Additional Resources Needed	0 GWh	0 GWh	1,957 GWh
Surplus Banked	*0 GWh*	*409 GWh*	*0 GWh*
Procurement by Portfolio Content Category (GWh)			
Category 0 RECs	1,822	1,062	958
Category 1 RECs	11,516	13,095	13,008
Category 2 RECs	800	0	0
Category 3 RECs	199	149	149
Pre-June 1, 2010 Category 3 RECs	41	31	31
Total	**14,378**	**14,336**	**14,146**
Long-Term Contracts			
Percentage of Long-Term RECs	94%	>99%	>99%

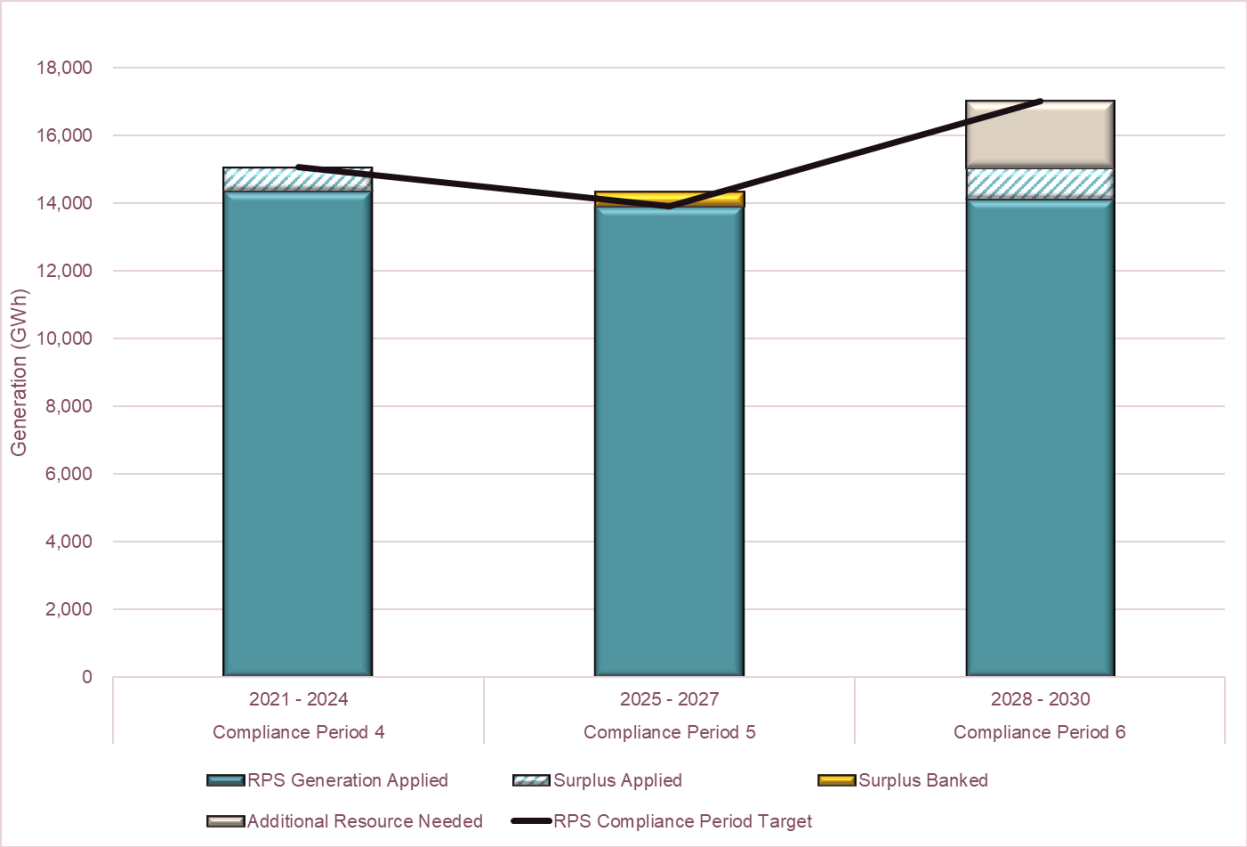
Note: Values in this table are subject to change.

SMUD's currently procured renewable energy resources are predominately Portfolio Content Category (PCC) 0 and PCC 1 RECs. SMUD has procured some PCC 3 RECs from our customers' distributed generation systems under SB 1. SMUD developed a strategy to optimize our renewables portfolio that includes procurement of PCC 2 resources and PCC3 RECs, and alternative uses of biomethane that maximize value in meeting compliance period requirements subject to *CEC RPS Regulations*, Section 3204 (c), and help further carbon emissions reductions. We procured PCC 2 and PCC 3 resources to help meet our compliance period 3 RPS obligations and are looking to procure PCC 1 or PCC 2 resources under short-term contracts to ensure we meet compliance period 4 obligations.

[3] Only resources that are existing, under contract, or under an active procurment process are included in this table. SMUD's *2030 Zero Carbon Plan* calls for an additional 5,000 GWh of renewable resource procurement in compliance period 5 and 13,000 GWh in compliance period 6..

Table 2 shows the PCC 0, PCC 1, PCC 2, and PCC 3 RECs, that SMUD expects from currently committed eligible renewable resources (including RECs expected from an active procurement process). The majority of procurement from contracts/agreements signed after June 1, 2010 are PCC 1, sufficient to exceed the portfolio balance requirements specified in PUC § 399.16 (c) and in the *CEC RPS Regulations*, Section 3203 (c)-(e) with regards to procured electricity products for compliance with RPS requirements. SMUD intends to retire RECs within 36 months of generation to fully meet the portfolio balance requirements as mandated by RPS requirements. Figure 1 illustrates SMUD's compliance through 2030 utilizing compliance period generation and banked resources, along with any surplus and additional resource needs.

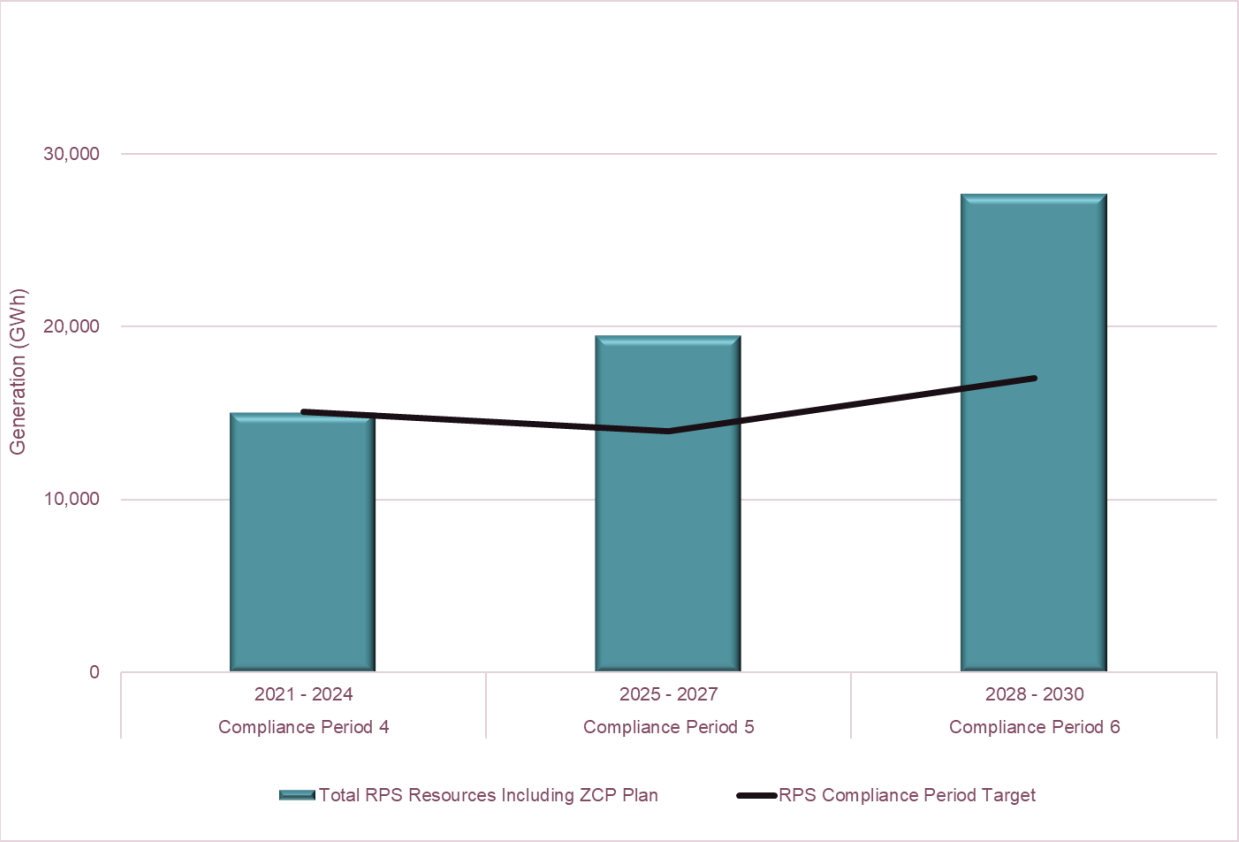
Figure 1: SMUD RPS Resources and Compliance



As noted above, Figure 1 also illustrates SMUD's need for additional resources to meet the compliance period 6 requirements. Consistent with our *2030 ZCP*, we plan to procure additional renewable resources that will far exceed our RPS needs, as illustrated in Figure 2.

SBX1-2 permitted POUs to accumulate excess procurement in one compliance period for use in a subsequent compliance periods. Under these original excess procurement rules, only RECs from long-term contracts and owned resources could count in the excess procurement calculation. This meant that any RECs from short-term contracts were

Figure 2: Total RPS Resources Including Planned *2030 ZCP* Procurement

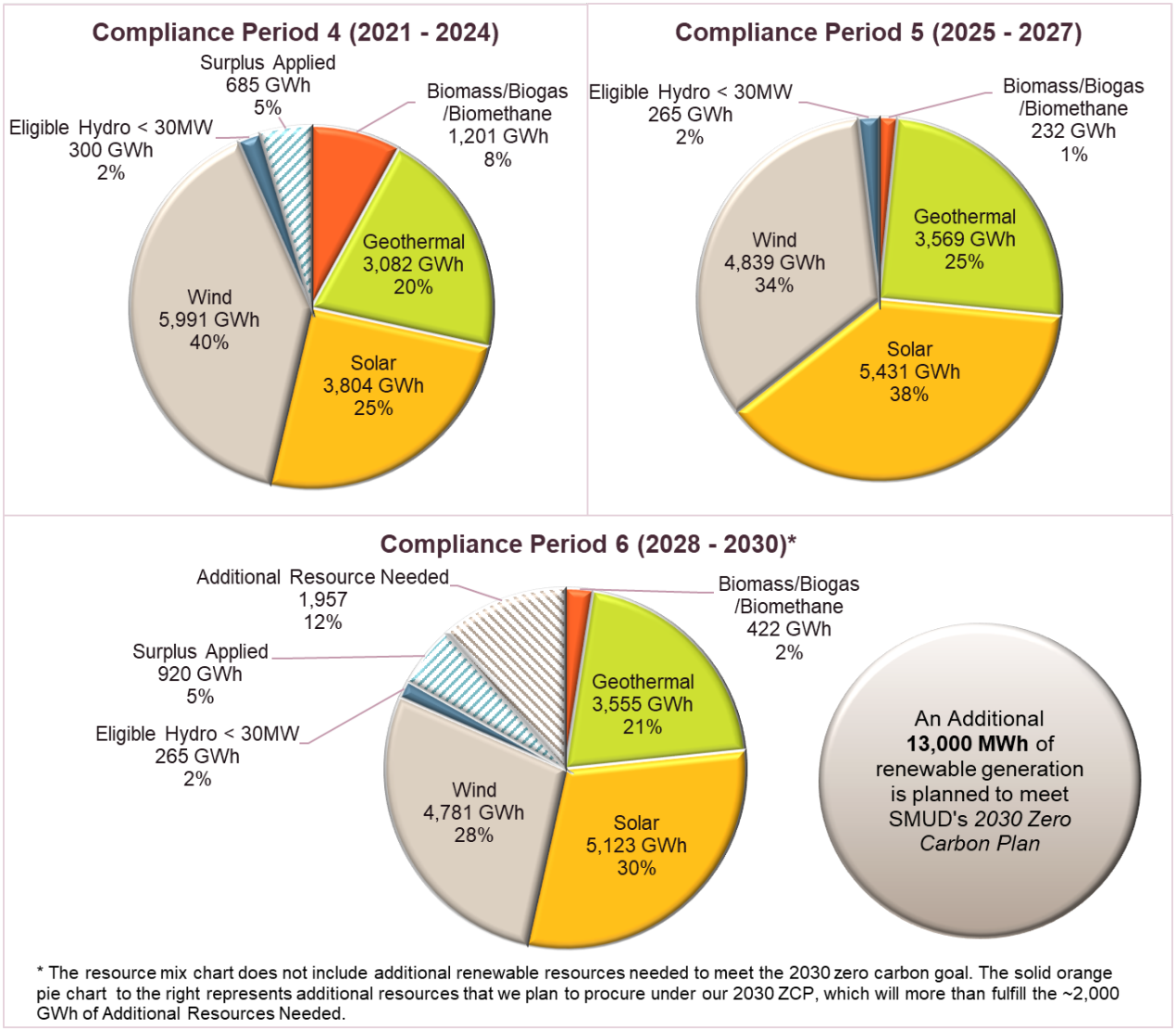


subtracted out before a POU could determine if it had any excess procurement. These original excess procurement rules remained in place until the end of compliance period 3. SMUD has banked excess procurement from compliance periods 1 and 2 for use in subsequent periods, pursuant to these existing excess procurement rules, which are currently implemented in *CEC RPS Regulations*, Section 3206 (a)(1). Once verification for compliance period 3 is completed, SMUD anticipates having banked excess procurement available to use in future compliance periods.

SB 350 significantly amended the excess procurement rules, allowing a POU to calculate its excess procurement without first subtracting out RECs from short-term contracts. Under these new excess procurement rules, only PCC 0 and PCC 1 RECs may be carried forward as excess procurement. This means that if a POU has excess PCC 2 or PCC 3 RECs, those RECs will not be able to be banked and carried forward. While these new excess procurement rules will become mandatory starting in compliance period 4, a POU may use these new excess procurement rules in compliance period 3 if the POU meets the 65% long-term procurement requirement specified in PUC § 399.13 (b), and elects to do so. SMUD's banked excess procurement as of the end of compliance period 2 was 3,551,599 RECs and expects to have approximately 1.2 million PCC 1 RECs of banked excess at the end of compliance period 3 (once verification is completed). Provisions regarding SMUD's authority to bank and use of excess procurement in subsequent compliance periods are included in our Enforcement Plan. SMUD also had historic

carryover that was completely retired and used to meet our compliance period 2 obligations. SMUD's total historic carryover balance, as approved by the CEC, was 2,666,104 RECs.[4]

Figure 3: SMUD RPS Compliance Resource Mix



* The resource mix chart does not include additional renewable resources needed to meet the 2030 zero carbon goal. The solid orange pie chart to the right represents additional resources that we plan to procure under our 2030 ZCP, which will more than fulfill the ~2,000 GWh of Additional Resources Needed.

SMUD's 2021 IRP, which is based on our *2030 ZCP*, reflects a need for additional renewable procurement starting in 2025 in order to meet or zero carbon goal by 2030. As identified previously in this Procurement Plan, the tables and charts here do not reflect planned procurement beyond what is currently under an active procurement process, which results in a need for additional resources in compliance period 6.

[4] Historic carryover balance was verified by the CEC as part of the Compliance Ceriod 1 verification and compliance determination process. The verification report was adopted by the CEC in January 2017, and the compliance determination was issued by the CEC's executive director in June 2017.

SMUD is continuing to pursue additional renewable resource options not included in Table 2 and is working to identify when additional procurement activities must occur in order to add approximately 5,000 GWh of renewables in compliance period 5, and an additional 13,000 GWh in compliance period 6. We will continue to evaluate new options to ensure compliance through 2030 and meet our *2030 ZCP* goal. SMUD's continued efforts to optimize our renewables portfolios and procurement value to our customers will likely impact the timing of additional resource procurements. SMUD will closely monitor resource availability relative to compliance obligations and will strategically assess when to pursue new resources through solicitations, direct contracts with developers and marketers, and building our own. Figure 3 provides an estimate of SMUD's RPS resource mix by compliance period through 2030.

Note that all tables and figures are based on expected generation through 2030. Actual generation and resource mixes may change as SMUD procures additional resources or resources generate differently than expected. SMUD's projected compliance may also be affected by the difference between the current forecast retail sales and actual sales through 2030. The market response to SMUD's investments in electrification, along with the uncertain technological changes in that market may lead to increases or decreases in actual sales from those forecast. In addition, changes in customer demand for our Greenergy and SolarShares programs, and in the resources used to supply those programs, can impact the "net" sales used to calculate SMUD's RPS obligations. Finally, technological advances in non-RPS qualified carbon free technologies may alter the quantity of renewable resources needed to meet our zero carbon goals by 2030.

Section 3: Procurement Process

The SMUD Board of Directors (Board) establishes all RPS goals and SDs and considers them in short and long-term renewable resource investment decisions. As mentioned above, the SDs include policies for environmental performance, power reliability, carbon emissions reductions, financial objectives, and renewables RD&D and procurement. SMUD's IRP process helps ensure SMUD achieves its long-term goals and SDs, at a reasonable cost. The IRP process helps develop balanced recommendations that support renewable procurement and development actions and other SMUD SDs.

SMUD owns and operates eligible renewable energy resources and uses the resulting electricity products for RPS compliance or to meet the needs of our voluntary green programs. SMUD owns several small hydro, wind, and solar PV facilities which are listed in Appendix A.

SMUD also procures eligible renewable electricity resources by contract through formal solicitation processes and unsolicited offers as needed to meet the requirements of various statutory obligations and SMUD's own goals. These proposals and offers are evaluated based on benefits, costs and overall value to SMUD's customer/owners.

Section 4: Historic Carryover

Since the Board approved an RPS goal in 2001, SMUD has actively procured renewable energy. In order to ensure SMUD met its annual RPS goals and, specifically, the 2010 target, SMUD procured renewable energy exceeding the annual targets established in the *CEC RPS Regulations*. Per the *CEC RPS Regulations*, "Historic carryover" means a POU's procurement that satisfies the following criteria:

- The procurement is for electricity and the associated renewable energy credit generated in 2004-2010 by any eligible renewable energy resource that met the Commission's RPS eligibility requirements in effect when the original procurement contract or ownership agreement was executed by the POU.
- The original contract or ownership agreement was executed by the POU prior to June 1, 2010.
- The procurement is in excess of the sum of the 2004-2010 annual procurement targets defined in section 3206 (a)(5)(D) and was not applied to the RPS of another state or to a voluntary claim.

Through the CEC's verification process, SMUD received 2,666,104 RECs of historic carryover from renewable energy consistent with these criteria. SMUD applied all its historic carryover towards the requirements for compliance period 2.

Section 5: Portfolio Content Category 0 Resources

SMUD has some of its current renewable supply procured pursuant to contracts or ownership agreement executed before June 1, 2010 from resources that met the CEC's eligibility requirements when the resources were procured. Pursuant to PUC § 399.16 (d) as implemented in *CEC RPS Regulations,* Section 3202 (a)(2)*,* the electricity product from these legacy resources are counted in full toward the RPS requirements. The CEC reporting forms refer to these resources as PPC "0" resources.

SMUD has modified or extended some of these contracts and as a result has changed the status of the resources from the date of modification from PCC 0 to PCC 1. See Appendix A for a listing of SMUD's resources.

Section 6: Additional Committed Category Resources

SMUD continued to develop and procure renewable supply after June 1, 2010. SMUD's Feed-In Tariff (FIT) solicitation in 2009 resulted in nearly 100 MW of solar PV systems that have since been constructed under the FIT. SMUD expanded its Solano Wind Facility in the Rio Vista area in 2012, by completing construction of Solano Phase III, which added 128 MW of capacity. In 2013, SMUD supported the construction of several local dairy digestor projects in SMUD's service territory. Some of SMUD's dairy digester resources have experienced operational issues and have been offline occasionally.

SMUD also has 3 legacy common carrier biomethane contracts that are certified to provide renewable biomethane to the Cosumnes Power Plant (CPP), along with a biogas cleanup facility near the Sacramento Regional County Sanitation District's (SRCSD) wastewater treatment plant that began injecting the cleaned biogas into SMUD's dedicated pipeline for combustion at CPP in 2011. This SRCSD biogas was previously combusted at SMUD's Carson power plant and may still be combusted there when combustion at CPP is infeasible (due to planned or unplanned outages). SMUD will continuing exploring opportunities to maximizee the value of these resources, including use of the biomethane for purposes other than the RPS that help advance the overall goals of our *2030 ZCP*.

SMUD has also extended contracts for two landfill gas facilities and a wind facility, and has added two geothermal and one solar PV projects.

Additionally, SMUD has added, or extended, the following contracts since the Procurement Plan was last updated:

- Wildflower Solar I – 13 MW solar PV project in SMUD's service territory began deliveries at the end of 2020.
- Rancho Seco PV II – 160 MW solar PV project in SMUD's service territory began deliveries in 2021.
- Grady Wind – 200 MW wind facility started delivery in 2019.
- South Fork Powerhouse – 1.9 MW small hydro facility started delivery in 2019.
- Chili Bar – 8.3 MW small hydro facility was purchased in 2020.

SMUD currently has some PCC 3 resources through the implementation of the SB-1 solar roof-top incentive program. The amount of PCC 3 generation represented is a fraction of the PCC 3 maximum in the CEC regulations. SMUD procured PCC 2 resources under short-term contracts to meet compliance period 3 RPS obligations as part of optimizing our overall renewables portfolio and plans to continue optimizing our portfolio mix, including procuring additional PCC 2 resources, through at least compliance period 4.

Section 7: Future Procurement

Since meeting its RPS goal through 2020 (compliance period 3), SMUD continues to conduct activities to procure renewable energy to meet future obligations. Activities include the following:

- SMUD staff will continue to seek additional renewable resources to address the RPS resource needs through 2030 and beyond. SMUD's *2030 ZCP* calls for significant additions of new renewable resources between 2025 and 2030 and is working to identify when the procurement process to meet these needs must occur. We plan to closely monitor when additional resources are needed and ensure that

requests for proposals for new projects are available well in advance of expected shortfalls, or that other means of identifying, negotiating, and contracting for new resources take place. Our *2030 ZCP* calls for many of the planned resource additions to be located within SMUD's service territory to provide greater local benefits, but we will also consider other in-state resources along with out-of-state resources.

- SMUD continually reviews existing renewable contracts set to expire to examine the possibility of extending and/or modifying these contracts.
- SMUD has signed agreements to purchase renewable energy from the following resources:
    - A new 100 MW solar PV facility located in Southern California that is scheduled to be online in 2022. RECs from this facility may be used for SMUD's voluntary renewable programs, with any surplus available to meet RPS requirements.
    - A 100 MW geothermal project scheduled to begin deliveries in January 2023.
    - A local (SMUD service territory) 200 solar PV plus 100 MW battery storage project expected to be operational in 2024.
    - A new local 50 MW solar PV project expected to be online in 2024.
- SMUD is planning to repower the earliest phase of our existing Solano Wind facility, and incorporating it into a Solano Wind phase 4 (~85 MW) project. .
- SMUD is currently engaged in a solicitation process to procure approximately 340 MW of solar PV resources and 170 MW of battery storage located in SMUD's service territory with expected online dates in 2024. This is the first of what is expected to be multiple solicitations to help meet the resource needs identified in the *2030 ZCP*.
- SMUD staff has supported development of new local dairy digester projects and continues to look for opportunities to economically expand this resource in SMUD's service territory.
- As SMUD's SolarShares and Greenergy Programs are expected to expand, staff continues to look for solar and renewable projects to supply these programs.

Some of the resources used to serve SMUD's voluntary renewable programs are listed here since any excess generation not used to serve load from those programs will be used to meet RPS obligations. However, this plan and any requirements or provisions herein apply to procurement to serve SMUD's RPS obligations.

These planned activities and other future procurement may also contribute to meeting SMUD's RPS compliance requirements, along with existing resources and committed projects. In addition, they will add to SMUD's renewable fuel diversity and contribute toward SMUD's longer term carbon reduction goals.

Appendix A – SMUD RPS Resources

Existing Resources

Resource	Technology	PCC	Short/Long	Capacity		Termination
CPP	Biomethane	PCC 0 & 1	Long			Post 2030
Solano Phase 1 & 2	Wind	PCC 0	Long	102		Post 2030
Solano Phase 3	Wind	PCC 1	Long	128		Post 2030
Grady	Wind	PCC 1	Long	200		Post 2030
Kiefer 1	Biogas	PCC 1	Long	8.3		2025
Kiefer 2	Biogas	PCC 1	Long	5.7		2026
Highwinds	Wind	PCC 1	Long	50		2025
Yolo Landfill	Biogas	PCC 0	Long	3.4		2026
Santa Cruz (GRS, Landfill)	Biogas	PCC 0	Long	1.9		2024
Loyalton Cogen (SB 859)	Biomass	PCC 1	Short	4.2		2023
Cal Energy	Geothermal	PCC 1	Long	30		Post 2030
Patua 1	Geothermal	PCC 1	Long	21		Post 2030
Robbs Peak	Small Hydro	PCC 0	Long	29		Post 2030
Jones Fork	Small Hydro	PCC 0	Long	11.5		Post 2030
South Fork Powerhouse	Small Hydro	PCC 1	Long	1.9		Post 2030
Chili Bar	Small Hydro	PCC 1	Long	8.3		Post 2030
RanchoSeco PV *	Solar PV	PCC 1	Long	10.9		Post 2030
Great Valley Solar *	Solar PV	PCC 1	Long	60		Post 2030
Wildflower Solar I *	Solar PV	PCC 1	Long	13		Post 2030
Rancho Seco PV II *	Solar PV	PCC 1	Long	160		Post 2030
FIT **	Solar PV	PCC 1	Long	100		Post 2030
WAPA CVP	Small Hydro	PCC 0	Long	13.5		Post 2030
New Hope Diary	Biogas	PCC 1	Long	0.4		Post 2030
Van Warmerdam Dairy	Biogas	PCC 1	Long	0.6		Post 2030
Van Steyn Dairy	Biogas	PCC 1	Long	0.2		2025
Cal Expo	Solar PV	PCC 0	Long	0.4		2020
Commercial PV (SB-1, PCC 3)	Solar PV	PCC 3	Long			Post 2030

Future Resources - Contracted/Under Development

Resource	Technology	PCC	Short/Long	Capacity	Online	Termination
NTUA ***	Solar PV	PCC 1	Long	100	2022	Post 2030
Calpine Geysers	Geothermal	PCC1	Long	100	2023	Post 2030
Solano Wind Phase 4	Wind	PCC 1	Long	85.5	2024	Post 2030
Coyote Creek (+ 100 MW Battery Storage)	Solar PV	PCC 1	Long	200	2024	Post 2030
Kings Country	Solar PV	PCC 1	Long	50	2024	Post 2030

Future Resources - Planned/Under Consideration

Resource	Technology	PCC	Short/Long	Capacity	Online	Termination
Sacramento Solar (+ 170 MW Battery Storage)	Solar PV	PCC 1	Long	340	2024	Post 2030

* These resources will be used primarily to serve load from SMUD's SolarShares programs and not available for RPS compliance needs. However, any excess generation not needed to serve SolarShares loads may be applied to SMUD's RPS compliance needs.

** Generation from the FIT resources will be used to serve SMUD's voluntary programs on occasion as needed (i.e. unexpected fluctuations in loads, delay in solar/renewable resource development, etc.)

*** The NTUA agreement specifically identifies the use of generation from this resource may be used to meet RPS requirements or to serve load from our voluntary renewable programs (SolarShares, Greenergy).

All RECs from these facilities are tracked in WREGIS and retired into the appropriate retirement accounts (compliance or voluntary program) to ensure no double counting between programs occurs.

RESOLUTION NO. 22-06-05

WHEREAS, Public Utilities Code section 399.30 requires each publicly-owned utility (POU) to adopt and periodically update a Renewables Portfolio Standard (RPS) Enforcement and Compliance Plan, which details actions the POU will take if the POU determines that it will not meet its RPS procurement requirements; and

WHEREAS, by Resolution No. 11-12-15, adopted on December 15, 2011, this Board adopted SMUD's initial **Renewables Portfolio Standard Enforcement and Compliance Plan (RPS Enforcement Plan)**; and

WHEREAS, in August 2013, the **California Energy Commission (CEC)** adopted final regulations entitled the *Enforcement Procedures for the Renewables Portfolio Standard for Local Publicly Owned Electric Utilities* **(CEC RPS Regulations)**, which became effective on October 1, 2013; and

WHEREAS, by Resolution No. 13-11-09, adopted on November 21, 2013, this Board adopted an update to the **RPS Enforcement Plan** in compliance with the **CEC RPS Regulations**; and

WHEREAS, the **CEC RPS Regulations** were modified, effective July 12, 2021; and

WHEREAS, staff has developed an update to the **RPS Enforcement Plan**, substantially in the form of **Attachment D**, that meets the statutory requirements of Public Utilities Code section 399.30 and is consistent with the modified **CEC RPS Regulations**; and

WHEREAS, Public Utilities Code section 399.30(e) and Section 3205(b)(2)(B) of the **CEC RPS Regulations** requires 10 days' notice be given to the public before any meeting is held to make changes to the **RPS Enforcement Plan**, in addition to public noticing requirements pursuant to Chapter 9, of Part 1 of Division 2 of Title 5 of the Government Code; and

WHEREAS, SMUD provided public notice on June 3, 2022, and June 10, 2022; **NOW, THEREFORE,**

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

This Board hereby approves and adopts the update to SMUD's **Renewables Portfolio Standard Enforcement and Compliance Plan (RPS Enforcement Plan)**, substantially in the form of **Attachment D**.

Approved: June 16, 2022

INTRODUCED: DIRECTOR HERBER				
SECONDED: DIRECTOR KERTH				
DIRECTOR	AYE	NO	ABSTAIN	ABSENT
ROSE	X			
BUI-THOMPSON	X			
FISHMAN	X			
HERBER	X			
KERTH	X			
TAMAYO	X			
SANBORN	X			

Attachment D
to Resolution No. 22-06-05

SMUD RPS Enforcement and Compliance Plan

June 2022

SMUD®

Table of Contents

Section 1: Introduction

The Sacramento Municipal Utility District (SMUD) is committed to development and procurement of renewable energy for our ratepayers. Senate Bill 2 (SBX1-2; 2011) established a Renewables Portfolio Standard (RPS) goal of 33% by 2020 for local publicly-owned electric utilities (POUs) as well as retail sellers. Senate Bill 350 (SB 350; 2015) modified certain provisions of the RPS and set a 2030 RPS target of 50%, which was further modified by Senate Bill 100 (SB 100; 2018) to establish a 60% RPS target by 2030 and a planning goal of serving 100% of retail sales with zero carbon and eligible renewable resources by 2045.This document describes SMUD's RPS Enforcement and Compliance Plan (Enforcement Plan), which, upon approval by the Board, will be submitted to the California Energy Commission (CEC) as required by Public Utilities Code (PUC) § 399.30(e) and by the *Enforcement Procedures for the Renewables Portfolio Standard for Local Publicly Owned Utilities (CEC RPS Regulations)*, Section 3205(b). SMUD adopted its initial Enforcement Plan in 2011 and updated this plan in 2013.

In July 2020, our Board of Directors declared a climate emergency and adopted a resolution directing SMUD to take significant and consequential actions to become carbon neutral (net zero carbon) by 2030. In April 2021, SMUD's Board approved our 2030 Zero Carbon Plan (2030 ZCP). SMUD's goal to eliminate carbon emissions from our power supply by 2030 is more ambitious than already aggressive state mandates and identifies procurement of renewable resources far beyond what is necessary to meet current RPS obligations through 2030. SMUD's goals beyond the State mandated RPS targets are not governed or subject to the provisions set forth in this Enforcement Plan.

Modifications or amendments to the Enforcement Plan require that no less than 10 calendar days' notice be given to the public of a meeting held for the purpose of adopting an updated Enforcement Plan. Upon adoption of an updated Enforcement Plan, SMUD shall submit a copy to the CEC within 30 days.

Section 2: Enforcement

At the end of each compliance period, SMUD staff will review RPS qualified generation and renewable energy credits (RECs) to determine whether SMUD has met its RPS procurement requirements in accordance with Section 3204 of the *CEC RPS Regulations*, for the compliance period. If staff determines that SMUD has met its RPS procurement requirements, an RPS compliance report addressing the reporting requirements of Section 3207 of the *CEC RPS Regulations* will be prepared and submitted to the CEC.

If SMUD staff determines that the conditions for delaying compliance detailed in Section 6, the cost limitation provisions of Section 7, or the adjustment of portfolio content category (PCC) provisions of Section 8 need to be applied for the compliance period, the Board will meet in open session to review the RPS compliance report. The Board shall consider staff's recommendation to apply the provisions of Section 6, 7, and/or 8; and

approve the compliance report if they determine that in doing so SMUD will comply with the RPS obligations for the compliance period pursuant to the *CEC RPS Regulations.*

Subject to the conditions for delaying compliance detailed in Section 6, and with consideration of any optional compliance modifications from Sections 5, 7, 8, 9, 10, and/or 11, the Board will take enforcement action if it finds either of the following:

- Failure to meet the procurement obligations for the previous compliance period set forth in Section 4; or
- Failure to meet the portfolio balance requirement for procurement of PCC 1 resources for the previous compliance period, for resources procured or owned by SMUD after June 1, 2010, as set forth in Section 5.

Section 3: Enforcement Actions

If the RPS compliance report shows either or both of the failures listed in Section 2, the Board shall direct the Chief Executive Officer (CEO)/General Manager (GM) to develop and present a plan within 6 months to bring SMUD into compliance. The plan will be presented at a Board meeting for discussion and action. The Board will consider one or more of the following enforcement actions, or other actions as determined by the Board:

- Instruct staff to issue a Request for Offers to solicit more renewable energy generation to meet the goals and/or the applicable portfolio balancing requirements; or
- Determine and impose a payment that goes into an AB 32-related fund, with the restriction that such deposits in the account may only be used for renewable research, development and/or procurement purposes;
- Instruct staff to identify the issues resulting in non-compliance and submit a report to the Board that includes recommendations for mitigation.

Section 4: Compliance
[PUC §399.30 (c), PUC 399.16 (c) and CEC RPS Regulations,* Section 3204*]

SMUD's procurement target will be consistent with PUC § 399.30 (c) and *CEC RPS Regulations,* Section 3204. SMUD shall meet the portfolio balance requirements for the procurement categories in each compliance period, as specified in PUC § 399.16(c) and *CEC RPS Regulations,* Section 3204 (c); and the long-term procurement requirements in PUC § 399.30 (d)(1) with reference to PUC § 399.13 (b), and CEC RPS Regulations, Section 3204(d).

Section 5: Rules For Excess Procurement and Carryover
[PUC § 399.30 (d)(1) and CEC RPS Regulations,* Section 3206(a)(1)*]

SMUD shall allow banking of excess procurement from one compliance period for use in subsequent periods, pursuant to *PUC § 399.30 (d)(1) and PUC § 399.13 (a)(5)(B)*, and *CEC RPS Regulations,* Section 3206(a)(1).

SMUD defines "excess procurement" as any eligible renewable generation in a compliance period that exceeds the compliance period requirement for that period as calculated using the formulas in *CEC RPS Regulations,* Section 3206(a)(1)(H), subject to the limitations and provisions of *CEC RPS Regulations,* Section 3206(a)(1)(B) – (F), as summarized below:

For Compliance Periods 1, 2, and 3 the following rules shall apply:

- SMUD may apply excess procurement in one compliance period to a subsequent compliance period, subject to the following limitations:
    - Electricity products that exceed the maximum limit for PCC 3, as specified in PUC § 399.16 (c), must be subtracted from the calculation of excess procurement.
    - Electricity products procured under contracts of less than 10 years in duration shall be subtracted from the calculation of excess procurement, unless the electricity product meets the legacy contract requirements of PUC § 399.16 (d).
- SMUD may begin accruing excess procurement as of January 1, 2011.
- Excess procurement meeting these requirements may be applied to any future compliance period and shall not expire.

For Compliance Period 4 and all subsequent compliance periods, the following rules shall apply:

- SMUD may apply excess procurement in one compliance period to a subsequent compliance period, subject to the following limitations:
    - Electricity products that are classified as PCC 2 or PCC 3 may not be counted as excess procurement.
    - Electricity products that exceed the maximum limit for PCC 3, as specified in PUC § 399.16(c), must be subtracted from the calculation of excess procurement.
- Excess procurement shall be classified as either short-term or long-term.
- Excess procurement meeting these requirements may be applied to any future compliance period and shall not expire.

Section 6: Conditions to Delay Compliance
***[CEC RPS Regulations,* Section 3206(a)(2)]**

The Board may delay compliance for an RPS procurement requirement pursuant to the *CEC RPS Regulations,* Section 3206(a)(2) for a particular compliance period if any of the following conditions occur that prevent compliance and it is demonstrated that SMUD took all reasonable actions to meet the RPS procurement requirements of the *CEC RPS Regulations*, Section 3204, the conditions are or were beyond the control of SMUD, and SMUD would have been compliant but for the occurrence of the conditions:

- Inadequate transmission capacity to allow for sufficient electricity to be delivered;
- Permitting, interconnection, or other circumstances that delay procured eligible renewable energy resource projects;
- Unanticipated curtailment of eligible renewable energy resources necessary to address the needs of a balancing authority that limit renewable energy deliveries to a California balancing authority;
- Unanticipated increase in retail sales due to transportation electrification.

If the Board approves a delay in compliance for a particular compliance period, the CEO/GM shall provide the Board with a compliance plan within 3 months that identifies actions to ensure future procurement requirements.

Section 7: Cost Limitations/Constraints
***[PUC § 399.30 (d)(2)(B) and CEC RPS Regulations*, Section 3206(a)(3)]**

SMUD shall establish specific cost limitations on procurement to ensure that RPS costs do not result in disproportionate rate impacts, pursuant to the *CEC RPS Regulations,* Section 3206(a)(3). SMUD launched a 2030 clean energy vision in 2020 and adopted the 2030 ZCP in 2021. SMUD's 2030 ZCP and long-term strategy include provision to minimize rate increases targeted at or below the rate of inflation while operating within targeted financial metrics. In accordance with this strategy, SMUD's goal is that compliance with the 60% RPS standard does not drive rate increases greater than the rate of inflation. SMUD may consider pursuing renewable energy that would cause rates to change by more than the rate of inflation if such procurement provides sufficient benefits to SMUD's ratepayers, or for other reasons, such as if other budget elements offset renewable increases so that the overall rate change is less than the rate of inflation.

In the event that SMUD's RPS costs are projected to be above the cost limitation, SMUD shall consider either: 1) adjusting the portfolio balance requirements in Section 4, pursuant to Section 8, until the cost limitation is achieved; 2) delaying the compliance period requirements in Section 4, pursuant to Section 6 above**,** until the cost limitation is achieved – this may include refraining from entering into new contracts or constructing facilities for eligible renewable energy resources beyond the quantity that can be procured within the cost limitation; or 3) waiving the cost-limitation established in this section.

Section 8: Adjustment of Portfolio Balance Requirements
***[PUC § 399.16(c) and CEC RPS Regulations*, Section 3206(a)(4)]**

SMUD adopts the following rule allowing for the reduction of the portfolio balance requirement for PCC 1, pursuant to PUC § 399.16(e), and the *CEC RPS Regulations,* Section 3204(a)(4):

SMUD's Board may adjust the percentage limitations specified in PUC § 399.16(c) for procurement of PCC 1 in order to comply with the obligation for a compliance period, provided the Board:

- Finds the need to reduce the PCC 1 procurement results from conditions beyond SMUD's reasonable control;
- Adopts such changes at a publicly noticed meeting; and
- Adopts an updated RPS Procurement Plan, submits it to the CEC, and includes the following information:
    - An explanation of why the reduction resulted from conditions beyond SMUD's control
    - The compliance period for which the reduction is adopted
    - The level by which the requirement was reduced

In no case shall the Board adjust the percentage requirement for procurement from PCC 1 below 65% for compliance after Compliance Period 2.

Section 9: Application Of Historic Carryover
***[CEC RPS Regulations*, Section 3206(a)(5)]**

SMUD shall calculate historic carryover associated with SMUD's eligible renewable procurement prior to 2011, and apply that excess historical carryover in the compliance periods defined herein, pursuant to the *CEC RPS Regulations,* Section 3206(a)(5). "Historic carryover" is defined as a POU's procurement that satisfies the following criteria:

- The procurement is for electricity and the associated renewable energy credit generated in 2004-2010 by any eligible renewable energy resource that met the CEC's RPS eligibility requirements in effect when the original procurement contract or ownership agreement was executed by the POU.
- The original contract or ownership agreement was executed by the POU prior to June 1, 2010.
- The procurement is in excess of the sum of the 2004-2010 annual procurement targets defined in section 3206 (a)(5)(D) and was not applied to the RPS of another state or to a voluntary claim.

Any excess historical procurement that is carried forward for application in the compliance periods herein, will meet the applicable CEC's RPS eligibility requirements in place at the

time of procurement. SMUD shall include generation from contracts of any length in the calculation of excess historical procurement.

Section 10: Long-Term Procurement

[PUC § 399.30 (d)(1) with reference to PUC § 399.13 (b)*, and *CEC RPS Regulations*, Section 3204(d)*]

SMUD's procurement strategy shall ensure that at least 65% of generation retired and applied to meet SMUD's RPS obligation in any given compliance period starting after January 1, 2021 (starting with compliance period 4), shall be from contracts deemed to be "long-term" in compliance with provisions of the *CEC RPS Regulations*, Section 3204(d), and in accordance with the formula in the *CEC RPS Regulations*, Section 3204(d)(1).

A long-term contract is defined as a contract to procure a nonzero quantity of electricity products from an RPS-certified facility for a duration of at least 10 continuous years, consistent with *CEC RPS Regulations*, Section 3204 (d)(2)(B) and (C).

Section 11: Retail Sales Exclusion for Voluntary Green Pricing or Shared Renewable Generation Programs

[*PUC § 399.30 (c)(4)* and *CEC RPS Regulations*, Section 3204(b)(9)]

Beginning January 1, 2014, SMUD may exclude from its retail sales the MWhs generated by an eligible renewable energy resource that is credited to customers participating in the SMUD's voluntary green pricing or shared renewable generation programs.

The exclusion may be applied under the following conditions:

- The generation is from an RPS-certified facility.
- The generation must be from a PCC 1 resource, as defined in the *CEC RPS Regulations*, Section 3203(a), or a resource that meets the criteria of *CEC RPS Regulations*, Section 3202(a)(2) and also satisfies the criteria for a PCC 1.
- The RECs associated with the generation are retired in WREGIS, are not counted toward SMUD's RPS procurement requirements, and are not further sold, transferred, or otherwise monetized for any purpose.
- To the extent possible, SMUD shall procure electricity products from facilities located within a California balancing authority area.

Prior to the CEC's incorporation of the provisions above into the *CEC RPS Regulations*, pursuant to the provisions of *PUC § 399.30 (c)(4)* and guidance from the CEC, SMUD elected to exclude certain green pricing and shared renewable program loads served by eligible RECs (meeting the requirements of this section) from total retail sales for purposes of determining RPS compliance obligation for the second (2014 – 2016) and

third (2017 – 2020) compliance periods. Provisions for this exclusion were previously incorporated in our RPS Procurement Plan.

Section 12: Separability of Voluntary Renewable Programs

This is the enforcement and compliance plan for SMUD's RPS obligation. SMUD also procures renewable energy for its voluntary green pricing and shared renewable programs, including Greenergy and SolarShares. Nothing in this Enforcement Plan is intended to apply to SMUD's procurement for those voluntary green pricing and shared renewable programs, except to the extent that the generation that is procured for those programs is excluded from retail sales pursuant to Section 11 above. In that case, such procurement shall be consistent with the provisions of Section 11.

President Rose then addressed Discussion Calendar Item 3, to approve Board member compensation, as revised, for service rendered at the request of the Board (pursuant to Resolution 18-12-15) for the period of May 16, 2022, through June 15, 2022.

No public comment was forthcoming for Discussion Calendar Item 3.

There being no discussion, President Rose moved for approval of Discussion Calendar Item 3, Vice President Sanborn seconded, and Resolution No. 22-06-06 was unanimously approved.

RESOLUTION NO. 22-06-06

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

That this Board hereby approves Board member compensation for service rendered at the request of the Board (pursuant to Resolution 18-12-15) for the period of May 16, 2022, through June 15, 2022.

Approved: June 16, 2022

INTRODUCED: DIRECTOR ROSE				
SECONDED: DIRECTOR SANBORN				
DIRECTOR	AYE	NO	ABSTAIN	ABSENT
ROSE	X			
BUI-THOMPSON	X			
FISHMAN	X			
HERBER	X			
KERTH	X			
TAMAYO	X			
SANBORN	X			

President Rose then turned to Discussion Calendar Item 10, to certify the California Environmental Quality Act (CEQA) Sacramento Municipal Utility District Operations, Maintenance, and New Construction Habitat Conservation Plan (HCP) Final Environmental Impact Report (FEIR), including adoption of the Findings; adopt the Mitigation Monitoring and Reporting Program; and approve the project.

Emily Bacchini, Manager, Environmental Services, gave a presentation regarding Discussion Calendar Item 10. A copy of the slides used in her presentation is attached hereto.

No public comment was forthcoming on Discussion Calendar Item 10.

After some discussion, Director Fishman moved to approve Discussion Calendar Item 10, Director Tamayo seconded, and Resolution No. 22-06-07 was unanimously approved.

RESOLUTION NO. 22-06-07

WHEREAS, this Board has adopted policies stating this Board is committed to meeting customers' electrical energy needs (SD-4); demonstrating energy reliability and environmental leadership (SD-7); and ensuring high levels of customer satisfaction (SD-5); and

WHEREAS, SMUD's primary purpose is to supply electrical energy to customers in the Sacramento area; and

WHEREAS, the **Sacramento Municipal Utility District Operations, Maintenance, and New Construction Habitat Conservation Plan (HCP)** was prepared to support issuance of requested take authorizations from the **California Department of Fish and Wildlife (CDFW)** and **U. S. Fish and Wildlife Service (USFWS)**; and

WHEREAS, the **HCP** is a 30-year plan designed to avoid, minimize, and mitigate impacts to **HCP Covered Species** that may be affected by SMUD's various operations, maintenance, and new construction activities; and

WHEREAS, the **HCP** covers activities within SMUD's service territory and in portions of Placer, Yolo, Amador, and San Joaquin Counties where SMUD's facilities are present; and

WHEREAS, the **HCP Covered Species** includes seven state and federally endangered and threatened species: slender Orcutt grass, Sacramento Orcutt grass, vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, California tiger salamander, and giant garter snake; and

WHEREAS, SMUD prepared an **Environmental Impact Report (EIR)** to evaluate the potential impacts of issuance of the take authorizations by **USFWS** and **CDFW**, implementation of those take authorizations, and approval and implementation of the **HCP**; and

WHEREAS, the **Sacramento Municipal Utility District Operations, Maintenance, and New Construction Habitat Conservation Plan Environmental Impact Report (HCP EIR)** provides the **California**

Environmental Quality Act (CEQA) analysis for the project, and the **Mitigation Monitoring and Reporting Program** incorporated environmental avoidance, mitigation and improvement measures; and

WHEREAS, the public scoping process for the **HCP EIR** began September 13, 2018, with submittal of the **Notice of Preparation (NOP)** to the State Clearinghouse notifying stakeholders of SMUD's intent to prepare the **HCP EIR**, two public meetings being held on September 27, 2018, and concluding on October 15, 2018, with no significant issues identified in the six scoping comments received; and

WHEREAS, the **HCP EIR** and **Mitigation Monitoring and Reporting Program** were posted on the SMUD website, distributed to approximately 100 interested parties including agencies, special interest groups, nonprofit organizations, and other stakeholders; notice was published in the *Sacramento Bee*, inviting public comment; the comment period was open from January 31, 2022, through March 17, 2022; a virtual public meeting was held on February 22, 2022, which was attended by one member of the public; and four comments were received consisting of requests for more information about the project or indicating there were no comments, thus requiring no corresponding changes to the text of the **HCP EIR**; and

WHEREAS, the **HCP EIR** included mitigation measures for cultural resources and tribal cultural resources to reduce impacts to a less-than-significant level and concluded the **Project** would not result in any significant and unavoidable impacts; and

WHEREAS, all comments received during the public review period have been responded to as appropriate and incorporated into the **Final HCP EIR** and **Mitigation Monitoring and Reporting Program**, which was made available for comments on June 3, 2022, and will require certification by the SMUD Board of Directors; and

WHEREAS, the **HCP EIR** and **Mitigation Monitoring and Reporting Program** are located in the records of SMUD under the custody of the Environmental Management Department; **NOW THEREFORE,**

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

Section 1. This Board has reviewed and considered information in the **Sacramento Municipal Utility District Operations, Maintenance, and New Construction Habitat Conservation Plan Environmental Impact Report (HCP EIR)** and **Mitigation Monitoring and Reporting Program** and (1) adopts the **Findings** as set forth in **Attachment E**, (2); certifies that the **HCP EIR** complies with the **California Environmental Quality Act (CEQA)**; (3) adopts the **Mitigation Monitoring and Reporting Program,** as set forth in **Attachment F**; and (4) approves the project.

Section 2. This Board, exercising its independent judgment, finds, on the basis of the **HCP EIR** and **Mitigation Monitoring and Reporting Program**, and comments received during the public review period that there is no substantial evidence that the **Sacramento Municipal Utility District Operations, Maintenance, and New Construction Habitat Conservation Plan** will have a significant effect on the environment.

Section 3. The Environmental Services Department is directed to file with the County Clerks of Sacramento County, Placer County, Yolo County, San Joaquin County, and Amador County a Notice of Determination, which shall set forth the information required by **CEQA**.

Approved: June 16, 2022

INTRODUCED: DIRECTOR FISHMAN				
SECONDED: DIRECTOR TAMAYO				
DIRECTOR	AYE	NO	ABSTAIN	ABSENT
ROSE	X			
BUI-THOMPSON	X			
FISHMAN	X			
HERBER	X			
KERTH	X			
TAMAYO	X			
SANBORN	X			

CALIFORNIA ENVIRONMENTAL QUALITY ACT FINDINGS IN CONNECTION WITH

SACRAMENTO MUNICIPAL UTILITY DISTRICT OPERATIONS, MAINTENANCE, AND NEW CONSTRUCTION HABITAT CONSERVATION PLAN

I. Introduction

The Sacramento Municipal Utility District (SMUD) is the lead agency under the California Environmental Quality Act (CEQA) for the SMUD Operations, Maintenance, and New Construction Habitat Conservation Plan (HCP) Environmental Impact Report (EIR). The EIR is a public information document that assesses and discloses the potential environmental effects not only of SMUD's discretionary application for, issuance and implementation of take authorizations from the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife and implementation of the HCP, but also its broader consideration and approval of the whole of the action under CEQA, which includes the direct and reasonably foreseeable indirect effects caused by the Covered Activities that will result with issuance of the take authorizations, and implementation of the Conservation Strategy covered by the authorizations and HCP. In combination, these activities constitute the proposed "Project" for purposes of CEQA.

CEQA prohibits an agency from approving or carrying out a project for which significant effects have been identified, unless the agency can make one or more of a set of three findings set forth in Public Resources Code (PRC) section 21081, subdivision (a):

> (1) Changes or alterations have been required in, or incorporated into, the project which mitigate or avoid the significant effects on the environment.
>
> (2) Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.
>
> (3) Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or alternatives identified in the environmental impact report. (See also California Code of Regulations [CCR] Title 14, section 15091.)

When significant effects are subject to a finding under paragraph (3) of subdivision (a), it means that before approving the project the lead agency must find that specific overriding economic, legal, social, technological, or other benefits of the project outweigh the significant effects on the environment. (PRC section 21081, subd.(b).)

CEQA also requires public agencies to prepare a program for monitoring or reporting on the revisions which it requires in the project and the measures it has imposed to mitigate or avoid significant environmental effects. (CCR Title 14, section 15097, subd. (a).)

II. CEQA Compliance

SMUD, as the lead agency pursuant to CEQA, has prepared a Draft and Final EIR for the Project. The SMUD Board of Directors (Board) hereby issues these Findings and concurrently certifies the EIR.

The EIR has been assigned State Clearinghouse Number 2018092030. The Final EIR consists of the Draft EIR and the Final EIR Responses to Comments document, which includes minor changes to the EIR and formal responses to comments received on the Draft EIR. The Final EIR assesses the potential environmental effects of implementation of the Project, identifies the means to eliminate or reduce potentially significant adverse environmental impacts, and evaluates a reasonable range of alternatives to the Project.

Pursuant to PRC section 21081 and CCR Title 14, section 15090, the Board hereby certifies that it completed the following activities prior to taking action related to activities evaluated under the SMUD HCP EIR: the Board has received the Final EIR; the Board has reviewed and considered the information contained in the Final EIR and received through public comments; and the Board has considered all additional written and oral statements received prior to or at its public hearing on the Final EIR. The Board additionally certifies that the Final EIR was completed in compliance with CEQA (PRC section 21000 et seq.), the CEQA Guidelines (CCR Title 14, section 15000 et seq.), and SMUD's policies and procedures for the implementation of CEQA and that the Final EIR reflects the SMUD Board of Directors' independent judgment and analysis. The conclusions presented in these Findings are based on the Final EIR and other evidence in the administrative record.

The Findings set forth below pertain to the certification of the SMUD Operations, Maintenance and New Construction HCP EIR.

Findings

Having received, reviewed, and considered the Final EIR and all other information in the administrative record, the Board hereby adopts the following Findings for the SMUD HCP EIR in compliance with CEQA, the CEQA Guidelines, and SMUD's procedures for implementing CEQA. The Board adopts these Findings in conjunction with its approval of the SMUD HCP EIR, as set forth below.

a. Project Description and Background

SMUD is applying for take authorizations from the U.S. Fish and Wildlife Service (USFWS), pursuant to Section 10(a)(1)(B) of the federal Endangered Species Act (ESA) of 1973, as amended, and from the California Department of Fish and Wildlife (CDFW), pursuant to Section 2081(b) of the California Fish and Game Code and the California Endangered Species Act (CESA). The take authorizations would authorize take of seven state and federally listed species (i.e., Covered Species), incidental to otherwise lawful activities (i.e., Covered Activities).

SMUD developed a HCP in consultation with USFWS and CDFW and is intended to support and inform the issuance of the requested environmental permitting from USFWS and CDFW. The HCP is a 30-year plan designed to protect and contribute to the recovery of Covered Species and natural communities in the HCP Plan Area. The HCP provides streamlined environmental permitting while providing a framework to protect, enhance, and restore natural resources.

The Plan Area is the area within which SMUD would implement conservation measures to mitigate potential impacts on Covered Species resulting from Covered Activities. The Plan Area includes the Permit Area, which encompasses SMUD's service territory plus SMUD's transmission line in Placer county and gas pipeline in Yolo County. The total size of the Permit Area is approximately 577,554 acres. The Permit Area encompasses SMUD's facilities within its service territory, which is primarily Sacramento County and a small portion of Placer County in California. The Permit Area also includes SMUD's gas pipeline in Yolo County, SMUD's transmission line in Placer County, small portions of Amador and San Joaquin Counties where SMUD has electrical facilities. The total size of the Permit Area is approximately 577,554 acres (Figure ES-1). The Permit Area is the area in which SMUD is requesting authorization from USFWS and CDFW for incidental take of Covered Species under the ESA and CESA resulting from Covered Activities, which include all activities and projects that may result in the take of species covered by the HCP.

The HCP proposes coverage for seven federally listed species, which include two plants, three invertebrates, one amphibian, and one reptile. The HCP includes conservation measures to protect all seven Covered Species, which are slender Orcutt grass (Orcuttia tenuis), Sacramento Orcutt grass (Orcuttia viscida), vernal pool fairy shrimp (Branchinecta lynchi), valley elderberry longhorn beetle (Desmocerus californicus dimorphus), vernal pool tadpole shrimp (Lepidurus packardi), California tiger salamander (Ambystoma californiense), and giant garter snake (Thamnophis gigas).

The Covered Activities are activities that SMUD would implement within the Permit Area that have the potential to result in incidental take of a Covered Species. The Covered

Activities are operations and maintenance and new construction activities within the following categories: electrical facilities, natural gas transmission facilities, telecommunications, vegetation management, conservation and enhancement, and miscellaneous. For the purposes of the analysis in the EIR, implementation of the Covered Activities is described as the Indirect Actions. The Indirect Actions are not entitled by the actions covered by this EIR but are largely activities we have been undertaking as part our ongoing operations. Therefore, SMUD's lead agency approval of the Project implements the HCP and take authorizations but does not confer or imply discretionary approval by SMUD of implementation of any specific Indirect Action.

The Conservation Strategy for the HCP would ensure the potential impacts from Covered Activities are avoided, minimized, and mitigated to the maximum extent practicable. Potential impacts from Covered Activities would be reduced or eliminated through pre-project planning and implementation of avoidance and minimization measures. A comprehensive mitigation program would offset unavoidable impacts and contribute to long-term conservation of Covered Species by fully mitigating for actual impacts. Mitigation would be accomplished by using existing credits at the SMUD Nature Preserve Mitigation Bank (SMUD Bank), purchasing credits from other conservation/mitigation banks within the Plan Area, or collaborating with the implementing entity of another HCP. The Conservation Strategy will also include offsetting effects on Sacramento and slender Orcutt grass modeled habitat by invasive plant management and introduction of Sacramento and slender Orcutt grasses at the SMUD Bank. For the purposes of the analysis in the EIR, the Conservation Strategy is described as the Direct Actions. The Direct Actions would be directly enabled by approval of the Project, the HCP and the take authorizations issued by USFWS and CDFW. The only Direct Action with potential physical impacts would be the Enhance Sacramento Orcutt Grass Population and Slender Orcutt Grass Introduction at SMUD Bank activity.

b. Absence of Significant New Information

CEQA Guidelines section 15088.5 requires a lead agency to recirculate an EIR for further review and comment when significant new information is added to the EIR after public notice is given of the availability of the draft EIR but before certification. New information includes: (i) changes to the project; (ii) changes in the environmental setting; or (iii) additional data or other information. CEQA Guidelines section 15088.5 further provides that "[n]ew information added to an EIR is not 'significant' unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement."

Comments received on the Draft EIR included two requests for more information regarding the HCP, one no comment, and one in support of the EIR. Each comment has been responded to in the Final EIR and none of the comments required changes to the Draft EIR or triggered the need to recirculate the Draft EIR.

Having reviewed the information contained in the Draft and Final EIR, and in the administrative record, including all comments received, as well as the requirements under CEQA Guidelines section 15088.5 and interpretive judicial authority regarding recirculation of draft EIRs, The Board hereby finds that no significant new information was added to the Draft EIR after the public review period. The Board specifically finds that: no new significant environmental impact would result from the project or from the implementation of a mitigation measure; no substantial increase in the severity of an environmental impact would result, or if such an increase would result, SMUD has adopted mitigation measures to reduce the impact to a level of insignificance; SMUD has not declined to adopt any feasible project alternative or mitigation measures considerably different from others previously analyzed that would clearly lessen the environmental impacts of the project; and the Draft EIR is not so fundamentally and basically inadequate in nature that it precluded meaningful public review.

Having reviewed the information in the Draft EIR, Final EIR, and administrative record, the Board finds that no new significant information was added to the EIR following public review, and recirculation of the EIR is therefore unnecessary and not required by CEQA.

c. Environmental Impacts Summary

As required by CEQA and the CEQA Guidelines, the following section summarizes the direct, indirect, and cumulative environmental impacts of the Project identified in the Final EIR and includes the Board's Findings regarding those impacts and any mitigation measures set forth in the Final EIR, adopted by the Board, and incorporated as requirements of the Project. These Findings summarize the determinations of the Final EIR with respect to the Project's impacts before and after mitigation and do not attempt to describe the full analysis of each environmental impact considered in the Final EIR. Instead, the Findings provide a summary of each impact, describe the applicable mitigation measures identified in the Final EIR and adopted by the Board, and state the Board's Findings regarding the significance of each impact with the adopted mitigation measures. The Final EIR contains a full explanation of each impact, mitigation measure, and the analysis that led SMUD to its conclusions on that impact. These Findings hereby incorporate by reference the discussion and analysis in the Final EIR, which support the Final EIR's determinations regarding the Project's environmental impacts and mitigation measures. In making these Findings, the Board ratifies, adopts, and incorporates by reference the Final EIR's analysis, determinations, and conclusions relating to environmental impacts and mitigation measures. The substantial evidence supporting

these findings and conclusions is are set forth in the Final EIR and the record of proceedings.

The Board hereby adopts, and incorporates as conditions of approval, the mitigation measures set forth in the findings below to reduce or avoid the potentially significant impacts of the Project. In adopting the mitigation measures described below, the Board intends to adopt each of the mitigation measures recommended in the MMRP. Accordingly, in the event that a mitigation measure identified in the Final EIR has been inadvertently omitted from these Findings, that mitigation measure is hereby adopted and incorporated by reference in the Findings. Additionally, in the event that the description of mitigation measures set forth below fails accurately to capture the substance of a given mitigation measure due to a clerical error (as distinct from specific and express modification by the Board through these Findings), the language of the mitigation measure as set forth in the MMRP of the Final EIR shall govern.

d. Issues for which the Project would have a Less-than-Significant Impact with Mitigation Measures Incorporated

Pursuant to PRC section 21081(a)(1) and CEQA Guidelines section 15091(a)(1), the following potentially significant impacts identified in the Final EIR will be reduced to less-than-significant impacts through the implementation of the mitigation measures hereby incorporated into the Project.

Cultural Resources

Impact 3.5-2: Have a substantial adverse change in the significance of a unique archaeological resource. The Project will enable SMUD to implement the Direct Actions that could potentially could destroy known and unknown unique archaeological resources and could have an adverse change in the significance of a unique archaeological resource. Therefore, there would be a potentially significant impact on a unique archaeological resource.

Mitigation Measure CUL-1: Avoidance and Archaeological Monitoring.

The northern portion of the SMUD Bank holds the most potential for uncovering early Native American cultural resources. If possible, soil disturbance in this area should be avoided. If avoidance is not possible, a qualified archaeologist must be present during any ground disturbance or excavation. This area includes that portion of the SMUD Bank north of latitude 38° 20’ 37.00” N or UTM 424560N (Zone 10). This east-west line would occur approximately just north of the reservoir that exists roughly 1,000 feet northwest of the lake and approximately 2,000 feet

southeast of the ranch buildings adjacent to the northwest portion of the SMUD Bank.

Mitigation Measure CUL-2: Environmental Awareness Training.

Prior to working onsite, individuals who are involved in soil moving and handling must attend environmental awareness training provided by a qualified professional archaeologist. This training would provide information on the types and extent of cultural resources that may be located onsite. Individuals conducting any excavation or other substantial subsurface disturbance activities onsite shall also attend the environmental awareness training.

Mitigation Measure CUL-3: Stop Work if Archaeological Resources are Encountered.

Should any evidence of early Native American or historic cultural resources be discovered during excavation or other substantial subsurface disturbance activities, all work should immediately cease, and a qualified archaeologist must be consulted to assess the significance of the cultural materials.

Finding: The Board finds that implementation of the Project could damage archaeological resources. But through adoption and incorporation of Mitigation Measures CUL-1, CUL-2, and CUL-3 into the Project that would reduce potential impacts from Direct Actions to a less-than-significant level, the Board finds that the Project with mitigation will not cause significant impacts on an archaeological resource.

Impact 3.5-3: Disturbance of any human remains including those interred outside of formal cemeteries. Although no human remains were found during previous cultural resources investigations, the Direct Actions could involve ground-disturbing activities that could have the potential to disturb human remains, including those interred outside of formal cemeteries. This would be a potentially significant impact.

Mitigation Measure CUL-4: Stop Work if Human Remains Are Discovered during Ground-Disturbing Activities.

If human remains are discovered during excavation or other substantial subsurface disturbance activities, all work must immediately cease and the local coroner must be contacted. Should the remains prove to be of cultural significance, the NAHC in Sacramento, California, must be contacted with additional notification going to the most likely descendants.

Finding: The Board finds that implementation of the Direct Actions could disturb previously unknown human remains. But because through adoption and incorporation of Mitigation Measure 3.5-3 into the Project that would reduce potential impacts on

previously unknown human remains, including those found outside formal cemeteries, to a less-than-significant level, the Board finds the Project with mitigation will not cause significant impacts on buried human remains.

Tribal Cultural Resources

Impact 3.18-1: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource that is Listed or Eligible for Listing in the California Register of Historical Resources or Other Local Register. Tribal cultural resources have been identified through AB52 consultations for the Project. Although, it was determined that the Direct Actions would not result in impacts on identified Tribal cultural resources, ground disturbing activities could lead to the destruction or damage of previously unknown Tribal cultural resources. This would be a significant impact.

Mitigation Measure TCR-1: Discovery of Unanticipated Tribal Cultural Resources.

If any suspected TCRs are discovered during ground disturbing construction activities, all work shall cease within 100 feet of the find, or an agreed upon distance based on the project area and nature of the find. A Tribal Representative from a California Native American tribe that is traditionally and culturally affiliated with a geographic area shall be immediately notified and shall determine if the find is a TCR (PRC §21074). The Tribal Representative will make recommendations for further evaluation and treatment as necessary.

When avoidance is infeasible, preservation in place is the preferred option for mitigation of TCRs under CEQA and Tribal protocols, and every effort shall be made to preserve the resources in place, including through project redesign, if feasible. Culturally appropriate treatment may be, but is not limited to, processing materials for reburial, minimizing handling of cultural objects, leaving objects in place within the landscape, or returning objects to a location within the project area where they will not be subject to future impacts. Permanent curation of TCRs will not take place unless approved in writing by the consulting Tribe that is traditionally and culturally affiliated with the project area.

The contractor shall implement any measures deemed by the CEQA lead agency to be necessary and feasible to preserve in place, avoid, or minimize impacts to the resource, including, but not limited to, facilitating the appropriate tribal treatment of the find, as necessary. Treatment that preserves or restores the cultural character and integrity of a TCR may include Tribal Monitoring, culturally appropriate recovery of cultural objects, and reburial of cultural objects or cultural soil.

Work at the discovery location cannot resume until all necessary investigation and evaluation of the discovery under the requirements of the CEQA, including AB52, have been satisfied.

Finding: The Board finds that implementation of the Project could potentially result in destruction or damage of previously unknown Tribal cultural resources during implementation of Direct Actions. But because adoption and incorporation of Mitigation Measure TCR-1 into the Project will reduce the impact to a less-than-significant level. the Board finds that the Project, with mitigation, will not cause significant impacts on Tribal cultural resources.

e. Alternatives

In compliance with CEQA and the CEQA Guidelines, Chapter 5, "Alternatives" of the Draft EIR evaluated a reasonable range of alternatives to the Project, including the No Project Alternative, followed by identification of an environmentally superior alternative. The EIR examined each alternative's feasibility and ability to meet the following Project Objectives:

- Conserve (avoid, minimize, and mitigate impacts on) Covered Species that may be affected by specific Covered Activities within the Permit Area.

- Receive take authorization from USFWS for federally listed species covered by the proposed HCP, pursuant to Section 10(a)(1)(B) of the ESA for Covered Activities proposed by SMUD.

- Receive take authorization from CDFW for state-listed species (California tiger salamander [CTS], and giant garter snake [GGS]) covered by the proposed HCP, Section 2081(b) of the California Fish and Game Code (California Endangered Species Act [CESA]) for Covered Activities proposed by SMUD.

- Receive take authorization from CDFW for state-listed species (Sacramento Orcutt grass and slender Orcutt grass) covered by the proposed HCP, Section 2081(a) of the California Fish and Game Code (California Endangered Species Act [CESA]) for Covered Activities proposed by SMUD.

- Streamline and coordinate regulatory processes for review and permitting of SMUD's Covered Activities.

- Provide greater certainty to SMUD regarding mitigation requirements.

Several alternatives including the option of using a different Conservation Strategy were initially evaluated but were not carried forward as alternatives analyzed in the EIR based on their lack of feasibility in light of identified screening criteria.

In particular, the proposed Project seeks to provide a coordinated HCP, which, when implemented, would conserve (avoid, minimize, and mitigate impacts on) Covered Species that may be affected by Covered Activities within the Permit Area. Alternatives that did not meet these objectives were eliminated from detailed consideration.

The No Project Alternative was carried forward and analyzed with regard to whether it would reduce or avoid significant impacts of the Project. Under the No Project Alternative, SMUD would not pursue an HCP to provide comprehensive ESA coverage for all of its Covered Activities in its service territory. SMUD would seek to avoid take of all Covered Species, but would need to acquire incidental take authorizations under Section 7 of the ESA or the California Endangered Species Act as applicable for each individual activity or project that may cause take. SMUD would continue its environmental planning and screening processes to avoid and minimize impacts, but site-specific AMMs (including numerous pre-activity surveys) would still be required for certain projects. Take of Covered Species could be similar or the same as under the Project. But individual projects and associated mitigation would likely result in higher costs and delays in O&M as compared to the Project because each one would be reviewed and analyzed individually. Neither SMUD nor the wildlife agencies have the staff or ability to efficiently conduct environmental review for numerous individual projects and could result in numerous delays and schedule disruptions.

Because of potential delays involved with permitting such a large volume of work, the No Project Alternative would be an impediment to the efficient and timely maintenance of SMUD facilities, potentially delaying reliability and safety improvements. This alternative was also deemed to be cost inefficient and would not provide streamlined or coordinated regulatory review and take authorizations from the USFWS or CDFW.

In connection with certification of the Final EIR for the Project, the Board certifies that it has independently reviewed and considered the information on alternatives provided in the Final EIR and the record of proceedings. The Board finds that no new alternatives have been identified and that the feasibility of the analyzed alternatives has not changed since the Draft EIR was circulated for public review. The Board certifies that it has independently reviewed and considered the information on alternatives provided in the Final EIR and the administrative record, and finds, for the reasons set forth above, that the No Project Alternative cannot feasibly attain, either at all or to the same extent as the proposed Project, one or more of the project objectives and is rejected by the Board from further consideration.

CCR section 15126.6 suggests that an EIR should identify the "environmentally superior" alternative. "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." No impacts identified would be significant and unavoidable. Feasible mitigation is available for all potentially significant impacts associated with project implementation.

Compared with the No Project alternative, the Project would best meet the project objectives, as stated in Chapter 7, "Alternatives" in the Draft EIR. The impacts associated with the Project and the No Project Alternative are qualitatively similar. Although impacts associated with ground-disturbing activities (Cultural Resources, Hydrology, Minerals) under the No Project Alternative may be slightly reduced compared to the Project, these impacts would remain less than significant. The Project would provide for a greater level of conservation in the Plan Area. The Conservation Strategy would provide greater species conservation and improvements to existing mitigation banks. The Project would result in benefits due to its approach of preserved habitat in larger blocks. The overall benefit to species would therefore be greater under the Project without a measurable difference in impacts on the environment.

f. Additional Findings

- These Findings incorporate by reference in their entirety the text of the Draft and Final EIR prepared for the Project. Without limitation, this incorporation is intended to elaborate on the scope and nature of the Project, related mitigation measures, and the basis for determining the significance of such impacts.

- All of the environmental effects of the Project have been adequately addressed in the Draft and Final EIR and have been mitigated or avoided, where feasible.

- CEQA Guidelines section 15074 requires the Lead Agency approving a Project to adopt an MMRP for the Project that it adopts or makes a condition of Project approval in order to ensure compliance during Project implementation. The Board adopts the MMRP for Project and the specific mitigation measures will be monitored in conjunction with SMUD's MMRP and Reporting process.

g. Record of Proceedings

For purposes of CEQA and these Findings, the record of proceedings for the Project (Record of Proceedings) consists of the following documents and other evidence, at a minimum:

- The Notice of Preparation (NOP) distributed on September 13, 2018 and comments received during its 30-day public review;
- The EIR for the Project, including, without limitation, the Draft EIR, Final EIR, and all of its appendices;
- All studies, EIRs, maps, rules, regulations, guidelines, permits and other documents and materials incorporated by reference in any portion of the EIR;
- All presentation materials from every noticed public meeting and public hearing for the Project;
- The MMRP for the proposed Project;
- Matters of common knowledge, including but not limited to federal, state and local laws and regulations, including, without limitation, SMUD's adopted CEQA Procedures and other adopted plans, policies and programs;
- Any documents expressly cited in these Findings; and
- All materials not otherwise identified which are expressly required to be in the Record of Proceedings by PRC section 21167.6(e).

g. Custodian and Location of Records

The documents and other materials which constitute the Record of Proceedings are located at SMUD Headquarters. Copies of those documents are and at all relevant times have been and will be available upon request at the Customer Service Center (6300 S Street, Sacramento, CA 95817). The custodian of the Record of Proceedings may be contacted as follows:

Kim Crawford
Sacramento Municipal Utility District
6201 S Street, MS B203
Sacramento, CA 95817-1899
(916) 732-5063
kim.crawford@smud.org

This information is provided in compliance with PRC section 21081.6(a)(2) and CEQA Guidelines section 15091(e).

III. Project Benefits

The fundamental purpose of the SMUD HCP Project is to provide a coordinated habitat conservation plan, which, when implemented, would conserve (avoid, minimize, and mitigate impacts on) Covered Species that may be affected by Covered Activities within the Permit Area. In addition, the Project would provide a framework to protect, enhance, and restore the natural resources affected by the Covered Activities. Within this framework, the proposed Project would achieve conservation goals and comply with state and federal environmental regulations while streamlining existing processes for review and permitting of SMUD's activities.

Finding: The SMUD Board finds the approval of the proposed SMUD HCP Project will result in continuing and enhanced benefits to SMUD customers in form of effective streamlining and meeting conservation goals.

IV. Summary

Based on the foregoing findings and the information contained in the record, it is hereby determined that:

- The Project will not result in a significant and unavoidable impacts.
- As the environmentally superior alternative, the Project would provide for a greater level of conservation in the Plan Area while meeting the objectives of the Project. This determination reflects the Board's independent judgment and analysis.

Attachment F
to Resolution No. 22-06-07

Sacramento Municipal Utility District Operations, Maintenance, and New Construction Habitat Conservation Plan EIR

Final Environmental Impact Report
May 2022
State Clearinghouse No. 2018092030

Powering forward. Together.

SMUD®

Sacramento Municipal Utility District

Operations, Maintenance, and New Construction Habitat Conservation Plan EIR

Final Environmental Impact Report

State Clearinghouse No. 2018092030

May 2022

Lead Agency:

Sacramento Municipal Utility District
6201 S Street, MS H201
Sacramento, CA 95817-1899

or

P.O. Box 15830 MS H201
Sacramento, CA 95852-1830
Attn: Kim Crawford
(916) 732-5063 or kim.crawford@smud.org

Prepared by:

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Sacramento, CA 95814
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Heather.Blair@ascentenvironmental.com

Table of Contents

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List of Tables **Page**

List of Abbreviated Terms

Draft EIR	draft environmental impact report
Final EIR	final environmental impact report
MMRP	mitigation monitoring and reporting program
NOP	Notice of Preparation
Proposed HCP	SMUD Operations, Maintenance, and New Construction Habitat Conservation Plan
SMUD	Sacramento Municipal Utility District
the Board	SMUD Board of Directors
VELB	Valley Elderberry Longhorn Beetle

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1 Introduction

On January 31, 2022, the Sacramento Municipal Utility District (SMUD) released for public review the draft environmental impact report (Draft EIR) for the proposed SMUD Operations, Maintenance, and New Construction Habitat Conservation Plan (proposed HCP). The EIR evaluates the impacts associated with implementation of the proposed HCP subject to state and federal endangered species take authorizations, and the impacts of the application for, issuance, and implementation of those authorizations.

1.1 Public Review and Response to Comments

Public participation is an essential part of the CEQA process. In accordance with 14 CCR Section 15082, a lead agency must provide notice that it will prepare an EIR and provide adequate opportunity for interested parties to provide comments on the scope of the EIR. Such comments are considered by the lead agency.

The public scoping process, which also establishes the environmental baseline, began September 13, 2018, with submittal of the Notice of Preparation (NOP) to the State Clearinghouse. The NOP notified the public and agencies of the SMUD HCP, the intent to prepare an EIR, and two public meetings that were held on September 27, 2018. The NOP also informed the public that written comments on the NOP should be received by October 15, 2018.

There were no significant issues identified in the scoping comments received. The NOP and scoping comments are included in Appendix A. The HCP is in Appendix B.

A Notice of Completion form and the Draft EIR were submitted to the State Clearinghouse on January 31, 2022. A notice of the availability of the Draft EIR and of the public meeting was mailed to agencies, organizations, and individuals that expressed interest during the scoping meetings described above.

The Draft EIR was available for public review starting January 31, 2022 and ending March 17, 2022. A virtual public meeting was held during the 45-day comment period on February 22, 2022. SMUD staff and SMUD's environmental consultant were available to present the project, receive comments, and answer questions. There was one attendee from the public at the public meeting but they did not submit any comments. During the 45-day public review process, interested parties (agencies, other stakeholders, and the general public) submitted a total of four e-mail comments (Table 2-1). The e-mails and SMUD's responses are provided in Chapter 2, *Comments and Responses to Comments.*

Responses to each of the comments received are provided in this document as part of the final environmental impact report (Final EIR). None of the comments require changes to the text of the Draft EIR. Therefore, there are no changes that constitute "significant new information," which would require recirculation of the Draft EIR. Significant new information is defined in Section 15088.5(a) of the State CEQA Guidelines as follows:

(1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.

(2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.

(3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it.

(4) The Draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

None of these circumstances have arisen from comments on the Draft EIR; therefore, recirculation is not required.

The Draft EIR, Final EIR, and associated appendices are available for review online at: https://www.smud.org/CEQA.

As required by State CEQA Guidelines Section 15088(b), SMUD has provided a printed or electronic copy (through the SMUD's website; see prior discussion) to each public agency that submitted written comments on the Draft EIR with written responses to that public agency's comments at least 10 days prior to consideration of the Final EIR for certification.

1.2 Organization of the Responses to Comments

Chapter 2 of the Final EIR consists of the written comments received on the Draft EIR, and presents responses to environmental issues raised in the comments (as required by State CEQA Guidelines Section 15132). The focus of the responses to comments is on the disposition of significant environmental issues that are raised in the comments, as required by Section 15088(c) of the State CEQA Guidelines. Each comment letter has been reproduced and numbered. Responses to the comments follow each letter.

1.3 Comments that Require Responses

Section 15088(c) of the State CEQA Guidelines specifies that the focus of the responses to comments shall be on the disposition of significant environmental issues. Responses are not required on comments regarding the merits of the project or on issues not related to the project's environmental impacts. Comments on the merits of the proposed project or other comments that do not raise environmental issues will be reviewed by SMUD's Board of Directors (the Board) before an action is taken on the project. The responses address environmental issues and indicate where issues raised are not environmental or address the merits of the projects. In the latter instance, no further response is provided.

1.4 Project Decision Process

This document and the Draft EIR together constitute the Final EIR, which will be considered by the Board before a decision on whether to approve the project. If the Board decides to approve the Project, it must first certify that the Final EIR was completed in compliance with CEQA's requirements, was reviewed and considered by the Board, and reflects the Board's independent judgment and analysis, as required by State CEQA Guidelines Section 15090. The Board would then be required to adopt findings of fact on the disposition of each significant environmental impact, as required by State CEQA Guidelines Section 15091. A Mitigation Monitoring and Reporting Program, which is required by CEQA Guidelines Section 15091(d), has been included as part of Chapter 3 of this Final EIR.

1.5 Revisions to the Draft EIR

CEQA Guidelines Section 15132 provides that a Final EIR must include, among other things, the Draft EIR or a revision of the draft. For this Final EIR, changes to the Draft EIR are shown with underline for additions and strikethrough for deletions.

The following text was added to Chapter 2, *Project Description* on page 2-8 of the Draft EIR and to the HCP (Appendix B of the Draft EIR) in Section 5.4.5.2, *Purchase Credits at Other Conservation Banks*:

Additional conservation/mitigation banks may be established in the future outside of the Plan Area that provide mitigation credits for VELB. If SMUD wishes to purchase credits at a newly-established conservation/mitigation bank, SMUD will review the conservation/mitigation bank documents to ensure that the bank satisfies the requirements of the SMUD HCP conservation strategy and permit. If SMUD believes the conservation/mitigation bank is appropriate, they will propose to purchase mitigation credits from that new conservation/mitigation bank to the Service to satisfy mitigation requirements of the HCP. The Service will review SMUD's proposal and approve if the conservation/mitigation bank satisfies the mitigation requirements of the HCP.

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2 Comments and Responses to Comments

This chapter contains the comment letters received during the public review period for the Draft EIR, which concluded on March 17, 2022. In conformance with Section 15088(a) of the State CEQA Guidelines, written responses were prepared addressing comments received from reviewers of the Draft EIR.

2.1 Commenters on the Draft EIR

Table 2-1 below indicates the numerical designation for the comment letters received, the author of the comment letter, and the date of the comment letter. Comment letters have been numbered in the order they were received by SMUD.

Table 2-1. List of Commenters on the Draft EIR

Comment Letter #	Commenter	Date Comment Received
1	United Auburn Indian Community, Anna Starkey	1/31/2022
2	San Joaquin Council of Governments, Steven Mayo	2/3/2022
3	County of Sacramento, Julie Newton	2/9/2022
4	Sacramento Metropolitan Air Quality Management District, Karen Huss	3/1/2022

2.2 Comments and Responses on the Draft EIR

The written comments received on the Draft EIR and the responses to those comments are provided in this section of the Final EIR. The comment letters received are reproduced in their entirety and followed by the response(s) to the letter.

All comments and provided herein are included within the record for consideration by the SMUD Board of Directors (the Board) as part of the SMUD HCP Project.

Letter 1. Anna Starkey, United Auburn Indian Community, dated January 31, 2022

From: Anna Starkey
To: Kim Crawford
Subject: [EXTERNAL] RE: Notice of Availability for SMUD Operations, Maintenance, and New Construction Habitat Conservation Plan EIR
Date: Monday, January 31, 2022 10:28:21 AM
Attachments: image001.png

CAUTION: This email originated from outside of SMUD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Congrats for getting this EIR out!
I do not have any comments other than really appreciate all the time and effort that was made to ensure tribal cultural resources were properly addressed and tribes were satisfied with the end results, including the language used in the TCR chapter. Great job!

Kindly,
Anna

From: Kim Crawford <Kim.Crawford@smud.org>
Sent: Monday, January 31, 2022 10:13 AM
To: Kim Crawford <Kim.Crawford@smud.org>
Subject: Notice of Availability for SMUD Operations, Maintenance, and New Construction Habitat Conservation Plan EIR

Good Morning,

Attached is the Notice of Availability for the Sacramento Municipal Utility District Operations, Maintenance, and New Construction Habitat Conservation Plan EIR.

Written comments should be submitted to Kim Crawford, SMUD, 6201 S Street, MS B209, Sacramento, CA, 95817-1889 or at Kim.Crawford@smud.org before 5 p.m., March 17, 2022. A virtual public meeting will be held on February 22nd, see the attached Notice for Availability for more information. If you have questions, please contact me via email or at 916-732-5063.

Thank you,
Kim Crawford

Environmental Specialist
Environmental Services Department

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w.916-732-5063
kim.crawford@smud.org

Response to Comment Letter 1 – Anna Starkey, United Auburn Indian Community

The United Auburn Indian Communitiy has no comment on the Draft EIR; although, offered their appreciation for the results of the Tribal Cultural Resources chapter. No changes to the Draft EIR are necessary.

Letter 2. Steven Mayo, San Joaquin Council of Governments, dated February 3, 2022

From: Steve Mayo
To: Kim Crawford
Subject: [EXTERNAL] RE: Notice of Availability for SMUD Operations, Maintenance, and New Construction Habitat Conservation Plan EIR
Date: Thursday, February 3, 2022 8:18:35 AM

Kim,

Thank you for the Notice of Availability for the SMUD O&M and New Construction HCP. We will be providing any comments to you by the deadline.

Our agency, as administrators of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), would like to request more information/details on the draft.

1. Mapping of the overlap area within SJ County (300 +/- acres) depicting the following:
    a. Area of overlap in a polygon
    b. Landscape vegetation type
    c. Past, current or future projects
2. Conservation Planning for impacts within SJ County

Respectfully,

Steven Mayo
Program Manager
Habitat Conservation Plan
San Joaquin Council of Governments
555 East Weber Avenue
Stockton, CA 95202
209-235-0600 phone
209-235-0438 fax
www.sjcog.org

Please note: During the pandemic, our staff will be limited in the office for responding to messages/calls and meetings. Thank you for understanding.

From: Kim Crawford <Kim.Crawford@smud.org>
Sent: Monday, January 31, 2022 10:13 AM
To: Kim Crawford <Kim.Crawford@smud.org>
Subject: Notice of Availability for SMUD Operations, Maintenance, and New Construction Habitat

Conservation Plan EIR

External Email:

Good Morning,

Attached is the Notice of Availability for the Sacramento Municipal Utility District Operations, Maintenance, and New Construction Habitat Conservation Plan EIR.

Written comments should be submitted to Kim Crawford, SMUD, 6201 S Street, MS B209, Sacramento, CA, 95817-1889 or at Kim.Crawford@smud.org before 5 p.m., March 17, 2022. A virtual public meeting will be held on February 22nd, see the attached Notice for Availability for more information. If you have questions, please contact me via email or at 916-732-5063.

Thank you,

Kim Crawford
Environmental Specialist
Environmental Services Department

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kim.crawford@smud.org

Response to Comment Letter 2 – Steven Mayo, San Joaquin Council of Governments

This comment is not directed at the environmental analysis included in the Draft EIR. Rather, it consists of a request for more information. Kim Crawford (SMUD) spoke with Steven Mayo on February 8, 2022, to provide more information and details on the proposed HCP. Below is a summary of the information discussed:

- the proposed HCP overlaps with San Joaquin County where SMUD has distribution electrical facilities. SMUD's electrical facilities are limited to approximately 3 miles of overhead distribution lines and 41 poles.

- land cover types within the Permit Area are described in Section 3.3 of the proposed HCP.

- SMUD's Covered Activities consist of O&M and construction activities within Permit Area as described in Section 2 (Covered Activities) of the proposed HCP.

- The Conservation Strategy consists of avoidance, minimization and mitigation as described in Section 3 (Conservation Strategy) of the proposed HCP. The Plan Area, where HCP mitigation would occur, did not include San Joaquin County.

No changes to the Draft EIR are necessary.

Letter 3. Julie Newton, County of Sacramento, dated January 5, 2021

From: Newton, Julie
To: Kim Crawford
Subject: [EXTERNAL] FW: Notice of Availability for SMUD Operations, Maintenance, and New Construction Habitat Conservation Plan EIR
Date: Wednesday, February 9, 2022 1:57:59 PM
Attachments: SMUD HCP EIR NOA.pdf

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Good afternoon Kim,

I am one of the Sacramento County staff members that implements the South Sacramento Habitat Conservation Plan. We are hoping to get a better understanding of how the SMUD plan works implementation-wise, and have a few questions. We figured it would be easier to just talk through it if you have an hour in which you are available.

Below are some times that we are available, would one of these work for you?
Tuesday 2/22 – 10-11 am
Thursday 2/24 – 9 am – 1pm
Friday 2/25 – after 10 am

Thanks
-Julie

Julie Newton, Senior Planner
Planning and Environmental Review
827 7th Street, Room 225, Sacramento, CA 95814 | (916) 876-8502
www.per.saccounty.net

Planning & Environmental Review (PER) is open by appointment only. Please see our website at www.planning.saccounty.net for the most current information on how to obtain services and to schedule an appointment.

From: Kim Crawford <Kim.Crawford@smud.org>
Sent: Monday, January 31, 2022 10:13 AM
To: Kim Crawford <Kim.Crawford@smud.org>
Subject: Notice of Availability for SMUD Operations, Maintenance, and New Construction Habitat Conservation Plan EIR

EXTERNAL EMAIL: If unknown sender, do not click links/attachments.

Good Morning,

Attached is the Notice of Availability for the Sacramento Municipal Utility District Operations, Maintenance, and New Construction Habitat Conservation Plan EIR.

Written comments should be submitted to Kim Crawford, SMUD, 6201 S Street, MS B209, Sacramento, CA, 95817-1889 or at Kim.Crawford@smud.org before 5 p.m., March 17, 2022. A virtual public meeting will be held on February 22nd, see the attached Notice for Availability for more information. If you have questions, please contact me via email or at 916-732-5063.

Thank you,

Kim Crawford
Environmental Specialist
Environmental Services Department

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w.916-732-5063
kim.crawford@smud.org

Response to Comment Letter 3 – Julie Newton, County of Sacramento

In this comment, the commenter requests more information regarding the implementation of the HCP and the comment is not directed at the environmental analysis.

On February 22, 2022, SMUD Environmental Services staff and Sacramento County staff that implements the South Sacramento HCP, discussed implementation of the South Sacramento HCP and SMUD's proposed HCP. Items discussed included SMUD's HCP Covered Activities and Conservation Strategy and potential coordination implementation and mitigation efforts between the two HCPs. There were no comments on the Draft EIR and therefore, no changes are necessary.

Letter 4. Karen Huss, Sacramento Metropolitan Air Quality Management District, dated March 1, 2022

From: Karen Huss
To: Kim Crawford
Cc: Paul Philley
Subject: [EXTERNAL] RE: Notice of Availability for SMUD Operations, Maintenance, and New Construction Habitat Conservation Plan EIR
Date: Tuesday, March 1, 2022 11:42:19 AM
Attachments: image001.png
image002.png

CAUTION: This email originated from outside of SMUD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Kim,
The Sac Metro Air District does not have comments on SMUD's HCP EIR.
Thank you for sending it over for review.

Karen Huss
Associate Air Quality Planner/Analyst
Transportation & Climate Change Division - CEQA & Land Use
Desk: (279) 207-1131
Website: www.AirQuality.org
Send project review inquiries to projectreview@airquality.org

@AQMD

From: Kim Crawford <Kim.Crawford@smud.org>
Sent: Monday, January 31, 2022 10:13 AM
To: Kim Crawford <Kim.Crawford@smud.org>
Subject: DUE 3/17 Notice of Availability for SMUD Operations, Maintenance, and New Construction Habitat Conservation Plan EIR

***** THIS EMAIL ORIGINATED OUTSIDE AIRQUALITY.ORG *****

Good Morning,

Attached is the Notice of Availability for the Sacramento Municipal Utility District Operations, Maintenance, and New Construction Habitat Conservation Plan EIR.

Written comments should be submitted to Kim Crawford, SMUD, 6201 S Street, MS B209, Sacramento, CA, 95817-1889 or at Kim.Crawford@smud.org before 5 p.m., March 17, 2022. A virtual public meeting will be held on February 22nd, see the attached Notice for Availability for more information. If you have questions,

please contact me via email or at 916-732-5063.

Thank you,

Kim Crawford
Environmental Specialist
Environmental Services Department

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w.916-732-5063
kim.crawford@smud.org

Response to Comment Letter 4 – Karen Huss, Sacramento Metropolitan Air Quality Management District

The Sacramento Metropolitan Air Quality Management District has no comment on the Draft EIR. No changes to the Draft EIR are necessary.

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3 Mitigation Monitoring and Reporting Program

This mitigation monitoring and reporting program (MMRP) summarizes the mitigation measures, implementation schedule, and responsible parties for monitoring the mitigation measures required for the proposed Project, as set forth in the EIR prepared for the Project.

Section 21081.6 of the California Public Resources Code and Section 15091(d) and Section 15097 of the State CEQA Guidelines require public agencies "to adopt a reporting or monitoring program for changes to the project which it has adopted or made conditions of project approval to mitigate or avoid significant effects on the environment." A MMRP is required for the project because the EIR for the project identified potentially significant adverse impacts related to construction and operation of the proposed Project, and mitigation measures have been identified to reduce most of those impacts to a less-than-significant-level.

This MMRP will be adopted by SMUD if it approves the Project and will be kept on file at SMUD's Customer Service Center at 6301 S Street, Sacramento, CA 95817; and at SMUD's East Campus Operations Center at 4401 Bradshaw Road, Sacramento, CA 95827. SMUD will use this MMRP to ensure that identified mitigation measures, adopted as a condition of project approval, are implemented appropriately.

3.1 Mitigation Implementation and Monitoring

SMUD will be responsible for monitoring the implementation of mitigation measures designed to minimize impacts associated with the 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 project meets the requirements of this MMRP 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 and its appointed contractor will also be responsible for ensuring that its construction personnel understand their responsibilities for implementing the mitigation measures and adhering to the performance requirements of the mitigation plan. In addition to the prescribed mitigation measures, the MMRP table below lists each identified environmental resource being affected (in the same order and using the same numbering system as in the EIR), the associated CEQA checklist question (used as the

thresholds of significance in the EIR), the corresponding monitoring and reporting requirement, the party responsible for ensuring implementation of the mitigation measure and monitoring effort, and the project component to which the mitigation measure applies.

If an issue addressed in the EIR does not result in mitigation, it is not included in the table.

3.2 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.

3.3 Reporting

SMUD shall prepare a monitoring report upon completion of the project describing the compliance of the activity with the required mitigation measures. Information regarding inspections and other requirements shall be compiled and explained in the report. The report shall be designed to simply and clearly identify whether mitigation measures have been adequately implemented. At a minimum, each report shall identify the mitigation measures or conditions to be monitored for implementation, whether compliance with the mitigation measures or conditions has occurred, the procedures used to assess compliance, and whether further action is required. The report shall be presented to SMUD's Board of Directors.

3.4 Mitigation Monitoring and Reporting Program Table

The categories identified in the attached MMRP table are described below.

Environmental Resource Topic – This column identifies which CEQA issue area the mitigation measure is attributed to in the EIR.

Impact – This column provides the impact number and statement included in the EIR.

Mitigation Measure – This column provides the verbatim text of the adopted mitigation measure.

Implementation Duration – This column identifies when the mitigation measure shall be implemented (e.g., prior to construction, during construction, prior to occupancy, etc.).

Monitoring Duration – This column identifies the period within which monitoring shall be conducted.

Responsibility – This column identifies the party(ies) responsible for implementation and/or enforcing compliance with the requirements of the mitigation measure.

Environmental Resource Topic	Impact	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
					Implementation	Monitoring
3.5 Cultural Resources	**Impact 3.5-2: Have a substantial adverse change in the significance of a unique archaeological resource.**	**Mitigation Measure CUL-1: Avoidance and Archaeological Monitoring** The northern portion of the SMUD Bank holds the most potential for uncovering early Native American cultural resources. If possible, soil disturbance in this area should be avoided. If avoidance is not possible, a qualified archaeologist must be present during any ground disturbance or excavation. This area includes that portion of the SMUD Bank north of latitude 38° 20' 37.00" N or UTM 424560N (Zone 10). This east-west line would occur approximately just north of the reservoir that exists roughly 1,000 feet northwest of the lake and approximately 2,000 feet southeast of the ranch buildings adjacent to the northwest portion of the SMUD Bank.	During implementation of Direct Actions including Enhance Sacramento Oructt Grass Population and Slender Orcutt Grass Introduction at SMUD Bank	During implementation of Direct Actions including Enhance Sacramento Oructt Grass Population and Slender Orcutt Grass Introduction at SMUD Bank	SMUD; contractor	SMUD

Environmental Resource Topic	Impact	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
					Implementation	Monitoring
3.5 Cultural Resources	**Impact 3.5-2: Have a substantial adverse change in the significance of a unique archaeological resource.**	**Mitigation Measure CUL-2: Environmental Awareness Training** Prior to working onsite, individuals who are involved in soil moving and handling must attend environmental awareness training provided by a qualified professional archaeologist. This training would provide information on the types and extent of cultural resources that may be located onsite. Individuals conducting any excavation or other substantial subsurface disturbance activities onsite shall also attend the environmental awareness training.	Prior to and during implementation of Direct Actions including Enhance Sacramento Oructt Grass Population and Slender Orcutt Grass Introduction at SMUD Bank	During implementation of Direct Actions including Enhance Sacramento Oructt Grass Population and Slender Orcutt Grass Introduction at SMUD Bank	SMUD; qualified archaeologist	SMUD
3.5 Cultural Resources	**Impact 3.5-2: Have a substantial adverse change in the significance of a unique archaeological resource.**	**Mitigation Measure CUL-3: Stop Work if Archaeological Resources are Encountered** Should any evidence of early Native American or historic cultural resources be discovered during excavation or other substantial	During implementation of Direct Actions including Enhance Sacramento Oructt Grass Population and Slender Orcutt Grass Introduction at SMUD Bank	During implementation of Direct Actions including Enhance Sacramento Oructt Grass Population and Slender Orcutt Grass Introduction at SMUD Bank	SMUD; qualified archaeologist; contractor	SMUD

Environmental Resource Topic	Impact	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
					Implementation	Monitoring
		subsurface disturbance activities, all work should immediately cease, and a qualified archaeologist must be consulted to assess the significance of the cultural materials.				
3.5 Cultural Resources	**Impact 3.5-3: Disturbance of any human remains including those interred outside of formal cemeteries.**	**Mitigation Measure CUL-4: Stop Work if Human Remains Are Discovered during Ground Disturbing Activities** If human remains are discovered during excavation or other substantial subsurface disturbance activities, all work must immediately cease and the local coroner must be contacted. Should the remains prove to be of cultural significance, the NAHC in Sacramento, California, must be contacted with additional notification going to the most likely descendants.	During implementation of Direct Actions including Enhance Sacramento Oructt Grass Population and Slender Orcutt Grass Introduction at SMUD Bank	During implementation of Direct Actions including Enhance Sacramento Oructt Grass Population and Slender Orcutt Grass Introduction at SMUD Bank	SMUD; Coroner; contractor	SMUD

Environmental Resource Topic	Impact	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
					Implementation	Monitoring
3.18 Tribal Cultural Resources	**Impact 3.18-1: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource that is Listed or Eligible for Listing in the California Register of Historical Resources or Other Local Register.**	**Mitigation Measure TCR-1: Discovery of Unanticipated Tribal Cultural Resources** If any suspected TCRs are discovered during ground disturbing construction activities, all work shall cease within 100 feet of the find, or an agreed upon distance based on the project area and nature of the find. A Tribal Representative from a California Native American tribe that is traditionally and culturally affiliated with a geographic area shall be immediately notified and shall determine if the find is a TCR (PRC §21074). The Tribal Representative will make recommendations for further evaluation and treatment as necessary. When avoidance is infeasible, preservation in place is the preferred option for mitigation of TCRs under CEQA and Tribal protocols, and	During implementation of Direct Actions including Enhance Sacramento Oructt Grass Population and Slender Orcutt Grass Introduction at SMUD Bank	During implementation of Direct Actions including Enhance Sacramento Oructt Grass Population and Slender Orcutt Grass Introduction at SMUD Bankand afterwards to ensure appropriate treatment is carried out	SMUD; contractor; culturally-affiliated Tribe	SMUD; contractor; culturally-affiliated Tribe

Environmental Resource Topic	Impact	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
					Implementation	Monitoring
		every effort shall be made to preserve the resources in place, including through project redesign, if feasible. Culturally appropriate treatment may be, but is not limited to, processing materials for reburial, minimizing handling of cultural objects, leaving objects in place within the landscape, or returning objects to a location within the project area where they will not be subject to future impacts. Permanent curation of TCRs will not take place unless approved in writing by the consulting Tribe that is traditionally and culturally affiliated with the project area. The contractor shall implement any measures deemed by the CEQA lead agency to be necessary and feasible to preserve in place, avoid, or minimize impacts to the				

Environmental Resource Topic	Impact	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
					Implementation	Monitoring
		resource, including, but not limited to, facilitating the appropriate tribal treatment of the find, as necessary. Treatment that preserves or restores the cultural character and integrity of a TCR may include Tribal Monitoring, culturally appropriate recovery of cultural objects, and reburial of cultural objects or cultural soil. Work at the discovery location cannot resume until all necessary investigation and evaluation of the discovery under the requirements of the CEQA, including AB52, have been satisfied.				

4 List of Preparers

4.1 SMUD

Kim Crawford – Environmental Specialist

Emily Bacchini – Manager, Environmental Services

4.2 ICF

Sally Lyn Zeff, AICP – Project Manager, Project Description, Environmental Approach

Tina Sorvari – Project Coordinator, Hazards and Hazardous Materials

Margaret Lambright – Project Coordinator, Introduction, Environmental Setting, Impacts, and Mitigation Measures

Angela Alcala – Senior Biologist (Wildlife), Biological Resources

Jordan Mayor – Senior Biologist (Botany), Biological Resources

Stephen Pappas – Cultural Resources and Tribal Cultural Resources

David Lemon – Cultural Resources

Devan Atteberry – Energy, Wildfire

Patrick Maley – Geology, Soils, and Minerals

Diana Roberts – Paleontological Resources

Caroline Vurlumis – Hydrology and Water Quality

Brendan Belby – Hydrology and Water Quality Peer Review

Daniel Schiff – GIS Specialist

Christine McCrory – Technical Editor

Jesse Cherry – Document Production

4.3 Ascent Environmental, Inc.

Heather Blair – Project Manager, Project Description, Environmental Approach

Gary Jakobs – Principal in Charge, Environmental Approach

Stephanie Rasmussen – Aesthetics, Project Description

Erin Kraft – Agricultural and Forest Resources, Land Use and Planning, Utilities

Kristi Black – Air Quality, Greenhouse Gas Emissions, Population and Housing, Public Services

Dimitri Antoniou – Noise

Ally Kerley – Recreation

Zachary Miller – Transportation

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President Rose then turned to Informational Items 11 through 13.

Kathy Ketchum, Manager, Accounting & Assistant Controller, gave a presentation on agenda item 11 regarding SMUD's financial statements through April 30, 2022. A copy of the slides used in her presentation is attached hereto.

No public comment was forthcoming on agenda item 11.

Kathy Ketchum, Manager, Accounting & Assistant Controller, gave a presentation on agenda item 12, a summary of SMUD's current Power Supply Costs. A copy of the slides used in her presentation is attached hereto.

No public comment was forthcoming on agenda item 12.

With regard to agenda item 13, the Audit Reports for Green-e® Energy Annual Verification and Data Sharing, no clarifying questions or public comment were forthcoming.

President Rose then turned to agenda item 14, statements from the public regarding items not on the agenda. He stated that in accordance with the Emergency Board Meeting Procedures, public comment for items not on the agenda would be provided to the Board electronically and placed into the record if received within two hours after the meeting ended.

Michael Harris, a member of the public, stated that he was excited that the Juneteenth flag was flying over the Capitol and spoke of a presentation he had provided to SMUD's Black employees about the reason why it is a federal holiday. He noted that action is being taken to quickly make Juneteenth a state, city, county, and SMUD holiday. He encouraged the Board to consider making Juneteenth a holiday for employees and stated that there would be a Juneteenth event at the Capitol on Sunday.

No additional public comment was forthcoming for agenda item 14.

President Rose then turned to Directors' Reports.

Director Bui-Thompson reported on her attendance at the Sacramento Host Breakfast hosted by the California Chamber of Commerce and at the Summit of America hosted by President Biden. She closed by reporting on her attendance at the State of the City address by Sacramento Mayor Steinberg.

Director Fishman reported that he had spoken to a number of organizations including WEAVE, the Indus Valley Chamber of Commerce, and the Sons in Retirement. He reported on his attendance at the Hydrogen Summit and noted he had spoken to another group about the 59th Street Project. He reported on some positive feedback he had received about SMUD's customer service and thanked staff. He closed by reporting on his participation in the Sacramento Pride Parade and noted how proud he is that SMUD supports pride.

Director Herber reported on her attendance at the Sacramento Pride Parade and noted she had the honor of announcing different contingents with Rob Stewart from Rob on the Road. She stated that she was pleased that the City of Elk Grove had flown the Pride flag for the first time ever at Elk Grove City Hall. She announced that KVIE had produced a program called LGBTQ Then and Now and encouraged all to view it. She congratulated Chief Financial Officer Jennifer Davidson and Chief Legal & Government Affairs Officer Laura Lewis for receiving C-suite awards from the *Sacramento Business Journal*. She stated that the ad hoc committee on the development of the land acknowledgement statement that included herself and Directors Kerth and Tamayo was making progress and hoped to bring forward something later in the year. She closed by reporting on her attendance at the Salute to Labor Dinner.

Director Kerth reported on his attendance at the Sacramento Host Breakfast as well as the California Hydrogen Summit. He then reported on his attendance at the Salute to Labor Dinner. He noted that the work on the land acknowledgement statement continues and would take some time but progress was being made. He closed by commenting on the Golden State Clean Energy Westlands that Directors Sanborn and Tamayo had visited and noted that it was fascinating and will eventually power a significant part of our energy needs.

Director Tamayo reported on his attendance at the Salute to Labor as well as his speaking engagement at the Filipino Fiesta. He also reported on speaking to a neighborhood association about the zero carbon plan and thanked Obadiah Bartholomy for being on hand to answer questions. He reported on his attendance at the Hydrogen Summit. He reported on his attendance at the State

of the City address and expressed his excitement about the youth sports complex that would be created in the Meadowview area. He closed by reporting on his attendance at a ribbon cutting of a 75-bed Wellspace facility in his ward.

Vice President Sanborn reported on her attendance at the California Sustainability Forum where she was a keynote speaker. She then reported on her tour of McClellan Business Park and noted that it currently employs 15,000 people. She reported on her attendance at a fundraiser for the Crocker Art Museum as well as an art auction for the Effie Yeaw Nature Center. She closed by reading a thank you note from a customer who praised the partnership between SMUD and the Sacramento Tree Foundation that provides free shade trees.

President Rose reported on his attendance at Distributech and a meeting with the Folsom Rotary Club. He then reported on his attendance at the Metro Chamber Leadership Event as well as his participation in the Sacramento Pride Parade.

Director Bui-Thompson commented that she worked for Wellspace and thus had not previously commented on the new facility, but she wanted to thank Directors Kerth and Tamayo and those at SMUD who had helped get the facility online.

Paul Lau, Chief Executive Officer and General Manager, reported on the following items:

1) **June Pride Month and Juneteenth.** As you know, June is Pride month, and this Sunday is Juneteenth. SMUD and our Employee Resource Groups are celebrating in many ways, including sharing information about these important occasions with employees. SMUD was a sponsor of last weekend's successful Sac Pride Festival. We heard from Board members who attended and walked alongside many of our employees and PRIDE@SMUD ERG members in the parade. For Juneteenth, our Black Employees Resource Group is hosting a Lunch and Learn, as well as inviting volunteers for different

activities – including supporting Folsom Cordova Community Partnership's Juneteenth celebration. In fact, our very own Dr. Markisha Webster will be speaking at the event. Vice President Sanborn and Chief Customer Officer Brandy Bolden are also speaking at Juneteenth events.

2) **Shine Awards.** I am excited to share that applications are now open for funding through our Shine community development awards program. The Shine program invests in projects developed by local nonprofits looking to bolster healthy lifestyles, environments and economies. Of course, our focus on Zero Carbon by 2030 means we are particularly interested in projects that innovate around mobility and clean energy solutions – all while being inclusive and equitable. Applications are open through August 1, 2022.

3) **Clean PowerCity.** Speaking of Zero Carbon, the next phase of our Clean PowerCity marketing, communications and outreach campaign launched last week. Remember that last April, we launched our Clean PowerCity campaign and extensive outreach to make our customers aware of our aggressive 2030 zero carbon goal and why it matters. Our new campaign highlights what SMUD is doing to achieve zero carbon and how customers can get involved in the movement, in many cases with free or low-cost actions that can have a big impact. You will see elements of the campaign, including "Join the charge" across our outreach, education, communications and community outreach efforts.

4) **Staffing Updates.** I am pleased to share some staffing news. Chief Operating Officer Frankie McDermott and Chief Information Officer Suresh Kotha have announced new directors in their respective business units. Ellias Van Ekelenburg is our new Director of Environmental, Safety & Real Estate Services

within Energy Delivery & Operations. Amber Connors is our new Director of IT Strategic Initiatives & Operational Technology within Information Technology. As you know, we have tremendous talent here at SMUD. Ellias and Amber are both internal hires with tremendous leadership experience and subject matter expertise. Congratulations, Ellias and Amber!

5) **NWPPA Annual Conference.** Late last month, I spoke about our 2030 Clean Energy Vision at the Northwest Public Power Association's (NWPPA's) annual conference. I was also honored and humbled to receive the NWPPA's Paul J. Raver Community Service Award. The award is given to individuals or NWPPA member utilities that have shown superior leadership in the betterment of cities, locales, states or regions. I was proud to receive the award on behalf of the work we are doing together.

6) **Industry Awards.** And just this week at the American Public Power Association's (APPA) National Conference, both the organization and I were honored. I gladly accepted the James D. Donovan Individual Achievement Award, recognizing those who have made significant contributions to the electric utility industry and public power. Then SMUD received an Energy Innovator Award for our work on our Natural Refrigerant Incentive Program. Congratulations to the team!

7) **Board Video.** Today's video highlights how our teams are back out at community events, when it is safe to do so. We are of course following all safety protocols. It is so wonderful to see that the fun is back.

President Rose requested the Summary of Board Direction, but there were no items.

President Rose then announced that having completed the open session agenda for the meeting, the Board would enter into closed session to discuss the following item:

1. **Conference with Labor Negotiators**.

Pursuant to Section 54957.6 of the Government Code:

SMUD Designated Representatives:
Cheryl Spector, Manager, Employee Relations
Jennifer Dibble, Principal Employee Relations Analyst

Employee Organization:
Public Safety Officers' Association (PSOA)

President Rose stated that the Board would not be taking any action during the closed session, so there would be nothing to report out at the end of the session. The Board entered into closed session at 6:53 p.m.

The meeting adjourned at 7:35 p.m. with no reportable action taken.

Approved:

_____ _____

President Secretary

Exhibit to Agenda Item #10

Certify the **California Environmental Quality Act (CEQA) Sacramento Municipal Utility District Operations, Maintenance, and New Construction Habitat Conservation Plan (HCP) Final Environmental Impact Report (FEIR)**, including adoption of the **Findings**; adopt the **Mitigation Monitoring and Reporting Program**; and approve the project.

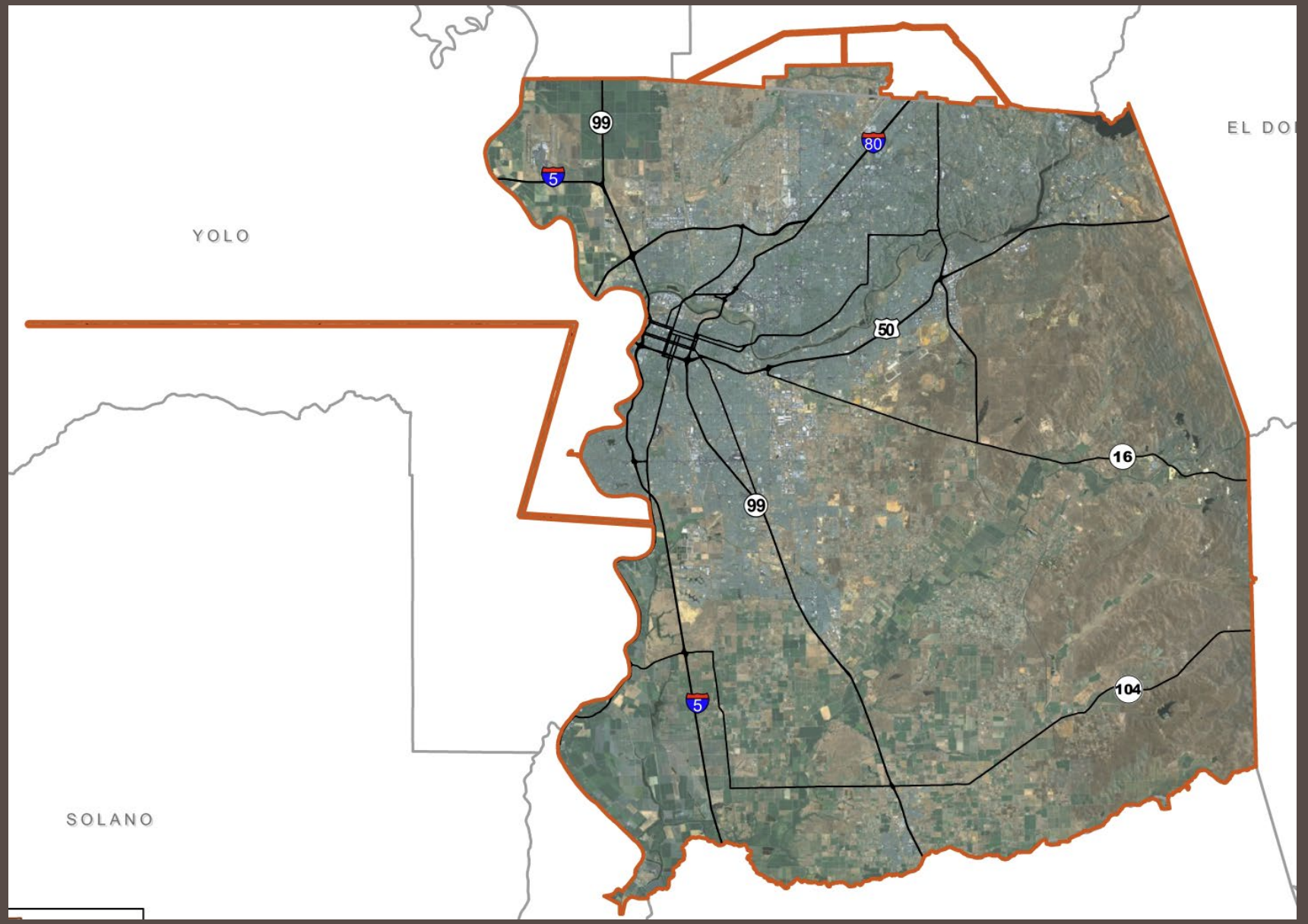
Board of Directors Meeting

Thursday, June 16, 2022, scheduled to begin at 5:30 p.m.

Virtual Meeting (online)

Habitat Conservation Plan Overview

- Streamlined state and federal endangered species act permitting for the next 30 years
- SMUD's operations, maintenance and new construction activities in the Permit Area
- Avoidance, minimization, and mitigation for:
  - Sacramento Orcutt grass, slender Orcutt grass, vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, California tiger salamander, giant garter snake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Habitat Conservation Plan Conservation Strategy

- Pre-project planning
- Avoidance and minimization measures
- Compensatory mitigation
- Enhance Sacramento Orcutt grass population and slender Orcutt grass introduction at the SMUD Bank

Habitat Conservation Plan Benefits

- Endangered species compliance
- Regulatory certainty
- Operational efficiency
- Cost savings
- Conservation

Habitat Conservation Plan Timeline

- California Environmental Quality Act (CEQA)
- National Environmental Policy Act (NEPA)
- Permit issuance
- HCP implementation

CEQA Proposed Project

- CEQA Proposed Project
  - Application, issuance, and implementation of take authorizations
  - HCP implementation, including the conservation strategy

- Does not provide discretionary CEQA approval of Covered Activities

CEQA Public Review Process

- Notice of Preparation 30-day public comment period (9/13/18 – 10/15/18)
- Draft Environmental Impact Report 45-day public comment period (1/31/22 – 3/17/22)
- Published at SMUD.org, Sacramento Bee
- Mailed to HCP steering committee; local, state, and federal agencies and special interest groups
- Available at CSC, ECOC
- Public Meetings
  - Scoping Meetings (9/27/18)
  - Draft EIR Public Meeting (2/22/22)

NOP and Draft EIR Commenters

Notice of Preparation

- California Native Plant Society
- Delta Stewardship Council
- Native American Heritage Commission
- Sacramento Fire Department
- Sacramento Metropolitan Air Quality Management District
- State Clearinghouse

Environmental Impact Report

- County of Sacramento
- Sacramento Metropolitan Air Quality Management District
- San Joaquin Council of Governments
- United Auburn Indian Community

Mitigation Monitoring and Reporting Program

- Mitigation Measures
  - Cultural Resources
  - Tribal Cultural Resources

- No significant and unavoidable impacts

Requested SMUD Board Action

- Certify the California Environmental Quality Act (CEQA) Environmental Impact Report;
- Adopt the Findings;
- Adopt the Mitigation Monitoring and Reporting Program; and
- Approve the Project.

Exhibit to Agenda Item #11

Provide the Board with the financial results from the four-month period ended April 30, 2022.

Board of Directors Meeting

Thursday, June 16, 2022, scheduled to begin at 5:30 p.m.

Virtual Meeting (online)

Powering forward.
Together.

SMUD®

April 2022 Financial Highlights

$10 Million

"Net Income"
Net position YTD
Favorable compared to budget

$407 Million — Customer Revenue

$9M or 2.3% higher customer revenues than budgeted (favorable)

- Customer revenues are $19M over target due to higher usage from our commercial customers
- Offset by $13M reduction to commercial customer revenues related to overstatement of 2021 estimated unbilled revenues

$184 Million — Commodity

$13M or 7.4% higher commodity expenditures than budgeted (unfavorable)

- Purchased power higher due to increased load and reduced hydro and thermal generation
- Non-cash revenue transfer from Hydro Rate Stabilization fund of $25 million will offset increased purchased power costs from lack of hydro

$172 Million — Other Operating Expenses

$7M or 3.7% lower expenditures than budgeted (favorable)

- Customer expenses $8M lower primarily due to lower customer collections labor and lower anticipated transportation electrification expenses and supply chain issues and delays
- Public Good $4M lower primarily due to less participation in energy efficiency programs and lower research and development expenses
- Transmission and Distribution expenses $6M higher primarily due to higher routine tree trimming expense and higher service reconnect and repair than planned

$60 Million — Non-cash Expenses

$29M or 32.6% lower non-cash expenses than budgeted (favorable)

- Accounting Governmental Accounting Standards Board required journal entries for pension

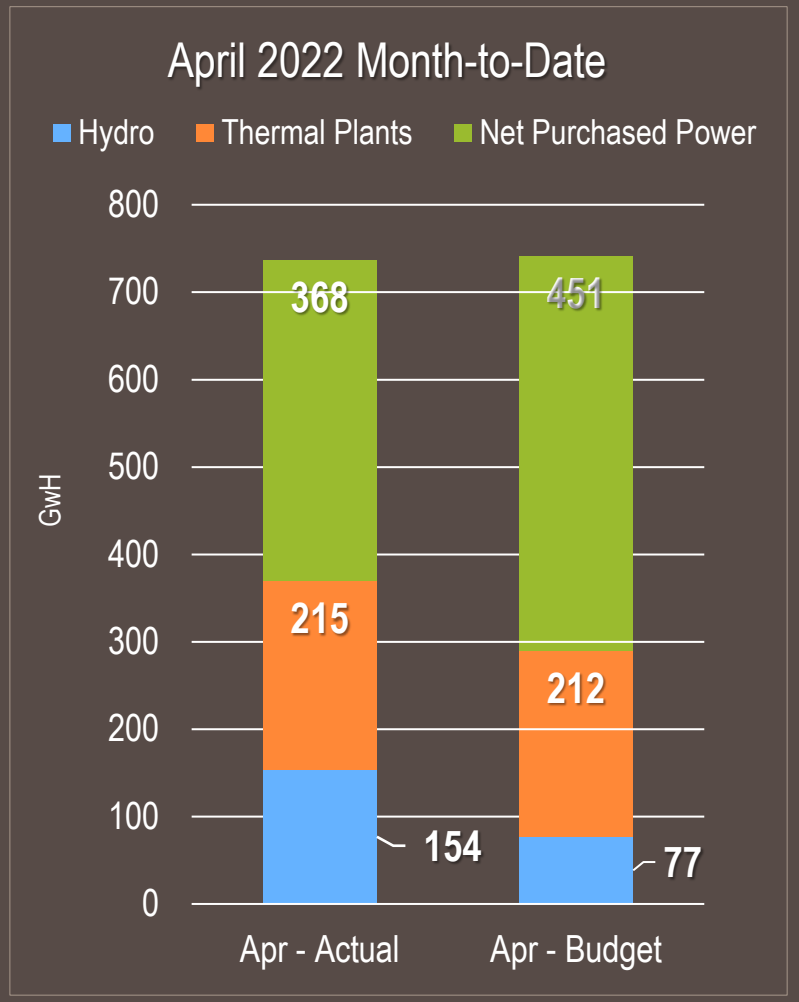
** There are $19M other net revenues and expenses not included in the highlights above – primarily $25M transfer from the Hydro rate stabilization fund*

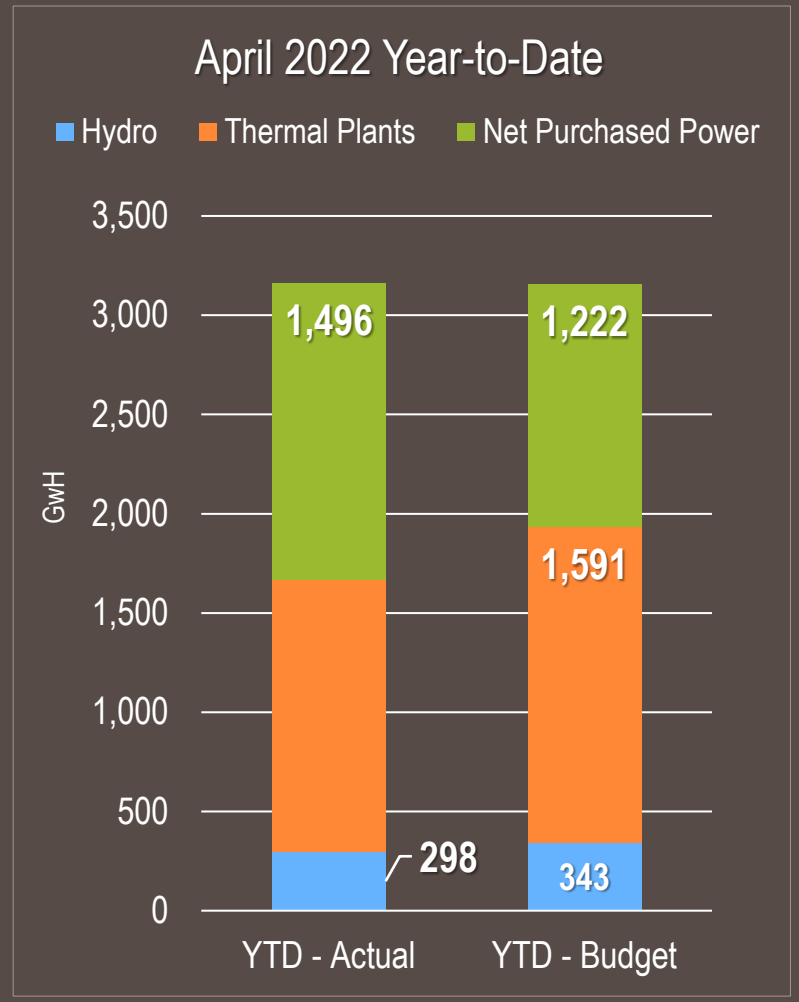
April 2022 Energy Sources

Hydro generation was 100% higher than budget in April due to early snow melt and plant outages, and 13% lower than budget year-to-date.

Thermal plants generation 1% higher than budget for April, and 15% lower than budget year-to-date due to plant outages.

Net purchased power was 18% lower than budget for April, and 22% higher than budget year-to-date due to higher load and the shortfall of hydro & thermal.

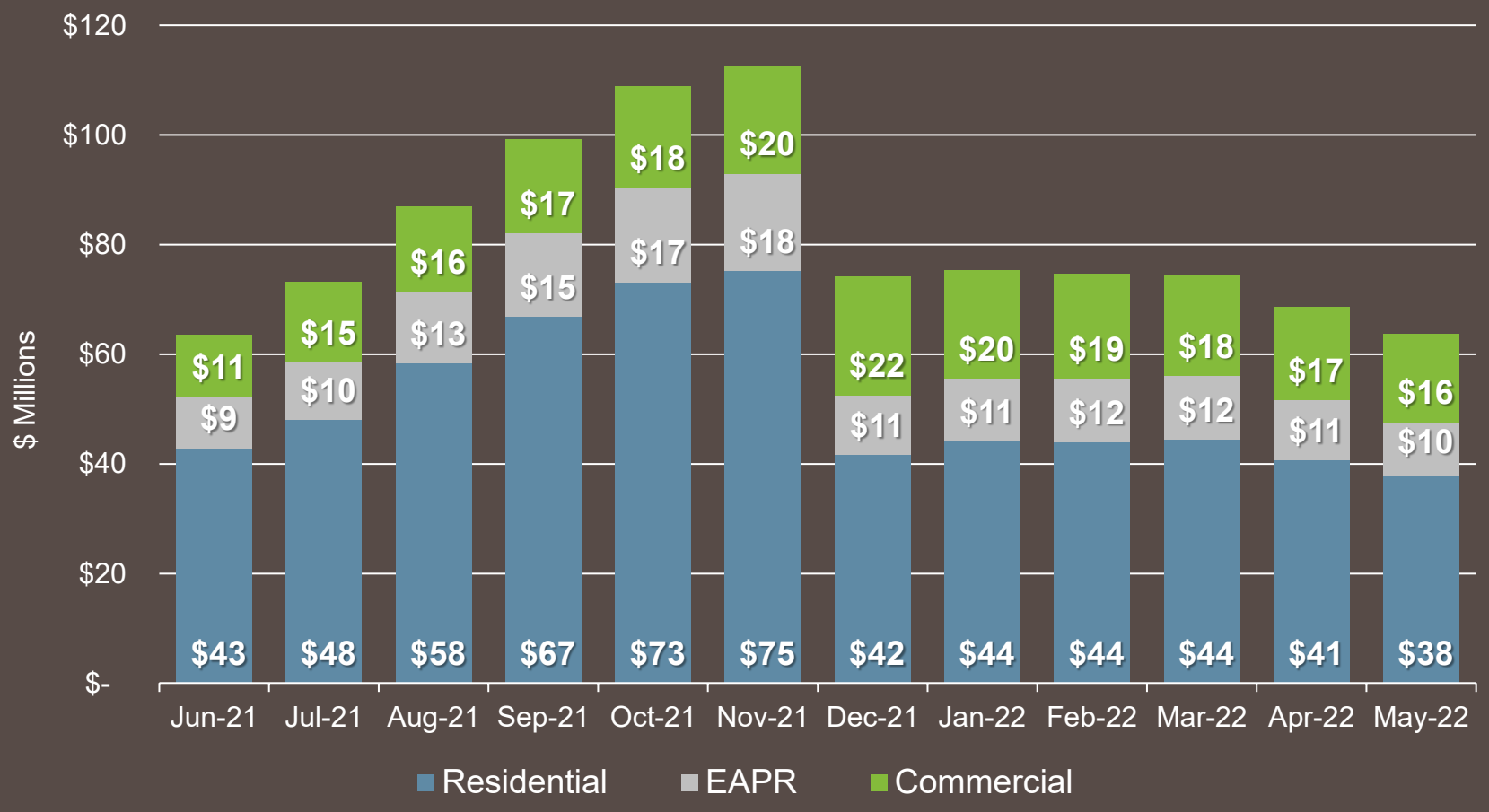




SMUD®

Delinquency by Account Type

As of 5/31/2022



Delinquency Summary
as of 5/31/2022

	Delinquency (millions)	Number of Customers
Residential	**$37.7**	**142,800**
Energy Assistance Program Rate (EAPR)	**$ 9.9**	**29,247**
Commercial	**$16.1**	**11,130**
All other (St. Lighting, Night Light, Agriculture)	**$ 0.6**	**1,177**
Totals	**$64.3**	**184,354**

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Exhibit to Agenda Item #12

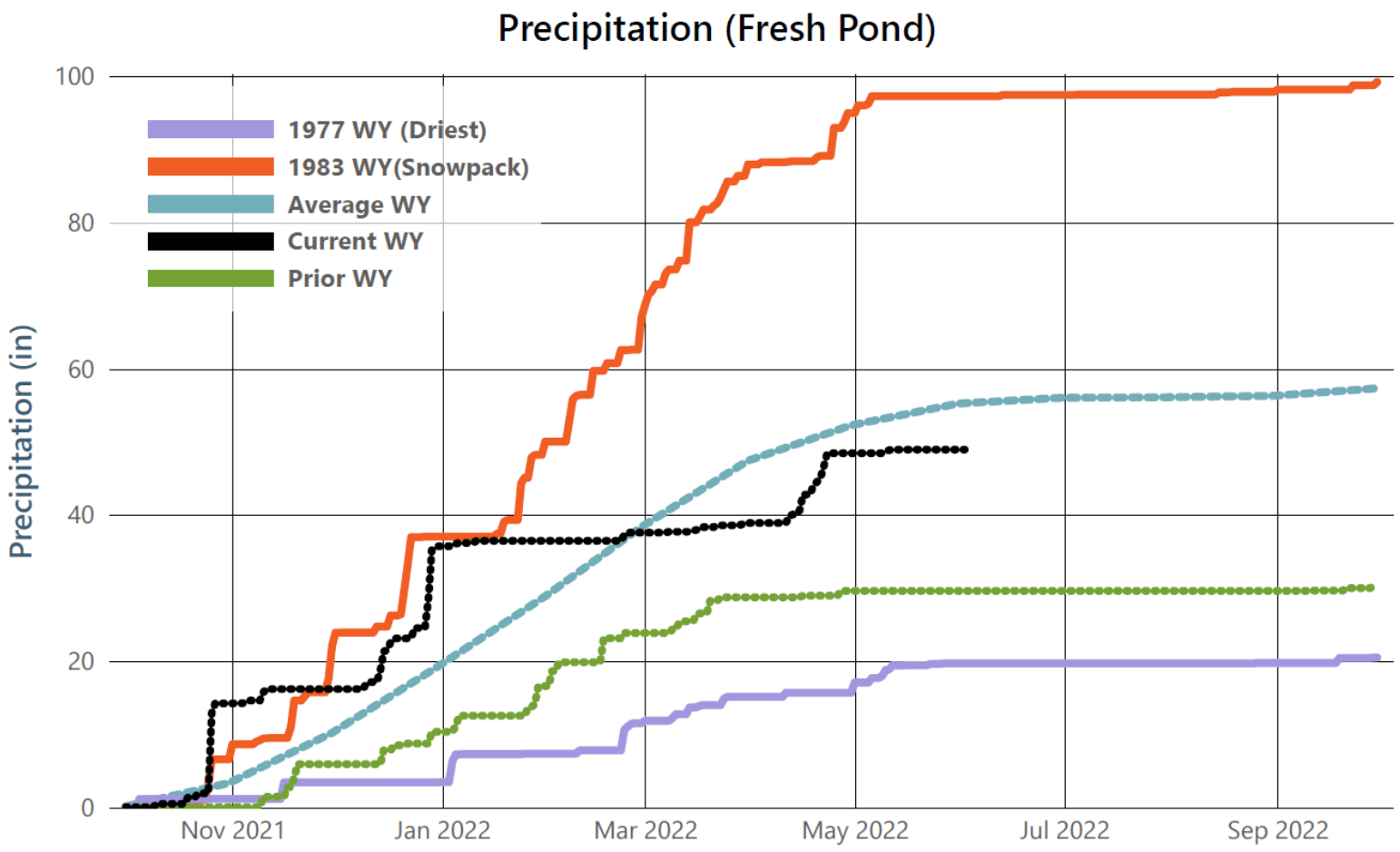
Provide the Board with the summary of SMUD's current Power Supply Costs.

Board of Directors Meeting

Thursday, June 16, 2022, scheduled to begin at 5:30 p.m.

Virtual Meeting (online)

Precipitation Levels
through June 2, 2022



Precipitation Levels

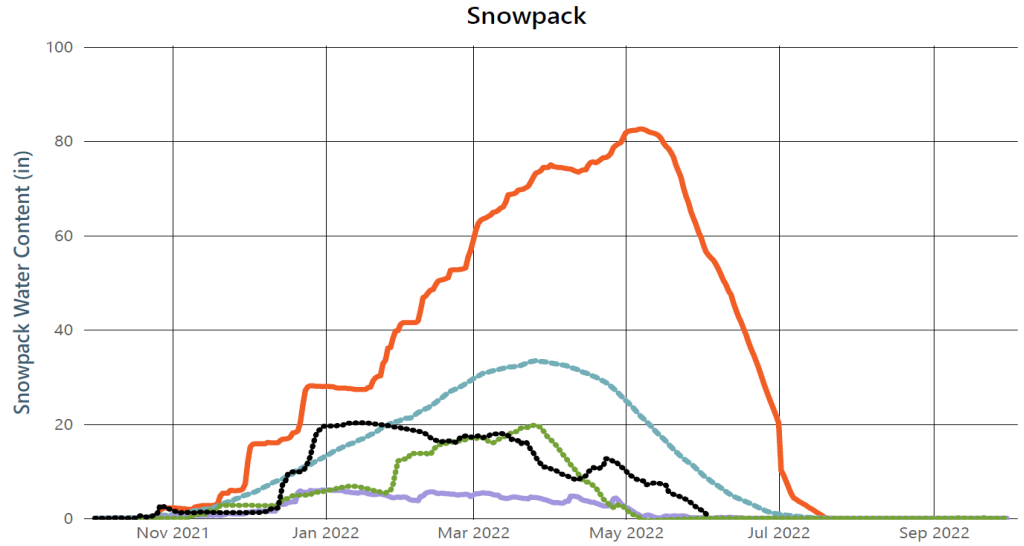
The cumulative precipitation for the area is 48.93" which is 88.5% of average to date (55.28”) and 85.4% of the entire water year average of 57.32”

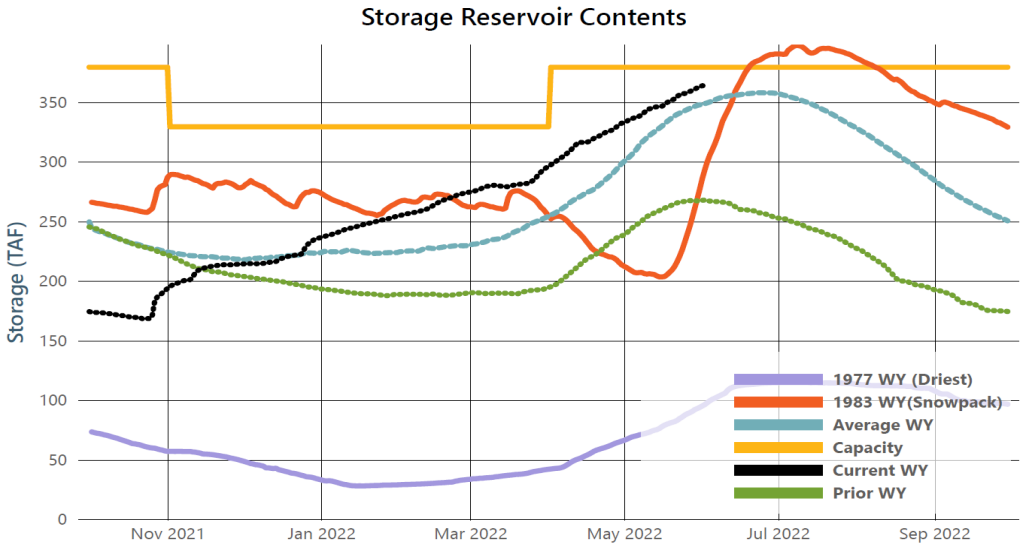
Water year is the 12-month period October 1st through September 30th, of the following year

SMUD®

Snowpack Water Content & SMUD Storage Reservoir Contents

through June 2, 2022





Snowpack & Storage Reservoir

The snowpack is 5.3% of average at selected snow sensors

The SMUD storage reservoirs are at 96% of full capacity

SMUD®

Commodity Budget: Mitigations & Forecast

SMUD has in place financial mitigation tools that hedge against hydroelectric uncertainty

$56.1 Million	Hydro Rate Stabilization Fund balance
-$25.1 Million	HRSF withdrawal for Water Year April 2021 to March 2022
$31.0 Million	HRSF remaining balance after withdrawal
$33.5 Million	Western Area Power Administration Rate Stabilization Fund balance
-$26.6 Million	WAPA RSF forecasted withdrawal
$6.9 Million	Estimated – WAPA RSF remaining balance after forecasted withdrawal

2022 Commodity Forecasted Annual Costs as of April 30, 2022	
Forecast	$486 Million
2022 Budget	$441 Million
Difference	$45 Million

Hydro Performance Annual Forecast as of April 30, 2022			
	UARP	WAPA	UARP + WAPA
Forecast	1,190 GWh	291 GWh	1,481 GWh
2022 Budget	1,303 GWh	661 GWh	1,964 GWh
Variance	113 GWh	370 GWh	483 GWh

WAPA: Western Area Power Administration **UARP**: Upper American River Project **RSF**: Rate Stabilization Fund

SSS No. LEG 2022-0100

BOARD AGENDA ITEM
STAFFING SUMMARY SHEET

Committee Meeting & Date
N/A
Board Meeting Date
July 21, 2022

TO		TO	
1.	Joe Schofield	6.	
2.		7.	
3.		8.	
4.		9.	**Legal**
5.		10.	**CEO & General Manager**

Consent Calendar		**Yes**	X	**No** *If no, schedule a dry run presentation.*	**Budgeted**	X	**Yes**		**No** *(If no, explain in Cost/Budgeted section.)*

FROM (IPR)	DEPARTMENT	MAIL STOP	EXT.	DATE SENT
Joe Schofield	Legal Department	B406	5446	07/08/22

NARRATIVE:

Requested Action: Make findings pursuant to Government Code section 54953(e) to continue meetings via virtual (online/teleconference) meeting for the next 30 days.

Summary: Pursuant to Executive Order N-29-20 issued on March 17, 2020, and Executive Order N-35-20 issued on March 21, 2020, as well as the Emergency Board Meeting Procedures adopted by this Board via Resolution No. 20-06-08 on June 18, 2020, this Board has conducted regular Board meetings and other public meetings via remote (online/teleconference) meetings.

On September 16, 2021, Governor Newsom signed Assembly Bill 361 (AB 361), which became effective immediately upon signature, containing language that eased Brown Act requirements to allow local agencies to meet remotely. AB 361 allows meetings to continue to be conducted by teleconference, similar to the process used during the current COVID-19 pandemic, but only when there is a declared state of emergency when the local governing body makes findings that there are imminent health risks to meeting in person.

On February 25, 2022, Executive Order N-04-22 was issued leaving the California State of Emergency due to the threat of COVID-19 in effect for the foreseeable future. Though the State of Emergency remains in effect, mask mandates have been dropped locally and at the State level.

On April 21, 2022, CAL/OSHA re-adopted its workplace COVID-19 Emergency Temporary Standards (ETS), as modified, effective May 6, 2022, through December 31, 2022, including outbreak reporting; SMUD staff continue to report COVID-19 infections, though at a decreasing rate; the lack of a requirement to sign in at SMUD Board meetings with contact information could make contact tracing nearly impossible; and the most recently reported COVID-19 data published , by the Sacramento County Department of Public Health on its Epidemiology COVID-19 Dashboard, and covering the period up to July 6, 2022, indicated a local COVID-19 case rate of 34.9% and 17 deaths since the last update. Since June 1, 2022, Sacramento County has been in the high severity tier for COVID-19. All surrounding counties are also in the high severity tier. Lab testing of samples in the Sacramento area wastewater show COVID rates are currently approximately 50% of the peak of omicron in January 2022. Moreover, when SMUD Board and Committee meetings were held in person, they could last as long as four hours with all participants in a single room. And although we could space out participants, they would still be breathing one another's respirated air for what could be a lengthy period of time.

By Resolution 21-10-01 adopted on October 12, 2021, Resolution No. 21-10-03 adopted on October 21, 2021, Resolution No. 21-11-05 adopted on November 18, 2021, Resolution No. 21-12-04 adopted on December 9, 2021, Resolution No. 22-03-01 adopted on March 8, 2022, Resolution No. 22-03-03 adopted on March 17, 2022, Resolution No. 22-04-01 adopted on April 13, 2022, Resolution No. 22-04-03 adopted on April 21, 2022, Resolution No. 22-05-06 adopted on May 19, 2022, and Resolution No. 22-06-02 adopted on June 16, 2022, this Board has previously made findings to continue to hold regular Board meetings and other public meetings via solely virtual (online/teleconference) format.

Staff's recommendation is to continue to hold regular Board meetings and other public meetings via solely virtual (online/teleconference) meeting and continue to monitor developments related to the COVID-19

	pandemic. Pursuant to Government Code section 54953(e), this Board must make findings every 30 days that conditions warrant continuing to meet virtually instead of in-person.
Board Policy: *(Number & Title)*	Governance Process GP-3, Board Job Description – j) Take such other actions as may be required by law.
Benefits:	Making the determination to continue remote meetings will allow for efficient conduct of SMUD business.
Cost/Budgeted:	Contained in Business Unit budget for internal labor.
Alternatives:	Take no action and comply with all original Brown Act requirements.
Affected Parties:	SMUD, Board of Directors, Public
Coordination:	Executive Office, Board Office, Legal Department, Information Technology, Communications
Presenter:	Laura Lewis, Chief Legal & Government Affairs Officer

Additional Links:

SUBJECT	ITEM NO. ***(FOR LEGAL USE ONLY)***
Make Findings to Continue Online/Teleconference Meetings	***4***

ITEMS SUBMITTED AFTER DEADLINE WILL BE POSTPONED UNTIL NEXT MEETING.

DRAFT

RESOLUTION NO. _____

WHEREAS, SMUD is committed to preserving public access and participation in meetings of the Board of Directors and to the safety of meeting attendees; and

WHEREAS, all meetings of the Board of Directors are open and public, as required by the Ralph M. Brown Act (Gov't Code, §§ 5495054963) ("Brown Act"), so that any member of the public may attend, participate in, and watch SMUD's governing body conduct its business; and

WHEREAS, the newly enacted Government Code section 54953(e) authorizes a local agency's governing body, during a proclaimed state of emergency, to participate in its public meetings using remote teleconferencing without compliance with the requirements of Government Code section 54953(b)(3), under specified conditions; and

WHEREAS, a required condition is that a state of emergency is declared by the Governor pursuant to Government Code section 8625, proclaiming the existence of conditions of disaster or of extreme peril to the safety of persons and property within the state caused by conditions as described in Government Code section 8558; and

WHEREAS, another condition is that state or local officials have imposed or recommended measures to promote social distancing, or, the legislative body determines that meeting in person would present imminent risks to the health and safety of attendees; and

WHEREAS, on February 28, 2022, the California Department of Public Health rescinded the mask requirement effective March 1, 2022, for all individuals

regardless of vaccination status and instead issued a strong recommendation that all persons, regardless of vaccine status, continue indoor masking; and

WHEREAS, the Sacramento County Department of Public Health on its Epidemiology COVID-19 Dashboard continues to show elevated case and death data, and this is supported by ongoing wastewater sampling; and

WHEREAS, Sacramento County currently has high community transmission rates for COVID-19 as defined by the Centers for Disease Control and Prevention, and all surrounding counties are also currently so classified; and

WHEREAS, on April 21, 2022, the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) re-adopted its workplace COVID-19 Emergency Temporary Standards (ETS), as modified, effective May 6, 2022, through December 31, 2022, including outbreak reporting; and

WHEREAS, SMUD is incrementally reintroducing staff to its administrative buildings, staff infections continue to be reported with some consistency, and, under the current schedule, the majority will not return to working on-site until August or September 2022; and

WHEREAS, SMUD Board and Committee meetings can last as long as four hours, with participants sitting in the same room sharing air the entire time; and

WHEREAS, it would be impractical for SMUD to take steps necessary to prevent imminent risks to the health and safety of attendees, such as by holding public meetings outdoors, ensuring public meeting attendees are vaccinated, have appropriate face coverings, and wear them consistent with public health guidance; and

WHEREAS, all meetings, agendas, meeting dates, times, and manner in which the public may participate in the public meetings of the SMUD Board and offer public comment by telephone or internet-based service options including video conference are posted on the SMUD website and physically outside of SMUD's Headquarters Building; and

WHEREAS, by Resolution No. 21-10-01 adopted on October 12, 2021, this Board made findings that requisite conditions exist for the SMUD Board to conduct remote teleconference meetings without compliance with paragraph (3) of subdivision (b) of section 54953; and

WHEREAS, by Resolution No. 21-10-03 adopted on October 21, 2021, this Board made findings that requisite conditions exist for the SMUD Board to conduct remote teleconference meetings without compliance with paragraph (3) of subdivision (b) of section 54953; and

WHEREAS, by Resolution No. 21-11-05 adopted on November 18, 2021, this Board made findings that requisite conditions exist for the SMUD Board to conduct remote teleconference meetings without compliance with paragraph (3) of subdivision (b) of section 54953; and

WHEREAS, by Resolution No. 21-12-04 adopted on December 9, 2021, this Board made findings that requisite conditions exist for the SMUD Board to conduct remote teleconference meetings without compliance with paragraph (3) of subdivision (b) of section 54953; and

WHEREAS, by Resolution No. 22-03-01 adopted on March 8, 2022, this Board made findings that requisite conditions exist for the SMUD Board to conduct

remote teleconference meetings without compliance with paragraph (3) of subdivision (b) of section 54953; and

WHEREAS, by Resolution No. 22-03-03 adopted on March 17, 2022, this Board made findings that requisite conditions exist for the SMUD Board to conduct remote teleconference meetings without compliance with paragraph (3) of subdivision (b) of section 54953; and

WHEREAS, by Resolution No. 22-04-01 adopted on April 13, 2022, this Board made findings that requisite conditions exist for the SMUD Board to conduct remote teleconference meetings without compliance with paragraph (3) of subdivision (b) of section 54953; and

WHEREAS, by Resolution No. 22-04-03 adopted on April 21, 2022, this Board made findings that requisite conditions exist for the SMUD Board to conduct remote teleconference meetings without compliance with paragraph (3) of subdivision (b) of section 54953; and

WHEREAS, by Resolution No. 22-05-06 adopted on May 19, 2022, this Board made findings that requisite conditions exist for the SMUD Board to conduct remote teleconference meetings without compliance with paragraph (3) of subdivision (b) of section 54953; and

WHEREAS, by Resolution No. 22-06-02 adopted on June 16, 2022, this Board made findings that requisite conditions exist for the SMUD Board to conduct remote teleconference meetings without compliance with paragraph (3) of subdivision (b) of section 54953; **NOW, THEREFORE**,

DRAFT

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

Section 1. Risks to Health and Safety of Attendees. The Board has reconsidered the circumstances of the state of emergency and hereby finds that the state of emergency continues to directly impact the ability of the members to meet safely in person and holding SMUD Board meetings in person would present imminent risks to the health and safety of attendees.

Section 2. Remote Teleconference Meetings. SMUD staff are hereby authorized and directed to take all actions necessary to carry out the intent and purpose of this Resolution, including conducting open and public meetings in accordance with section 54953(e) and other applicable provisions of the Brown Act.

Section 3. Effective Date of Resolution. This Resolution shall take effect immediately upon its adoption and shall be effective until the earlier of (i) August 20, 2022, or (ii) such time the Board of Directors adopts a subsequent resolution in accordance with Government Code section 54953(e)(3) to extend the time during which the SMUD Board may continue to teleconference without compliance with paragraph (3) of subdivision (b) of section 54953.

SSS No. ES 22-005

BOARD AGENDA ITEM
STAFFING SUMMARY SHEET

Committee Meeting & Date
N/A
Board Meeting Date
July 21, 2022

TO		TO	
1.	Emily Bacchini	6.	
2.	Ellias van Ekelenburg	7.	
3.	Maria Veloso Koenig	8.	
4.	Frankie McDermott	9.	**Legal**
5.		10.	**CEO & General Manager**

Consent Calendar		**Yes**	X	**No** *If no, schedule a dry run presentation.*	**Budgeted**	X	**Yes**		**No** *(If no, explain in Cost/Budgeted section.)*

FROM (IPR)	DEPARTMENT	MAIL STOP	EXT.	DATE SENT
Rob Ferrera	Environmental Services	B209	6676	6/27/2022

NARRATIVE:

Requested Action: Certify the California Environmental Quality Act (CEQA) Cordova Park Underground Cable Replacement Project (Project) Final Environmental Impact Report (FEIR), including adoption of the Findings; adopt the Mitigation Monitoring and Reporting Program for the Project; and approve the Project.

Summary: SMUD proposes to install approximately 0.6 miles of 12 kilovolt (kV) underground cable, approximately 2.12 miles of 69kV underground cable and up to 13 new utility vaults in the City of Rancho Cordova, near the location of existing 12kV and 69kV underground cables that are approaching the end of their operational lives. Installation of the new cable, conduit and utility vaults would be done by open trenching. Where possible, the new conduit will be installed to align with the existing cable, which would be abandoned in place.

The Project will occur over two phases, with the first phase consisting of only the 12kV elements and is anticipated to occur between July 2022 and September 2022. The second phase consists of the 69kV and utility vault elements and is anticipated to occur over the next 5-8 years.

As required by CEQA, a Notice of Preparation was made available for public review from March 7, 2022, to April 6, 2022. A public meeting was hosted on March 24, 2022. The draft EIR was subsequently prepared and issued on May 11, 2022. Public comments were received during a 45-day review period ending June 27, 2022. A second public meeting was hosted by SMUD on June 9, 2022. During the CEQA process, letters were sent to over 500 members of the public and agencies. Three comments were received from local agencies during the comment period. These have been addressed in the FEIR. There were no attendees from the public at either of the public meetings.

Responses to comments and issues raised during the comment period were addressed in the final EIR which was made available to commenters on July 11, 2022, for a 10-day review period. The SMUD Board of Directors meeting was noticed by direct mail to agencies and the public.

All impacts will either experience no impacts or can be mitigated to less-than-significant levels with the implementation of the Mitigation Monitoring and Reporting Program. SMUD did conduct a field study, in consultation with the tribes, to discover the possible location of tribal remains and will design the installation to avoid them.

Board Policy: *(Number & Title)* The Project supports the following Board adopted policies: SD-4, System Reliability; SD-7, Environmental Leadership. The Project supports Policy SD-4 by ensuring maintenance can be performed with fewer outages in the Rancho Cordova neighborhood to keep the electric system in good repair, and to make the necessary upgrades, maintain load serving capability, and meet regulatory standards. The Project supports Policy SD-7 by ensuring SMUD compliance with CEQA.

Benefits: The Project would provide for improved maintenance of the underground 69kV and 12kV cable and improved service reliability supporting the Rancho Cordova neighborhood.

Cost/Budgeted:	Phase 1 of the Project was budgeted and approved for $300,000. The cost of phase 2 will be determined as part of a future planning and budgeting cycle.
Alternatives:	Certify the EIR, adopt the Findings and Mitigation Monitoring and Reporting Program; Return to staff for further study; or Reject the FEIR.
Affected Parties:	The City of Rancho Cordova, Sacramento County, American River Parkway, Wilton Rancheria, United Auburn Indian Community, Shingle Springs Band of Miwok Indians and the public.
Coordination:	Operations: Substations, Grid Strategy & Operations: Distribution Operations, Grid Planning; Regional & Local Government; Legal; Community Engagement, Marketing & Corporate Communications; Environmental Services; Real Estate Services; Customer Operations; The City of Rancho Cordova, Wilton Rancheria, United Auburn Indian Community
Presenter:	Emily Bacchini, Manager, Environmental Services

Additional Links:

SUBJECT	ITEM NO. *(FOR LEGAL USE ONLY)*
Cordova Park Underground Cable Replacement Project (CEQA)	**5**

ITEMS SUBMITTED AFTER DEADLINE WILL BE POSTPONED UNTIL NEXT MEETING.

Sacramento Municipal Utility District

Cordova Park Underground Cable Replacement Project

Final Environmental Impact Report • July 2022
State Clearinghouse #2022030186

Powering forward. Together.

SMUD®

Sacramento Municipal Utility District

Cordova Park Underground Cable Replacement Project

Final Environmental Impact Report

State Clearinghouse #2022030186

July 2022

Lead Agency:

Sacramento Municipal Utility District
6201 S Street, MS B209
Sacramento, CA 95817-1899

or

P.O. Box 15830 MS B209
Sacramento, CA 95852-1830
Attn: Rob Ferrera
(916) 732-6676 or rob.ferrera@smud.org

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Contact: Cori Resha
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Table of Contents

Appendices

Acronyms and Abbreviations

CCR	California Code of Regulations
Draft EIR	draft environmental impact report
kV	kilovolt
PRC	Public Resources Code
project	Cordova Park Underground Cable Replacement Project
RWQCB	Regional Water Quality Control Board
SMUD	Sacramento Municipal Utility District

1 Introduction

On May 13, 2022, the Sacramento Municipal Utility District (SMUD) released for public review the draft environmental impact report (Draft EIR) for the proposed Cordova Park Underground Cable Replacement Project (project). The EIR describes the existing conditions of the project alignments, analyzes the potential environmental impacts of the project, and identifies mitigation measures where necessary and available to avoid or reduce the magnitude of potentially significant impacts of the project. As part of the project, SMUD would install approximately 0.6 miles of 12 kilovolt (kV) underground cable, approximately 1.12 miles of 69kV underground cable, and up to 13 new utility vaults in the City of Rancho Cordova, near the location of existing 12kV and 69kV underground cables that are approaching the end of their operational lives.

1.1 Public Review

In accordance with Sections 15087 and 15105 of the State CEQA Guidelines, the Draft EIR was circulated for public review and comment to lead and responsible agencies, as well as members of the public, for 45 days (May 13, 2022 through June 27, 2022). SMUD also held a public meeting on June 9, 2022 to receive comments on the Draft EIR. No comments were received at the public meeting or during the public review period. Therefore, this Final EIR does not contain any responses to comments.

The Draft EIR, Final EIR, and associated appendices are available for review online at: https://www.smud.org/CordovaParkCableReplacement and at the following locations:

Sacramento Municipal Utility District
Customer Service Center
6301 S Street
Sacramento, CA 95817

Sacramento Municipal Utility District
East Campus Operations Center
4401 Bradshaw Road
Sacramento, CA 95827

1.2 Project Decision Process

This document and the Draft EIR together constitute the Final EIR, which will be considered by the Board before a decision on whether to approve the project. If the Board decides to approve the project, it must first certify that the Final EIR was completed in compliance with CEQA's requirements, was reviewed and considered by the Board, and reflects the Board's independent judgment and analysis, as required by State CEQA Guidelines Section 15090. The Board would then be required to adopt findings of fact on the disposition of each significant environmental impact, as required by State CEQA Guidelines Section 15091. This EIR does not identify any significant and unavoidable impacts (those that cannot be mitigated to a less-than-significant level) that would result from the project; therefore, a statement of overriding considerations, pursuant to State CEQA Guidelines Section 15093, is not warranted. A Mitigation Monitoring and Reporting Program, which is required by CEQA Guidelines Section 15091(d), has been included as Chapter 3 of this Final EIR.

1.3 Project Updates

State CEQA Guidelines Section 15088.5 requires recirculation of an EIR when the lead agency adds "significant new information" to an EIR, regarding changes to the project description or the environmental setting, after public notice is given of the availability of a draft EIR for public review under State CEQA Guidelines, California Code of Regulations (CCR) Section 15087, but before EIR certification (State CEQA Guidelines CCR Section 15088.5[a]). Significant new information is defined in Section 15088.5(a) of the State CEQA Guidelines as follows:

> (1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
>
> (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
>
> (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it.
>
> (4) The Draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

Recirculation is not required unless the EIR is changed in a way that would deprive the public of the opportunity to comment on significant new information, including a new significant impact in which no feasible mitigation is available to fully mitigate the impact (thus resulting in a significant and unavoidable impact), a substantial increase in the severity of a disclosed environmental impact, or development of a new feasible alternative or mitigation measures that would clearly lessen environmental impacts but that the project proponent declines to adopt (State CEQA Guidelines Section 15088.5[a]). Recirculation is not required when the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR (State CEQA Guidelines Section 15088.5[b]).

Following the release of the Draft EIR for public review, it was noticed that text from the version of the Draft EIR approved by SMUD for public release was inadvertently removed from the Draft EIR prior to its release for public review. These text changes are shown in Chapter 2, "Revisions to the Draft EIR," of this Final EIR. These text changes provide updated information regarding the project's environmental setting and do not constitute significant new information that would require recirculation of the Draft EIR.

Since release of the Draft EIR, SMUD has continued to coordinate with the Native American Tribes under Public Resources Code (PRC) Section 21080.3 (enacted by Assembly Bill 52, Statutes of 2014). SMUD and the Tribes have agreed that

consultation is complete, though SMUD will continue to coordinate with the Tribes regarding implementation of the mitigation measures as discussed below.

None of the circumstances requiring recirculation have arisen; therefore, recirculation of the Draft EIR is not required.

1.3.1 Tribal Consultation Update

PRC Section 21080.3 requires that lead agencies undertaking CEQA consult with California Native American Tribes upon the Tribes' written request and evaluate in the EIR the potential for projects to affect Tribal cultural resources. Section 3.1, "Tribal Cultural Resources," of the Draft EIR describes the consultation that has occurred between the tribes and SMUD pursuant to PRC Section 21080.3. In particular, pages 3.1-8 and 3.1-9 of the Draft EIR summarize the consultation process that occurred prior to release of the Draft EIR for public review. During the Draft EIR public review period, SMUD continued to coordinate with the Tribes, including continued discussions regarding the implementation of Mitigation Measures 3.1-1a, -1b, and -1c (found on pages 3.1-12 and 3.1-13 of the Draft EIR).

Based on these further communications, Tribal consultation under PRC Section 21080.3has been completed, as agreed to by the consulting tribes. This project update does not constitute significant new information that would require recirculation of the document.

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2 Revisions to the Draft EIR

This chapter presents specific text changes made to the Draft EIR since its publication and public review. The changes are presented in the order in which they appear in the original Draft EIR and are identified by the Draft EIR page number. Text deletions are shown in ~~strikethrough~~, and text additions are shown in underline.

The information contained within this chapter clarifies and expands on information in the Draft EIR and does not constitute "significant new information" requiring recirculation under CEQA Guidelines Section 15088.5.

2.1 Revisions to Section 3.1, Tribal Cultural Resources

During preparation of the document for publication, some text and revisions were inadvertently excluded. The text beginning on page 3.1-7 of the Draft EIR is revised as follows:

> **Ethnographic Setting**
>
> The study area is within the traditional territory of the Valley Nisenan, also known as the Southern Maidu. These Indigenous people are the southernmost linguistic group of the Maidu-Penutian language family who occupied the northern portion of California's Central Valley. Although boundaries with neighboring tribes were often fluid and overlapping, the southern portion of the Valley Nisenan territory is defined as extending from the original confluence of the American and Sacramento rivers near today's Old Sacramento, up the American River and its tributaries to the crest of the Sierras. The northern portion of their territory consisted of the lower half of the Feather River, and then east along both the Bear and Yuba rivers up to the Sierra crest. Their neighbors were the Plains Miwok to the south, the Patwin across the Sacramento River to the west, and the Konkow and Mountain Maidu to the north. Settlements were typically located on low, natural rises next to streams and rivers or on gentle, south-facing slopes. Populations within the settlements are estimated to have varied from 15 individuals or more for smaller occupation sites and satellite villages, and up to 500 or more in large villages (SMUD 2022).
>
> Valley Nisenan relied on a wide range of abundant natural resources. Large and small mammals, such as pronghorn antelope, deer, tule elk, black bears, cottontails, and jackrabbits, were hunted by individuals or by communal effort. Plant resources included acorns, pine nuts, buckeye nuts, berries, grass seeds, herbs, and underground tubers. To procure these resources, Valley Nisenan employed a variety of tools and hunting implements. The bow and arrow, snares, traps, nets, and enclosures or blinds were used for hunting land mammals and birds. For fishing, they made canoes from tule, balsa, or logs, and used harpoons, hooks, nets, and basketry traps. To collect plant resources, sharpened digging sticks, long poles for dislodging acorns and pinecones, and a variety of

basketry, such as seed beaters, burden baskets, and carrying nets, were utilized. Foods were processed with a variety of tools, such as bedrock mortars, bedrock grinding slicks, hand stones, pestles, hopper mortars, or metates (SMUD 2022).

A key component of Valley Nisenan life was their participation in an extensive east-west trade network between the coast and the Great Basin. From coastal groups marine *Olivella*, abalone, shell and steatite moved eastward, while salt and obsidian traveled westward from the Sierras and Great Basin. Basketry, an important trade item, moved in both directions (SMUD 2022).

The traditional culture and lifeways of the Valley Nisenan, and Central Valley Indigenous people in general, were disrupted beginning in the early 1800s. Although Spanish explorers entered their territory as early as 1808, there is no record of the forced movement of any Nisenan to the missions, at least no evidence similar to that recorded for the neighboring Plains Miwok. Regardless, Valley Nisenan and other Indigenous peoples were affected by land grant settlements and devastated by foreign disease epidemics that swept through the densely populated Central Valley. In particular, an epidemic presumed to be malaria, swept through the region in 1833, wiping out entire villages and causing the death of an estimated 75 percent of the Valley Nisenan population. Not long after in 1839, Captain John Sutter settled into the area and conscripted many of the surviving local Indigenous peoples to work for him at his fort and various other endeavors, including his hock farm on the banks of the Feather River (SMUD 2022).

Additional impacts to Valley Nisenan traditional lifeways resulted from the California Gold Rush in 1849. As a steady influx of non-native people exploited their lands and wasted their resources, many lifeways of the Valley Nisenan, as well as neighboring groups, were irretrievably interrupted. As a result, surviving Valley Nisenan either retreated to the foothills and mountains, or became domestics and laborers for the expanding ranching, farming, and mining industries (SMUD 2022).

Known Nisenan Villages Near the Project Site

The banks of the American River were heavily populated in Indigenous times. At least four Nisenan villages are known to have been present within ten miles of the project alignment. On the north side of the American River, east of California State University Sacramento but west of the project area, was *Kadema*, *Kishkish,* and *Yamankudu*. On the south side of the river, the closest known village was *Yalisumni*. Additional un-named villages on the south side of the American River are evidenced by three particularly deep and large archaeological sites, CA-SAC-157, CA-SAC-319, and CA-SAC- 320/H, each site being located less than three miles from either end of the project alignment (SMUD 2022).

Contemporary Native American Setting

Defining Tribal cultural resources involves the knowledge and expertise of living California Native Americans. As the embodiment of a continuous connection between tribal history and the landscape, they are uniquely qualified to act as the interpreters and stewards of their culture, including the ability to define the significance of the material remains and landscapes of their ancestor's lifeways.

As described above, the~~The~~ Project is located on land traditionally inhabited by the Valley Nisenan. ~~Although boundaries with neighboring tribes were often fluid and overlapping, traditional Valley Nisenan lands are generally described as extending from present-day Old Sacramento, up the American River and its tributaries to the crest of the Sierras.~~ Today, many descendants of Valley Nisenan still reside on lands once inhabited by their ancestors or on lands set aside for tribal communities by the federal government in California which may or may not been traditionally inhabited by their ancestors. Contemporary Californian Native American tribes with ancestral connections to the study area and Valley Nisenan heritage include the United Auburn Indian Community (UAIC), Shingle Springs Band of Miwok Indians (SSBMI), Ione Band of Miwok, and Wilton Rancheria.

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3 Mitigation Monitoring and Reporting Program

This mitigation monitoring and reporting program (MMRP) summarizes the mitigation measures, implementation schedule, and responsible parties for monitoring the mitigation measures required of the proposed Cordova Park Underground Cable Replacement Project, as set forth in the EIR prepared for the project.

Section 21081.6 of the California Public Resources Code and Section 15091(d) and Section 15097 of the State CEQA Guidelines require public agencies "to adopt a reporting or monitoring program for changes to the project which it has adopted or made conditions of project approval to mitigate or avoid significant effects on the environment." An MMRP is required for the project because the EIR for the project identified potentially significant adverse impacts related to construction and operation of the project, and mitigation measures have been identified to reduce most of those impacts to a less-than-significant-level.

This MMRP will be adopted by SMUD if it approves the project and will be kept on file at SMUD's Customer Service Center at 6301 S Street, Sacramento, CA 95817; and at SMUD's East Campus Operations Center at 4401 Bradshaw Road, Sacramento, CA 95827. SMUD will use this MMRP to ensure that identified mitigation measures, adopted as a condition of project approval, are implemented appropriately.

3.1 Mitigation Implementation and Monitoring

SMUD will be responsible for monitoring the implementation of mitigation measures designed to minimize impacts associated with the 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 project meets the requirements of this MMRP 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 and its appointed contractor 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 3-1 lists each identified environmental resource being affected (in the same order and using the same numbering system as in the EIR), the associated CEQA checklist question (used as the thresholds of significance in the EIR),

the corresponding monitoring and reporting requirement, the party responsible for ensuring implementation of the mitigation measure and monitoring effort, and the project component to which the mitigation measure applies.

If an issue addressed in the EIR does not result in mitigation, it is not included in the table.

3.2 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.

3.3 Reporting

SMUD shall, or may require the developer to, prepare a monitoring report upon completion of the project describing the compliance of the activity with the required mitigation measures. Information regarding inspections and other requirements shall be compiled and explained in the report. The report shall be designed to simply and clearly identify whether mitigation measures have been adequately implemented. At a minimum, each report shall identify the mitigation measures or conditions to be monitored for implementation, whether compliance with the mitigation measures or conditions has occurred, the procedures used to assess compliance, and whether further action is required. The report shall be presented to SMUD's Board of Directors.

3.4 Regulatory Considerations

In addition to the mitigation measures set forth in this MMRP, SMUD complies with all applicable regulations and statutes, including but not limited to the following:

- The City of Rancho Cordova's noise restrictions (Municipal Code, Chapter 6.68), which restricts the days and hours of construction noise, will be followed.

- The City of Rancho Cordova's Land Grading and Erosion Control requirements (Municipal Code, Chapter 16.44) includes specific standards for project construction related to erosion control.

- Should groundwater be encountered during project construction, testing would occur in accordance with the California Department of Toxic Substances Control and Regional Water Quality Control Board (RWQCB) requirements prior to dewatering activities. This may include seeking coverage under RWQCB's General Order for Dewatering (R5-2013-0074). If dewatering activities are needed, they would include the potential use of Baker tanks and/or filtration bags, if needed, to treat water prior to discharge into the City of Rancho Cordova's stormdrain system.

It should be noted that this discussion of regulatory requirements is not intended to be all-inclusive; site specific conditions and activities may require compliance with other regulations or statutes.

3.5 Mitigation Monitoring and Reporting Program Table

The categories identified in the attached MMRP table are described below.

Impact – This column provides the verbatim text of the impact statement included in the EIR.

Mitigation Measure – This column provides the verbatim text of the adopted mitigation measure.

Implementation Duration – This column identifies when the mitigation measure shall be implemented (e.g., prior to construction, during construction, prior to occupancy, etc.).

Monitoring Duration – This column identifies the period within which monitoring shall be conducted.

Responsibility – This column identifies the party(ies) responsible for implementation and/or enforcing compliance with the requirements of the mitigation measure.

Impact	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
				Implementation	Monitoring
Impact 3.1-1: Cause a substantial adverse change in the significance of a Tribal cultural resource, including human remains. **Impact 3.1-2: Potential for the project, in combination with other development, to contribute to a significant cumulative impact to Tribal cultural resources including human remains.**	**Mitigation Measure 3.1-1a: Avoid TCRs through Project Design.** During the design phase of the 69kV alignment portion of the Project, SMUD will consult with consulting Tribes on the adequacy of the plans to avoid and protect in place the identified Tribal cultural resources. The consulting Tribes will review the plans starting at 30 percent design, or a similar milestone, and will continue to be consulted with until the design plans are finalized (100 percent design). To avoid impacts and protect the Tribal cultural resources in place, a qualified archaeologist, in collaboration with consulting Tribes, will ensure that no staging, storage, or work will come within a minimum of a 15-foot protection buffer from each Tribal cultural resource. If the archaeologist and consulting Tribes find at any time that the plans do not meet the 15-foot protection buffer, the design engineers will work with the archaeologist and consulting Tribes to modify the plans. If sufficient modifications to the plans cannot be achieved to ensure a 15-foot protection buffer, additional consultation with the participating tribes will be required to develop appropriate avoidance and mitigation measures. Such measures may include creation of a treatment plan, data recovery, reburial, or additional plan redesign. The project plans will not be considered final until the archaeologist has deemed them to be adequate for the avoidance and protection in place of the Tribal cultural resources.	During project design	During construction activities	SMUD	SMUD
Impact 3.1-1: Cause a substantial adverse change in the significance of a Tribal cultural	**Mitigation Measure 3.1-1b: Prepare and implement worker cultural resources awareness and respect training program.** A cultural resources awareness and respect training program will be provided to all construction personnel active on the project site prior to the start of project implementation and to any new workers who start on	Prior to and during construction activities (ground disturbance)	During construction activities (ground disturbance)	SMUD	SMUD

Impact	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
				Implementation	Monitoring
resource, including human remains. **Impact 3.1-2: Potential for the project, in combination with other development, to contribute to a significant cumulative impact to Tribal cultural resources including human remains.**	the project after starting. A representative or representatives from culturally affiliated Native American Tribe(s) will be invited to participate in the development and delivery of the cultural resources awareness and respect training program in coordination with a professional archaeologist meeting the United States Secretary of Interior's qualification standards for archaeology. The program will include relevant information regarding Tribal cultural resources, including applicable laws and regulations, the consequences of violating said laws and regulations, protocols for resource avoidance, and protocols for discoveries, including who to contact in the event of a discovery and what to do upon the discovery of human remains. The program will also underscore the requirement for confidentiality and culturally-appropriate treatment of any find of significance to Native Americans and protocols, consistent to the extent feasible, with Native American Tribal values.				
Impact 3.1-1: Cause a substantial adverse change in the significance of a Tribal cultural resource, including human remains. **Impact 3.1-2: Potential for the project, in combination with other development, to contribute to a significant cumulative impact**	**Mitigation Measure 3.1-1c: Implement Tribal and Archaeological Monitoring.** All ground disturbing activities, including any preparatory grading, tree removal, or vegetation clearing, within the project site will be monitored by a Tribal monitor and a qualified archaeologist. SMUD shall contact the participating Tribes a minimum of seven days prior to beginning earthwork or other ground disturbing activities to ensure a Tribal monitor is available; construction activities will proceed if no response is received 48 hours prior to ground disturbing activities. The Tribal and archaeological monitor shall complete daily monitoring logs that describe each day's activities, including construction activities, locations, soil, and any cultural materials identified. In the event that unanticipated archaeological or Tribal cultural	Prior to and during construction activities (ground disturbance)	During construction activities (ground disturbance)	SMUD	SMUD

Impact	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
				Implementation	Monitoring
to Tribal cultural resources including human remains.	resources are discovered, including human remains, compliance with Mitigation Measure 3.1-1d would be required. Both the Tribal monitor and the archaeological monitor have the ability to halt work if a discovery occurs.				
Impact 3.1-1: Cause a substantial adverse change in the significance of a Tribal cultural resource, including human remains. **Impact 3.1-2: Potential for the project, in combination with other development, to contribute to a significant cumulative impact to Tribal cultural resources including human remains.**	**Mitigation Measure 3.1-1d: Halt Ground Disturbance Upon Discovery of Subsurface Tribal Cultural Resources and Evaluate Discovered Resource.** If any suspected Tribal cultural resources or unique archaeological resources are discovered during ground disturbing construction activities, all work shall cease within 100 feet of the find, or a distance agreed upon by the Tribal monitor, archaeological monitor, SMUD, and the construction foreman based on the location and nature of the find and type of work occurring. The Tribal monitor shall determine if the find is a Tribal cultural resource. The Tribal monitor will make recommendations for further evaluation and culturally appropriate treatment of discovered Tribal cultural resources as necessary in consultation with the archaeological monitor. Unless another type of treatment is recommended, resources will be preserved in place by redesigning the project; however, if project redesign is determined by SMUD, with evidence, to be technologically, regulatorily, or economically infeasible. Redesign could include modifying the route of the alignment; and route modification would remain within the boundary of the project study area. If redesign is demonstrated to be infeasible, culturally appropriate treatment would be developed in consultation with the participating Tribes. Culturally appropriate treatment may include, but is not limited to, processing materials for reburial, minimizing handling of cultural objects, leaving objects in place within the landscape, returning objects to a location	During construction activities (ground disturbance)	During construction activities (ground disturbance)	Contractor	SMUD

Impact	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
				Implementation	Monitoring
	within the project area where they will not be subject to future impacts from the project. Because curation of Tribal cultural resources is not considered by the participating Tribes to be appropriate or respectful, participating Tribes request that materials not be permanently curated, unless approved by the participating Tribes. Work at the discovery location cannot resume until all necessary investigation, evaluation, and treatment of the discovery under the requirements of the CEQA, including AB 52, have been satisfied. Implementation of this mitigation measure would also satisfy State and local regulations regarding the treatment of Tribal cultural resources as well as Section 7050.5 of the Health and Safety Code and PRC 5097 regarding the treatment of human remains.				
Impact 3.2-1: Change the significance of a known archaeological resource. **Impact 3.2-3: Potential for the project, in combination with other development, to contribute to a significant cumulative impact to cultural resources.**	**Mitigation Measure 3.2-1: Establish Work Exclusion Zones to Avoid Archeological Features.** Prior to the start of operations, a 15-foot work exclusion zone (WEZ) will be established around each of the identified archeological features. The WEZ will be shown on project plans and will be installed prior to the start of work on Rossmoor Drive. The WEZ will be delineated by the installation of high visibility temporary construction fencing set 15 feet away from the edge of the feature. The installation of the WEZ fencing will be overseen by a professionally qualified archaeologist who meets the Secretary of the Interior's standards for archaeology. The archaeologist will review the WEZ location and mark the location of the WEZ on the ground prior to installation. No access, staging, storage, equipment, or personnel shall enter any portion of the WEZ.	During project design	During construction activities	SMUD	SMUD

Impact	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
				Implementation	Monitoring
	The WEZ for each archaeological feature will remain in place until all work on Rossmoor Drive is complete.				
Impact 3.2-2: Change the significance of unknown archaeological resources. **Impact 3.2-3: Potential for the project, in combination with other development, to contribute to a significant cumulative impact to cultural resources.**	**Mitigation Measure 3.2-2a: Halt Ground-Disturbing Activity Upon Discovery of Archaeological Resources and Evaluate Discovered Resource.** In the event that a historic-period archaeological resource (such as concentrated deposits of bottles or bricks with makers marks, amethyst glass, ceramic or metal pipes, or other historic refuse) or a prehistoric archaeological resource (such as lithic scatters, midden soils), is uncovered during grading or other construction activities, all ground-disturbing activity within 100 feet of the discovery shall be halted until a qualified archaeologist can assess the significance of the find. SMUD will be notified of the potential find and a qualified archeologist shall be retained to investigate its significance. If the find is suspected to be Native American in origin, Mitigation Measure 3.1-1d shall be implemented. Any previously undiscovered resources found during construction will be recorded on appropriate California Department of Parks and Recreation 523 forms and evaluated for significance under all applicable regulatory criteria. If the archaeologist determines that the find does not meet the CRHR standards of significance for cultural resources, construction may proceed. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either an historical resource or a unique archaeological resource), the archaeologist shall work with SMUD to follow accepted professional standards such as further testing for evaluation or data recovery, as necessary. The results of the identification, evaluation, and/or data recovery program for any unanticipated discoveries shall be presented in a	During construction activities (ground disturbance)	During construction activities (ground disturbance)	Contractor	SMUD

Impact	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
				Implementation	Monitoring
	professional-quality report that details all methods and findings, evaluates the nature and significance of the resources, analyzes and interprets the results.				
Impact 3.2-2: Change the significance of unknown archaeological resources. **Impact 3.2-3: Potential for the project, in combination with other development, to contribute to a significant cumulative impact to cultural resources.**	**Mitigation Measure 3.2-2b: Implement Native American and Archaeological Monitoring.** All ground disturbing activities, including any preparatory grading, tree removal, or vegetation clearing, within the project site will be monitored by a Tribal monitor and a qualified archaeologist. SMUD shall contact the participating Tribes a minimum of seven days prior to beginning earthwork or other ground disturbing activities to ensure a Tribal monitor is available; construction activities will proceed if no response is received 48 hours prior to ground disturbing activities. The Tribal and archaeological monitor shall complete daily monitoring logs that describe each day's activities, including construction activities, locations, soil, and any cultural materials identified. In the event that unanticipated archaeological or Tribal cultural resources are discovered, including human remains, compliance with Mitigation Measure 3.1-1d would be required. Both the Tribal monitor and the archaeological monitor have the ability to halt work if a discovery occurs.	During construction activities (ground disturbance)	During construction activities (ground disturbance)	SMUD	SMUD
Impact 3.3-2: 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	**Mitigation Measure 3.3-1: Implement SMAQMD Basic Construction Emission Control Practices.** During construction, the contractor shall comply with and implement SMAQMD's Basic Construction Emission Control Practices, which includes SMAQMD-recommended BMPs and BACT, for controlling fugitive dust emissions. Measures to be implemented during construction include the following: • Water all exposed surfaces at least two times daily. Exposed surfaces include, but are not limited to, soil piles,	During construction activities	During construction activities	Contractor	SMUD

Impact	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
				Implementation	Monitoring
ambient air quality standard.	graded areas, unpaved parking areas, staging areas, and access roads. • Cover or maintain at least two (2) feet of freeboard 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 track-out 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. • All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used. • 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 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 will be checked by a certified mechanic and determined to be running in proper condition before it is operated.				
Impact 3.4-2: Result in the Loss of or Disturbance of Valley Elderberry	**Mitigation Measure 3.4-2: Avoid and protect elderberry shrubs.** • The elderberry shrub and a 20-foot buffer from the dripline of the shrub shall be fenced or flagged as close to the	Prior to construction activities	Prior to construction activities	Qualified biologist	SMUD

Impact	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
				Implementation	Monitoring
Longhorn Beetle and Habitat.	edge of construction as feasible and avoided during construction activities. • A qualified biologist will provide training for all contractors, work crews, and any onsite personnel on the status of valley elderberry longhorn beetle, its host plant and habitat, the need to avoid damaging elderberry shrubs, and the possible penalties for non-compliance. • As much as feasible, all activities that could occur within 165 feet of an elderberry shrub (but outside of the 20-foot no disturbance buffer), shall be conducted outside of the flight season of the valley elderberry longhorn beetle (the flight season typically occurs between March-July). • Project activities such as truck traffic or other use of machinery, shall not create excessive dust on the project site, such that the growth or vigor of elderberry shrubs could be adversely affected. Establishing and enforcing a 15 miles per hour speed-limit for off-road usage and watering non-paved access roads shall be implemented as needed to minimize excessive dust. • A qualified biologist (i.e., a biologist that holds a wildlife biology, botany, ecology, or other relevant degree from an accredited university and: 1) be knowledgeable in relevant species life histories and ecology, 2) be able to correctly identify relevant species and habitats, 3) have experience conducting field surveys of relevant species or resources, 4) be knowledgeable about survey protocols, 5) be knowledgeable about State and federal laws regarding the protection of special-status species, and 6) have experience with CDFW's CNDDB and Biogeographic Information and Observation System (BIOS). The project proponent will review the resume and approve the qualifications of biologists.) shall monitor the work area				

Impact	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
				Implementation	Monitoring
	within 165 feet of the elderberry shrub at project-appropriate intervals to ensure the avoidance and minimization measures listed above are implemented.				
Impact 3.4-3: Disturbance of nesting Swainson's hawk, white-tailed kite, or other avian species.	**Mitigation Measure 3.4-3: Avoid disturbance of active nests.** • For project activities, including tree trimming or removal, that begin between February 1 and September 15, a qualified biologist will conduct preconstruction surveys for Swainson's hawk, white-tailed kite, and other nesting birds to identify active nests on and within 0.25 mile of the alignments for Swainson's hawk and on or within 500 feet for other birds. The survey for Swainson's hawks will be conducted before the beginning of any construction activities between March 1 and September 15, following the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000). • If active nests are found, a qualified biologist will establish appropriate buffers around the active nest sites identified during preconstruction bird surveys such that project-related activities are unlikely to result in nest abandonment or disruption of normal nesting activities. No project activity will commence within the buffer areas until a qualified biologist has determined the young have fledged, the nest is no longer active, or reducing the buffer would not likely result in nest abandonment. CDFW guidelines recommend implementation of 0.25-mile buffer for Swainson's hawk and white-tailed kite and 500-feet for other raptors, but the size of the buffer may be adjusted if a qualified biologist, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest. Monitoring of the nest by a qualified biologist during and	Prior to construction activities	Prior to construction activities	Qualified biologist	SMUD

Impact	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
				Implementation	Monitoring
	after construction activities will be required if the activity has potential to adversely affect the nest.				
Impact 3.4-4: Conflict with provisions of the City of Rancho Cordova Municipal Code or Sacramento County Code of Ordinances intended to protect biological resources.	**Mitigation Measure 3.4-4: Tree Protection.** Prior to site disturbance, SMUD shall provide to the City of Rancho Cordova and Sacramento County a plan for all tree work. A Certified Arborist shall approve all work plans prior to submittal to the City of Rancho Cordova and Sacramento County. Tree planting will comply with the City of Rancho Cordova's and Sacramento County's landscaping requirements. For those trees that will be preserved on site during project construction, the following guidelines are recommended to ensure the long-term survival and stability of the trees. • **Educate Workers:** Educate all workers on site about tree protection guidelines and requirements prior to construction. • **Establish a Tree Protection Zone:** Establish a tree protection zone (TPZ) around any tree or group of trees designated for retention. The TPZ should at minimum be equal to 1.5 times the radius of the dripline. The TPZ may be adjusted on a case-by-case basis after consultation with a Certified Arborist. • **Install Fencing and Signage:** Install fencing around the TPZ of all trees or groups of trees designated for retention. The fencing should remain in place for the duration of construction activities. Post appropriate signage to help convey the importance of the TPZ to workers. • **Prohibit Construction Activities within the TPZ:** Prohibit construction-related activities, including grading, trenching, construction, demolition, or other work, within the TPZ. No heavy equipment or machinery should be operated within	Prior to site disturbance	Throughout construction activities	SMUD	SMUD

Impact	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
				Implementation	Monitoring
	the TPZ. No construction materials, equipment, machinery, or other supplies should be stored within the TPZ. Vehicle and foot traffic should not be permitted within the TPZ. No wires or signs should be attached to any trees designated for retention. • **Prune Selected Trees:** Prune selected trees to provide necessary clearance during construction and to remove any defective limbs or other tree parts that may pose a failure risk. All pruning should be completed by a Certified Arborist or Tree Worker and adhere to the Tree Pruning Guidelines of the International Society of Arboriculture. • **Monitor Trees and TPZs:** Monitor the integrity of the TPZs and the health of the trees designated for retention regularly throughout the construction process. A Certified Arborist should monitor the health and condition of the protected trees and, if necessary, recommend additional mitigations and appropriate actions. This could include the monitoring of trees adjacent to project facilities to determine if construction activities (including the removal of nearby trees) would affect protected trees in the future. • **Treat Impacted Trees:** Provide supplemental irrigation and other care, such as mulch and fertilizer, as deemed necessary by a Certified Arborist, to any trees impacted by construction. Treatment of any injuries should be performed by a Certified Arborist.				
Impact 3.5-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit,	**Mitigation Measure 3.5-1: Traffic Control Plan.** Prior to project construction within or adjacent to public roadways, SMUD's construction contractor shall develop a traffic control plan for the project and submit the plan to the City of Rancho Cordova's Department of Public Works. The plan shall identify temporary lane, sidewalk, bicycle lane, and transit stop closures and	Prior to construction	During construction activities	Contractor	SMUD

Impact	Mitigation Measure	Implementation Duration	Monitoring Duration	Responsibility	
				Implementation	Monitoring
roadway, bicycle, and pedestrian facilities. **Impact 3.5-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)** **Impact 3.5-4: Result in inadequate emergency access.**	provide information regarding how access and connectivity will be maintained during construction activities. The plan shall include details regarding traffic controls that would be employed, including signage, detours, and flaggers. The traffic control plan shall be implemented by the contractor during construction to allow for the safe passage of vehicles, pedestrians, and cyclists along the project route.				

4 References

Chapter 1, Introduction

No references cited.

Chapter 2, Revisions to the Draft EIR

No references cited.

Chapter 3, Mitigation Monitoring and Reporting Program

No references cited.

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Sacramento Municipal Utility District

Cordova Park Underground Cable Replacement Project

Draft Environmental Impact Report • May 2022
Reflects Revisions Made in the Final EIR on July 11, 2022
State Clearinghouse #2022030186

Powering forward. Together.

SMUD®

Sacramento Municipal Utility District

Cordova Park Underground Cable Replacement Project

Draft Environmental Impact Report
Reflects Revisions Made in the Final EIR on July 11, 2022

State Clearinghouse #2022030186

May 2022

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Table of Contents

Appendices (included on flash drive)

Figures

Tables

Acronyms and Abbreviations

AB	Assembly Bill
AQAP	air quality attainment plans
BACT	Best Available Control Technology
BMP	best management practices
BP	Before Present
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
City	City of Rancho Cordova
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Cordova Park Project	Cordova Park Underground Cable Replacement Project
County	Sacramento County
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CVFPB	Central Valley Flood Protection Board
CWA	Clean Water Act
DAC	disadvantaged communities
District	Folsom Mining District
DPS	Distinct Population Segment
Draft EIR	draft environmental impact report
DSH	diameter at standard height
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency

ESA	federal Endangered Species Act
ESU	Evolutionary Significant Unit
GGRF	Greenhouse Gas Reduction Fund
GHG	greenhouse gas
IS	Initial Study
kV	kilovolt
lbs/day	pounds per day
MBTA	Migratory Bird Treaty Act
MND	Mitigated Negative Declaration
MRZ	Mineral Resource Zones
$MTCO_2e$	metric tons of carbon dioxide equivalent
NAHC	Native American Heritage Commission
NCIC	North Central Information Center
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NPPA	California Native Plant Protection Act
NRHP	National Register of Historic Places
NRMP	Natural Resources Management Plan
O_3	ozone
OPR	Governor's Office of Planning and Research
PM	particulate matter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PM_{10}	particulate matter less than 10 microns in diameter
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
ppm	parts per million
PRC	Public Resources Code

project	Cordova Park Underground Cable Replacement Project
ROG	reactive organic gas
RWQCB	regional water quality control board
SB	Senate Bill
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
SNAHC	Sacramento Native American Health Center Inc.
SO_2	sulfur dioxide
SVAB	Sacramento Valley Air Basin
TAC	toxic air contaminants
TPZ	tree protection zone
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Service
WDR	waste discharge requirements
WEZ	work exclusion zone

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Executive Summary

Introduction

This summary is provided in accordance with the California Environmental Quality Act (CEQA) Guidelines Section 15123. As stated in the State CEQA Guidelines Section 15123(a), "an environmental impact report (EIR) shall contain a brief summary of the proposed actions and their consequences. The language of the summary should be as clear and simple as reasonably practical." As required by the Guidelines, this section includes: (1) a summary description of the project; (2) a synopsis of environmental impacts and recommended mitigation measures; (3) identification of the alternatives evaluated and of the environmentally superior alternative; and (4) a discussion of the areas of controversy associated with the project.

Summary Description of the Project

The Sacramento Municipal Utility District (SMUD) replaces aging electrical infrastructure as part of its routine maintenance and upgrade protocols. Accordingly, SMUD proposes to install approximately 0.6 miles of 12 kilovolt (kV) underground cable, approximately 2.12 miles of 69kV underground cable and up to 13 new utility vaults in the City of Rancho Cordova, near the location of existing 12kV and 69kV underground cables that are approaching the end of their operational lives. Installation of the new cable, conduit and utility vaults would be done by open trenching. Where possible, the new conduit will be installed to align with the existing cable, which would be abandoned in place.

Project Objectives

SMUD's objectives for the project are to:

- Provide safe and reliable electrical service to existing and proposed development in the Rancho Cordova area.
- Facilitate efficient maintenance of underground cables and infrastructure.
- Maximize the use of available SMUD property and resources.
- Minimize impacts to nearby sensitive receptors.
- Minimize potential conflicts with existing planning efforts within the City of Rancho Cordova.

Project Location

The project is in the City of Rancho Cordova. The proposed 12kV alignment begins at SMUD's Cordova Park Substation located near the intersection of Ambassador Drive and

Trails Court. The 12kV path travels to Ambassador Drive where it follows the road for approximately 0.6 miles until it connects to existing riser poles just east of Ellison Drive.

The proposed 69kV alignment begins on the northwest side of Coloma Road, approximately 200 feet southeast of Sierra Madre Court. The 69kV alignment heads northwest from Coloma Road, crossing through the property of Mills Middle School and Cordova High School, until it connects to SMUD's Cordova Park Substation. From the substation, the 69kV alignment heads northeast nearly adjacent to, but outside, the backyards of homes facing Ambassador Drive until it reaches Rossmoor Drive. At Rossmoor Drive, the 69kV alignment turns and heads north towards the American River. The 69kV alignment stays along Rossmoor Drive until its termination near the American River, when the 69kV alignment connects to existing riser poles located between the boundaries of Rossmoor Drive and the American River. The proposed 69kV alignment is approximately 2.12 miles in length.

The existing 12kV and 69kV lines that run through the American River Parkway would be abandoned in place, and new conduit containing the new lines would be installed in separate trenches within the alignments described above. The proposed 12kV and 69kV alignments are highly disturbed due to vehicle traffic, including areas of pavement and dirt. There are residences adjacent to portions of the proposed 12kV and 69kV alignments. Along Ambassador Drive, the 12kV circuit would be installed beneath existing roadways, sidewalks, or curbs and gutters. Along Rossmoor Drive, the 69kV circuit would be installed beneath existing pavement or within an existing fuel break adjacent to the pavement.

Project Description

Project Elements

The project involves the installation of approximately 0.6 miles of new underground 12kV electrical lines (cable) and approximately 2.12 miles of new underground 69kV cable to replace existing underground 12kV and 69kV cable buried directly in the ground (direct-buried) that was installed in the 1970s. The new 12kV cable would be installed in conduits buried in dirt while the new 69kV cable would be installed in conduits housed in concrete-encased duct banks to provide pathways and adequate spacing. The proposed project also involves installation of up to 13 new utility vaults along the 69kV alignment to allow access for electric cable pulling, splicing and maintenance.

The existing direct-buried 12kV cable begins at SMUD's Cordova Park Substation and extends approximately 0.6 miles east, where it connects to existing riser poles.

The existing direct-buried 69kV cable begins on the northwest side of Coloma Road, approximately 200 feet southeast of Sierra Madre Court, and extends north across the eastern property lines of Mills Middle School, Cordova High School and Hagen Park until it enters SMUD's Cordova Park Substation located near the intersection of Ambassador Drive and Trails Court (approximately 0.45 miles). From SMUD's substation, the existing

69kV cable extends east beneath a dirt path for approximately 0.70 miles when it turns north and cuts across the American River Parkway towards the American River for approximately 0.75 miles. Note that the total existing 69kV alignment is approximately 1.9 miles and the proposed 69kV alignment is approximately 2.12 miles. The extra mileage is due to deviating from the existing route to align with Rossmoor Drive.

Since installation of the existing 12kV and 69kV cable in the 1970s, native trees have established within the existing alignment along the Parkway. SMUD has coordinated with Sacramento County to install the new conduit outside of the existing alignment to reduce potential impacts to these trees and other biological resources within the American River Parkway and to facilitate easier access for future maintenance.

Accordingly, SMUD proposes to install the conduit for the new 12kV cable beneath the pavement, sidewalks, or curbs and gutters of Ambassador Drive. The proposed 69kV alignment would deviate from the existing alignment by continuing east until it heads north at Rossmoor Drive. While the exact location of the 69kV alignment along Rossmoor Drive is not yet known and would be determined once existing utilities beneath the pavement are identified, the 69kV alignment would generally be within Rossmoor Drive or the fuel break immediately west of the pavement. The 69kV alignment would continue along Rossmoor Drive as it intersects with the American River Parkway bike trail and continue beyond the edge of pavement at the end of Rossmoor Drive. The 69kV alignment would connect to existing riser poles located between the boundaries of Rossmoor Drive and the edge of the American River. Within the American River Parkway, the existing direct-buried 69kV cable would be abandoned in place.

The project would include up to 13 utility vaults to be installed at various points along the 69kV alignment. The proposed utility vaults would consist of pre-cast concrete, measuring 8 feet x 14 feet x 8 feet inside, requiring an excavation area of approximately 15 feet x 20 feet x 15 feet, and would generally be spaced evenly throughout the alignment to allow for cable pulling, splicing and maintenance.

Project Construction

Construction activities would occur in two phases. Phase 1 would include the 12kV alignment, while Phase 2 would include the 69kV alignment and utility vaults. Construction activities would occur during hours identified in City of Rancho Cordova Zoning Code Section 6.68.090(E). If there is a need for work to occur outside of these hours, SMUD will provide additional notification to customers adjacent to the project boundary.

Most construction would include open trenching to a maximum depth of 7 feet, though some deeper excavation may be necessary to avoid conflicts with existing utility lines. Removing water from the construction area (dewatering) may be necessary due to the high water-table of the area. SMUD would use Baker tanks and/or filtration bags, if needed, to treat water prior to discharge into the existing storm drain system in a manner consistent with regulatory requirements. For the 12kV alignment, the 12kV cable would

be installed in conduit in the trenches. The 69kV electrical cable would be placed in a duct bank, which is a series of conduits encased in concrete. The trenches would then be backfilled with a cement-like slurry mixture or compacted aggregate base to the roadway subgrade elevation followed by replacement of the appropriate cover (e.g., pavement or dirt). Construction activities would generally be conducted in existing alignments or along the roadway and would include the temporary closure of footpaths and roads. Alternative routes of travel will be provided where feasible. Following construction activities each day, the open trenches would be covered, and equipment removed to allow safe use of footpaths and roadways.

Project Operation

As the project includes construction and installation of underground utility infrastructure, project operation would include the active use of these facilities in replacement of existing infrastructure. There would not be any above-ground structures installed as part of the project, and operation of project elements would not create sources of noise, light, or other features that would be noticeable to residents and recreationists in the area.

Project Schedule

Construction for Phase 1 (12kV alignment) is anticipated take up to 3 weeks and would begin in the summer of 2022. Phase 2 (69kV alignment) construction would take approximately 12 months once initiated and is anticipated to begin in the next 5 to 7 years, after the completion of Phase 1.

Potential Approvals and Permits Required

Elements of the project could be subject to permitting and/or approval authority of other agencies. As the lead agency pursuant to the CEQA, SMUD is responsible for considering the adequacy of the environmental impact report (EIR) and determining if the project should be approved. Other potential permits required from other agencies could include:

State

- State Water Resources Control Board/Central Valley Regional Water Quality Control Board: Construction Storm Water Discharge Permits for projects that disturb more than one acre of land.
- California Department of Transportation: permits for movement of oversized or excessive loads on State Highways.

Local

- Sacramento Metropolitan Air Quality Management District: Authority to Construct/Permit to Operate pursuant to Sacramento Metropolitan Air Quality Management District Regulation 2 (Rule 201 et seq.).

- City of Rancho Cordova:
  - Tree removal permit.
  - Encroachment permit.
- County of Sacramento:
  - Encroachment permit.

Environmental Impacts and Recommended Mitigation Measures

Project Specific Impacts

This EIR has been prepared pursuant to the CEQA (Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, Section 1500, et seq.) to evaluate the physical environmental effects of the proposed Cordova Park Underground Cable Replacement Project. SMUD is the lead agency for the project. SMUD has the principal responsibility for approving and carrying out the project and for ensuring that the requirements of CEQA have been met. After the Final EIR is prepared and the EIR public-review process is complete, the SMUD Board of Directors is the party responsible for certifying that the EIR:

- has been completed in compliance with CEQA;
- was presented to the decision-making body of the lead agency, and that the decision-making body reviewed and considered the information contained in the final EIR prior to approving the project; and
- reflects the lead agency's independent judgment and analysis

Table ES-1, presented at the end of this chapter, provides a summary of the environmental impacts for the Cordova Park Underground Cable Replacement Project that are evaluated in this Draft EIR. The table provides the level of significance of the impact before mitigation, recommended mitigation measures, and the level of significance of the impact after implementation of the mitigation measures. Note that this table does not include the impacts and conclusions included in the Initial Study (IS) (see Appendix B).

Significant-and-Unavoidable Impacts and Cumulative Impacts

The project would not result in any significant and unavoidable impacts.

Summary of Alternatives

Alternatives evaluated in this Draft EIR are:

- **Alternative A (No Project)**, which assumes the existing 12kV or 69kV lines would not be replaced and that the existing equipment would continue to be used until it is no longer considered viable, and then abandoned in place; and
- **Alternative B (Existing Cable Alignment)**, which assumes the proposed 12kV and 69kV alignments would be reoriented to follow the existing cable alignment; and,
- **Alternative C (Ambassador Drive Alignment)**, which assumes that the proposed 69kV alignment between the substation and Rossmoor Drive would be within Ambassador Drive.

The following summary provides brief descriptions of the alternatives. For a more thorough discussion of project alternatives, see Chapter 5, “Alternatives.”

Alternative A (No Project)

Under this alternative, the existing 12kV and 69kV lines would continue to be used until they are no longer considered viable and then abandoned in place, without replacement. Under this alternative, SMUD would not be able to provide reliable and safe electrical service to existing and proposed development in the Rancho Cordova area.

Alternative B (Existing Cable Alignment)

Under this alternative, new 12kV and 69kV cable lines would be installed along the existing alignment that extends from Coloma Road to SMUD’s Cordova Park Substation and through the American River Parkway. Existing direct-buried cable would be abandoned in place and the new cables would be installed within 40 feet of the existing cable alignment. While the southern portion of this alternative (from Coloma Road to the substation) would be identical to the proposed project, it would differ in that the 12kV line would be installed in the same alignment as the 69kV alignment within the open space of the American River Parkway. From the substation, the alignment would extend approximately 0.70 miles east where it would then turn north and run through the open space of the Parkway. This alternative would not include any construction activities within roadway rights-of-way as all work would occur within school property, SMUD property, or open space.

This alternative would achieve most of the project objectives but not to the degree of the project. It would potentially conflict with the City of Rancho Cordova’s tree preservation ordinance, indicating that this alternative would not meet the objective of minimizing potential conflicts with existing planning efforts within the City of Rancho Cordova.

Alternative C (Ambassador Drive Alignment)

Under this alternative, both the 12kV and 69kV alignments would be placed within Ambassador Drive. For the 12kV alignment, this is the same as the proposed project. For the 69kV alignment, this alternative would change the location of the alignment between SMUD's Cordova Park Substation and Rossmoor Drive. Instead of the 69kV alignment crossing through open space behind homes facing Ambassador Drive, that portion of the 69kV alignment would instead be located within Ambassador Drive.

This alternative would achieve most of the project objectives but not to the degree of the project. By locating both alignments within Ambassador Drive instead of the open space of the Parkway, Alternative C would not maximize the use of available SMUD property and easements and would not minimize impacts to nearby sensitive receptors as it would entail additional work within roadways used by local residents and would place noise-generating construction equipment closer to residences.

Environmentally Superior Alternative

State CEQA Guidelines (CCR Section 15126.6) directs that an EIR should identify the "environmentally superior" alternative. "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." The consideration of alternatives that fulfill CEQA requirements, in the instance of the project, is complicated by a simple factor: the project would not result in any significant and unavoidable impacts. The significant impacts of the project, which would be to Tribal cultural resources, cultural resources, air quality, biological resources, and transportation, can be clearly mitigated.

When considering objectives, the proposed project would best meet the project objectives, as stated in Chapter 2, "Project Description." In contrast, Alternative B, by keeping all project construction out of existing roadways, could conflict with existing planning efforts within the City of Rancho Cordova, specifically the tree preservation ordinance. Similarly, Alternative C, by moving the 69kV alignment from the open space of the American River Parkway to within Ambassador Drive, would increase impacts to nearby sensitive receptors.

Consistent with State CEQA Guidelines (CCR Section 15126.6 [e][2]), because the environmentally superior alternative was identified as the No Project Alternative, another environmentally superior alternative shall be identified. Based on the environmental analysis contained in this Draft EIR, Alternative C would result in less-severe impacts compared to the project. However, and as noted above, Alternative C could still result in potential impacts on Tribal cultural resources, cultural resources, air quality, biological resources, and transportation. Therefore, the environmental impact differences between the project and Alternative C are not substantial enough that one is clearly superior over the other.

Areas of Controversy

In accordance with Public Resources Code Section 21092 and State CEQA Guidelines (CCR Section 15082), SMUD issued a notice of preparation (NOP) on March 7, 2022, to inform agencies and the general public that an EIR was being prepared and to invite comments on the scope and content of the document (Appendix A). SMUD accepted comments on the scope of the EIR between March 7 and April 6, 2022. A noticed virtual scoping meeting for the EIR occurred on March 24, 2022.

Based on the comments received during the NOP comment period, the major areas of controversy associated with the project include:

- potential impacts to Tribal Cultural Resources;
- need for AB 52 and SB 18 compliance; and
- potential impacts to biological resources.

Areas of controversy that fall within the scope of CEQA are addressed in this Draft EIR and its appendices. Issues that fall outside the scope of CEQA are not evaluated in this Draft EIR; however, SMUD will continue to respond to these issues through the project planning process.

All of the substantive environmental issues raised in the NOP comment letters have been addressed or otherwise considered during preparation of this Draft EIR.

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
3.1 Tribal Cultural Resources			
Impact 3.1-1: Cause a substantial adverse change in the significance of a Tribal cultural resource, including human remains. Consultation with Wilton Rancheria, UAIC, and the SSBMI identified three Tribal cultural resources to be present within the study area and that the entire project location is sacred and sensitive for the presence of Tribal cultural resources including Native American burials. Because project-related ground-disturbing activities could result in damage to Tribal cultural resources, the project could cause a potentially significant impact.	PS	**Mitigation Measure 3.1-1a: Avoid TCRs through Project Design.** During the design phase of the 69kV alignment portion of the Project, SMUD will consult with consulting Tribes on the adequacy of the plans to avoid and protect in place the identified Tribal cultural resources. The consulting Tribes will review the plans starting at 30 percent design, or a similar milestone, and will continue to be consulted with until the design plans are finalized (100 percent design). To avoid impacts and protect the Tribal cultural resources in place, a qualified archaeologist, in collaboration with consulting Tribes, will ensure that no staging, storage, or work will come within a minimum of a 15-foot protection buffer from each Tribal cultural resource. If the archaeologist and consulting Tribes find at any time that the plans do not meet the 15-foot protection buffer, the design engineers will work with the archaeologist and consulting Tribes to modify the plans. If sufficient modifications to the plans cannot be achieved to ensure a 15-foot protection buffer, additional consultation with the participating tribes will be required to develop appropriate avoidance and mitigation measures. Such measures may include creation of a treatment plan, data recovery, reburial, or additional plan redesign. The project plans will not be considered final until the archaeologist has deemed them to be adequate for the avoidance and protection in place of the Tribal cultural resources. **Mitigation Measure 3.1-1b: Prepare and implement worker cultural resources awareness and respect training program.** A cultural resources awareness and respect training program will be provided to all construction personnel active on the project site prior to the start of project implementation and to any new workers who start on the project after starting. A representative or representatives from culturally affiliated Native American Tribe(s) will be invited to participate in the development and delivery of the cultural resources awareness and respect training program in coordination with a professional archaeologist meeting the United States Secretary of Interior's qualification standards for archaeology. The program will include relevant information regarding Tribal	LTS

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Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		cultural resources, including applicable laws and regulations, the consequences of violating said laws and regulations, protocols for resource avoidance, and protocols for discoveries, including who to contact in the event of a discovery and what to do upon the discovery of human remains. The program will also underscore the requirement for confidentiality and culturally-appropriate treatment of any find of significance to Native Americans and protocols, consistent to the extent feasible, with Native American Tribal values. **Mitigation Measure 3.1-1c: Implement Tribal and Archaeological Monitoring.** All ground disturbing activities, including any preparatory grading, tree removal, or vegetation clearing, within the project site will be monitored by a Tribal monitor and a qualified archaeologist. SMUD shall contact the participating Tribes a minimum of seven days prior to beginning earthwork or other ground disturbing activities to ensure a Tribal monitor is available; construction activities will proceed if no response is received 48 hours prior to ground disturbing activities. The Tribal and archaeological monitor shall complete daily monitoring logs that describe each day's activities, including construction activities, locations, soil, and any cultural materials identified. In the event that unanticipated archaeological or Tribal cultural resources are discovered, including human remains, compliance with Mitigation Measure 3.1-1d would be required. Both the Tribal monitor and the archaeological monitor have the ability to halt work if a discovery occurs. **Mitigation Measure 3.1-1d: Halt Ground Disturbance Upon Discovery of Subsurface Tribal Cultural Resources and Evaluate Discovered Resource** If any suspected Tribal cultural resources or unique archaeological resources are discovered during ground disturbing construction activities, all work shall cease within 100 feet of the find, or a distance agreed upon by the Tribal monitor, archaeological monitor, SMUD, and the construction foreman based on the location and nature of the find and type of work occurring. The Tribal monitor shall determine if the find is a Tribal cultural resource. The Tribal monitor will make recommendations for further	

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		evaluation and culturally appropriate treatment of discovered Tribal cultural resources as necessary in consultation with the archaeological monitor. Unless another type of treatment is recommended, resources will be preserved in place by redesigning the project; however, if project redesign is determined by SMUD, with evidence, to be technologically, regulatorily, or economically infeasible. Redesign could include modifying the route of the alignment; and route modification would remain within the boundary of the project study area. If redesign is demonstrated to be infeasible, culturally appropriate treatment would be developed in consultation with the participating Tribes. Culturally appropriate treatment may include, but is not limited to, processing materials for reburial, minimizing handling of cultural objects, leaving objects in place within the landscape, returning objects to a location within the project area where they will not be subject to future impacts from the project. Because curation of Tribal cultural resources is not considered by the participating Tribes to be appropriate or respectful, participating Tribes request that materials not be permanently curated, unless approved by the participating Tribes. Work at the discovery location cannot resume until all necessary investigation, evaluation, and treatment of the discovery under the requirements of the CEQA, including AB 52, have been satisfied. Implementation of this mitigation measure would also satisfy State and local regulations regarding the treatment of Tribal cultural resources as well as Section 7050.5 of the Health and Safety Code and PRC 5097 regarding the treatment of human remains.	
Impact 3.1-2: Potential for the project, in combination with other development, to contribute to a significant cumulative impact to Tribal cultural resources including human remains. The project, in combination with other cumulative development in the region, could result in impacts to Tribal cultural resources in the area. However, with the implementation of Mitigation Measures 3.1-1a through 3.1-1d, significant impacts would not occur and the project's potential contribution to cumulative impacts would be less than significant.	LTS	See Mitigation Measures 3.1-1a, 3.1-1b, 3.1-1c, and 3.1-1d. No additional mitigation is required.	LTS

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Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
3.2 Cultural Resources			
Impact 3.2-1: Change the significance of a known archaeological resource. Results of the records search for the study area indicate that the project would occur entirely within the boundaries of an historic-period archaeological resource, the Folsom Mining District (P-34-000335/CA-SAC-308H). Six newly-identified features which are contributing elements of the District are located within the study area. Each could be impacted by project-related ground-disturbing activities. This would be a potentially significant impact.	PS	**Mitigation Measure 3.2-1: Establish Work Exclusion Zones to Avoid Archeological Features.** Prior to the start of operations, a 15-foot work exclusion zone (WEZ) will be established around each of the identified archeological features. The WEZ will be shown on project plans and will be installed prior to the start of work on Rossmoor Drive. The WEZ will be delineated by the installation of high visibility temporary construction fencing set 15 feet away from the edge of the feature. The installation of the WEZ fencing will be overseen by a professionally qualified archaeologist who meets the Secretary of the Interior's standards for archaeology. The archaeologist will review the WEZ location and mark the location of the WEZ on the ground prior to installation. No access, staging, storage, equipment, or personnel shall enter any portion of the WEZ. The WEZ for each archaeological feature will remain in place until all work on Rossmoor Drive is complete.	LTS
Impact 3.2-2: Change the significance of unknown archaeological resources. The project area is known to have been used by Native Americans and Euro-American for settlement, mining, and agricultural activities. Project-related ground-disturbing activities could result in discovery or damage of yet undiscovered archaeological resources as defined in State CEQA Guidelines Section 15064.5. This would be a potentially significant impact.	PS	**Mitigation Measure 3.2-2a: Halt Ground-Disturbing Activity Upon Discovery of Archaeological Resources and Evaluate Discovered Resource.** In the event that a historic-period archaeological resource (such as concentrated deposits of bottles or bricks with makers marks, amethyst glass, ceramic or metal pipes, or other historic refuse) or a prehistoric archaeological resource (such as lithic scatters, midden soils), is uncovered during grading or other construction activities, all ground-disturbing activity within 100 feet of the discovery shall be halted until a qualified archaeologist can assess the significance of the find. SMUD will be notified of the potential find and a qualified archeologist shall be retained to investigate its significance. If the find is suspected to be Native American in origin, Mitigation Measure 3.1-1d shall be implemented. Any previously undiscovered resources found during construction will be recorded on appropriate California Department of Parks and Recreation 523 forms and	LTS

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Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		evaluated for significance under all applicable regulatory criteria. If the archaeologist determines that the find does not meet the CRHR standards of significance for cultural resources, construction may proceed. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either an historical resource or a unique archaeological resource), the archaeologist shall work with SMUD to follow accepted professional standards such as further testing for evaluation or data recovery, as necessary. The results of the identification, evaluation, and/or data recovery program for any unanticipated discoveries shall be presented in a professional-quality report that details all methods and findings, evaluates the nature and significance of the resources, analyzes and interprets the results. **Mitigation Measure 3.2-2b: Implement Native American and Archaeological Monitoring.** Implement Mitigation Measure 3.1-1c.	
Impact 3.2-3: Potential for the project, in combination with other development, to contribute to a significant cumulative impact to cultural resources. The project, in combination with other cumulative development in the area, could result in impacts to cultural resources in the area. Through the implementation of project-specific mitigation measures, the contribution of the project would not be cumulatively considerable with respect to archaeological resources. Impacts would be less than significant.	LTS	See Mitigation Measures 3.2-1 and 3.2-2. No additional mitigation is required.	LTS
3.3 Air Quality			
Impact 3.3-1: Conflict with or obstruct implementation of the applicable air quality plan. The project would involve construction activities that would include 2.76 miles of underground cable replacement and installation of up to 13 underground utility vaults. The project does not include any land uses or operational emission sources that would result in long-term employment opportunities, new housing, or substantial increases in operational vehicle trips. Because the project is consistent with the land uses of the City's General Plan, the project would not conflict with the	LTS	No mitigation is required.	LTS

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Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
implementation of the SMAQMD AQAP and would not facilitate further growth. This impact would be less than significant.			
Impact 3.3-2: 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. Project construction would not generate emissions in excess of the SMAQMD thresholds for ROG and NO_X. However, the project, without the application of BMPs and BACT, would generate daily and annual emissions of PM_{10} and $PM_{2.5}$ in excess of the SMAQMD thresholds during construction activities. Therefore, this impact would be potentially significant.	PS	**Mitigation Measure 3.3-1: Implement SMAQMD Basic Construction Emission Control Practices.** During construction, the contractor shall comply with and implement SMAQMD's Basic Construction Emission Control Practices, which includes SMAQMD-recommended BMPs and BACT, for controlling fugitive dust emissions. Measures to be implemented during construction include the following: • Water all exposed surfaces at least 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 two (2) feet of freeboard 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 track-out 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. • All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used. • 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 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 will be checked by a certified mechanic and determined to be running in proper condition before it is operated.	LTS

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Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.3-3: Expose sensitive receptors to substantial pollutant concentrations. Construction-related activities would result in temporary, intermittent emissions of diesel PM, which is the primary TAC of concern. Based on emissions modeling, maximum daily emissions of exhaust $PM_{2.5}$ would not exceed SMAQMD thresholds of significance. It is anticipated that operational emissions from the project would be negligible. As a result, this impact would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.3-4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. Minor odors generated during project construction would be minor and temporary. Implementation of the project would not result in exposure of a substantial number of people to objectionable odors. Thus, this impact would be *less than* significant.	LTS	No mitigation is required.	LTS
3.4 Biological Resources			
Impact 3.4-1: Result in a Substantial Adverse Effect on Riparian Habitat or Other Sensitive Natural Community Project implementation would occur within the dripline of riparian habitat and sensitive natural communities and within the floodway of the American River. Working, trimming or removing vegetation within riparian, oak woodland habitat and sensitive natural communities could result in degradation of habitat value. This would be a potentially significant impact.	PS	No mitigation is required.	LTS
Impact 3.4-2: Result in the Loss of or Disturbance of Valley Elderberry Longhorn Beetle and Habitat. Project implementation would result in construction disturbances within 165 feet of an elderberry shrub. The single elderberry shrub is located in grassland habitat but near riparian habitat that is known to support valley elderberry longhorn beetle. Construction activities would occur a minimum of 100 feet from the shrub so no direct effects to this elderberry would occur. However, project construction could cause indirect effects to valley elderberry longhorn beetle and its habitat. This impact would be potentially significant.	PS	**Mitigation Measure 3.4-2: Avoid and protect elderberry shrubs.** • The elderberry shrub and a 20-foot buffer from the dripline of the shrub shall be fenced or flagged as close to the edge of construction as feasible and avoided during construction activities. • A qualified biologist will provide training for all contractors, work crews, and any onsite personnel on the status of valley elderberry longhorn beetle, its host plant and habitat, the need to avoid damaging elderberry shrubs, and the possible penalties for non-compliance. • As much as feasible, all activities that could occur within 165 feet of an elderberry shrub (but outside of the 20-foot no disturbance buffer), shall	LTS

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		be conducted outside of the flight season of the valley elderberry longhorn beetle (the flight season typically occurs between March-July). • Project activities such as truck traffic or other use of machinery, shall not create excessive dust on the project site, such that the growth or vigor of elderberry shrubs could be adversely affected. Establishing and enforcing a 15 miles per hour speed-limit for off-road usage and watering non-paved access roads shall be implemented as needed to minimize excessive dust. • A qualified biologist (i.e., a biologist that holds a wildlife biology, botany, ecology, or other relevant degree from an accredited university and: 1) be knowledgeable in relevant species life histories and ecology, 2) be able to correctly identify relevant species and habitats, 3) have experience conducting field surveys of relevant species or resources, 4) be knowledgeable about survey protocols, 5) be knowledgeable about State and federal laws regarding the protection of special-status species, and 6) have experience with CDFW's CNDDB and Biogeographic Information and Observation System (BIOS). The project proponent will review the resume and approve the qualifications of biologists.) shall monitor the work area within 165 feet of the elderberry shrub at project-appropriate intervals to ensure the avoidance and minimization measures listed above are implemented.	
Impact 3.4-3: Disturbance of nesting Swainson's hawk, white-tailed kite, or other avian species. Project implementation would result in construction disturbances that could cause Swainson's hawk, white-tailed kite, or other avian species to abandon their nests, if located nearby. Therefore, project construction could cause direct mortality of chicks and eggs. This impact would be potentially significant.	PS	**Mitigation Measure 3.4-3: Avoid disturbance of active nests.** • For project activities, including tree trimming or removal, that begin between February 1 and September 15, a qualified biologist will conduct preconstruction surveys for Swainson's hawk, white-tailed kite, and other nesting birds to identify active nests on and within 0.25 mile of the alignments for Swainson's hawk and on or within 500 feet for other birds. The survey for Swainson's hawks will be conducted before the beginning of any construction activities between March 1 and September 15, following the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's*	LTS

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		Central Valley (Swainson's Hawk Technical Advisory Committee 2000). • If active nests are found, a qualified biologist will establish appropriate buffers around the active nest sites identified during preconstruction bird surveys such that project-related activities are unlikely to result in nest abandonment or disruption of normal nesting activities. No project activity will commence within the buffer areas until a qualified biologist has determined the young have fledged, the nest is no longer active, or reducing the buffer would not likely result in nest abandonment. CDFW guidelines recommend implementation of 0.25-mile buffer for Swainson's hawk and white-tailed kite and 500-feet for other raptors, but the size of the buffer may be adjusted if a qualified biologist, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest. Monitoring of the nest by a qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest.	
Impact 3.4-4: Conflict with provisions of the City of Rancho Cordova Municipal Code or Sacramento County Code of Ordinances intended to protect biological resources. The alignments are located within the City of Rancho Cordova and Sacramento County and are subject to the provisions of the Rancho Cordova Municipal Code and Sacramento County Code of Ordinances. Construction associated with the project may require the removal of trees, some of which could be considered protected trees under the City of Rancho Cordova Municipal Code and Sacramento County Code of Ordinances. Without acquisition of a permit from the City and County prior to tree removal, the project would conflict with local ordinances, which would constitute a significant impact.	S	**Mitigation Measure 3.4-4: Tree Protection** Prior to site disturbance, SMUD shall provide to the City of Rancho Cordova and Sacramento County a plan for all tree work. A Certified Arborist shall approve all work plans prior to submittal to the City of Rancho Cordova and Sacramento County. Tree planting will comply with the City of Rancho Cordova's and Sacramento County's landscaping requirements. For those trees that will be preserved on site during project construction, the following guidelines are recommended to ensure the long-term survival and stability of the trees. • **Educate Workers:** Educate all workers on site about tree protection guidelines and requirements prior to construction. • **Establish a Tree Protection Zone:** Establish a tree protection zone (TPZ) around any tree or group of trees designated for retention. The TPZ should at minimum be equal to 1.5 times the radius of the dripline. The TPZ may be adjusted on a case-by-case basis after consultation with a Certified Arborist.	LTS

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Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		• **Install Fencing and Signage:** Install fencing around the TPZ of all trees or groups of trees designated for retention. The fencing should remain in place for the duration of construction activities. Post appropriate signage to help convey the importance of the TPZ to workers. • **Prohibit Construction Activities within the TPZ:** Prohibit construction-related activities, including grading, trenching, construction, demolition, or other work, within the TPZ. No heavy equipment or machinery should be operated within the TPZ. No construction materials, equipment, machinery, or other supplies should be stored within the TPZ. Vehicle and foot traffic should not be permitted within the TPZ. No wires or signs should be attached to any trees designated for retention. • **Prune Selected Trees:** Prune selected trees to provide necessary clearance during construction and to remove any defective limbs or other tree parts that may pose a failure risk. All pruning should be completed by a Certified Arborist or Tree Worker and adhere to the Tree Pruning Guidelines of the International Society of Arboriculture. • **Monitor Trees and TPZs:** Monitor the integrity of the TPZs and the health of the trees designated for retention regularly throughout the construction process. A Certified Arborist should monitor the health and condition of the protected trees and, if necessary, recommend additional mitigations and appropriate actions. This could include the monitoring of trees adjacent to project facilities to determine if construction activities (including the removal of nearby trees) would affect protected trees in the future. • **Treat Impacted Trees:** Provide supplemental irrigation and other care, such as mulch and fertilizer, as deemed necessary by a Certified Arborist, to any trees impacted by construction. Treatment of any injuries should be performed by a Certified Arborist.	

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.4-5: Conflict with provisions of the County of Sacramento American River Parkway Plan and the American River Parkway Natural Resources Management Plan. Portions of the alignments are located within the American River Parkway and subject to the provisions of the County of Sacramento American River Parkway Plan and the American River Parkway Natural Resources Management Plan (which is in preparation). Construction associated with the project may require the trimming of vegetation, removal of trees, and construction in access roads and pedestrian trails within the American River Parkway. However, the project would be constructed within existing access/trail areas, and on either a paved road or fire break and includes project design features that are consistent with the American River Parkway Plan Goals and Policies and as such it would not conflict with the Plan. Therefore, this impact would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.4-6: Interfere with Wildlife Movement or Migration or Impede the Use of Nursery Sites. While the 69kV alignment includes areas within the American River Parkway, which provides a movement corridor and nursery sites for wildlife, the project would install underground features and would not interfere with wildlife movement in the area. This impact would be less than significant.	LTS	No mitigation is required.	LTS
3.5 Transportation			
Impact 3.5-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Project construction would temporarily interfere with existing vehicle, bicycle, and pedestrian circulation as it would include temporary closures of roads, pathways, and bike lanes. Because project construction activities could affect the existing circulation system, this impact would be potentially significant.	PS	**Mitigation Measure 3.5-1: Traffic Control Plan** Prior to project construction within or adjacent to public roadways, SMUD's construction contractor shall develop a traffic control plan for the project and submit the plan to the City of Rancho Cordova's Department of Public Works. The plan shall identify temporary lane, sidewalk, bicycle lane, and transit stop closures and provide information regarding how access and connectivity will be maintained during construction activities. The plan shall include details regarding traffic controls that would be employed, including signage, detours, and flaggers. The traffic control plan shall be implemented by the contractor during construction to allow for the safe passage of vehicles, pedestrians, and cyclists along the project route.	LTS

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Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.5-2: Conflict or be inconsistent with CEQA Guidelines section 15064.3(b), which pertains to vehicle miles travelled. Because the project would not change the amount of development projected for the area, would be consistent with the population growth and VMT projections in regional and local plans, and would have only a slight increase in VMT during construction, this impact would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.5-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) Implementation of the project would not result in any changes in road geometry or use, but would require temporary closure of vehicle lanes, bicycle lanes, and pathways. This impact would be potentially significant.	PS	Implement Mitigation Measure 3.5-1: Traffic Control Plan	LTS
Impact 3.5-4: Result in inadequate emergency access. While project operation would not change any roadways in the area, project construction would require temporary closures of roadways used for emergency access. This impact would be potentially significant.	PS	Implement Mitigation Measure 3.5-1: Traffic Control Plan	LTS

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1 Introduction

This draft environmental impact report (Draft EIR) evaluates the potential environmental impacts of the Sacramento Municipal Utility District's (SMUD's) proposed Cordova Park Underground Cable Replacement Project ("Cordova Park Project" or "project"). This Draft EIR has been prepared under the direction of SMUD in accordance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000-21177) and the State CEQA Guidelines (California Code of Regulations [CCR], Title 14, Division 6, Chapter 3, Sections 15000-15387) ("the State CEQA Guidelines"). SMUD is the lead agency under CEQA for consideration of this EIR and potential approval of the project.

1.1 Purpose and Intended Uses of this EIR

CEQA requires that public agencies consider the potentially significant adverse environmental effects of projects over which they have discretionary approval authority before taking action on those projects PRC Section 21000 *et seq*. CEQA also requires that each public agency avoid or mitigate to less-than-significant levels, wherever feasible, the significant adverse environmental effects of projects it approves or implements. If a project would result in significant and unavoidable environmental impacts (i.e., significant effects that cannot be feasibly mitigated to less-than-significant levels), the project can still be approved, but the lead agency's decision-maker, in this case the SMUD Board of Directors, must prepare findings and issue a "statement of overriding considerations" explaining in writing the specific economic, social, or other considerations that they believe, based on substantial evidence, warrant approving the project despite the occurrence of significant effects (PRC Section 21002, State CEQA Guidelines Section 15093).

According to the State CEQA Guidelines Section 15064(f)(1), preparation of an EIR is required whenever a project may result in a significant adverse environmental impact. An EIR is an informational document used to inform public agency decision makers and the general public of the significant environmental effects of a project, identify possible ways to mitigate or avoid the significant effects, and describe a range of reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project while substantially lessening or avoiding any of the significant environmental impacts. Public agencies are required to consider the information presented in the EIR when determining whether to approve a project.

Because it will carry out the project, SMUD is the lead agency, as defined by CEQA, for this EIR. Other public agencies with jurisdiction over the project are listed below in Section 1.3, "Agency Roles and Responsibilities."

1.2 Scope of the Draft EIR

Pursuant to CEQA and the State CEQA Guidelines, a lead agency shall focus an EIR's discussion on significant environmental effects and may limit discussion of other effects to brief explanations about why they are not significant (PRC Sections 21002.1(e) and 21100, CEQA Guidelines Section 15143). A determination of which impacts would be potentially significant was made for this project based on comments received as part of the public scoping process (Appendix A) and the information presented in the Initial Study (IS) prepared for the project (Appendix B), as well as additional research and analysis of relevant project data during preparation of this Draft EIR. Accordingly, SMUD has determined that the project has the potential to result in significant environmental impacts on Tribal cultural resources, cultural resources, air quality, biological resources, and transportation, which are addressed in this Draft EIR.

The IS (Appendix B) presents the reasons that possible significant effects of the project were determined not to be significant and therefore were not discussed in detail in this EIR, pursuant to the State CEQA Guidelines Sections 15126.2(a) and 15128. Effects dismissed from detailed consideration in an IS as clearly insignificant or unlikely to occur need not be discussed further in the EIR unless the lead agency subsequently receives information inconsistent with the finding in the IS (CEQA Guidelines Section 15143).

The following resources would not experience any significant environmental impacts from the project, as explained in the IS:

- Aesthetics
- Agriculture and Forest Resources
- Energy
- Geology and Soils
- Greenhouse Gases
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise and Vibration
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems
- Wildfire

Chapter 3, "Existing Environmental Setting, Impacts, and Mitigation" summarizes the rationale as to why significant impacts to each of the aforementioned resources would not occur.

1.3 Agency Roles and Responsibilities

This Draft EIR will be used by SMUD and CEQA responsible and trustee agencies to ensure that they have met their requirements under CEQA before deciding whether to approve or permit project elements over which they have jurisdiction. It may also be used

as an informational resource by other state and local agencies, which may have an interest in resources that could be affected by the project, or that have jurisdiction over portions of the project.

As the lead agency pursuant to CEQA, SMUD is responsible for considering the adequacy of the EIR and determining if the project should be approved.

Under CEQA, a responsible agency is a public agency, other than the lead agency, that has responsibility to carry out or approve a project (PRC Section 21069). A trustee agency is a state agency that has jurisdiction by law over natural resources that are held in trust for the people of the State of California (PRC Section 21070). Trustee agencies are: California Department of Fish and Wildlife, California State Lands Commission, California State Parks, and the University of California (CEQA Guidelines Section 15386); none of these agencies have resources that would be affected by the project.

The following agencies may serve as responsible agencies for the project:

State

- State Water Resources Control Board/Central Valley Regional Water Quality Control Board
- California Department of Transportation, District 3

Local

- City of Rancho Cordova
- County of Sacramento
- Sacramento Metropolitan Air Quality Management District

1.4 CEQA Public Review Process

1.4.1 Notice of Preparation

The purpose of a Notice of Preparation (NOP) is to provide sufficient information about the project and its potential environmental impacts to allow agencies and interested parties the opportunity to provide a meaningful response related to the scope and content of the EIR, including mitigation measures that should be considered and alternatives that should be addressed (State CEQA Guidelines Section 15082[b]). Comments submitted in response to the NOP are used by the lead agency to identify broad topics to be addressed in the EIR.

In accordance with PRC Section 21092 and State CEQA Guidelines Section 15082, SMUD issued an NOP on March 7, 2022 to inform agencies and the general public that an EIR was being prepared and to invite comments on the scope and content of the document (Appendix A). The NOP was submitted to the State Clearinghouse, which then

distributed the NOP to potential responsible and trustee agencies; posted on SMUD's website (https://www.smud.org/CordovaParkCableReplacement); posted with the Sacramento County Clerk; and made available at SMUD's offices. In addition, the NOP was distributed directly to property owners within 500 feet of the project site, interested Native American Tribes, and the Sacramento Metropolitan Air Quality Management District (which has requested to be notified directly of SMUD's projects). Finally, notice was published in the *Sacramento Bee* on Monday, March 7, 2022. The NOP was available for a 30-day review period, with comments accepted through April 6, 2022.

In accordance with the State CEQA Guidelines Section 15082(c), a noticed virtual scoping meeting for the EIR occurred on March 24, 2022.

Comments on environmental issues received during the NOP public comment period are considered and addressed in this Draft EIR. Appendix A contains the comment letters received during the NOP public comment period. A summary of the comments received is presented below.

Table 1-1 Comment Letters and Discussion Location in Draft EIR

NOP Comment Letter	Comment/Topic	Addressed in Draft EIR Section
Letter 1 Native American Heritage Commission	*Tribal Cultural Resources* - Requests AB 52 and SB 18 compliance.	Section 3.1, Tribal Cultural Resources
Letter 2 California Department of Fish and Wildlife	*Biological Resources* – Provides information regarding CDFW requirements and suggestions for information to be included in the EIR.	Section 3.4, Biological Resources
Letter 3 Central Valley Regional Water Quality Control Board	*Hydrology and Water Quality* – provided information about regulations and permitting.	See Section 3.11 of the Initial Study (IS) included as Appendix B of this Draft EIR
Letter 4 Sacramento Metropolitan Air Quality Management District	*Air Quality* – Requests reference to the Sacramento Metropolitan Air Quality Management District's *Guide to Air Quality Assessment in Sacramento County*.	Section 3.3, Air Quality.

1.4.2 Public Review of this Draft EIR

This Draft EIR is being circulated for a 45-day period for review and comment by the public and other interested parties, agencies, and organizations. A virtual public meeting will be held on June 9, 2022 at 5:30 p.m. to present information and receive input from agencies and the public on the Draft EIR. Copies of the Draft EIR are available online at https://www.smud.org/CordovaParkCableReplacement and hardcopies at the following locations for review:

Sacramento Municipal Utility District
Customer Service Center
6301 S Street
Sacramento, CA 95817

Sacramento Municipal Utility District
East Campus Operations Center
4401 Bradshaw Road
Sacramento, CA 95827

During the public comment period, written comments from the public as well as organizations and agencies on the Draft EIR's accuracy and completeness may be submitted to SMUD. Written comments (including via email) must be received by 5:00 p.m. on June 27, 2022. Written comments should be addressed to:

SMUD–Environmental Services
P.O. Box 15830 MS B209
Sacramento, CA 95852-1830
Attn: Rob Ferrera

Email comments may be addressed to rob.ferrera@smud.org.

1.4.3 Final EIR

After the end of the public comment period, responses to comments on environmental issues will be prepared. Consistent with State CEQA Guidelines Section 15088(b), commenting agencies will be provided a minimum of 10 days to review the responses to their comments before any action is taken by SMUD on the Final EIR or project. The Final EIR (containing this Draft EIR and the Responses to Comments document) will then be considered for certification by SMUD's Board of Directors. If the Board certifies the EIR, it will then consider whether to approve the project.

The level of detail contained throughout this EIR is consistent with State CEQA Guidelines Section 15151 and recent court decisions, which provide the standard of adequacy on which this document is based. The Guidelines states as follows:

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

CEQA (Guidelines Section 15091(d)) requires that when a public agency makes findings based on an EIR, the public agency must adopt a reporting or monitoring program for those measures it has adopted or made a condition of the project approval to mitigate significant adverse effects on the environment. The reporting or monitoring program must be designed to ensure compliance during project implementation.

1.5 Organization of the Draft EIR

The organization of this Draft EIR is as follows:

- **Executive Summary** – This chapter introduces the proposed Cordova Park Underground Cable Replacement Project; provides a summary of the environmental review process, effects found not to be significant, and key environmental issues; and lists significant environmental impacts and mitigation measures to reduce significant impacts to a less-than-significant level.

- **Chapter 1: Introduction** – This chapter describes the purpose and scope of this EIR, agency roles and responsibilities, and the CEQA public review process. This chapter also gives a brief outline of this document's organization.

- **Chapter 2: Project Description** – This chapter presents a detailed description of the proposed project including its location, background, objectives, and characteristics of project construction and operation.

- **Chapter 3: Existing Environmental Setting, Impacts, and Mitigation** – This chapter presents a summary of the environmental analysis provided in the IS (Appendix B). In addition, this chapter presents analysis of potential impacts to Tribal cultural resources, cultural resources, air quality, biological resources, and transportation, including presentation of applicable thresholds of significance, environmental impacts, policy considerations related to the environmental issue area being analyzed, and mitigation measures capable of avoiding or reducing the magnitude of otherwise significant impacts. This chapter also discusses the potential cumulative impacts that would result from implementation of the project together with other past, present and probable future projects and including whether the project's incremental increase to an already significant impact is cumulatively considerable.

- **Chapter 4: Other CEQA Sections** – As required under CEQA, this chapter provides additional analysis of environmental effects that could result from implementation of the proposed project, including effects found not to be significant, growth-inducing impacts, significant irreversible changes to the environment, and significant and unavoidable impacts. This section also provides an evaluation of environmental-justice-related issues that pertain to the project.

- **Chapter 5: Alternatives** – This chapter presents and analyzes a reasonable range of feasible alternatives to the proposed project.

- **Chapter 6: List of Preparers** – This chapter identifies all individuals responsible for the preparation of this EIR.

- **Chapter 7: References** – Lists the sources of information cited throughout this EIR.

2 Project Description

2.1 Introduction

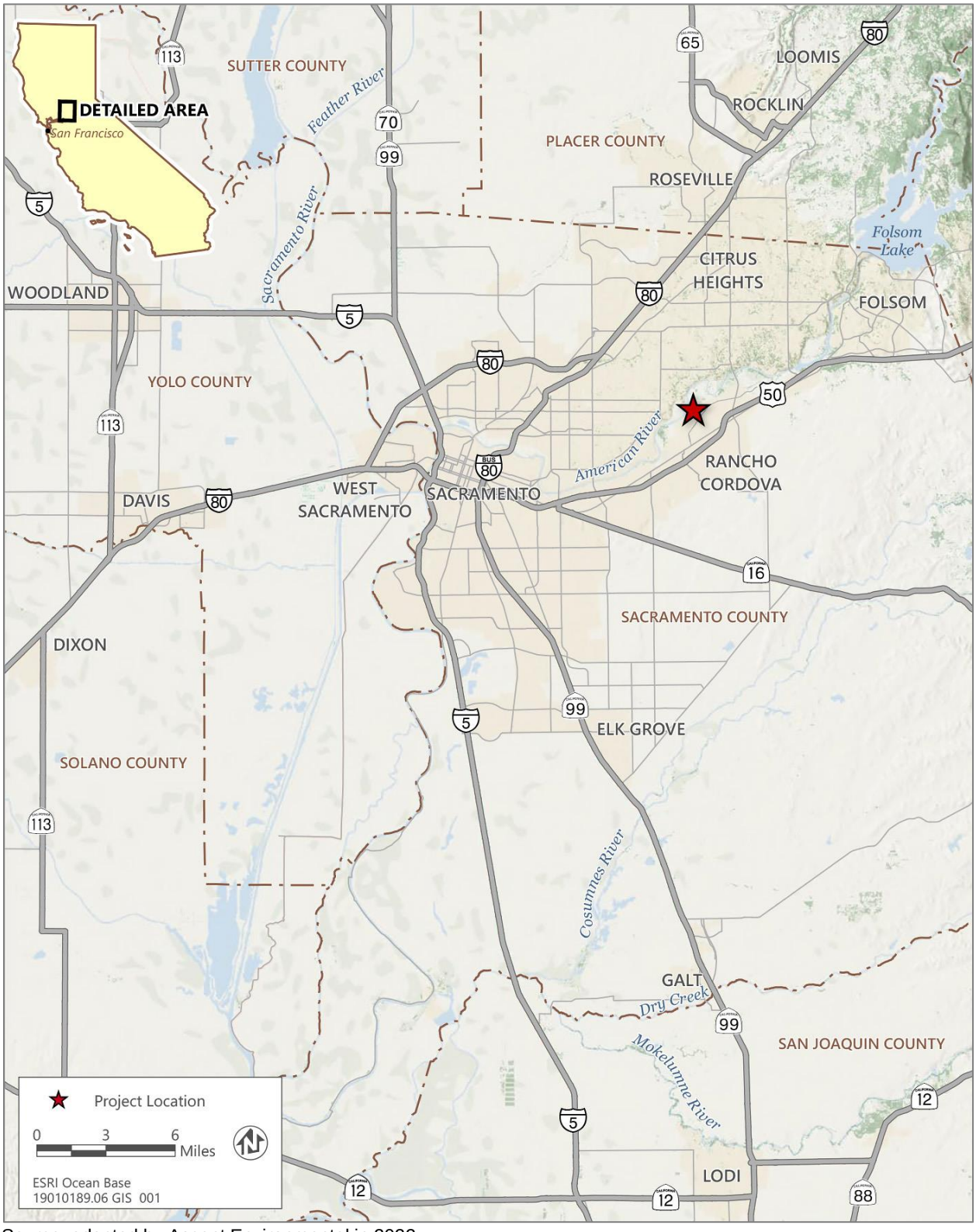
This chapter presents a detailed description of the Sacramento Municipal Utility District's (SMUD's) proposed Cordova Park Underground Cable Replacement Project (project) located in Rancho Cordova, California. It is SMUD's goal for the project to provide consistent and reliable electrical service to its existing and future customers. This chapter describes the project's location, background, objectives, components, and anticipated schedule for construction and operation.

SMUD replaces aging electrical infrastructure as part of its routine maintenance and upgrade protocols. Accordingly, SMUD proposes to install approximately 0.6 miles of 12 kilovolt (kV) underground cable, approximately 2.12 miles of 69kV underground cable and up to 13 new utility vaults in the City of Rancho Cordova, near the location of existing 12kV and 69kV underground cables that are approaching the end of their operational lives. Installation of the new conduit (cables would later be pulled through the conduit) and utility vaults would be done by open trenching. Where possible, the new conduit will be installed to align with the existing cable, which would be abandoned in place.

2.2 Project Location and Setting

The project is in the City of Rancho Cordova (see Figure 2-1). The proposed 12kV alignment begins at SMUD's Cordova Park Substation located near the intersection of Ambassador Drive and Trails Court. The 12kV path travels to Ambassador Drive where it follows the road for approximately 0.6 miles until it connects to existing riser poles just east of Ellison Drive.

The proposed 69kV alignment begins on the northwest side of Coloma Road, approximately 200 feet southeast of Sierra Madre Court. The 69kV alignment heads northwest from Coloma Road, crossing through the property of Mills Middle School and Cordova High School, until it connects to SMUD's Cordova Park Substation. From the substation, the 69kV alignment heads northeast nearly adjacent to, but outside, the backyards of homes facing Ambassador Drive until it reaches Rossmoor Drive. At Rossmoor Drive, the 69kV alignment turns and heads north towards the American River. The 69kV alignment stays along Rossmoor Drive until its termination near the American River, when the 69kV alignment connects to existing riser poles located between the boundaries of Rossmoor Drive and the American River. The proposed 69kV alignment is approximately 2.12 miles in length.



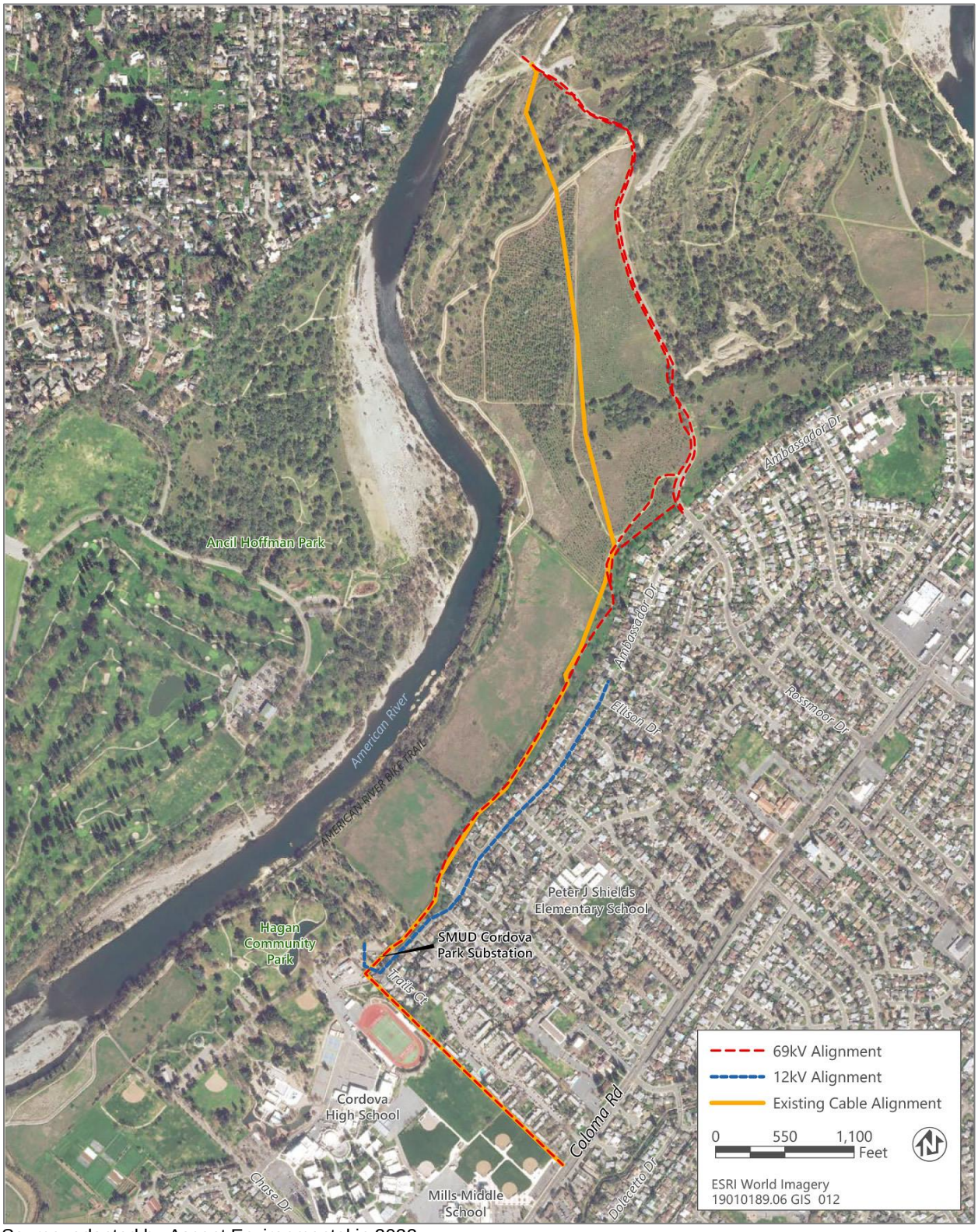
Source: adapted by Ascent Environmental in 2022

Figure 2-1. Project Location

The existing 12kV and 69kV lines that run through the American River Parkway would be abandoned in place, and new conduit containing the new lines would be installed in separate trenches within the alignments described above. The proposed 12kV and 69kV alignments are highly disturbed due to vehicle traffic, including areas of pavement and dirt. There are residences adjacent to portions of the proposed 12kV and 69kV alignments. Along Ambassador Drive, the 12kV circuit would be installed beneath existing roadways, sidewalks, or curbs and gutters. Along Rossmoor Drive, the 69kV circuit would be installed beneath existing pavement or within an existing fuel break adjacent to the pavement.

Figure 2-2 shows both the 12kV and 69kV proposed alignments, as well as the alignment of the existing underground direct-buried cable. The alignments presented on Figure 2-2 illustrate SMUD's preferred locations for conduit installation; however, as needed to avoid resources, the analysis in this EIR assumes the conduit would be installed within the boundary of the study area.

The 12kV alignment would extend from the substation along Ambassador Drive, which is fully paved and includes curbs, gutters, and sidewalks through the residential neighborhood. The western portion of the 69kV alignment up to the substation extends between residential units and school properties. From the substation, the 69kV alignment travels along an unpaved trail within the American River Parkway that abuts the rear of residential units facing Ambassador Drive. At Rossmoor Drive, the 69kV alignment would follow the existing paved alignment of Rossmoor Drive within the American River Parkway. Near the terminus of the 69kV alignment near the American River, there are restroom facilities and a small, paved parking lot for park users.



Source: adapted by Ascent Environmental in 2022

Figure 2-2. Project Alignments

2.3 Project Objectives

SMUD's objectives for the project are to:

- Provide safe and reliable electrical service to existing and proposed development in the Rancho Cordova area.
- Facilitate efficient maintenance of underground cables and infrastructure.
- Maximize the use of available SMUD property and resources.
- Minimize impacts to nearby sensitive receptors.
- Minimize potential conflicts with existing planning efforts within the City of Rancho Cordova.

2.4 Required Public Approvals

Elements of the project could be subject to permitting and/or approval authority of other agencies. As the lead agency pursuant to the CEQA, SMUD is responsible for considering the adequacy of the environmental impact report (EIR) and determining if the project should be approved. Other potential permits required from other agencies could include:

State

- State Water Resources Control Board/Central Valley Regional Water Quality Control Board: Construction Storm Water Discharge Permits for projects that disturb more than one acre of land.
- California Department of Transportation: permits for movement of oversized or excessive loads on State Highways.

Local

- Sacramento Metropolitan Air Quality Management District: Authority to Construct/Permit to Operate pursuant to Sacramento Metropolitan Air Quality Management District Regulation 2 (Rule 201 et seq.).
- City of Rancho Cordova:
  - Tree removal permit.
  - Encroachment permit.
- County of Sacramento: Encroachment permit.

2.5 Project Description

2.5.1 Project Elements

The project involves the installation of approximately 0.6 miles of new underground 12kV electrical lines (cable) and approximately 2.12 miles of new underground 69kV cable to replace existing underground 12kV and 69kV cable buried directly in the ground (direct-buried) that was installed in the 1970s. The new 12kV cable would be installed in conduits buried in dirt while the new 69kV cable would be installed in conduits housed in concrete-encased duct banks to provide pathways and adequate spacing. The proposed project also involves installation of up to 13 new utility vaults along the 69kV alignment to allow access for electric cable pulling, splicing and maintenance.

The existing direct-buried 12kV cable begins at SMUD's Cordova Park Substation and extends approximately 0.6 miles east, where it connects to existing riser poles.

The existing direct-buried 69kV cable begins on the northwest side of Coloma Road, approximately 200 feet southeast of Sierra Madre Court, and extends north across the eastern property lines of Mills Middle School, Cordova High School and Hagen Park until it enters SMUD's Cordova Park Substation located near the intersection of Ambassador Drive and Trails Court (approximately 0.45 miles). From SMUD's substation, the existing 69kV cable extends east beneath a dirt path for approximately 0.70 miles when it turns north and cuts across the American River Parkway towards the American River for approximately 0.75 miles. Note that the total existing 69kV alignment is approximately 1.9 miles and the proposed 69kV alignment is approximately 2.12 miles. The extra mileage is due to deviating from the existing route to align with Rossmoor Drive.

Since installation of the existing 12kV and 69kV cable in the 1970s, native trees have established within the existing alignment along the Parkway. SMUD has coordinated with Sacramento County to install the new conduit outside of the existing alignment to reduce potential impacts to these trees and other biological resources within the American River Parkway and to facilitate easier access for future maintenance.

Accordingly, SMUD proposes to install the conduit for the new 12kV cable beneath the pavement, sidewalks, or curbs and gutters of Ambassador Drive. The proposed 69kV alignment would deviate from the existing alignment by continuing east until it heads north at Rossmoor Drive. While the exact location of the 69kV alignment along Rossmoor Drive is not yet known and would be determined once existing utilities beneath the pavement are identified, the 69kV alignment would generally be within Rossmoor Drive or the fuel break immediately west of the pavement. The 69kV alignment would continue along Rossmoor Drive as it intersects with the American River Parkway bike trail and continue beyond the edge of pavement at the end of Rossmoor Drive. The 69kV alignment would connect to existing riser poles located between the boundaries of Rossmoor Drive and the edge of the American River. Within the American River Parkway, the existing direct-buried 69kV cable would be abandoned in place.

The project would include up to 13 utility vaults to be installed at various points along the 69kV alignment. The proposed utility vaults would consist of pre-cast concrete, measuring 8 feet x 14 feet x 8 feet inside, requiring an excavation area of approximately 15 feet x 20 feet x 15 feet, and would generally be spaced evenly throughout the alignment to allow for cable pulling, splicing and maintenance.

2.5.2 Project Construction

Construction activities would occur in two phases. Phase 1 would include the 12kV alignment, while Phase 2 would include the 69kV alignment and utility vaults. Construction activities would occur during hours identified in City of Rancho Cordova Zoning Code Section 6.68.090(E). If there is a need for work to occur outside of these hours, SMUD will provide additional notification to customers adjacent to the project boundary.

Most construction would include open trenching to a maximum depth of 7 feet, though some deeper excavation may be necessary to avoid conflicts with existing utility lines. Removing water from the construction area (dewatering) may be necessary due to the high water-table of the area. SMUD would use Baker tanks and/or filtration bags, if needed, to treat water prior to discharge into the existing storm drain system in a manner consistent with regulatory requirements. For the 12kV alignment, the 12kV cable would be installed in conduit in the trenches. The 69kV electrical cable would be placed in a duct bank, which is a series of conduits encased in concrete. The trenches would then be backfilled with a cement-like slurry mixture or compacted aggregate base to the roadway subgrade elevation followed by replacement of the appropriate cover (e.g., pavement or dirt). Construction activities would generally be conducted in existing alignments or along the roadway and would include the temporary closure of footpaths and roads. Alternative routes of travel will be provided where feasible. Following construction activities each day, the open trenches would be covered, and equipment removed to allow safe use of footpaths and roadways.

As design for both the 12kV and 69kV proceed, the exact placement of the alignments will be determined based on existing utility infrastructure location, avoidance of identified environmental resources, and engineering/construction considerations.

2.5.3 Project Operation and Maintenance

Project operation would include the active use of the underground electrical components installed during construction. SMUD would maintain the new 12kV and 69kV lines in the same way as it maintains the existing 12kV and 69kV lines under baseline conditions. Maintenance would entail regular inspection including testing and addressing issues warranting repair as identified during inspection. Components in vaults would be inspected to verify stability, structural integrity, and condition. Utility covers would be visually inspected to check for damaged lids, disposition of lid covers (for safety and trip hazards), and the presence of water. While inspecting utility covers, crews inspect the condition of cable splices and grounding for the cable.

SMUD would access components associated with SMUD's underground electrical facilities in pickup trucks or service trucks using existing roads; no off-road travel would be necessary. Inspections would take less than a day. There would not be any above-ground structures installed as part of the project, and operation of project elements would not create sources of noise, light, or other features that would be noticeable to residents and recreationists in the area. Maintenance of the project could result in vehicle movement, vehicle noise, and human presence.

2.5.4 Project Schedule

Construction for Phase 1 (12kV alignment) is anticipated take up to 3 weeks and would begin in the summer of 2022. Phase 2 (69kV alignment) construction would take approximately 12 months once initiated and is anticipated to begin in the next 5 to 7 years, after the completion of Phase 1.

3 Existing Environmental Setting, Impacts, and Mitigation

This chapter is organized by environmental resource category; each resource category is organized to provide an integrated discussion of the existing environmental conditions (including regulatory setting and environmental setting), potential environmental effects (including direct and indirect impacts), and measures to reduce significant effects, where feasible, associated with implementation of the Cordova Park Underground Cable Replacement project. As shown below and in the Initial Study (IS) (see Appendix B), further analysis was determined to be necessary for potentially significant impacts to Tribal cultural resources, cultural resources, air quality, biological resources, and transportation as part of this EIR. This chapter, combined with "Mandatory Findings of Significance" as provided in Appendix B also present an analysis of the project's cumulative impacts, which are the impacts of the project considered together with other past, present, and probable future projects producing related impacts, as required by Section 15130 of the State California Environmental Quality Act (CEQA) Guidelines.

Terminology Used In the EIR

This Draft EIR may use the following terms to describe the level of significance of impacts identified during the environmental analysis:

Significant and Unavoidable Impact: An impact that exceeds the defined threshold of significance and cannot be eliminated or reduced to a less than significant level through the implementation of feasible mitigation measures.

Potentially Significant Impact: An impact that exceeds the defined thresholds of significance prior to implementation of mitigation measures. The analysis may determine that the impact can be reduced to less than significant through implementation of feasible mitigation measures. Or if feasible mitigation measures are not available or would not reduce the magnitude of the impact below the threshold of significance, the impact would be determined significant and unavoidable.

Less-than-Significant Impact: An impact that does not exceed the defined thresholds of significance or that is potentially significant and can be eliminated or reduced to a less than significant through implementation of feasible mitigation measures.

No Impact: Where an environmental issue is evaluated and it is determined that the project would have no effect on the issue, the conclusion is drawn that the proposed project would have "No Impact" and no further analysis is presented.

Mitigation Measures: The State CEQA Guidelines Section 15370 define mitigation as:

a) avoiding the impact altogether by not taking a certain action or parts of an action;

b) minimizing impacts by limiting the degree of magnitude of the action and its implementation;

c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and

e) compensating for the impact by replacing or providing substitute resources or environments.

Cumulative Impacts: An analysis of cumulative impacts follows the project-specific impacts and mitigation measures evaluation in each section. 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 past, present and reasonably foreseeable projects causing related impacts.

The beginning of the cumulative impact analysis in each section includes a description of the cumulative analysis methodology and the geographic or temporal context in which the cumulative impact is analyzed (e.g., the City of Rancho Cordova, Valley Nisenan ancestral territory, the Sacramento Valley Air Basin, other activity concurrent with project construction). In some instances, a project-specific impact may be considered less than significant, but when considered in conjunction with other cumulative projects or activities may be considered significant or potentially significant.

As noted above, where a cumulative impact is significant when compared to existing or baseline conditions, the analysis must address whether the project's contribution to the significant cumulative impact is "considerable." If the contribution of the project is considerable, then the EIR must identify potentially feasible measures that could avoid or reduce the magnitude of the project's contribution to a less-than-considerable level. If the project's contribution is not considerable, it is considered less than significant, and no mitigation for the project's contribution is required.

Introduction to the Analysis

In accordance with State CEQA Guidelines Section 15126.2, this draft environmental impact report (Draft EIR) identifies and focuses on the significant direct and indirect environmental effects of the project, giving due consideration to both its short-term and its long-term effects. Short-term effects are generally those associated with construction, and long-term effects are generally those associated with project operations. As part of the IS, prepared for the project and provided in Appendix B, the project was determined to have either less-than-significant or no impact for the majority of environmental resource categories. The following discussion summarizes the analysis conducted for these resource categories, and presents any mitigation determined to be necessary to reduce impacts to less than significant. Refer to Appendix B for additional information.

Environmental Resource Categories Not Evaluated Further

Aesthetics

The project site is located in a developed area of Rancho Cordova. Surrounding uses include single- and multi-family residential development, schools, and open space of the American River Parkway. The visual character of the project alignments and the surrounding area is typical of the City of Rancho Cordova's residential areas, which includes school buildings, single and multi-family residential units, landscaping, lawns, and open space. Distant views consist of the Sierra Nevada foothills, although existing buildings, trees, and other city infrastructure preclude/limit these views in many locations. The American River is also visible from the northern end of the 69kV alignment, though the view is partially obscured by trees and vegetation along the river's edge.

The closest scenic resource to the project alignment is the American River, located approximately 200 feet from the riser pole at the northern terminus of the 69kV alignment. Between the project alignment and the American River, there is extensive open space and vegetation that blocks views of the American River. Views in the project area are limited to the open space and vegetation of the Parkway, primarily because of the flat terrain and the level of development/landscaping that preclude long-range views. While project construction activities, particularly the temporary and short-term presence of construction equipment, would temporarily interfere with views of the river and the Parkway, these impacts would cease upon completion of construction. Further, the project would not involve the operation of above-ground facilities that could permanently impede long-distance views in the area.

For the reasons above, the project would not result in significant impacts related to aesthetics and this issue is not discussed further.

Agriculture and Forest Resources

The project site does not contain any farmland or 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 contract lands within or near the project alignments. There are no areas either within or adjacent to the project alignment that have been designated as forest land or timberland or support trees in the concentration or cover that would qualify them as such.

For the reasons above, the project would not result in significant impacts related to agriculture and forest resources and this issue is not discussed further.

Energy

During Phase 1, an estimated 72,427 gallons of gasoline and 5,392 gallons of diesel would be consumed and during Phase 2, an estimated 1,254,910 gallons of gasoline and 89,721 gallons of diesel would be consumed, accounting for both onsite equipment use

and offsite vehicle travel. This one-time energy expenditure required to construct the alignments would be nonrecoverable. The energy needs for project construction would be temporary and would not require additional capacity or increase peak or base period demands for electricity or other forms of energy. Furthermore, the project includes the replacement of aging underground cables, which would result in increased transmission efficiency. Increased efficiency in energy transmission allows for increased energy conservation, which would be consistent with the City's General Plan Policy NR.7.1. Furthermore, the underground cable replacement helps support electrification which is a technology use type recommended in the SMUD's Zero Carbon Plan for building and vehicle decarbonization. Thus, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

For the reasons above, the project would not result in significant impacts related to energy resources, and this issue is not discussed further.

Geology and Soils

No Alquist-Priolo Earthquake Fault Zones exist in Sacramento County (CGS 2010). Consequently, the project is not expected to expose people or structures to adverse effects caused by the rupture of a known fault. Additionally, the project site is located in a flat area of Rancho Cordova so there is no risk of landslides. The project would not require the use of septic tanks or alternative wastewater disposal systems. Thus, the project would have no impact related to soil suitability for use of septic tanks or alternative wastewater disposal systems. The project site is located in the Sacramento Valley, which has historically experienced a low level of seismic ground shaking. The California Geological Survey has identified the region as an area of low to moderately low earthquake shaking potential (CGS 2016). The project would be constructed in a manner consistent with the California Building Code (CBC) Title 24, which identifies specific design requirements to reduce damage from strong seismic ground shaking, ground failure, landslides, soil erosion, and expansive soils. The potential for erosion and topsoil loss at the project site would be minimal because the project would prepare and implement erosion and sediment control plans and comply with the requirements of the CBC. The new 69kV cable would be placed in a series of conduits encased in concrete. Trenches associated with underground infrastructure would then be backfilled with a cementitious slurry mixture or compacted aggregate base to the roadway subgrade elevation to reduce the risk of expansive soils. The Rancho Cordova area is not considered sensitive for paleontological resources as it is generally underlain by younger Holocene alluvium (City of Rancho Cordova 2006:4.11-4).

For the reasons above, the project would not result in significant impacts related to geology and soils, and this issue is not discussed further.

Greenhouse Gases

Greenhouse gas (GHG) emissions associated with implementation of the project would be generated during project construction. Project-related construction activities would

result in the generation of GHG emissions from the use of heavy-duty off-road construction equipment and vehicle use during worker commute. Construction activities would include site preparation, trenching, and resurfacing. The Sacramento Metropolitan Air Quality Management District has established quantitative significance thresholds for evaluating GHG emissions. For construction of all types, emissions due to land development projects, the established significance threshold is 1,100 metric tons of carbon dioxide equivalent ($MTCO_2e$) annually (SMAQMD 2021). Phase 1 and a portion of Phase 2 construction activities were assumed to occur in 2022, while the remainder of Phase 2's emissions were also assumed to occur in 2023. In 2022, Phase 1 and Phase 2 construction-related GHG emissions would generate a total of 425 $MTCO_2e$. In 2023, Phase 2 construction-related GHG emissions would generate a total of 470 $MTCO_2e$. Individually, 2022 and 2023 annual emissions would be under the 1,100 $MTCO_2e$ annual threshold. Furthermore, the sum of GHG emissions for both 2022 and 2023 construction activities, 895 $MTCO_2e$, would not exceed the annual 1,100 $MTCO_2e$ threshold. In general, it is expected that the new infrastructure would be more efficient than existing equipment. Thus, the project would not conflict with any applicable plan, policy, or regulation adopting for the purpose of reducing emissions of GHGs.

For the reasons above, the project would not result in significant impacts related to GHGs, and this issue is not discussed further.

Hazards and Hazardous Materials

The project site is not located within an airport land use plan or within 2 miles of a public airport or public use airport, or within the vicinity of a private airstrip. Implementation of the project would not result in an aviation-related safety hazard for people residing or working in the project area.

There are two public schools adjacent to the project alignment and five schools within one-quarter mile of the project alignments. Small quantities of hazardous materials such as fuels, oils, and lubricants would be used during project construction. The project would be required to comply with existing regulations associated with the transport, use, and disposal of hazardous materials. Compliance with applicable regulations regarding hazardous materials would reduce the potential for hazardous emissions within one-quarter mile of existing schools

The project alignments and surrounding areas are not located on any site included on a list of hazardous materials sites (SWRCB 2022; DTSC 2022). Further, if any hazardous materials or conditions are discovered during project construction, SMUD and its contractor would comply with existing laws and regulations related to the use, disposal, and transport of hazardous materials.

Project construction may require temporary lane closures along the project alignments that could interfere with or slow down emergency vehicles. However, project activities that may involve public right-of-way would be required to obtain an encroachment permit from the City of Rancho Cordova. As part of this encroachment permit application, SMUD

would be required to prepare and then later implement a traffic control plan, which would require the provision of temporary traffic controls and maintenance of emergency access during construction. Once project construction is complete, all roads would return to their pre-construction state and project operations would not interfere with emergency repose or evacuation plans.

For the reasons above, the project would not result in significant impacts related to hazards and hazardous materials, and this issue is not discussed further.

Hydrology and Water Quality

The project alignments are located within the Sacramento River Basin. As such, the applicable water quality standards are listed in the Fifth Edition of the Water Quality Control Plan (Basin Plan) For the Sacramento River and San Joaquin River Basins (CRWQCB 2018). Construction of the project would occur within the City of Rancho Cordova and would disturb more than one acre of land surface. Therefore, the applicable waste discharge requirements (WDRs) are the Municipal Separate Storm Sewer (MS4) stormwater National Pollutant Discharge Elimination System (NPDES) permit (Order No. R5-2016-0040-008 and NPDES No. CAS082597 Municipal Stormwater NPDES Permit) and the Statewide NPDES General Construction Permit for stormwater runoff (Order No. 2009-0009-DWQ [as amended by 2010-0014-DWQ and 2012-0006-DWQ] and NPDES No. CAS000002 [Construction General NPDES Permit]), and the dewatering and low threat discharges general NPDES permit (Order No. R5-2008-0081 and NPDES No. CAG995001 [Dewatering General NPDES Permit]).

Because the project would involve construction activities within previously disturbed areas, which are primarily paved areas, the project would not involve construction practices or develop facilities that would substantially prevent or otherwise redirect groundwater resources in the project site. Implementation of the project would not result in an increase in impervious surfaces; there would be no change in surface infiltration characteristics affecting groundwater recharge and the project would not be expected to substantially increase the rate or amount of surface runoff in or near the project site.

A portion of the project alignments are within the 100-year floodplain (City of Rancho Cordova 2006:4.9-9). Thus, flooding could occur in the area. Project construction could temporarily impede or redirect flood flows if construction equipment would be located near gutters and areas near storm drain inlets. However, if notified of an impending chance of flood conditions, SMUD would vacate and shore up the project area to prevent damage to its construction equipment and infrastructure. Construction activities would be temporary and project operation would not require above-ground features that could impede or redirect flood flows.

For the reasons above, the project would not result in significant impacts related to hydrology and water quality, and this issue is not discussed further.

Land Use and Planning

The project would replace existing underground cable and install new underground utility vaults in the City of Rancho Cordova. Because the duct banks and conduit that would house the new cable would be underground, there would be no division or impediment to the surrounding community as such underground facilities do not interfere with community life. The project would not lead to a physical division of an established community. The project does not propose any land use changes. The project would not conflict with any adopted plans, policies, or regulations adopted for avoiding or mitigating an environmental effect.

For the reasons above, the project would not result in significant impacts related to land use and planning, and this issue is not discussed further.

Mineral Resources

The Surface Mining and Reclamation Act directs the State Geologist to classify (identify and map) the non-fuel mineral resources of the State to show where economically significant mineral deposits occur and where they are likely to occur based upon the best available scientific data. Areas known as Mineral Resource Zones (MRZs) are classified on the basis of geologic factors, without regard to existing land use and land ownership. The areas are categorized into four general classifications (MRZ-1 through MRZ-4). Of the four, the MRZ-2 classification is recognized in land use planning because the likelihood for occurrence of significant mineral deposits is high, and the classification may be a factor in the discovery and development of mineral deposits that would tend to be economically beneficial to society.

A majority of the project alignments are classified as MRZ-3; however, portions of the 69kV alignment along Rossmoor Drive, near Rossmoor Bar River access, have been classified as MRZ-2. The MRZ-3 classification indicates that these areas contain mineral deposits, the significance of which cannot be evaluated from available data. The MRZ-2 classification indicates that significant mineral deposits are present, or there exists a high likelihood that significant mineral deposits are present (Dupras 1999a). The project alignments are not designated as a locally important mineral resource recovery site in the *Rancho Cordova General Plan,* and no existing mining sites have been identified along the alignments (City of Rancho Cordova 2006: 4.8-13; Dupras 1999b). The project alignments are within the boundaries of the Folsom Mining District, a large and complex historic-era archaeological district. Potential impacts related to the Folsom Mining District are evaluated in Section 3.2, “Cultural Resources,” of this Draft EIR as this is no longer an active mining area.

For the reasons above, the project would not result in significant impacts related to mineral resources, and this issue is not discussed further.

Noise

In the project area, the dominant noise source is roadway traffic, primarily from vehicles along Coloma Road and activities and events at Cordova High School and Mills Middle School. The project would result in temporary increase in noise levels during construction as a result of heavy equipment movement and pavement removal, but no permanent increases in ambient noise levels would occur during operation. Construction-related noise sources would include both mobile and stationary on-site equipment (e.g., dozers, loaders, generators). Construction noise would be short-term and temporary, and operation of heavy-duty construction equipment would be intermittent throughout the day during construction.

The City of Rancho Cordova Municipal Code Chapter 6.68 exempts certain activities, including construction, from the City's noise standards as long as the activities do not take place between the hours of 8:00 p.m. and 6:00 a.m. on weekdays and Friday commencing at 8:00 p.m. through and including 7:00 a.m. on Saturday; Saturdays commencing at 8:00 p.m. through and including 7:00 a.m. on the next following Sunday and on each Sunday after the hour of 8:00 p.m. This exemption provides that construction equipment must include appropriately maintained exhaust and intake silencers. However, the City does not specify limits in terms of maximum noise levels that may occur during the allowable construction hours.

The project is not located within an airport land use plan or within two miles of a public airport or public use airport. Additionally, the project is not located within two miles of a private airstrip. Finally, the project would not include any new land uses where people would live or work.

For the reasons above, the project would not result in significant impacts related to noise and vibration, and this issue is not discussed further.

Population and Housing

The project involves the replacement of an underground cable that does not include new homes, businesses, or infrastructure that would induce or generate population growth. Therefore, the project would not result in substantial unplanned population growth. Further, no persons or homes would be displaced as a result of implementation or operation of the proposed project.

For the reasons above, the project would not result in significant impacts related to population and housing, and this issue is not discussed further.

Public Services

Implementation of the project would not increase demand for fire or police protection services such that the construction of new or expansion of existing fire or police service facilities would be required. The project does not include a residential/commercial component that would increase demand for services nor would it increase the service

boundary of any existing public service providers. As noted above, the project would not provide any new housing that would generate new students in the community or a need for new or expanded park facilities. For the reasons above, the project would not result in significant impacts related to public services, and this issue is not discussed further.

Recreation

The project would not involve any changes to permitted uses of existing recreational facilities, nor would it require the construction of new recreational facilities or the expansion of existing ones that might have an adverse physical effect on the environment. Thus, the project would not result in potentially significant impacts related to recreation, and this issue is not discussed further.

Utilities and Service Systems

The project involves replacement of existing electrical utility lines and would not require water supply or generate wastewater requiring disposal. Removing water from the construction area (dewatering) may be necessary due to the high water-table of the area. SMUD would use Baker tanks and/or filtration bags, if needed, to treat water prior to discharge into the existing storm drain system in a manner consistent with regulatory requirements.

The project would generate a small amount of solid waste during construction, but would not generate solid waste during project operation. Construction debris could include asphalt, concrete, scrap lumber, finishing materials, metals, and organic materials. Compliance with the current CALGreen Code and Rancho Cordova's Construction and Demolition Debris Reduction, Reuse and Recycling requirements would result in a reduction of construction waste and demolition debris and increase recycling.

For the reasons above, the project would not result in significant impacts related to utilities, and this issue is not discussed further.

Wildfire

The project alignments are located within a local responsibility area that is designated as a non-Very High Fire Hazard Severity Zone (non-VHFHSZ) (CAL FIRE 2008). Construction of the project would require road lane closures that could temporarily impair emergency response plans or evacuation plans. As required by the City of Rancho Cordova, SMUD and its construction contractor would develop and implement a traffic control plan that would maintain access and connectivity during project construction activities. Because access and connectivity would be maintained during construction, the project would not substantially impair an emergency response plan or evacuation plan. Once construction is complete, the project alignments would be returned to their pre-construction condition and there would not be any above-ground features that would potentially impair emergency response or evacuation.

The project is located in an area of predominantly flat terrain and would not involve the changing to slopes that could expose people to risks of flooding from post-fire slope instability. Project facilities would be located under the ground surface and would not result in changes to existing drainage.

For the reasons above, the project would not result in significant impacts related to wildfire, and this issue is not discussed further.

Environmental Resource Categories Evaluated Further

As described in Chapter 1, "Introduction," this EIR's analysis provides a more detailed evaluation of a single environmental resource topic because other topics have already been addressed in the IS (see Appendix B):

- Section 3.1, Tribal Cultural Resources
- Section 3.2, Cultural Resources
- Section 3.3, Air Quality
- Section 3.4, Biological Resources
- Section 3.5, Transportation

The format of Sections 3.1 through 3.5 is as follows:

Regulatory Setting gives a summary of regulations, plans, policies, and laws that are relevant to the environmental effects in each resource section. Regulations originating from the federal, state, and local levels are each discussed as appropriate.

Environmental Setting presents the existing environmental conditions on the project site and surrounding area as appropriate, in accordance with the State CEQA Guidelines (California Code of Regulations [CCR] Section 15125). This setting generally serves as the baseline against which environmental impacts are evaluated.

Environmental Impacts and Mitigation Measures identifies the thresholds of significance used to determine the level of significance of the environmental impacts for each resource topic, in accordance with the State CEQA Guidelines Sections 15126, 15126.2, and 15143. The thresholds of significance used in this Draft EIR are based on the checklist presented in Appendix G of the State CEQA Guidelines; best available data; and regulatory standards of federal, state, and local agencies. The level of each impact is determined by comparing the effects of the project to the environmental setting. Key methods and assumptions used to frame and conduct the impact analysis as well as issues or potential impacts not discussed further (such issues for which the project would have no impact) are also described.

Project impacts are organized numerically in each subsection (e.g., Impact 3.1-1, Impact 3.1-2, Impact 3.1-3, etc.). A bold-font impact statement, a summary of each impact, and its level of significance precedes the discussion of each impact. The discussion that follows the impact summary includes the substantial evidence supporting the impact significance conclusion.

The Draft EIR must describe any feasible measures that could avoid, minimize, rectify, reduce, or compensate for significant adverse impacts, and the measures are to be fully enforceable through incorporation in and adoption of a Mitigation Monitoring and Reporting Plan (Public Resources Code Section 21081.6[b]). Mitigation measures are not required for effects that are found to be less than significant. Where feasible mitigation for a significant impact is available, it is described following the impact along with its effectiveness at addressing the impact. Each identified mitigation measure is labeled numerically to correspond with the number of the impact that would be mitigated by the measure. Where sufficient feasible mitigation is not available to reduce impacts to a less-than-significant level, or where SMUD lacks the authority to ensure that the mitigation is implemented when needed, the impacts are identified as remaining "significant and unavoidable."

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3.1 Tribal Cultural Resources

This section analyzes and evaluates the potential impacts of the project on known and unknown (undiscovered or unidentified) Tribal cultural resources. Tribal cultural resources, as defined by Assembly Bill (AB) 52, Statutes of 2014, in Public Resources Code (PRC) Section 21074, are sites, features, places, cultural landscapes, sacred places and objects, with cultural value to a Tribe. A Tribal cultural landscape is defined as a geographic area (including both cultural and natural resources and the wildlife therein), associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values. Because Tribal cultural resources are known to be in the immediate vicinity of the project alignments (as explained further in Section 3.1.2), unanticipated Native American human remains would also be considered a Tribal cultural resource, and are therefore analyzed in this section.

One comment letter regarding Tribal cultural resources was received in response to the Notice of Preparation (see Appendix A). The Native American Heritage Commission (NAHC) requested AB 52 and Senate Bill (SB) 18 compliance information; SB 18 does not apply to the project because there is no General Plan amendment associated with the project (which is the trigger for SB 18 compliance). Additionally, SB 18 is not a CEQA requirement and therefore is not discussed in this section. AB 52 compliance is described below.

3.1.1 Regulatory Setting

Federal

There are no federal regulations that apply.

State

California Register of Historical Resources

All properties in California that are listed in or formally determined eligible for listing in the National Register of Historic Places (NRHP) are also listed in the California Register of Historical Resources (CRHR). The CRHR is a listing of State of California resources that are significant in the context of California's history. It is a Statewide program with a scope and with criteria for inclusion similar to those used for the NRHP. In addition, properties designated under municipal or county ordinances are also eligible for listing in the CRHR.

A historical resource must be significant at the local, State, or national level under one or more of the criteria defined in the California Code of Regulations Title 15, Chapter 11.5, Section 4850 to be included in the CRHR. The CRHR criteria are tied to CEQA because any resource that meets the criteria below is considered a significant historical resource under CEQA. As noted above, all resources listed in or formally determined eligible for listing in the NRHP are automatically listed in the CRHR.

The CRHR uses four evaluation criteria:

Criterion 1. 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.

Criterion 2. Is associated with the lives of persons important to local, California, or national history.

Criterion 3. Embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of a master; or possesses high artistic values.

Criterion 4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

Similar to the NRHP, a historical resource must meet one of the above criteria and retain integrity to be listed in the CRHR. The CRHR uses the same seven aspects of integrity used by the NRHP: location, design, setting, materials, workmanship, feeling, and associations.

California Environmental Quality Act

CEQA requires public agencies to consider the effects of their actions on "[T]ribal cultural resources." PRC Section 21084.2 establishes that "[a] project with an effect that may cause a substantial adverse change in the significance of a [T]ribal cultural resource is a project that may have a significant effect on the environment." PRC Section 21074 states:

a) "Tribal cultural resources" are either of the following:

   1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are either of the following:

      A) Included or determined to be eligible for inclusion in the CRHR.

      B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

   2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American Tribe.

b) A cultural landscape that meets the criteria of subdivision (a) is a Tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a Tribal cultural resource if it conforms with the criteria of subdivision (a).

AB 52, signed by the California Governor in September of 2014, established a new class of resources under CEQA: "[T]ribal cultural resources," defined in PRC Section 21074. Pursuant to CEQA requirements, lead agencies undertaking CEQA review must, upon written request of a California Native American Tribe, begin consultation before the release of an EIR, negative declaration, or mitigated negative declaration.

Health and Safety Code, Section 7050.5

Section 7050.5 of the Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If they are determined to be those of a Native American, the coroner must contact Native American Heritage Commission (NAHC).

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural, and Sacred Sites Act (PRC Section 5097.9) applies to both State and private lands. The act requires, upon discovery of human remains, that construction or excavation activity cease and that the county coroner be notified. If the remains are those of a Native American, the coroner must notify the NAHC, which notifies (and has the authority to designate) the most likely descendants (MLD) of the deceased. The act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

Public Resource Code Section 5097

PRC Section 5097 specifies the procedures to be followed in the event of the unexpected discovery of human remains on nonfederal land. The disposition of Native American human burials falls within the jurisdiction of the NAHC. Section 5097.5 of the Code states the following:

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

3.1.2 Environmental Setting

Study Area

Figure 2-2 shows both the 12kV and 69kV proposed alignments, as well as the alignment of the existing underground direct-buried cable. The alignments presented on Figure 2-2 illustrate SMUD's preferred locations for cable installation; however, as needed to avoid resources, the analysis in this EIR assumes the cable would be installed within the boundary of the study area identified in Figure 3.1-1. The study area was designed to encompass all areas within the alignment that could be subject to ground disturbing project actions. The study area also encompasses all areas proposed for staging, access, and storage within the alignment.

For the portion of the project involving the 69kV alignment within the American River Parkway, the majority of the study area is defined as the location of the existing underground cable alignment with a 40-foot buffer on either side. As the existing 69kV alignment approaches Rossmoor Drive, it turns to the north through a wooded area (see Figure 3.1-1). To avoid impacts to the trees, the existing alignment here will be abandoned in place, and a new alignment which extends east towards Rossmoor Drive will be selected. To provide alternatives for this eastward trending alignment, a space equaling 5.19 acres was included in the study area. Once the alignment reaches Rossmoor Drive, a path will be chosen which either parallels the road or is placed within the road. To accommodate all possible alignments along Rossmoor Drive, the study area included a 40-foot-wide corridor starting from the edge of pavement on the west side of the road and a 10-foot-wide corridor starting at the edge of pavement on the east side; the 40-foot-wide corridor on the west side of Rossmoor Drive is equivalent to the existing park fuel break. A 0.58-acre area around the existing electrical tower on the south bank of the American River was also included in the study area to accommodate utility vault installation and equipment staging at the termination point of the new alignment.

Source: Data received from SMUD in 2022

Figure 3.1-1: Study Area

Ethnographic Setting

The study area is within the traditional territory of the Valley Nisenan, also known as the Southern Maidu. These Indigenous people are the southernmost linguistic group of the Maidu-Penutian language family who occupied the northern portion of California's Central Valley. Although boundaries with neighboring tribes were often fluid and overlapping, the southern portion of the Valley Nisenan territory is defined as extending from the original confluence of the American and Sacramento rivers near today's Old Sacramento, up the American River and its tributaries to the crest of the Sierras. The northern portion of their territory consisted of the lower half of the Feather River, and then east along both the Bear and Yuba rivers up to the Sierra crest. Their neighbors were the Plains Miwok to the south, the Patwin across the Sacramento River to the west, and the Konkow and Mountain Maidu to the north. Settlements were typically located on low, natural rises next to streams and rivers or on gentle, south-facing slopes. Populations within the settlements are estimated to have varied from 15 individuals or more for smaller occupation sites and satellite villages, and up to 500 or more in large villages (SMUD 2022).

Valley Nisenan relied on a wide range of abundant natural resources. Large and small mammals, such as pronghorn antelope, deer, tule elk, black bears, cottontails, and jackrabbits, were hunted by individuals or by communal effort. Plant resources included acorns, pine nuts, buckeye nuts, berries, grass seeds, herbs, and underground tubers. To procure these resources, Valley Nisenan employed a variety of tools and hunting implements. The bow and arrow, snares, traps, nets, and enclosures or blinds were used for hunting land mammals and birds. For fishing, they made canoes from tule, balsa, or logs, and used harpoons, hooks, nets, and basketry traps. To collect plant resources, sharpened digging sticks, long poles for dislodging acorns and pinecones, and a variety of basketry, such as seed beaters, burden baskets, and carrying nets, were utilized. Foods were processed with a variety of tools, such as bedrock mortars, bedrock grinding slicks, hand stones, pestles, hopper mortars, or metates (SMUD 2022).

A key component of Valley Nisenan life was their participation in an extensive east-west trade network between the coast and the Great Basin. From coastal groups marine *Olivella*, abalone, shell and steatite moved eastward, while salt and obsidian traveled westward from the Sierras and Great Basin. Basketry, an important trade item, moved in both directions (SMUD 2022).

The traditional culture and lifeways of the Valley Nisenan, and Central Valley Indigenous people in general, were disrupted beginning in the early 1800s. Although Spanish explorers entered their territory as early as 1808, there is no record of the forced movement of any Nisenan to the missions, at least no evidence similar to that recorded for the neighboring Plains Miwok. Regardless, Valley Nisenan and other Indigenous peoples were affected by land grant settlements and devastated by foreign disease epidemics that swept through the densely populated Central Valley. In particular, an epidemic presumed to be malaria, swept through the region in 1833, wiping out entire villages and causing the death of an estimated 75 percent of the Valley Nisenan population. Not long after in 1839, Captain John Sutter settled into the area and

conscripted many of the surviving local Indigenous peoples to work for him at his fort and various other endeavors, including his hock farm on the banks of the Feather River (SMUD 2022).

Additional impacts to Valley Nisenan traditional lifeways resulted from the California Gold Rush in 1849. As a steady influx of non-native people exploited their lands and wasted their resources, many lifeways of the Valley Nisenan, as well as neighboring groups, were irretrievably interrupted. As a result, surviving Valley Nisenan either retreated to the foothills and mountains, or became domestics and laborers for the expanding ranching, farming, and mining industries (SMUD 2022).

Known Nisenan Villages Near the Project Site

The banks of the American River were heavily populated in Indigenous times. At least four Nisenan villages are known to have been present within ten miles of the project alignment. On the north side of the American River, east of California State University Sacramento but west of the project area, was *Kadema*, *Kishkish,* and *Yamankudu*. On the south side of the river, the closest known village was *Yalisumni*. Additional un-named villages on the south side of the American River are evidenced by three particularly deep and large archaeological sites, CA-SAC-157, CA-SAC-319, and CA-SAC- 320/H, each site being located less than three miles from either end of the project alignment (SMUD 2022).

Contemporary Native American Setting

Defining Tribal cultural resources involves the knowledge and expertise of living California Native Americans. As the embodiment of a continuous connection between tribal history and the landscape, they are uniquely qualified to act as the interpreters and stewards of their culture, including the ability to define the significance of the material remains and landscapes of their ancestor's lifeways.

As described above, the Project is located on land traditionally inhabited by the Valley Nisenan. Today, many descendants of Valley Nisenan still reside on lands once inhabited by their ancestors or on lands set aside for tribal communities by the federal government in California which may or may not been traditionally inhabited by their ancestors. Contemporary Californian Native American tribes with ancestral connections to the study area and Valley Nisenan heritage include the United Auburn Indian Community (UAIC), Shingle Springs Band of Miwok Indians (SSBMI), Ione Band of Miwok, and Wilton Rancheria.

These tribes today maintain connection to their history and culture in a multitude of ways, including through ceremony, language and traditional knowledge instruction, community service, and tribal governance. For example, a "Big Time" is typically celebrated every September to mark the start of autumn and acorn gathering time at Chaw'se Grinding Rock State Park in Pine Grove. This celebration includes serving traditional foods, traditional dancing, healing rituals, and worship in the roundhouse. Language and

traditional skill classes are offered by most of the tribes, including by the SSBMI which has a Traditional Ecological Knowledge department to assist members with learning about respectful and traditional uses of plants and animals, and the UAIC who has a Pre-K through 8th grade school where key aspects of Indian culture and critical thinking are taught to prepare tribal members to face future challenges (Private School Review 2022; SSBMI 2022a). Tribal community service departments provide family support services to adults and children in order to promote the health and well-being of tribal community members and their families as well as connection to their heritage. Common services offered by all tribes include Indian Child Welfare Act (ICWA) advocacy and intervention, housing assistance, health care assistance, Elder programs, and grants and scholarships for higher education (Ione Band of Miwok Indians 2022; SSBMI 2022a; UAIC 2022; Wilton Rancheria 2022a). Governance on tribal lands is typically outlined by tribally prepared constitutions, codes and/or ordinances, and are carried out by tribal departments which are in turn typically overseen by the tribal council. This includes the office of Tribal Historic Preservation Officer. Because tribes retain inherent sovereign powers over their members and territory, SSBMI and the Wilton Rancheria also have Tribal Courts which serve as culturally- sensitive, independent judicial forums where tribal cultural values are held at the forefront of dispute resolutions (SSBMI 2022b; Wilton Rancheria 2022b).

Consultation and Research

Sacred Lands File Search

A search of the NAHC Sacred Lands File was requested on May 18, 2021. On June 21, 2021, the results were returned as positive for the presence of Native American resources within the study area. A list of Native American individuals and Tribes to contact for more information was also provided with the results.

Tribal Consultation

As discussed previously, 1 comment letter regarding Tribal cultural resources was received in response to the Notice of Preparation (see Appendix A). NAHC requested AB 52 and SB 18 compliance information; SB 18 does not apply to the project because there is a no General Plan amendment associated with the project (which is the trigger for SB 18 compliance). Additionally, SB 18 is not a CEQA requirement and therefore is not discussed in this section. The AB 52 consultation process is described below.

On August 19, 2021, in compliance with AB 52 requirements, SMUD sent letters to the Ione Band of Miwok Indians, UAIC, Shingle Springs Rancheria, and Wilton Rancheria; responses were received from all four Tribes. Because Tribal consultation involves the locations and details of sites, the specific details of the consultations are confidential pursuant to California law. A summary of events related to communication between the Tribes and SMUD is provided below:

- June 14, 2021: Wilton Rancheria participated in in-field consultation and gave preliminary confirmation to SMUD that they wanted to consult.

- September 13, 2021: UAIC replied to SMUD's letter indicating a desire to consult and to have a forensic canine survey conducted.

- September 18, 2021 SMUD sent the Colfax-Todds Valley Consolidated Tribe an invitation to consult under AB 52 in response to a request to consult under AB 52 sent to the consultant.

- September 16, 2021: Shingle Springs Band of Miwok Indians submitted a letter indicating a desire to consult.

- Monthly or bimonthly meetings with all three Tribes or individual Tribes, as requested by the Tribes, have been conducted since September to the present. SMUD conducts regular meetings with UAIC, SSBMI, IBMI, and Wilton Rancheria, and these meetings include updates on all SMUD projects, regardless of whether Tribes have elected to consult on various projects. SMUD does not currently hold standing meetings with the Colfax-Todds Valley Consolidated Tribe.

- January 13, 2022, a meeting to discuss the was held with Wilton Rancheria, UAIC, and Shingle Springs to discuss the findings of the forensic canine survey, designation of Tribal cultural resources, and next steps for an EIR. Based on the results of the meeting, three Tribal cultural resources were identified within the study area. The Tribal cultural resources identified were the sites of the positive responses identified as a result of the forensic canine field survey.

Forensic Canine Field Survey

Consultation and background research identified that the project location is known to be sensitive for the presence of Native American human remains and burials. As requested by the UAIC, and in agreement with the other consulting Tribes, a forensic a canine field survey was arranged to investigate the study area for the presence of human remains. December 2021, the Institute for Canine Forensics (ICF) conducted a canine field survey of the 69kV project study area (see Figure 3.1-1); Ambassador Drive (i.e., the 12kV alignment) was not included in the investigation because it is paved, and intact pavement creates a scent barrier for the dogs (SMUD 2022:42). This investigation was conducted as a non-ground disturbing testing method to help ascertain possible locations within the study area where human remains may be present. Four locations of "scattered scent" were identified. Three of these locations are within the study area and one is adjacent to the study area, but at a sufficient distance as to not be disturbed by project activities. A "scattered scent" alert by the dog indicates that the location of scent is highly disturbed and that the remains may be fragmentary and dissipated, and/or contain only soils once associated with an interment. No locations of possible intact or partially intact burials were identified by the dogs as a result of the canine investigation (SMUD 2022:4). A professional archaeologist and Tribal representatives from the UAIC and Wilton Rancheria were present during the canine field survey. Results of the canine investigation and a copy of the final report were sent to the UAIC, Wilton Rancheria, Shingle Springs Band of Miwok Indians, and Ione Band of Miwok Indians.

Tribal Cultural Resources

Consultation with affiliated Tribes has identified the presence of three Tribal cultural resources in the study area. The consultation also identified that entire region encompassing the project alignment is considered to be sacred and highly sensitive for the presence of Tribal cultural resources, including human remains, based on tribal oral traditions, tribal knowledge, and the results of past investigations.

The three Tribal cultural resources are the sites of "scattered scent" identified as a result of the forensic canine field study described above. Based on the alert level given by the canines, these locations may only contain fragmentary or dissipated remains and/or associated burial soils. However, all participating Tribes consider burial soils, dissipated, and fragmented human remains to be as significant as an intact burial. On January 13, 2022, as part of the AB 52 consultation process all parties agreed that these sites represent Tribal cultural resources for the purposes of CEQA under PRC Section 21074.

3.1.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance/Significance Criteria

Based on Appendix G of the State CEQA Guidelines, the project would result in a potentially significant impact on Tribal cultural resources if it would:

- disturb any human remains, including those interred outside of dedicated cemeteries; or

- cause a substantial adverse change in the significance of a Tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe.

Analysis Methodology

Information related to Tribal cultural resources is based on findings reported in the NAHC Sacred Lands File database search, the records search results (NCIC File Number File no. SAC-21-102 and SAC-21-150), the results of Native American consultation under AB 52, and the forensic canine field study. The analysis is also informed by the provisions and requirements of State, and local laws and regulations that apply to cultural resources.

PRC Section 21074 defines "Tribal cultural resources" as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American [T]ribe" that are listed or determined eligible for listing in the CRHR, listed in a local register of historical resources, or otherwise determined by the lead agency to be a Tribal cultural resource.

Tribal cultural resources, which may qualify as "historical resources" pursuant to CEQA, are analyzed separately from built-environment historical resources and unique archaeological resources, which are analyzed in Section 3.2, "Cultural Resources," of this EIR.

Issues or Potential Impacts Not Discussed Further

All potential impacts to Tribal cultural resources are evaluated below.

Impact Analysis

Impact 3.1-1: Cause a substantial adverse change in the significance of a Tribal cultural resource, including human remains.

Consultation with Wilton Rancheria, UAIC, and the SSBMI identified three Tribal cultural resources to be present within the study area and that the entire project location is sacred and sensitive for the presence of Tribal cultural resources including Native American burials. Because project-related ground-disturbing activities could result in damage to Tribal cultural resources, the project could cause a **potentially significant** impact.

As detailed above, SMUD has been in consultation with three Native American Tribes: Wilton Rancheria, UAIC, and Shingle Springs Band of Miwok Indians. The Colfax-Todds Valley Consolidated Tribes initially asked to participate in the AB 52 consultation, but later decided they did not wish to continue in the consultation. Information obtained during consultation, combined with the record search results, and results of the forensic canine field survey, resulted in the identification of three Tribal cultural resources within the study area. The consultation also identified the entire project location as sacred and sensitive for the presence of Tribal cultural resources, including Native American burials.

California law recognizes the need to protect Native American human burials, skeletal remains, and items associated with Native American burials from vandalism and inadvertent destruction. The procedures for the treatment of Native American human remains are contained in California Health and Safety Code Section 7050.5 and California PRC Section 5097. Because the three Tribal cultural resources within the study area are believed to contain Native American human remains, any Native American human remains and associated objects and soils discovered would be considered part of the Tribal cultural resource.

Implementation of the project would involve ground disturbing activities (e.g., excavation) to install new electrical cable and utility vaults. The existing 12kV and 69kV lines would be abandoned in place, and new conduit containing the new lines would be installed in separate trenches. Although the study area is largely disturbed by existing underground utilities, residential, and recreational development as well as past mining and agricultural activities, research in the area has demonstrated there is high potential for the presence of subsurface cultural resources, including objects, features, and human remains that would qualify as Tribal cultural resources. Components of the project that require earth-

moving and excavation may disturb or destroy subsurface Tribal cultural resources. Therefore, the potential impact would be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.1-1a: Avoid TCRs through Project Design.

During the design phase of the 69kV alignment portion of the Project, SMUD will consult with consulting Tribes on the adequacy of the plans to avoid and protect in place the identified Tribal cultural resources. The consulting Tribes will review the plans starting at 30 percent design, or a similar milestone, and will continue to be consulted with until the design plans are finalized (100 percent design). To avoid impacts and protect the Tribal cultural resources in place, a qualified archaeologist, in collaboration with consulting Tribes, will ensure that no staging, storage, or work will come within a minimum of a 15-foot protection buffer from each Tribal cultural resource. If the archaeologist and consulting Tribes find at any time that the plans do not meet the 15-foot protection buffer, the design engineers will work with the archaeologist and consulting Tribes to modify the plans. If sufficient modifications to the plans cannot be achieved to ensure a 15-foot protection buffer, additional consultation with the participating tribes will be required to develop appropriate avoidance and mitigation measures. Such measures may include creation of a treatment plan, data recovery, reburial, or additional plan redesign. The project plans will not be considered final until the archaeologist has deemed them to be adequate for the avoidance and protection in place of the Tribal cultural resources.

Mitigation Measure 3.1-1b: Prepare and implement worker cultural resources awareness and respect training program.

A cultural resources awareness and respect training program will be provided to all construction personnel active on the project site prior to the start of project implementation and to any new workers who start on the project after starting. A representative or representatives from culturally affiliated Native American Tribe(s) will be invited to participate in the development and delivery of the cultural resources awareness and respect training program in coordination with a professional archaeologist meeting the United States Secretary of Interior's qualification standards for archaeology. The program will include relevant information regarding Tribal cultural resources, including applicable laws and regulations, the consequences of violating said laws and regulations, protocols for resource avoidance, and protocols for discoveries, including who to contact in the event of a discovery and what to do upon the discovery of human remains. The program will also underscore the requirement for confidentiality and culturally-appropriate treatment of any find of significance to Native Americans and protocols, consistent to the extent feasible, with Native American Tribal values.

Mitigation Measure 3.1-1c: Implement Tribal and Archaeological Monitoring.

All ground disturbing activities, including any preparatory grading, tree removal, or vegetation clearing, within the project site will be monitored by a Tribal monitor and a qualified archaeologist. SMUD shall contact the participating Tribes a minimum of seven days prior to beginning earthwork or other ground disturbing activities to ensure a Tribal

monitor is available; construction activities will proceed if no response is received 48 hours prior to ground disturbing activities. The Tribal and archaeological monitor shall complete daily monitoring logs that describe each day's activities, including construction activities, locations, soil, and any cultural materials identified. In the event that unanticipated archaeological or Tribal cultural resources are discovered, including human remains, compliance with Mitigation Measure 3.1-1d would be required. Both the Tribal monitor and the archaeological monitor have the ability to halt work if a discovery occurs.

Mitigation Measure 3.1-1d: Halt Ground Disturbance Upon Discovery of Subsurface Tribal Cultural Resources and Evaluate Discovered Resource

If any suspected Tribal cultural resources or unique archaeological resources are discovered during ground disturbing construction activities, all work shall cease within 100 feet of the find, or a distance agreed upon by the Tribal monitor, archaeological monitor, SMUD, and the construction foreman based on the location and nature of the find and type of work occurring. The Tribal monitor shall determine if the find is a Tribal cultural resource. The Tribal monitor will make recommendations for further evaluation and culturally appropriate treatment of discovered Tribal cultural resources as necessary in consultation with the archaeological monitor.

Unless another type of treatment is recommended, resources will be preserved in place by redesigning the project; however, if project redesign is determined by SMUD, with evidence, to be technologically, regulatorily, or economically infeasible. Redesign could include modifying the route of the alignment; and route modification would remain within the boundary of the project study area. If redesign is demonstrated to be infeasible, culturally appropriate treatment would be developed in consultation with the participating Tribes. Culturally appropriate treatment may include, but is not limited to, processing materials for reburial, minimizing handling of cultural objects, leaving objects in place within the landscape, returning objects to a location within the project area where they will not be subject to future impacts from the project. Because curation of Tribal cultural resources is not considered by the participating Tribes to be appropriate or respectful, participating Tribes request that materials not be permanently curated, unless approved by the participating Tribes.

Work at the discovery location cannot resume until all necessary investigation, evaluation, and treatment of the discovery under the requirements of the CEQA, including AB 52, have been satisfied. Implementation of this mitigation measure would also satisfy State and local regulations regarding the treatment of Tribal cultural resources as well as Section 7050.5 of the Health and Safety Code and PRC 5097 regarding the treatment of human remains.

Significance after Mitigation

Implementation of Mitigation Measures 3.1-1a through 3.1-1d would reduce potential impacts to Tribal cultural resources by avoiding and protecting them in place prior to the start of work to the extent feasible as defined in Mitigation Measure 3.1-1d. If avoidance is not possible, Tribally accepted and legally compliant procedures for the protection

and treatment of Tribal cultural resources would be implemented. With implementation of these mitigation measures, impacts to tribal cultural resources would be reduced to a **less-than-significant** level.

Impact 3.1-2: Potential for the project, in combination with other development, to contribute to a significant cumulative impact to Tribal cultural resources including human remains.

The project, in combination with other cumulative development in the region, could result in impacts to Tribal cultural resources in the area. However, with the implementation of Mitigation Measures 3.1-1a through 3.1-1d, significant impacts would not occur and the project's potential contribution to cumulative impacts would be **less than significant**.

The cumulative context for the analysis of Tribal cultural resources considers a broad regional system of which the resources are a part. The cumulative context for Tribal cultural resources is the former territory of the Valley Nisenan. As explained in Section 3.1.2, the former territory of the Valley Nisenan extended from present-day Old Sacramento to the crest of the Sierras and includes the project area.

Because all Tribal cultural resources are unique and nonrenewable members of finite classes, meaning there are a limited number, all adverse effects erode a dwindling resource base. Tribal cultural systems are represented by the total inventory of all sites and other remains in the region. As a result, a meaningful approach to preserving and managing cultural resources must focus on the likely distribution of Tribal cultural resources within a region, rather than on a single project or parcel boundary.

The historical lands of the Valley Nisenan people have been affected by development since the early 1800s as part of Spanish settlement and missionization and through the steady influx of nonnative people during the 1850s Gold Rush. Disturbance of the Nisenan lands continued after the Gold Rush through the dredging operations of the Natomas Company and expansion of their agricultural endeavors through the mid-1900s. The residential and recreational growth after World War II within the region encompassing the project area continued to perpetrate significant adverse effects on Tribal cultural resources, including Native American remains. Cumulative development in the area continues to contribute to the disturbance and loss of Tribal cultural resources.

Proper planning and appropriate mitigation can help to capture and preserve knowledge of such resources and can provide opportunities for increasing our understanding of the past environmental conditions and cultures by recording data about sites discovered and preserving them in place. Federal, State, and local laws are also in place that protect these resources in most instances. Even so, it is not always feasible to protect these resources, particularly when preservation in place would make projects infeasible, and for this reason the cumulative effects of past and present projects in the City of Rancho Cordova and along the south bank of the American River are considered to be significant.

Implementation of Mitigation Measures 3.1-1a through 3.1-1d and compliance with existing policies and regulations, would prevent the project, from impacting Tribal cultural resources, including Native American human remains. Because this impact would be avoided with implementation of mitigation, the project's contribution to the existing cumulative impact on Tribal cultural resources including human remains in the area would not be cumulatively considerable; this impact would be **less than significant**.

Mitigation Measures

See Mitigation Measures 3.1-1a, 3.1-1b, 3.1-1c, and 3.1-1d. No additional mitigation is required.

3.5 Cultural Resources

This section analyzes and evaluates the potential impacts of the project on known and unknown cultural resources. Although impacts related to human remains are typically analyzed in a cultural resources section, unanticipated discovery of human remains in the project area may potentially be Native American and would be considered a Tribal cultural resource. Impacts associated with Tribal cultural resources are discussed in Section 3.1, "Tribal Cultural Resources."

Cultural resources include districts, sites, buildings, structures, or objects generally older than 50 years and considered to be important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. They include prehistoric resources and historic-period resources. Archaeological resources are locations where human activity has measurably altered the earth or left deposits of prehistoric or historic-period physical remains (e.g., stone tools, bottles, former roads, house foundations). Historical (or built-environment) resources include standing buildings (e.g., houses, barns, outbuildings, cabins) and intact structures (e.g., dams, bridges, roads, districts), or landscapes. A cultural landscape is defined as a geographic area (including both cultural and natural resources and the wildlife therein), associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values.

No comments regarding cultural resources were received in response to the Notice of Preparation (see Appendix A).

3.5.1 Regulatory Setting

Federal

National Register of Historic Places

The National Register of Historic Places (NRHP) is the nation's master inventory of known historic properties. It is administered by the National Park Service and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level.

The formal criteria (36 Code of Federal Regulations [CFR] 60.4) for determining NRHP eligibility are as follows:

1. The property is at least 50 years old (however, properties under 50 years of age that are of exceptional importance or are contributors to a district can also be included in the NRHP);

2. It retains integrity of location, design, setting, materials, workmanship, feeling, and associations; and

3. It possesses at least one of the following characteristics:

Criterion A	Is associated with events that have made a significant contribution to the broad patterns of history (events).
Criterion B	Is associated with the lives of persons significant in the past (persons).
Criterion C	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, distinguishable entity whose components may lack individual distinction (architecture).
Criterion D	Has yielded, or may be likely to yield, information important in prehistory or history (information potential).

Listing in the NRHP does not entail specific protection or assistance for a property but it does guarantee consideration in planning for federal or federally-assisted projects, eligibility for federal tax benefits, and qualification for federal historic preservation assistance. Additionally, project effects on properties listed in the NRHP must be evaluated under CEQA.

The National Register Bulletin series was developed to assist evaluators in the application of NRHP criteria. For example, National Register Bulletin #36 provides guidance in the evaluation of archaeological site significance. If a property cannot be placed within a particular theme or time period, and thereby lacks "focus," it will be unlikely to possess characteristics which would make it eligible for listing in the NRHP. Evaluation standards for linear features (such as roads, trails, fence lines, railroads, ditches, and flumes) are considered in terms of four related criteria that account for specific elements that define engineering and construction methods of linear features: (1) size and length, (2) presence of distinctive engineering features and associated properties, (3) structural integrity, and (4) setting. The highest probability for NRHP eligibility exists in the intact, longer segments, where multiple criteria coincide.

State

California Register of Historic Resources

All properties in California that are listed in or formally determined eligible for listing in the NRHP are also listed in the California Register of Historical Resources (CRHR). The CRHR is a listing of State of California resources that are significant in the context of California's history. It is a Statewide program with a scope and with criteria for inclusion similar to those used for the NRHP. In addition, properties designated under municipal or county ordinances are also eligible for listing in the CRHR.

A historical resource must be significant at the local, State, or national level under one or more of the criteria defined in the California Code of Regulations (CCR) Title 15, Chapter 11.5, Section 4850 to be included in the CRHR. The CRHR criteria are tied to CEQA because any resource that meets the criteria below is considered a significant historical

resource under CEQA. As noted above, all resources listed in or formally determined eligible for listing in the NRHP are automatically listed in the CRHR.

The CRHR uses four evaluation criteria:

1. 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.

2. Is associated with the lives of persons important to local, California, or national history.

3. Embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of a master; or possesses high artistic values.

4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

Similar to the NRHP, a historical resource must meet one of the above criteria and retain integrity to be listed in the CRHR. The CRHR uses the same seven aspects of integrity used by the NRHP.

California Environmental Quality Act

CEQA requires public agencies to consider the effects of their actions on “historical resources,” “unique archaeological resources,” and “tribal cultural resources.” Pursuant to Public Resources Code (PRC) Section 21084.1, a “project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.” PRC Section 21083.2 requires agencies to determine whether projects would have effects on unique archaeological resources. PRC Section 21084.2 establishes that “[a] project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment."

Historical Resources

“Historical resource” is a term with a defined statutory meaning (PRC Section 21084.1; State CEQA Guidelines Sections 15064.5[a] and [b]). Under State CEQA Guidelines Section 15064.5(a), historical resources include the following:

1) A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in, the CRHR (PRC Section 5024.1).

2) A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g), will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

3) Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be historically significant if the resource meets the criteria for listing in the CRHR (PRC Section 5024.1).

4) The fact that a resource is not listed in or determined to be eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to PRC Section 5020.1[k]), or identified in a historical resources survey (meeting the criteria in PRC Section 5024.1[g]) does not preclude a lead agency from determining that the resource may be a historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

Unique Archaeological Resources

CEQA also requires lead agencies to consider whether projects will affect unique archaeological resources. PRC Section 21083.2(g) states that "unique archaeological resource" means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.

3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Public Resources Code Section 21083.2

Treatment options under PRC Section 21083.2(b) to mitigate impacts to archaeological resources include activities that preserve such resources in place in an undisturbed state. PRC Section 21083.2 states:

(a) As part of the determination made pursuant to Section 21080.1, the lead agency shall determine whether the project may have a significant effect on archaeological resources. If the lead agency determines that the project may have a significant effect on unique archaeological resources, the environmental impact report shall address the issue of those resources. An environmental impact report, if otherwise necessary, shall not address the issue of nonunique archaeological resources. A negative declaration shall be issued with respect to a project if, but for the issue of nonunique archaeological resources, the negative declaration would be otherwise issued.

(b) If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. Examples of that treatment, in no order of preference, may include, but are not limited to, any of the following:

(1) Planning construction to avoid archaeological sites.

(2) Deeding archaeological sites into permanent conservation easements.

(3) Capping or covering archaeological sites with a layer of soil before building on the sites.

(4) Planning parks, greenspace, or other open space to incorporate archaeological sites.

(c) To the extent that unique archaeological resources are not preserved in place or not left in an undisturbed state, mitigation measures shall be required as provided in this subdivision.

(d) Excavation as mitigation shall be restricted to those parts of the unique archaeological resource that would be damaged or destroyed by the project.

(e) In no event shall the amount paid by a project applicant for mitigation measures required pursuant to subdivision (c) exceed the following amounts:

(1) An amount equal to one-half of 1 percent of the projected cost of the project for mitigation measures undertaken within the site boundaries of a commercial or industrial project.

(2) An amount equal to three-fourths of 1 percent of the projected cost of the project for mitigation measures undertaken within the site boundaries of a housing project consisting of a single unit.

(3) If a housing project consists of more than a single unit, an amount equal to three-fourths of 1 percent of the projected cost of the project for mitigation measures undertaken within the site boundaries of the project for the first unit plus the sum of the following:

(A) Two hundred dollars ($200) per unit for any of the next 99 units.
(B) One hundred fifty dollars ($150) per unit for any of the next 400 units.
(C) One hundred dollars ($100) per unit in excess of 500 units.

(f) Unless special or unusual circumstances warrant an exception, the field excavation phase of an approved mitigation plan shall be completed within 90 days after final approval necessary to implement the physical development of the project or, if a phased project, in connection with the phased portion to which the specific mitigation measures

are applicable. However, the project applicant may extend that period if he or she so elects. Nothing in this section shall nullify protections for Indian cemeteries under any other provision of law.

Local

City of Rancho Cordova General Plan

The Cultural and Historical Resources Element of the 2006 City of Rancho Cordova General Plan seeks to identify and protect locally important sites, buildings, and memorabilia that reflect the history of the community. It also seeks to honor the people of Rancho Cordova by promoting the inclusion of cultural arts into the fabric of the community as a component that contributes to the overall quality of life for residents, workers, and visitors. The Element provides goals, policies, and actions designed recognize and preserve the history of the area and celebrate the diversity of the City's population.

GOAL CHR.1: Identify and preserve the history of Rancho Cordova for future generations.

GOAL CHR.2: Highlight, preserve, and acknowledge the cultural diversity of the community.

GOAL CHR.3: Enhance the quality of life in Rancho Cordova by promoting, preserving, and sustaining the cultural and performing arts.

Under the general plan Policy CHR.1.3 is the policy used to implement the identification of resources which are historically important to the City of Rancho Cordova.

- **Policy CHR.1.3 -**Establish review procedures for development projects that recognizes the history of the area in conjunction with State and federal laws.
    - **Action CHR.1.3.1-** Require historic resources and paleontological studies (e.g., archaeological and historical investigations) for all applicable discretionary projects, in accordance with CEQA regulations. The studies should identify paleontological, historic, or cultural resources in the project area, determine their eligibility for inclusion in the California Register of Historical Resources, and provide mitigation measures for any resources in the project area that cannot be avoided.

3.5.2 Environmental Setting

Study Area

Figure 2-2 shows both the 12kV and 69kV proposed alignments, as well as the alignment of the existing underground direct-buried cable. The alignments presented on Figure 2-2 illustrate SMUD's preferred locations for cable installation; however, as needed to avoid

resources, the analysis in this EIR assumes the cable would be installed within the boundary of the study area identified in Figure 3.1-1. The study area was designed to encompass all areas within the alignment that could be subject to ground disturbing project actions. The study area also encompasses all areas proposed for staging, access, and storage within the alignment.

Regional Prehistory

The archaeology of Sacramento County is included within the broad temporal framework established by archaeologists for the California Central Valley which is presented below (SMUD 2022).

The Paleo-Indian Period (13,550 to 10,550 Before Present [BP]) saw the first demonstrated entry and spread of humans into California. The Central Valley was covered with extensive grasslands and riparian forests. The Central California Delta had not yet developed. The Central Valley was home to a diverse community of large mammals, some of which soon became extinct. Human populations were likely focused on large game hunting, although evidence remains scant, as does understanding of lifeways during this period (SMUD 2022).

The beginning of the Lower Archaic Period (10,550 to 7,550 BP) coincides with that of the middle Holocene climatic change to generally drier conditions that brought about the drying up of the pluvial lakes. Lithic assemblages from Lower Archaic sites are associated with notched and stemmed dart points, including Lake Mohave, Silver Lake, and Pinto styles. It is also during this period that the first evidence of milling stone technology appears, indicating an increased reliance on processing plants for food. Milling equipment such as handstones and milling slabs and are frequently associated with a diverse tool assemblage, including cobble-based pounding, chopping, and scraping tools commonly formed from meta-volcanic greenstone and volcanic basalts. (SMUD 2022).

The Middle Archaic Period (7,550 to 2,550 BP) began at the end of mid-Holocene climatic conditions, when the climate became similar to present-day conditions. Cultural change primarily occurred in response to environmental technological factors. Hunting remained an important source of food. Milling equipment includes handstones and milling slabs as well as mortars and pestles, which appear as early as 6000 BP in marsh and riparian settings such as the project area. This technological change in groundstone is believed to signal a more sedentary lifestyle in those environments. A general population growth and expansion occurred. The presence of numerous exotic trade goods, including obsidian from a range of sources across California, found within Middle Archaic assemblages indicates that populations were already part of a complex regional trade network. *Olivella* shell beads make their first appearance in the project area during the Middle Archaic, indicating trade with Southern California coastal groups (SMUD 2022).

Growth of sociopolitical complexity marks the Upper Archaic Period (2,550 to 900 BP). The development of status distinctions based on wealth is well documented. Group-oriented religions emerged and may have been the origins of the Kuksu religious system

at the end of the period and populations tended towards large, high-density, permanent settlements. These villages were used as hubs from which the populace roamed to collect resources, using a wide range of technologies. Economic activities focused on a broad spectrum of locally available plant and animal resources, many of which could be seasonally exploited for storage or exchange. The technical investment in tools and gear from Upper Archaic sites indicate that many were produced and used for specialized tasks, including fishing gear, such as harpoon heads and hooks, and ornamentation, such as bone awls and stone drills used to make objects such as bird bone tubes and charmstones. This period retained the large dart points in different styles but with a marked decrease in stemmed points. Milling equipment includes wooden mortars and bi-pointed and flat-end pestles as well as handstones and milling slabs, although mortars and pestles are more abundant (SMUD 2022).

Several technological and social changes distinguish the Emergent Period (900 to 300 BP). The bow and arrow were introduced, ultimately replacing dart points. Territorial boundaries between groups became well established and may closely resemble those documented in the ethnographic literature. Exchange of goods between groups became more regularized with more material, including raw materials, entering into the exchange networks. In the latter portion of this period (500 to 200 BP), exchange relations become highly regularized and sophisticated. The clam disk bead became a monetary unit for exchange and increasing quantities of goods moved greater distances. Many of the Emergent Period sites identified in the study area are located on high ground near watercourses, such as the American River. During the latter decades of this period, large-scale Euro-American-related impacts, such as illnesses, on Native American groups took place (SMUD 2022).

Historic Setting

Early Euro- American Exploration and Settlement

Although the segment of the American River in the project area was explored by American fur-trapper Jedediah Smith in 1826 to 1827, Euro-American settlement of the Sacramento area did not begin until the late 1830s and early 1840s, when entrepreneurs, such as John Sutter and Jared Sheldon obtained land grants from the Mexican government. The south side of the American River, including the project area, was granted to William A. Leidesdorff as part of the 35,521-acre *Rancho de los Americanos* land grant on October 8, 1844 (SMUD 2022).

The Natomas Company

With the discovery of gold in 1848, a surge of miners traveled up the American River from Sacramento or along the Coloma Road to Folsom and from there, into the Sierran foothills to engage in placer mining along its numerous rivers, creeks, and streams. Within less than a decade, placer mining was giving out and alternative, yet more destructive, gold extractions were employed, such as hydraulic mining. As hydraulic mining proved to be deleterious to the regions river systems, mining operations turned to dredging as next

best way to quickly extract the remaining gold bearing gravels from California's river channels and floodplains.

The Folsom Mining District was one of the largest dredge fields in California, incorporating 17,400 acres between Folsom in the north and Rancho Cordova in the south. The principal dredging outfit which operated in the district was the Natomas Company. The Natomas Company, organized in 1851 as the Natoma Water and Mining Company, initially provided water for mining interests, its water rights and land holdings allowed the company to pursue other ventures such as agriculture, hydroelectric power, aggregate processing, and real estate. From 1909 until 1962, the company dredged 13,241 acres, operating 20 dredges, as well as a shop in Natomas where dredges were designed and built. The Natomas Company is responsible for the dredge tailings seen along the lower American River, including those in the project area. Approximately one billion cubic yards of gravel were dredged by the Natomas Company over its almost 60-year history (SMUD 2022).

Agriculture

The main crops being raised in the project area during the mid to late 19th century were grain crops, such as wheat and barley, and wine grapes. The success of these endeavors was boosted by the presence of already established major transportation corridors, such as the Placerville Road, Folsom Road, Bradshaw Road, Coloma Road, and rail lines such as the Sacramento Valley Railroad. To spur additional agricultural interest in the area, the Natomas Company started their own vineyards and orchards. These crops were watered from their canals, such as the Valley Ditch. By 1885, the Natomas Company had over 2,000 acres in vineyards, 300 acres in orchards and over 800 acres in grain and hay, a large majority of which was located within what would become the City of Rancho Cordova (SMUD 2022).

Post-WWII Housing, Recreation, and the City of Rancho Cordova

Population in the project area remained sparse well into the 20th century. The opening of Mather Air Force Base and Army Airfield (Mather Field) in 1917 brought in more residents, but it was not until World War II that the population began to grow. This was largely due to the employment opportunities for both military and civilian families at Mather Field and Aerojet, a rocket and missile propulsion manufacturer, in the late 1950s and early 1960s. In response to the growing population, multiple new housing developments were constructed, including the Riverview Orchard neighborhood and the Rossmoor Neighborhood in 1962. The two schools within the 69kV alignment, Mills Middle School and Cordova High School, opened in 1960 and 1961 respectively (SMUD 2022).

One of the goals of the new community was to provide and enhance recreational activities for its residents. This goal was supported by Sacramento County until Rancho Cordova was incorporated in 2003 and the city was able to form its own parks department. There are two parks located within the project area which will have project actions occur within them, the American River Parkway (namely, Rossmoor Bar Park) and Hagan Community Park. The proposed 69kV alignment within the American River Parkway intersects with

the Jedediah Smith Memorial Multi-use Trail. This trail is a "world-renowned" bike trail that stretches for 32 miles along the south bank of the American River, supposedly following the route fur-trader Jedediah Smith took within the region as the first American known to have explored the area in 1827. In 1974, this trail was listed as a National Trail making it part of an interconnected, cross-country public access trail system. Both parks and the portion of the Jedediah Smith Memorial Multi-use Trail within the project area are located on lands that once belonged to the Natomas Company. The portion of the American River Parkway in the project area and all the land for Rossmoor Bar Park were sold to the County of Sacramento by the Natomas Company in 1974 (SMUD 2022).

Records Searches and Known Resources

On August 2, 2021, a search of the study area and a one-half-mile buffer was conducted at the North Central Information Center (NCIC), at California State University, Sacramento (File no. SAC-21-150). This search expanded on an earlier record search conducted on May 20, 2021 (File no. SAC-21-102) that included a smaller segment within the project alignment.

As part of both record searches, the following information was reviewed:

- site records of previously recorded cultural resources,
- previous cultural studies,
- NRHP and CRHR listings,
- the California Historic Resources Inventory,
- Built Environment Resource Directory,
- Historical Maps (USGS Topographic and GLO Plat maps), and
- Archaeological Determinations of Eligibility.

The records search results identified that entire project is located within the boundaries of a large and complex historic-era archeological district, the Folsom Mining District (P-34-000335/CA-SAC-308H). No other archaeological or built environment resources have been previously recorded in the study area. The record search results also revealed that approximately 50 percent of the study area had been previously surveyed.

Four new historic-period archaeological resources and six new archaeological features and one isolate associated with the Folsom Mining District were identified within the study area as a result of archaeological survey. One built environment resource was also observed; however, as it is a functioning stormwater conveyance system in use by the City of Rancho Cordova, it will be avoided by SMUD and is not discussed further. All four newly discovered historic-period archaeological resources and the isolate of the Folsom Mining District were

determined to be not eligible for the NRHP or CRHR. Therefore, they are not historical resources or unique archaeological resources for the purposes of CEQA; they are not discussed further. The six newly discovered archaeological features associated with the Folsom Mining District were determined to be contributing elements to the Folsom Mining District. As such, they discussed further below.

Historical Resources

Not identified in the record search results but known to be present in the study area at its intersection with Rossmoor Drive is the Jedediah Smith Memorial Multi-use Trail. The trail is a National Trail and is considered part of a national public-access recreational system. However, it is neither listed in nor has it been evaluated as eligible for the NRHP or CRHR. Therefore, it is not considered a historical resource for the purposes of CEQA.

Archaeological Resources

P-34-000335/CA-SAC-308H Folsom Mining District

P-34-000335/CA-SAC-308H is the Folsom Mining District (District). It is defined as a historic mining district that covers a 15-mile-long by 11-mile-wide area from Folsom to the eastern boundary of Mather Airport. The District as a whole was evaluated in 1992 as eligible for the NRHP as under Criterion A for its association with the California Gold Rush, gold mining in California, and the economic development of the region as well as the role of the Chinese in the Gold Rush; Criterion B for its association with numerous individuals important to the development of the state and the local area; and Criterion D for the intact remains of mining camps, cemeteries, town sites, stores, and way stations as well as other archaeological features and deposits found throughout the District which remain intact and thus, retain their data potential. The period of significance for the District is from 1848-1962. Although the integrity of the district's design, setting, and feeling varies across its expanse due to intrusion from modern developments, its integrity is still considered to be good because overall it retains much of its materials, workmanship, location, and association (SMUD 2022). As a property eligible for the NRHP, the District is automatically listed in the CRHR.

The dominant feature of the District within the study area is a series of tailing piles resulting from the gold mining dredging operations of the Natomas Company. These tailings are located south of the American River in Rossmoor Bar Park; no features, isolates, or deposits associated with the District were identified within portions of the study area located outside of Rossmoor Bar Park (SMUD 2022). Six newly discovered archaeological features which are contributing elements to the District were identified during the archaeological survey conducted for the project. All of these features are located within the 69kV alignment study area along Rossmoor Drive. All six features are in-situ and largely intact, and all six represent water storage and distribution systems which were integral engineering structures of the dredging operation. As such, these six features are considered contributing elements to the District under NRHP and CRHR Criterion A/1 for their association with the Natomas Company and under Criterion C/3 as significant engineering features distinct to dredging operations (SMUD 2022).

3.5.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance/Significance Criteria

Based on Appendix G of the State CEQA Guidelines, the project would result in a potentially significant impact on cultural resources if it would:

- cause a substantial adverse change in the significance of an historical resource pursuant to Section 15064.5 of the State CEQA Guidelines; and

- cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the State CEQA Guidelines.

Analysis Methodology

The impact analysis for archaeological and historical resources is based on the records search results (NCIC File no. SAC-21-102 and SAC-21-150). The analysis is also informed by the provisions and requirements of federal, State, and local laws and regulations that apply to cultural resources.

PRC Section 21083.2(g) defines a "unique archaeological resource" as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following CRHR-related criteria: (1) that it contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information; (2) that it as a special and particular quality, such as being the oldest of its type or the best available example of its type; or (3) that it is directly associated with a scientifically recognized important prehistoric or historic event or person. An impact on a resource that is not unique is not a significant environmental impact under CEQA (State CEQA Guidelines Section 15064.5[c][4]). If an archaeological resource qualifies as a resource under CRHR criteria, then the resource is treated as a unique archaeological resource for the purposes of CEQA.

For the purposes of this impact discussion, "historical resource" is used to describe built-environment historic-era resources. Archaeological resources which may qualify as "historical resources" pursuant to CEQA, are analyzed separately from built-environment historical resources and are referred to as unique archaeological resources.

Issues or Potential Impacts Not Discussed Further

All unique archaeological resources issues identified in the significance criteria are evaluated below. As described above, no historical resources were identified within the study area. Therefore, project implementation would have no impact on historical resources. This issue is not analyzed further.

Impact Analysis

Impact 3.2-1: Change the significance of a known archaeological resource.

Results of the records search for the study area indicate that the project would occur entirely within the boundaries of an historic-period archaeological resource, the Folsom Mining District (P-34-000335/CA-SAC-308H). Six newly-identified features which are contributing elements of the District are located within the study area. Each could be impacted by project-related ground-disturbing activities. This would be a **potentially significant** impact.

The Folsom Mining District is a significant historic-period archaeological resource. As described previously, the District covers a 15-mile-long by 11-mile-wide area from Folsom to the eastern boundary of Mather Airport. The District as a whole was evaluated in 1992 as eligible for the NRHP and therefore is a resource under CEQA. The pedestrian survey conducted for this project resulted in the identification of six newly discovered archaeological features representing water storage and distribution elements which contribute to the significance of the District. All six are located within the 69 kV alignment portion of the study area along Rossmoor Drive. Each could be impacted by project-related ground-disturbing activities. This would be a **potentially significant** impact.

Mitigation Measures

Mitigation Measure 3.2-1: Establish Work Exclusion Zones to Avoid Archeological Features.

Prior to the start of operations, a 15-foot work exclusion zone (WEZ) will be established around each of the identified archeological features. The WEZ will be shown on project plans and will be installed prior to the start of work on Rossmoor Drive. The WEZ will be delineated by the installation of high visibility temporary construction fencing set 15 feet away from the edge of the feature. The installation of the WEZ fencing will be overseen by a professionally qualified archaeologist who meets the Secretary of the Interior's standards for archaeology. The archaeologist will review the WEZ location and mark the location of the WEZ on the ground prior to installation. No access, staging, storage, equipment, or personnel shall enter any portion of the WEZ.

The WEZ for each archaeological feature will remain in place until all work on Rossmoor Drive is complete.

Significance after Mitigation

Implementation of Mitigation Measure 3.2-1 would ensure that each feature of the District is avoided by project activities and preserved in place. Therefore, this measure meets the requirements of PRC Section 21083.1(b) for the preservation and avoidance of unique archaeological resources in place. Implementation of this measure would reduce impacts to known archaeological resources to a **less-than-significant** level.

Impact 3.2-2: Change the significance of unknown archaeological resources.

The project area is known to have been used by Native Americans and Euro-American for settlement, mining, and agricultural activities. Project-related ground-disturbing activities could result in discovery or damage of yet undiscovered archaeological resources as defined in State CEQA Guidelines Section 15064.5. This would be a **potentially significant** impact.

The NCIC records search results did not reveal any known archaeological resources within the study area, beyond the Folsom Mining District (P-34-000335/CA-SAC-308H). However, the study area was used by indigenous people, fur-trappers, gold mining operations, and farmers including farmers of Asian origin in the past. Therefore, there is the potential that ground disturbance during project construction could encounter previously undiscovered or unrecorded historic-period or prehistoric archaeological sites, features, and materials. These activities could damage or destroy archaeological resources. This would be a **potentially significant** impact.

Mitigation Measure 3.2-2a: Halt Ground-Disturbing Activity Upon Discovery of Archaeological Resources and Evaluate Discovered Resource.

In the event that a historic-period archaeological resource (such as concentrated deposits of bottles or bricks with makers marks, amethyst glass, ceramic or metal pipes, or other historic refuse) or a prehistoric archaeological resource (such as lithic scatters, midden soils), is uncovered during grading or other construction activities, all ground-disturbing activity within 100 feet of the discovery shall be halted until a qualified archaeologist can assess the significance of the find. SMUD will be notified of the potential find and a qualified archeologist shall be retained to investigate its significance. If the find is suspected to be Native American in origin, Mitigation Measure 3.1-1d shall be implemented. Any previously undiscovered resources found during construction will be recorded on appropriate California Department of Parks and Recreation 523 forms and evaluated for significance under all applicable regulatory criteria. If the archaeologist determines that the find does not meet the CRHR standards of significance for cultural resources, construction may proceed. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either an historical resource or a unique archaeological resource), the archaeologist shall work with SMUD to follow accepted professional standards such as further testing for evaluation or data recovery, as necessary. The results of the identification, evaluation, and/or data recovery program for any unanticipated discoveries shall be presented in a professional-quality report that details all methods and findings, evaluates the nature and significance of the resources, analyzes and interprets the results.

Mitigation Measure 3.2-2b: Implement Native American and Archaeological Monitoring.

Implement Mitigation Measure 3.1-1c.

Significance after Mitigation

Implementation of Mitigation Measures 3.2-2a and 3.2-2b would reduce impacts associated with archaeological resources to a **less-than-significant** level by requiring the performance of professionally accepted and legally compliant procedures in the event of a discovery, as well as the protection of any previously undocumented significant archaeological resources.

Impact 3.2-3: Potential for the project, in combination with other development, to contribute to a significant cumulative impact to cultural resources.

The project, in combination with other cumulative development in the area, could result in impacts to cultural resources in the area. Through the implementation of project-specific mitigation measures, the contribution of the project would not be cumulatively considerable with respect to archaeological resources. Impacts would be **less than significant**.

The cumulative context for the cultural resources analysis considers a broad regional system of which the resources are a part. The cumulative context for and historic-period archaeological resources is the City of Rancho Cordova where common patterns of historic-era settlement have occurred over roughly the past two centuries. The cumulative context for prehistoric archaeological resources is the Sacramento Valley, where archaeologists have developed a taxonomic framework describing patterns characterized by technology, particular artifacts, economic systems, trade, burial practices, and other aspects of culture.

Because all significant cultural resources are unique and nonrenewable members of finite classes, meaning there are a limited number of significant cultural resources, all adverse effects erode a dwindling resource base. The loss of any one archaeological site or significant features of an archaeological site could affect the scientific value of others in a region because these resources are best understood in the context of the entirety of the cultural system of which they are a part. The cultural system is represented archaeologically by the total inventory of all sites and other cultural remains in the region. As a result, a meaningful approach to preserving and managing cultural resources must focus on the likely distribution of cultural resources, rather than on a single project or parcel boundary.

The lands adjacent to the American River in the City of Rancho Cordova have been affected by gold mining activities from 1849 to 1962. After placer mining was no longer productive, gold mining continued in the region under the Natomas Company's dredging operations. Agriculture also became a major economic activity, dominating the area within and around the city from the 1860s until after World War II when industrial jobs led to increased residential growth. By the 1960s and 1970s recreational development of former Natomas

Company lands led to the creation of both Cordova Community Park and Rossmoor Bar Park, as well as the Jedediah Smith Memorial Multi-use Trail. This development has resulted in an existing significant adverse effect on cultural resources, including historic-period and prehistoric archaeological resources. Cumulative development continues to contribute to the disturbance and loss of cultural resources in general.

Proper planning and appropriate mitigation can help to capture and preserve knowledge of such resources and can provide opportunities for increasing our understanding of the past environmental conditions and cultures by recording data about sites discovered and preserving features and artifacts found. Federal, State, and local laws are also in place that protect these resources in most instances. Even so, it is not always feasible to protect these resources, particularly when preservation in place would make projects infeasible, and for this reason the cumulative effects of past and present projects in the City of Rancho Cordova on cultural resources are considered significant.

With implementation of Mitigation Measure 3.2-1, potential adverse effects to historic-period archaeological resource Folsom Mining District (P-34-000335/CA-SAC-308H) associated with ground-disturbing construction activities would be avoided by ensuring the integrity of the contributing features is maintained during construction. With implementation of Mitigation Measure 3.2-2, potential adverse effects to previously unknown archaeological resources associated with construction-related ground disturbing activities would be avoided. Implementation of these mitigation measures would ensure that the project's contribution to cumulatively significant historic-period and prehistoric archeological resource impacts would not be cumulatively considerable by requiring construction work to cease in the event of an accidental find and appropriate treatment of discovered resources be performed, in accordance with pertinent laws and regulations. This impact would be **less than significant**.

Mitigation Measures

See Mitigation Measures 3.2-1 and 3.2-2. No additional mitigation is required.

3.3 Air Quality

This section describes the project area's existing air quality conditions and applicable air quality regulations, and analyzes potential short- and long-term air quality impacts that could result from implementation of the project.

One comment letter regarding air quality was received in response to the Notice of Preparation (see Appendix A). The letter was submitted by the Sacramento Metropolitan Air Quality Management District (SMAQMD) and requested that the EIR reference SMAQMD's *Guide to Air Quality Assessment in Sacramento County*. The analysis included in this section references this document, as discussed below.

3.3.1 Regulatory Setting

The project is located in the City of Sacramento, which is within the Sacramento Valley Air Basin (SVAB). Air quality in the SVAB is regulated by the U.S. Environmental Protection Agency (EPA), California Air Resources Board (CARB), and Sacramento Metropolitan Air Quality Management District (SMAQMD). SMAQMD develops rules, regulations, policies, and/or goals to comply with applicable legislation. Although EPA regulations may not be superseded, State and local regulations may be more stringent.

Federal

U.S. Environmental Protection Agency

EPA has established National Ambient Air Quality Standards (NAAQS) for six criteria air pollutants, which are known to be harmful to human health and the environment. These pollutants are: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (which is categorized into particulate matter less than 10 microns in diameter [PM_{10}] and particulate matter less than 2.5 microns in diameter [$PM_{2.5}$]), and sulfur dioxide (SO_2). The State of California has also established the California Ambient Air Quality Standards (CAAQS) for these six pollutants, as well as sulfates, hydrogen sulfide (H_2S), vinyl chloride, and visibility-reducing particles. NAAQS and CAAQS were established to protect the public with a margin of safety, from adverse health impacts caused by exposure to air pollution. A brief description of the source and health effects of criteria air pollutants is provided below in Table 3.3-1.

Table 3.3-1 Criteria Air Pollutants

Pollutant	Sources	Effects
Ozone	Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG), also sometimes referred to as volatile organic compounds by some regulating agencies) and nitrogen oxides (NO_X). The main sources of ROG and NO_X,	Ozone causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

Pollutant	Sources	Effects
	often referred to as ozone precursors, are products of combustion processes (including motor vehicle engines) and the evaporation of solvents, paints, and fuels.	
Carbon monoxide	CO is usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicle engines; the highest emissions occur during low travel speeds, stop-and-go driving, cold starts, and hard acceleration.	Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue; impair central nervous system function; and induce angina (chest pain) in persons with serious heart disease. Very high levels of CO can be fatal.
Particulate matter	Some sources of particulate matter, such as wood burning in fireplaces, demolition, and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect.	Scientific studies have suggested links between fine particulate matter and numerous health problems, including asthma, bronchitis, and acute and chronic respiratory symptoms, such as shortness of breath and painful breathing. Recent studies have shown an association between morbidity and mortality and daily concentrations of particulate matter in the air.
Nitrogen dioxide	NO_2 is a reddish-brown gas that is a by-product of combustion processes. Automobiles and industrial operations are the main sources of NO_2.	Aside from its contribution to ozone formation, NO_2 can increase the risk of acute and chronic respiratory disease and reduce visibility.
Sulfur dioxide	SO_2 is a combustion product of sulfur or sulfur-containing fuels such as coal and diesel.	SO_2 is also a precursor to the formation of particulate matter, atmospheric sulfate, and atmospheric sulfuric acid formation that could precipitate downwind as acid rain.
Lead	Leaded gasoline, lead-based paint, smelters (metal refineries), and the manufacture of lead storage batteries have been the primary sources of lead released into the atmosphere, with lead levels in the air decreasing substantially since leaded gasoline was eliminated in the United States.	Lead has a range of adverse neurotoxic health effects.

Sources: EPA 2019
Notes: CO=carbon monoxide; NO_2= nitrogen dioxide; NO_x=nitrogen oxides; ROG-=reactive organic gases; SO_2=sulfur dioxide

State

California Air Resources Board

CARB 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 (CCAA). California law authorizes CARB to set ambient (outdoor) air pollution standards (California Health and Safety Code Section 39606) in consideration of public health, safety, and welfare.

Criteria Air Pollutants

CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants. In most cases the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

The CCAA requires that all local air districts in the state endeavor to achieve and maintain the CAAQS by the earliest date practical. The act specifies that local air districts should focus particular attention on reducing the emissions from transportation and areawide emission sources, and provides districts with the authority to regulate indirect sources.

Among CARB's other responsibilities are overseeing local air district compliance with Federal and State laws, approving local air quality plans, monitoring air quality, determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

Toxic Air Contaminants

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are required before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs, including diesel particulate matter (PM), and adopted EPA's list of HAPs as TACs.

Once a TAC is identified, CARB then adopts an airborne toxics control measure for sources that emit that particular TAC. If a safe threshold exists for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If no safe threshold exists, the measure must incorporate best available control technology for toxics to minimize emissions.

CARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses, and off-road diesel equipment (e.g., tractors, generators). Recent milestones included the low-sulfur diesel fuel requirement and tighter emissions standards for heavy-duty diesel trucks (effective in 2007 and subsequent model years) and off-road diesel equipment (2011). Over time, replacing older vehicles will result in a vehicle fleet that produces substantially lower levels of TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) in California have been reduced substantially over the last decade; such emissions will be reduced further through a progression of regulatory measures (e.g., low emission vehicle/clean fuels and Phase II reformulated-gasoline regulations) and control technologies.

Local

Sacramento Metropolitan Air Quality Management District

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. SMAQMD maintains an updated plan for achieving the State and federal ozone standards that was updated and approved by the SMAQMD Board and CARB in 2017. There are currently no plans available for achieving the federal $PM_{2.5}$ or State PM_{10} standards. The air quality plan establishes the strategies used to achieve compliance with the NAAQS and 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 (oxides of nitrogen [NO_X] and reactive organic gases [ROGs]), toxic air contaminants (TACs), and odors within its jurisdiction.

SMAQMD published the *Guide to Air Quality Assessment in Sacramento County,* which provides air quality guidance when preparing CEQA documents. This document was last updated in April 2020. SMAQMD's guide establishes thresholds of significance for criteria air pollutants that SMAQMD recommends using when evaluating air quality impacts in Sacramento County. CEQA-related air quality thresholds of significance are tied to achieving or maintaining attainment designation with the NAAQS and CAAQS, which are scientifically substantiated, numerical concentrations of criteria air pollutants considered to be protective of human health. As such, for the purposes of this project, the following thresholds of significance are used to determine if project-generated emissions would produce a significant localized and/or regional air quality impact such that human health would be adversely affected.

Per SMAQMD recommendations, air quality impacts are considered significant if the project would result in any of the following:

- NO_X emissions in excess of 85 pounds per day (lbs/day) during construction and 65 lbs/day during operations;
- ROG emissions in excess of 65 lbs/day during operations;
- PM_{10} emissions in excess of 80 lbs/day and 14.6 tons per year (tons/year) during construction and operations;
- $PM_{2.5}$ emissions in excess of 82 lbs/day and 15 tons/year during construction and operations;
- CO emissions that would violate or contribute substantially to concentrations that exceed the 1-hour CAAQS of 20 parts per million (ppm) or the 8-hour CAAQS of 9 ppm during construction and operations;

- Expose any off-site sensitive receptor to a substantial incremental increase in TAC emissions that exceed 10 in one million for carcinogenic risk (i.e., the risk of contracting cancer) and/or a noncarcinogenic hazard index of 1.0 or greater; or

- Create objectional odors affecting a substantial number of people.

In addition to these thresholds, all SMAQMD-recommended best management practices (BMPs) (and use of Best Available Control Technology (BACT) shall be implemented to minimize emission of PM_{10} and $PM_{2.5}$. Without the application of BMPs and BACT, the threshold for PM_{10} and $PM_{2.5}$ during construction and operations is zero pounds per day and tons per year.

Criteria Air Pollutants

SMAQMD is the primary agency responsible for planning to meet NAAQS and CAAQS in Sacramento County. SMAQMD works with other local air districts in the Sacramento region to maintain the region's portion of the State Implementation Plan (SIP) for ground-level ozone. The SIP is a compilation of plans and regulations that govern how the region and State will comply with the federal Clean Air Act requirements to attain and maintain the NAAQS for ozone.

SMAQMD has developed a set of guidelines for use by lead agencies when preparing environmental documents. The guidelines contain thresholds of significance for criteria pollutants and TACs, and also make recommendations for conducting air quality analyses.

Toxic Air Contaminants

At the local level, air districts may adopt and enforce CARB control measures. Under SMAQMD Rule 201 ("General Permit Requirements"), Rule 202 ("New Source Review"), and Rule 207 ("Federal Operating Permit"), all sources that possess the potential to emit TACs are required to obtain permits from SMAQMD. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including New Source Review standards and air toxics control measures. SMAQMD limits emissions and public exposure to TACs through a number of programs. SMAQMD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. Sensitive receptors are people, or facilities that generally house people (e.g., schools, hospitals, residences), that may experience adverse effects from unhealthful concentrations of air pollutants.

3.3.2 Environmental Setting

The project alignments are located in the City of Rancho Cordova, which is within the SVAB. The SVAB encompasses Butte, Colusa, Glenn, Tehama, Shasta, Yolo, Sacramento, Yuba, and Sutter Counties and parts of Placer, El Dorado, and Solano Counties. The SVAB 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. Sacramento County is

currently designated as nonattainment for both the federal and State ozone standards, the federal $PM_{2.5}$ standard, and the State PM_{10} standard. The region is designated as in attainment or unclassifiable for all other federal and State ambient air quality standards. (SMAQMD 2021)

3.3.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance/Significance Criteria

Per Appendix G of the CEQA Guidelines, air quality impacts are considered significant if the project would result in any of the following:

- Conflict with or obstruct implementation of the applicable air quality plan;
- 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;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Impact Analysis

Impact 3.3-1: Conflict with or obstruct implementation of the applicable air quality plan.

The project would involve construction activities that would include 2.76 miles of underground cable replacement and installation of up to 13 underground utility vaults. The project does not include any land uses or operational emission sources that would result in long-term employment opportunities, new housing, or substantial increases in operational vehicle trips. Because the project is consistent with the land uses of the City's General Plan, the project would not conflict with the implementation of the SMAQMD AQAP and would not facilitate further growth. This impact would be **less than significant**.

SMAQMD has developed air quality attainment plans (AQAPs) (i.e., Sacramento Regional 2008 NAAQS 8-Hour Ozone Attainment and Reasonable Further Progress Plan), which present comprehensive strategies to reduce ROG, NO_X, PM_{10}, and $PM_{2.5}$ emissions from stationary, area, mobile, and indirect sources to achieve attainment status of the NAAQS and CAAQS. SMAQMD has not prepared a similar plan for particulate matter. The emission inventories used to develop the applicable AQAPs are based primarily on projected population and employment growth and associated VMT for the SVAB. This growth is estimated for the region, based in part, on the planned growth identified in regional and local land use plans such as general plans or community plans. Therefore, projects that would result in increases in population or employment growth

beyond that projected in regional or local plans could result in increases in VMT above that forecasted in the attainment plans, further resulting in mobile source emissions that could conflict with or obstruct implementation of the AQAP. Increases in VMT beyond that projected in the City's General Plan, Sacramento's Area Council of Governments regional VMT modeling, and SMAQMD regional AQAPs generally would be considered to have a significant adverse incremental effect on the SVAB's ability to attain CAAQS and NAAQS for all criteria air pollutants.

It is anticipated that operational activities associated with the project would include only occasional maintenance and repair; therefore, operational emissions from the project would be negligible. The project does not include any land uses or operational emission sources that would result in long-term employment opportunities, new housing, or substantial increases in operational vehicle trips considered in the AQAP Because the project is consistent with the land uses of the City's General Plan, the project would not conflict with the implementation of the SMAQMD AQAP and would not facilitate further growth. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.3-2: 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.

Project construction would not generate emissions in excess of the SMAQMD thresholds for ROG and NO_X. However, the project, without the application of BMPs and BACT, would generate daily and annual emissions of PM_{10} and $PM_{2.5}$ in excess of the SMAQMD thresholds during construction activities. Therefore, this impact would be **potentially significant**.

Construction activities would result in temporary generation and emissions of criteria air pollutants and precursors. Construction-related emissions were estimated using the California Emissions Estimator Model (CalEEMod) Version 2020.4.0 computer program (CAPCOA 2021), in accordance with recommendations by SMAQMD. Modeling was based on project-specific information; reasonable assumptions based on typical construction activities; and default values in CalEEMod that are based on the project's location and land use type.

Phase 1 (12kV alignment) construction is anticipated to occur over a three-week period and could begin in summer 2022. Phase 2 (69kV alignment) construction is anticipated to begin after Phase I is complete and would occur over a twelve-month period. Construction-related activities would result in project-generated emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ from construction activities (e.g., site preparation, trenching, conduit duct bank installation, utility vault installation, and paving), off-road equipment, material delivery, and worker commute trips. Fugitive dust emissions of PM_{10} and $PM_{2.5}$ are

associated primarily with site preparation and trenching, and vary as a function of soil silt content, soil moisture, wind speed, acreage of disturbance, and vehicle miles traveled on and off the site. Emissions of ozone precursors, ROG and NO_X, are associated primarily with construction equipment and on-road mobile exhaust. Construction activities associated with the project would likely require the use of forklifts, cranes, excavators, rubber tiered dozers, graders, and generators, as well as other diesel-fueled equipment as necessary.

It should be noted that as construction continues into the future, equipment exhaust emission rates would decrease as newer, more emission-efficient construction equipment replaces older, less efficient equipment. As such, reported emissions represent a conservative estimate of maximum daily emissions during the construction period. For assumptions and modeling inputs, refer to Appendix C.

Table 3.3-2 summarizes the modeled maximum daily emissions for all pollutants and annual emissions for particulate matter from Phase 1 and Phase 2 construction activity without the application of BMPs and BACT.

Table 3.3-2 Summary of Unmitigated Emissions Generated During Project Construction

	Maximum Daily Emissions (lbs/day)				Annual Emissions (tons/year)	
	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**PM_{10}**	**$PM_{2.5}$**
Phase 1	5	47	9	5	1	<1
Phase 2	5	47	9	5	1	<1
SMAQMD Threshold of Significance[a]	None	85	0	0	0	0
Exceeds Threshold?	No	No	Yes	Yes	Yes	Yes

Notes: ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; lbs/day = pounds per day; SMAQMD = Sacramento Metropolitan Air Quality Management District

[a] Represents SMAQMD Threshold of Significance without the application of Best Management Practices (BMPs) and Best Available Control Technology (BACT).

Maximum daily emissions represent overlapping construction phases. See Appendix C for details.

Source: Modeled by Ascent Environmental in 2022

As shown in Table 3.3-2, Phase 1 and Phase 2 construction would not generate emissions in excess of the SMAQMD thresholds for ROG and NO_X. However, the project, without the application of BMPs and BACT, would generate daily and annual emissions of PM_{10} and $PM_{2.5}$ in excess of the SMAQMD thresholds during construction activities. Therefore, the impact of construction activities would be potentially significant.

Mitigation Measures

Mitigation Measure 3.3-1: Implement SMAQMD Basic Construction Emission Control Practices.

During construction, the contractor shall comply with and implement SMAQMD's Basic Construction Emission Control Practices, which includes SMAQMD-recommended BMPs

and BACT, for controlling fugitive dust emissions. Measures to be implemented during construction include the following:

- Water all exposed surfaces at least 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 two (2) feet of freeboard 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 track-out 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.

- All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.

- 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 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 will be checked by a certified mechanic and determined to be running in proper condition before it is operated.

Significance after Mitigation

Implementation of BMPs and BACT as required by Mitigation Measure 3.3-1 would result in the project generating emissions less than the SMAQMD thresholds for all pollutants, as shown in Table 3.3-3.

Table 3.3-3 Summary of Mitigated Emissions Generated During Project Construction

	Maximum Daily Emissions (lbs/day)				Annual Emissions (tons/year)	
	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**PM_{10}**	**$PM_{2.5}$**
Phase 1	5	47	5	4	<1	<1
Phase 2	5	47	5	4	<1	<1
SMAQMD Threshold of Significance	None	85	80	82	14.6	15
Exceeds Threshold?	No	No	No	No	No	No

Notes:

ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; lbs/day = pounds per day; SMAQMD = Sacramento Metropolitan Air Quality Management District
Maximum daily emissions represent overlapping construction phases. See Appendix A for details.
Source: Modeled by Ascent Environmental in 2022

With implementation of Mitigation Measure 3.3-1, Phase 1 and Phase 2 short-term construction emissions of criteria air pollutants and precursors would not violate or substantially contribute to an existing or projected air quality violation.

It is anticipated that operational activities associated with the project would include only occasional maintenance and repair; therefore, operational emissions from the project would be negligible and would not exceed pollutant concentrations. Because construction and operational emissions would not exceed pollutant concentrations, sensitive receptors would not be exposed to substantial pollutant concentrations such that adverse health impacts would occur. As discussed previously, SMAQMD developed these thresholds in consideration of achieving attainment for the NAAQS and CAAQS, which represent concentration limits of criteria air pollutants needed to adequately protect human health. Therefore, with implementation of Mitigation Measure 3.3-1, short-term project-generated construction emissions and long-term operational emissions would not be cumulatively considerable and impacts would be reduced to a ***less than significant*** level.

Impact 3.3-3: Expose sensitive receptors to substantial pollutant concentrations.

Construction-related activities would result in temporary, intermittent emissions of diesel PM, which is the primary TAC of concern. Based on emissions modeling, maximum daily emissions of exhaust $PM_{2.5}$ would not exceed SMAQMD thresholds of significance. It is anticipated that operational emissions from the project would be negligible. As a result, this impact would be **less than significant**.

Sensitive receptors are generally considered to include those land uses where exposure to pollutants could result in health-related risks to sensitive individuals, such as children or the elderly. Residential dwellings, schools, hospitals, playgrounds, and similar facilities are of primary concern because of the presence of individuals particularly sensitive to pollutants and the potential for increased and prolonged exposure of individuals to pollutants.

Construction-related activities would result in temporary, intermittent emissions of diesel PM from the exhaust of off-road, heavy-duty diesel equipment. For construction-activity, diesel PM is the primary TAC of concern. The potential cancer risk from inhaling diesel PM outweighs the potential for all other diesel PM-related health impacts (i.e., noncancer chronic risk, short-term acute risk) and health impacts from other TACs (CARB 2003). Diesel PM is highly dispersive and can be estimated to decrease by approximately 70 percent at a distance of 500 feet from the source (Zhu et al. 2002).

Both the 12kV and 69kV project alignments are generally located adjacent to sensitive receptors along the entirety of the alignments except the 69kV alignment portion that runs north to south along Rossmoor Drive. These receptors include residences along Sierra

Madre Court, Trails Court, Ambassador Drive, and two school sites, Cordova High School and Mills Middle School. Construction activities would only occur close to any sensitive receptor over a short time period based on the incremental construction activities along a linear plan. For the purposes of this analysis, it is assumed that Phase 1 construction would generally progress at a rate of approximately 198 feet per day and Phase 2 would progress at a rate of approximately 43 linear feet per day, based on the length of the construction period and the linear length of the 12 kV and 69kV alignments. Considering that construction activities would move along the proposed alignments, no individual receptor would be exposed to diesel exhaust emissions from construction equipment for more than a few days at a time. Thus, in accordance with OEHHA guidance and due to uncertainties in evaluating cancer risk from very short exposure periods (i.e., two months) at any one individual receptor, this project type would not result in substantial pollution concentrations of TACs at nearby receptors (OEHHA 2015).

Further, based on emissions modeling, maximum daily emissions of exhaust $PM_{2.5}$ would not exceed more than four (4) lbs per day during construction with the implementation of Mitigation Measure 3.3-1 and would be in attainment with NAAQS and CAAQS thresholds. NAAQS and CAAQS represent concentration limits of criteria air pollutants needed to adequately protect human health. As noted previously, these estimates represent a conservative analysis and would temporarily occur nearby each sensitive receptor.

It is anticipated that operational activities associated with the project would include only occasional maintenance and repair, similar to existing operations. Therefore, operational emissions from the project would be negligible.

Considering the highly dispersive properties of diesel PM, the relatively low mass of diesel PM emissions that would be generated at any single place during project construction, and the relatively short period during which diesel PM-emitting construction activities would take place near any one sensitive receptor, construction-related TACs would not expose sensitive receptors to an incremental increase in cancer risk that exceeds 10 in one million. The project would generate negligible emissions during operations, similar to baseline conditions, and would not result in long-term exposure of any sensitive receptors to TACs. As a result, this impact would be ***less than significant***.

Mitigation Measures

No mitigation is required.

Impact 3.3-4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Minor odors generated during project construction would be minor and temporary. Implementation of the project would not result in exposure of a substantial number of people to objectionable odors. Thus, this impact would be ***less than*** **significant**.

Minor odors from the use of heavy-duty diesel equipment and the laying of asphalt during project construction activities would be short-term and temporary, and would dissipate rapidly from the source within an increase in distance. These types of odor-generating activities would not occur at any single location or for an extended period of time. Activities associated with project operation would be similar to existing operations and would not generate odors. Implementation of the project would not result in exposure of a substantial number of people to objectionable odors. Thus, this impact would be ***less than significant***.

Mitigation Measures

No mitigation is required.

3.4 Biological Resources

This section describes the biological resources known or with potential to occur near the project alignments. The analysis includes a description of the existing environmental conditions, the methods used for assessment, the potential impacts associated with implementing the project, and mitigation measures proposed to reduce significant and potentially significant impacts. This section also includes a brief overview of the federal, State, and local laws and regulations pertaining to the protection of biological resources in the City of Rancho Cordova (City) and Sacramento County (County).

The biological resources information presented in this section is based on review of available background reports and biological resource databases as well as reconnaissance-level surveys of the project alignment and surrounding area conducted in 2021 and 2022. Information sources reviewed include:

- Technical Report for the SMUD Cordova Park Underground Cable Replacement Project — Biological Resources (included as Appendix D of this Draft EIR);
- Arborist Report for the SMUD Cordova Park 69kV Underground Cable Replacement Project (included as Appendix E of this Draft EIR);
- California Natural Diversity Database (CNDDB) records search within the Rio Linda, Citrus Heights, Folsom, Roseville, Sacramento East, Carmichael, Buffalo Creek, Florin, Elk Grove, and Sloughhouse U.S. Geological Service (USGS) 7.5-minute quadrangles (CNDDB 2021);
- eBird database search within Hagan Community Park and Rossmoor Bar Area (eBird 2021);
- California Native Plant Society (CNPS), Rare Plant Program database records search within the Rio Linda, Citrus Heights, Folsom, Roseville, Sacramento East, Carmichael, Buffalo Creek, Florin, Elk Grove, and Sloughhouse USGS 7.5-minute quadrangles (CNPS 2021); and
- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) project planning tool (USFWS 2022a).
- USFWS National Wetland Inventory online mapper. (USFWS 2022b).

Before conducting the field surveys, available information regarding biological resources in the vicinity of the project area was gathered and reviewed, including information on special-status plant and wildlife species with the potential to occur in the vicinity of the study area. Queries of the CNDDB, CNPS, and USFWS IPaC databases were conducted before the surveys. Lists of special-status plant and wildlife species with the potential to occur in the project area were developed based on the review of

existing information, as identified above. These lists were used to focus the area of investigation on the special-status species and associated habitats with the potential to be present within the project area.

The project includes the 69 kilovolt (kV) and 12kV alignments (see Figure 2-2 in Chapter 2, "Project Description," of this Draft EIR). The alignments presented on Figure 2-2 illustrate SMUD's proposed/preferred locations for conduit installation; however, as needed to avoid resources, the analysis in this Draft EIR section assumes the conduit would be installed within the boundary of the 330-foot wide survey area (i.e., 165-foot on each side)[1] centered over the proposed alignment routes as identified in Figure 3.4-1. The proposed conduit trench would be approximately 3 feet wide and between 5-7 feet deep. The utility vaults would be 8 feet wide x 14 feet long x 8 feet deep inside, requiring an excavation area of approximately 15 feet x 20 feet x 15 feet, and would generally be spaced evenly throughout the alignment to allow for cable pulling, splicing and maintenance. The survey area was designed to encompass all areas within the alignment that could be subject to ground disturbing project actions. The survey area also encompasses all areas proposed for staging, access, and storage within the alignment.

Biological resources within the survey area were identified through field reconnaissance-level surveys, habitat assessment surveys, and an arborist survey conducted in 2021 and 2022. Surveys were conducted on May 25, May 26, and December 7, 2021, and January 26, February 2, and February 3, 2022. The surveys were conducted by walking the survey area on foot, and recording existing habitat types, plants, and wildlife species within and adjacent to these areas. Plant communities and wildlife habitats were identified using aerial photo interpretation and field reconnaissance. Before the field surveys, special-status species characteristics and habitat requirements were reviewed to aid in field recognition of suitable habitats. During the surveys, habitats were evaluated for their potential to support special-status species and the presence of any other biologically sensitive resources such as wetlands, riparian habitat, or drainages.

Sensitive biological resources are protected and/or regulated by federal, State, and/or local laws and policies. Sensitive biological resources include special-status species and sensitive natural communities, and other resources under the jurisdiction of the California Department of Fish and Wildlife (CDFW) and USFWS.

One comment letter pertaining to biological resources was received in response to the Notice of Preparation (see Appendix A). The letter was submitted by CDFW and related to impacts to wildlife and riparian habitat. These comments are addressed herein as appropriate. The NOP and comments received during the public review period are included as Appendix A of this Draft EIR.

[1] The survey area for the arborist survey includes a 40-foot buffer on each side of the alignment for a total width of 80 feet. Please see Figures 3a through 3i in the Arborist Report, included as Appendix E to this Draft EIR.

3.4.1 Regulatory Setting

Federal

Federal Endangered Species Act

Pursuant to the federal Endangered Species Act (ESA), USFWS has authority over projects that may affect the continued existence of federally listed (threatened or endangered) species. Section 9 of ESA prohibits any person from "taking" an endangered or threatened fish or wildlife species or removing, damaging, or destroying a listed plant species on federal land or where the taking of the plant is prohibited by State law. Take is defined under ESA, in part, as killing, harming, or harassing. Under federal regulations, take is further defined to include habitat modification or degradation where it results in death or injury to wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

Section 10 of the ESA applies if a non-federal agency is the lead agency for an action that results in incidental take and no other federal agencies are involved in permitting the action. Section 7 applies if a federal discretionary action is required (e.g., a federal agency must issue a permit), in which case the involved federal agency is required to consult with USFWS if the action may affect federally listed species.

Clean Water Act

Section 404 of the Clean Water Act (CWA) requires project proponents to obtain a permit from the U.S. Army Corps of Engineers (USACE) before performing any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands. Fill material is material placed in waters of the United States where the material has the effect of replacing any portion of a water of the United States with dry land or changing the bottom elevation of any portion of a water of the United States. Waters of the United States include navigable waters of the United States, interstate waters, tidally influenced waters, and all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Many surface waters and wetlands in California meet the criteria for waters of the United States.

In accordance with Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredged or fill material must obtain water quality certification from the appropriate regional water quality control board (RWQCB) indicating that the action would uphold State water quality standards.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. Section 703, et seq.), first enacted in 1918, provides for protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of migratory birds. The MBTA provides that it shall be unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or

any part, nest, or egg of any such bird. This prohibition includes both direct and indirect acts, although harassment and habitat modification are not included unless they result in direct loss of birds, nests, or eggs. The current list of species protected by the MBTA can be found in Title 50 of the Code of Federal Regulations, Section 10.13. The list includes nearly all birds native to the United States.

State

California Endangered Species Act

Pursuant to the California Endangered Species Act (CESA), a permit from CDFW is required for projects that could result in "take" of a species State listed as threatened or endangered. Section 2080 of CESA prohibits take of State listed species. Under CESA, take is defined as any activity that would directly or indirectly kill an individual of a species. The definition does not include “harm” or “harass” as in the federal act. As a result, the threshold for take under CESA is higher than under ESA (i.e., habitat modification is not necessarily considered take under CESA). The take of State-listed species incidental to otherwise lawful activities requires a permit, pursuant to Section 2081(b) of CESA. The State has the authority to issue an incidental take permit under Section 2081 of the California Fish and Game Code or to coordinate with USFWS during the federal process, so the federal permit also would cover State-listed species.

California Native Plant Protection Act

In addition to CESA, the California Native Plant Protection Act (NPPA; California Fish and Game Code Section 1900 et seq.) provides protection to endangered and “rare” plant species, subspecies, and varieties of wild native plants in California. The NPPA was enacted in 1977 and allows the California Fish and Game Commission to designate plants as rare or endangered. Sixty-four species, subspecies, and varieties of plants are protected as rare under the NPPA. The act prohibits take of endangered or rare native plants but includes exceptions for agricultural and nursery operations; for emergencies; and, after proper notification of CDFW, for vegetation removal from canals, roads, and other building sites, changes in land use, and other situations. When CESA was enacted in 1984, it expanded on the original NPPA and enhanced legal protection for plants. CESA established threatened and endangered species categories and grandfathered all rare animals—but not rare plants—into the act as threatened species. Thus, three listing categories for plants are used in California: rare, threatened, and endangered.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), waters of the State fall under the jurisdiction of the appropriate RWQCB. The study area is within the Central Valley RWQCB. Each of the nine RWQCBs in California must prepare and periodically update water quality control plans (basin plans) pursuant to the Porter-Cologne Act. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution to achieve and maintain these standards. The RWQCB’s jurisdiction includes federally protected waters as well as areas that meet the definition of “waters of the State.” Waters

of the State are defined as any surface water or groundwater, including saline waters, within the boundaries of the State. Projects that affect waters of the State must meet waste discharge requirements of the RWQCB, which may be issued in addition to a water quality certification under Section 401 of the CWA.

California Fish and Game Code

Section 1602—Lake and Streambed Alteration

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by CDFW under Section 1602 of the California Fish and Game Code. Under Section 1602, it is unlawful for any person, governmental agency, or public utility to do the following without first notifying CDFW:

- substantially divert or obstruct the natural flow of, or substantially change or use any material from, the bed, channel, or bank of any river, stream, or lake; or

- deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

The regulatory definition of a stream is a body of water that flows at least periodically or intermittently through a bed or channel that has banks and supports fish or other aquatic life. This definition includes watercourses with a surface or subsurface flow that supports or has supported riparian vegetation (California Code of Regulations [CCR] Title 14, Section 1.72). CDFW regulatory authority within altered or artificial waterways is based on the value of those waterways to fish and wildlife. A lake and streambed alteration agreement must be obtained for any diversion or alteration that would substantially adversely affect a fish or wildlife resource in a river, stream, or lake.

Fully Protected Species

Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species and do not provide for authorization of incidental take. CDFW has informed nonfederal agencies and private parties that their actions must avoid take of any fully protected species.

Protection of Birds and Their Nests

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (e.g., hawks, owls, eagles, and falcons), including their nests or eggs.

Local

Central Valley Flood Protection Board

Portions of the project are within the designated floodway of the American River. Under CCR Title 23, Division 1 (Title 23), an encroachment permit from the Central Valley Flood Protection Board (CVFPB) may be needed for work within a designated floodway.

Sacramento County American River Parkway Plan 2008

The American River Parkway Plan is the guiding management document for the Parkway. The plan guides land use decisions, including those related to recreation and other human uses. According to the Parkway Plan Concept, the American River Parkway is a unique regional facility which shall be managed to: a) preserve naturalistic open space and protect environmental quality within the urban environment, and b) contribute to the provision of recreational opportunities in the Sacramento area.

The Parkway Plan Goals are:

- To provide, protect, and enhance for public use a continuous open space greenbelt along the American River extending from the Sacramento River to Folsom Dam.
- To provide appropriate access and facilities so that present and future generations can enjoy the amenities and resources of the Parkway.
- To preserve, protect, interpret, and improve the natural, archaeological, historical, and recreational resources of the Parkway, including an adequate flow of high-quality water, anadromous and resident fishes, migratory and resident wildlife, and diverse natural vegetation.
- To mitigate adverse effects of activities and facilities adjacent to the Parkway.
- To provide public safety and protection within and adjacent to the Parkway.

American River Parkway – Natural Resources Management Plan (in preparation)

The Natural Resources Management Plan (NRMP) is a guide for implementation of a multifaceted natural resource management program for the Parkway. It integrates ecological resource management and conservation with cultural resources protection, recreational use and impacts, and other human uses in the Parkway. The NRMP informs the management, conservation, and rehabilitation of Parkway land and natural resources, and helps to ensure compliance with environmental laws and regulations. Utilizing an adaptive management approach, the effectiveness of natural resource management efforts in the Parkway will be reevaluated and the NRMP will be updated periodically.

The purpose of the NRMP is to establish resource management guidelines to minimize the impact of human uses on the Parkway and the environment. The NRMP includes goals and objectives designed to maintain natural communities located within the

Parkway and identifies projects for implementation to accomplish goals and objectives. The NRMP takes an integrative approach to planning for ecological resources, cultural resources, and human use. However, it is important to note that the emphasis of the NRMP is to manage human uses in a manner that minimizes impacts to natural and cultural resources while maintaining recreational access. Sacramento County plans to adopt it in October 2022.

City of Rancho Cordova Municipal Code

Although the project is geographically within the City of Rancho Cordova, regulations from other jurisdictions may apply in certain areas. City of Rancho Cordova Municipal Code regulations would be applicable for those areas of the project that are within Mills Middle School, Cordova High School, Hagen Community Park, and Ambassador Drive.

Chapter 19.04 – Protection of Public Trees

Chapter 19.04 of the City of Rancho Cordova Municipal Code (Protection of Public Trees) establishes regulations pertaining to the planting, maintenance, protection, and preservation of all public trees growing on public property. A public tree is defined as a tree or shrub whose trunk is planted in a street, planting easement, public premises, public sidewalk, median, traffic island, or any other right-of-way owned or controlled by the city through an easement, license, fee title, or other permissive grant of use and maintained by the city. A public tree permit shall be required before any person shall plant, transplant, move, separate, trim, prune, cut above or below the ground, disrupt, alter, or do surgery upon any public tree.

Chapter 19.12 – Preservation and Protection of Private Trees

Chapter 19.12 of the City of Rancho Cordova Municipal Code (Preservation and Protection of Private Trees) establish regulations for the protection, removal, and preservation of landmark trees and protected trees within the city. A landmark tree is defined as any trees designated by council through resolution as a vital and historical part of the city's landscape such that the trees need to be designated as landmarks for protection and preservation. Protected trees are defined as:

1. Native oak – *Quercus lobata*, valley oak; *Quercus wislizenii*, interior live oak; *Quercus douglasii*, blue oak; or *Quercus morehus*[2], oracle oak – having a trunk diameter of at least six inches or greater; or

2. Any tree species other than a native oak having a trunk diameter of at least 12 inches or greater on nonresidential property; or

3. Any tree species other than a native oak having a trunk diameter of at least 24 inches or greater on residential property; or

[2] *Q. morehus* is a hybrid of *Q. wislizeni* and *Q. kelloggi* and is not recognized as a species by *The Jepson Manual: Vascular Plants of California* (Second Edition) (Baldwin et al. 2012).

4. Any tree planted as a requirement tree for site development, tree permit condition, landscape plan removal replacement, or other designated condition by the public works director or planning director.

5. "Protected tree" does not include any trees for sale within the city sold by a nursery.

Section 19.12.040 states that "no person shall trench, grade or fill within the dripline of any protected tree, or damage, kill or remove any protected tree, or perform a major trimming of any protected tree without an approved tree permit. It shall be the responsibility of the owner or lessee/tenant of the property on which the protected tree is located and the person performing tree work to have the approved tree permit and/or a copy of the conditions of permit approval at the work site."

Sacramento County Code of Ordinances

Sacramento County ordinances would be applicable for the portions of the project that are within the American River Parkway area.

Chapter 19.04

Chapter 19.04 of the Sacramento County Code of Ordinances provides for the protection, preservation, and regulation of trees on public property within Sacramento County. This includes all trees planted or maintained by the County on an easement, planting easement, street, County park, or public premises. A permit shall be required to plant, transplant, move, separate, trim, prune, cut above or below ground, disrupt, alter, or take any other action upon any tree located on public premises.

Chapter 19.12

The Sacramento County Tree Preservation and Protection Ordinance (Chapter 19.12 of the Sacramento County Code of Ordinances) provides for the protection of native oak trees, including valley oak (*Quercus lobata*), interior live oak (*Q. wislizeni*), blue oak (*Q. douglasii*), and oracle oak (*Q. morehus*). Protected trees include any living native oak tree having at least one trunk of six inches or more diameter at standard height (DSH), or a multi-trunked native oak tree having an aggregate DSH of 10 inches. Chapter 19.12 states that no person shall trench, grade, or fill within the dripline of any native oak tree; or destroy, kill, or remove any native oak tree, on any property, public or private, without a tree permit.

3.4.2 Environmental Setting

The project includes the 69kV and 12kV alignments (see Figure 2-2 in Chapter 2, "Project Description," of this Draft EIR). While the 12kV alignment is within a residential neighborhood in the City of Rancho Cordova and is surrounded by developed areas, the 69kV alignment includes the property of two public schools (Mills Middle School and Cordova High School), Hagen Community Park, SMUD's Cordova Park Substation, and the American River Parkway. The zoning designations of the underlying parcels are residential or open space. The topography project alignments are flat. The northern end of

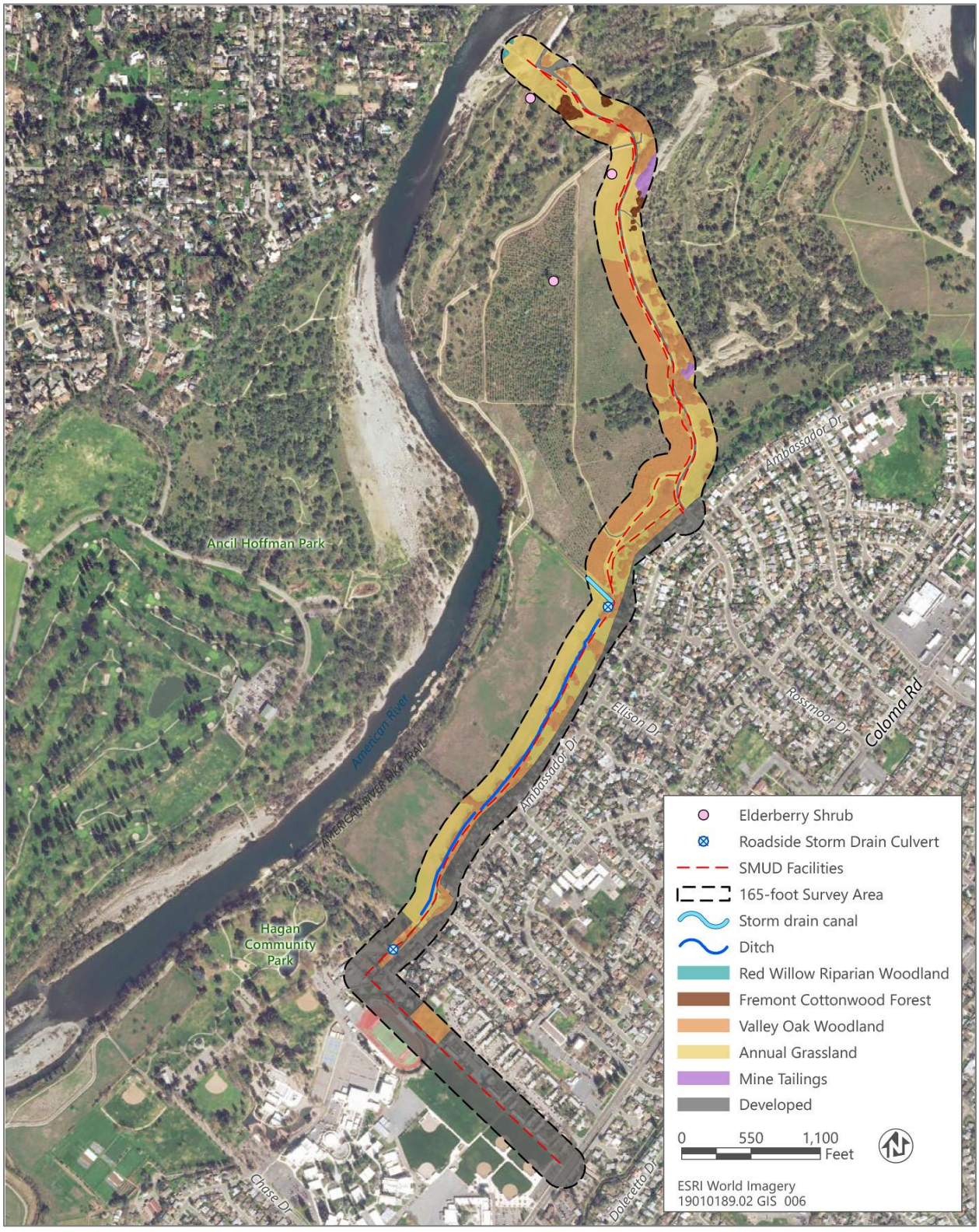
the 69kV alignment ends approximately 200 feet from the edge of the American River. The alignments presented on Figure 2-2 illustrate SMUD's proposed/preferred locations for cable installation; however, as needed to avoid resources, the analysis in this EIR section assumes the cable would be installed within the boundary of the 330-foot-wide survey area (i.e., 165-foot on each side)[3] centered over the proposed alignment routes as identified in Figure 3.4-1. The proposed cable trench would be approximately 3 feet wide and between 5–7 feet deep. The utility vaults would be 8 feet wide by 14 feet long and 8 feet deep. The survey area was designed to encompass all areas within the alignment that could be subject to ground disturbing project actions. The survey area also encompasses all areas proposed for staging, access, and storage within the alignment.

Land Cover

The 69kV alignment falls within a small portion of Mills Middle School, Cordova High School, and Hagan Community Park, with the remainder of the 69kV alignment within the American River Parkway – Rossmoor Bar Area. The 12kV alignment starts within the Cordova Park Substation and would follow Ambassador Drive for 0.6 miles northeast until it connects to existing electrical riser poles on the edge of the Parkway. Land cover types observed within the survey area include developed, valley oak woodland, annual grassland, Fremont cottonwood forest, mine tailings, and red willow riparian woodland (Figure 3.4-1). Each land cover type is described in more detail below. Vegetation types and descriptions in follow *A Manual of California Vegetation* (Sawyer et al. 2009 or current version; most current natural community data available at http://vegetation.cnps.org/), which is the current standard for vegetation classification in California.

The 69kV alignment on the south end falls within Mills Middle School, Cordova High School sport fields, then follows a utility right-of-way, until it reaches SMUD's Cordova Park Substation at Hagan Community Park. It then follows an existing access road/trail until it reaches Rossmoor Drive, where the 69kV alignment turns and heads north towards the American River. The 69kV alignment stays along Rossmoor Drive until its termination near the American River, where the 69kV alignment connects to existing riser poles located between the boundaries of Rossmoor Drive and the American River. Along Rossmoor Drive, the 69kV circuit would be installed beneath existing pavement or within an existing fuel break adjacent to the pavement. Land use surrounding the survey area includes Mills Middle School, Cordova High School and Hagan Park to the west, American River Parkway to the north and northeast, and private residences to the south and east.

[3] The survey area for the arborist survey includes a 40-foot buffer on each side of the alignment for a total width of 80 feet. Please see Figures 3a through 3i in the Arborist Report, included as Appendix E to this Draft EIR.



Source: Compiled by Ascent Environmental 2022

Figure 3.4-1 Landcover

Valley Oak Woodland Savannah

Oak woodland habitat within the survey area is dominated by valley oak (*Quercus lobata*) blue oak (*Quercus douglasii*), and interior live oak (*Quercus wislizeni*). Due to the proximity of residences, fruit and non-native trees are also present and include almond (*Prunus* sp.), apricot *(Prunus armeniaca*), plum (*Prunus americana*), orange (*Citrus* sp.), mulberry (*Morus* sp.), sweetgum (*Liquidambar* sp.), and silver maple (*Acer saccharinum*). The understory is composed of annual grasses, including ripgut brome (*Bromus diandrus*), wild oats (*Avena fatua*), rye grass (*Festuca perennis*), Bermuda grass (*Cynodon dactylon*) and Dallis grass (*Paspalum dilatatum*). Additional plants observed within the understory include blue plumbago (*Plumbago auriculata*), flat top sedge (*Cyperus* sp.), California grape (*Vitis californica*), and fig (*Ficus carica*). Due to the proximity of residential homes, there are some ornamental plants also present within the survey area including Chinese privet (*Ligustrum* sp.), bottlebrush (*Callistemon* sp.), aloe (*Aloe* sp.), prickly pear cactus (*Opuntia* sp.), calla lily (*Zantedeschia* sp.), and bear's breeches (*Acanthus mollis*).

Annual Grassland

Annual grassland habitat is dominated by nonnative grasses, including those mentioned as occurring in the understory of the valley oak woodland savannah. Other plant species observed include yellow starthistle (*Centaurea solstitialis*), hairy vetch (*Vicia villosa*), clover (*Trifolium* sp.), bedstraw (*Galium* sp.), crane's bill geranium (*Geranium molle*), California burclover (*Medicago polymorpha*), and wild radish (*Raphanus raphanistrum*).

Fremont Cottonwood Forest

This land cover type is located within the American River Parkway area in proximity to mine tailing deposits. Observed species include Fremont cottonwood (*Populus fremontii*), blue oak, black walnut (*Juglans hindsii* x *regia*), and willow (*Salix* sp.), with an understory of Himalayan blackberry (*Rubus armeniacus*), coyote brush (*Baccharis* sp.), poison oak (*Toxicodendron diversilobum*), and annual grasses.

Red Willow Riparian

This land cover type was observed at the edge of the American River. It is composed of young red willow (*Salix lasiolepis*) shrubs. The membership rule for this vegetation alliance is that red willow has to have relative cover greater than 50 percent. The area was dominated by red willow over a cobble substrate with relatively sparce herb substrate and lots of bare ground.

Mine Tailings

The mine tailing deposits are remnants of historic gold mining operations. Vegetation quantity varies depending on depth of the mine tailings; some have trees growing within the mine tailings and some are bare or with very little vegetation.

Developed

The developed land cover type includes suburban single-family residential lots, residential streets, and landscaped areas. Landscaped areas support ornamental vegetation such as tall fescue (*Festuca* sp.), Kentucky bluegrass (*Poa pratensis*), Bermuda grass (*Cynodon dactylon*), mallow (*Malva parviflora*), Chinese privet, bottlebrush, aloe, prickly pear cactus, Chinese pistache (*Pistacia chinensis*), Italian cypress (*Cupressus* sp.), tree-of-heaven (*Ailanthus altissima*), and Algerian ivy (*Hedera canariensis*).

Aquatic Resources

An abandoned irrigation ditch is located within the survey area north of Ambassador Drive. This irrigation ditch was previously used to irrigate the adjacent field when it was in agricultural production. However, this ditch is no longer in use. The irrigation ditch does not connect to the American River.

A concrete lined drainage canal is located a few feet east of where the drainage ditch ends. This canal is approximately 5 feet wide and may receive roadside runoff from Ambassador Drive; however, at the time of the surveys the canal was dry and showed no evidence of recent flows. The canal does not appear to be maintained, as it is overgrown with ruderal, upland plant species throughout its extent. The canal does not connect to the American River.

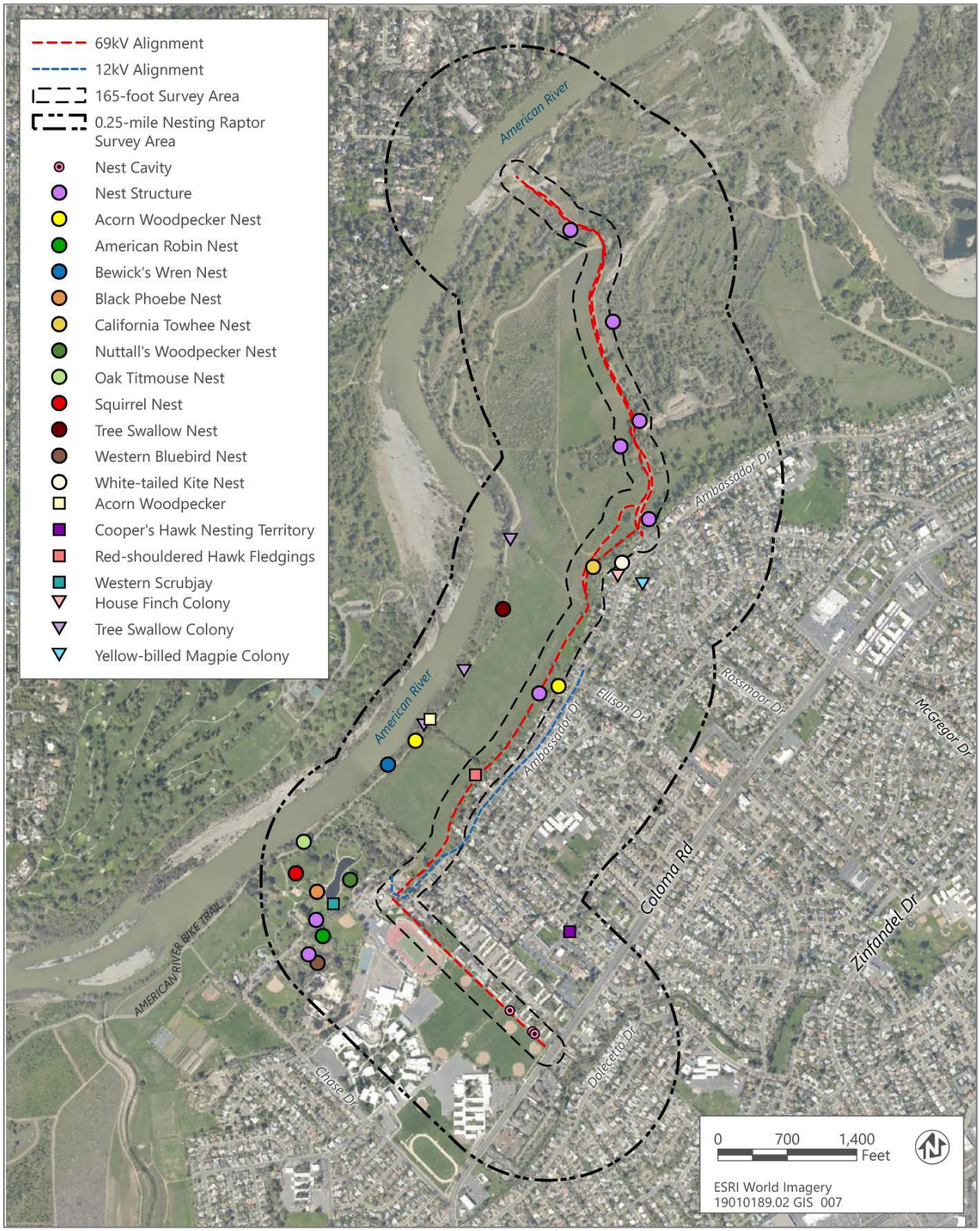
There is a culvert that daylights just east of the substation and north of the trail/access road. This culvert originates from a roadside storm drain along Ambassador Drive and it also receives runoff from adjacent residences. There is no watercourse associated with this culvert and it does not connect to the American River.

The American River is approximately 200 feet north of where the 69kV alignment connects to an existing riser pole. Based on CVFPB Best Available Maps, a portion of the 69kV alignment is within the FEMA Flood Zone AE (Area subject to 1% annual chance flood; Based Flood Elevations determined) (CVFPB 2022).

No other aquatic features were observed during the surveys. Outside of the American River, the USFWS National Wetlands Inventory does not show other aquatic resources within the survey area (USFWS 2022b).

Wildlife

The survey area contains suitable habitat for many common wildlife species, and many of these species were observed during the reconnaissance-level surveys. Wildlife species observed within the survey area are listed in Table 1 of Appendix D. Only one of the wildlife species observed during reconnaissance-level surveys is a special-status species (i.e., white-tailed kite, CDFW fully protected), as described further in “Special-Status Wildlife”, below. Figure 3.4-2 shows the general location of nests and nest structures observed during the reconnaissance-level field surveys.



Source: Data received from SMUD in 2021

Figure 3.4-2 Nest Locations

Special-Status Species

Special-status species are defined as species that are legally protected or that are otherwise considered sensitive by federal, State, or local resource agencies. Special-status species are species, subspecies, or varieties in one or more of the following categories, regardless of their legal or protection status:

- species listed or proposed for listing as threatened or endangered under ESA or candidates for possible future listing;
- species listed or candidates for listing by the State of California as threatened or endangered under CESA;
- species listed as rare under the California Native Plant Protection Act;
- species listed as Fully Protected under the California Fish and Game Code;
- species identified by CDFW as species of special concern;
- plants considered by CNPS and CDFW to be "rare, threatened, or endangered in California" and assigned a California Rare Plant Rank (CRPR). Species on these lists may meet the CEQA definition of rare or endangered. They are summarized as follows:
    - CRPR 1A - Plants presumed to be extinct in California;
    - CRPR 1B - Plants that are rare, threatened, or endangered in California and elsewhere;
    - CRPR 2A - Plants that are presumed extirpated in California, but more common elsewhere;
    - CRPR 2B - Plants that are rare threatened, or endangered in California, more common elsewhere.
- species considered a locally significant species, that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA Section15125 (c)) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G); or
- species that otherwise meet the definition of rare or endangered under CEQA Section15380(b) and (d).

Preliminary lists of special-status plant and animal species known or with potential to occur in the survey area were developed based on a review of the CNDDB, CNPS, and USFWS IPaC databases. The data review preliminarily identified 14 special-status plants

species and 27 special-status wildlife species with the potential to occur within the vicinity of the survey area (CNDDB 2021, CNPS 2021, USFWS 2022a).

Special-Status Plant Species

The biological resources technical report (see Appendix D of this Draft EIR) provides a list of the special-status plants that have been documented within the nine USGS quadrangles surrounding the survey area and describes their regulatory status, habitat, and potential for occurrence in the survey area. None of the 14 special-status plant species identified during the review of existing data are expected to occur based on lack of suitable habitat (i.e., vernal pools, wetland, marsh habitat).

Special-Status Wildlife Species

The biological resources technical report included as Appendix D to this Draft EIR provides a list of the special-status wildlife species that have been documented within the nine USGS quadrangles surrounding the survey area and describes their regulatory status, habitat, and potential for occurrence. A total of 27 special-status wildlife species have been documented in the vicinity of the survey area. Of the 27 special-status wildlife species identified during the review of existing data, it was determined that three species could occur or were observed within or in proximity of the study area (Table 3.4-1): valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), white-tailed kite (*Elanus leucurus*), and Swainson's hawk (*Buteo swainsoni*). A white-tailed kite active nest was identified within the 0.25-mile survey buffer during reconnaissance surveys for the project in 2021.

Table 3.4-1 Special Status Wildlife Species Known to Occur in the Project Region and Their Potential for Occurrence in the Survey Area

Name	Federal Status[1]	State Status[1]	Habitat	Potential to Occur in the Survey Area
Invertebrates				
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT	--	Riparian scrub. Occurs only in the Central Valley of California, in association with blue elderberry (*Sambucus nigra* ssp. *caerulea*). Prefers to lay eggs in elderberries 2-8 inches in diameter; some preference shown for "stressed" elderberries.	**May occur:** One elderberry shrub with stems greater than 1-inch in diameter was found within the survey area. This elderberry is located 300 feet southwest of the intersection of Rossmoor Drive and the bike trail.
Birds				
Swainson's hawk *Buteo swainsoni*	--	ST	Great Basin grassland, riparian forest, riparian woodland, valley and foothill grassland. Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or	**May occur:** The survey area is within the breeding range of the species. Surveys within 0.25 miles of the survey area did not result in observations of nesting Swainson's

Name	Federal Status[1]	State Status[1]	Habitat	Potential to Occur in the Survey Area
			ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	hawks but this species is regularly observed in the area.
White-tailed kite *Elanus leucurus*	--	FP	Cismontane woodland, marsh and swamp, riparian woodland, valley and foothill grassland, and wetlands. Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**Present:** A pair of white-tailed kites was observed nesting west of the intersection of Rossmoor Drive and Ambassador Drive.

General references: Unless otherwise noted all habitat and distribution data provided by CNDDB.

Note: CNDDB = California Natural Diversity Database

[1] Legal Status Definitions

Federal:
FT Threatened (legally protected)

State:
ST Threatened (legally protected)
FP Fully protected (legally protected)

[2] Potential for Occurrence Definitions

May occur: Suitable habitat is available in the survey area; however, there are little to no other indicators that the species might be present.
Present. Species observed within the survey area.

Source: CNDDB 2021; USFWS 2022a

Valley Elderberry Longhorn Beetle

Valley elderberry longhorn beetle is federally listed as threatened. This species is endemic to the Central Valley of California and is only found in association with its host plant, elderberry (*Sambucus* spp.). The beetle spends most of its life in the larval stage, living within the stems of an elderberry plant, and feeding on pith. Frequently, the only exterior evidence of the elderberry's use by the beetle is an exit hole created by the larva just before the pupal stage. The life cycle takes one or two years to complete. Adult emergence is from late March through June, about the same time the elderberry produces flowers.

The nearest known occurrences of valley elderberry longhorn beetle include two occurrences along the banks of the American River Parkway. One occurrence includes Goethe Park (now known as River Bend Park) to the Rossmoor Bar boat ramp. This

occurrence is one of the earliest known population locations of valley elderberry longhorn beetle dating back to 1976, and last reported as present in 2013. The second occurrence is along the American River east of El Manto Drive in the vicinity of Sacramento Bar. This occurrence location also dates back to 1976 and was last reported as present in 2006.

One elderberry shrub was observed within the survey area. This shrub is located in the American River Parkway within annual grassland habitat and is approximately 300 feet southwest of the intersection of Rossmoor Drive and the bike trail (see Figure 3.4-1). This elderberry is approximately 95 feet from the edge of the fire break or 135 feet from the west lane of Rossmoor Drive. Two additional elderberry shrubs were observed outside of the survey area.

Swainson's Hawk

Swainson's hawk is State listed as threatened. Swainson's hawks typically are found in California only during the breeding season (March–September) and generally begin to arrive in the Central Valley in March. Nesting territories are usually established by April, with incubation and rearing of young occurring through June. Most Swainson's hawks leave the Central Valley by late August to mid-September to migrate to South America. Nesting pairs frequently return to the same nest site for multiple years. Sacramento, Yolo, Solano, and San Joaquin Counties support the largest concentration of nesting Swainson's hawks in California.

The nearest known nesting occurrence of Swainson's hawk is approximately 0.72 miles north of the survey area (CNDDB 2021). Swainson's hawk has been observed flying over Rossmoor Bar area on several occasions, included as recently as April 18, 2021 (eBird 2021). The survey area and vicinity contain suitable nesting trees and also contains suitable grassland foraging habitat for this species.

White-Tailed Kite

White-tailed kite is a CDFW fully protected species. The nearest active white-tailed kite nesting occurrence is in the backyard of a private residence west of the intersection of Rossmoor Drive and Ambassador Drive. The survey area and vicinity contain suitable nesting trees and suitable adjacent foraging grassland habitat. This species is known to nest frequently in the project area and adjacent trees (CNDDB 2021). The occupied nest that was observed during the May 25–26, 2021 reconnaissance-level survey could be used by white-tailed kite during future nesting seasons.

Common Raptor Species

Common raptor species, such as red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*), and great horned owl (*Bubo virginianus*), are not considered special-status species pursuant to the definition provided above under "Special-Status Species". However, nests of these species are protected under the MBTA and Section 3503.5 of the California Fish and Game Code. Common raptor species are known to nest in the survey area.

Common Migratory Birds

A large number of common bird species are migratory and are afforded protection under the MBTA. Occupied nests of all migratory birds are protected under the MBTA, which makes it illegal to intentionally take these species or destroy their eggs. In addition, 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 this Code or any regulation made pursuant thereto. Section 3503.5 of the Code prohibits take, possession, or destruction of any birds in the orders Falconiformes (hawks) or Strigiformes (owls), or of their nests and eggs. Migratory non-game birds are protected under Section 3800, while other specified birds are protected under Section 3505. Common migratory bird species are known to nest in the survey area.

Protected Trees

An arborist report was prepared to document the species, size, and condition of trees within the arborist survey area. Information provided in Table 3.4-3 includes a summary of the native and non-native tree species observed in the arborist survey area. Native trees are protected under City of Rancho Cordova Municipal Code Chapter 19.04 Protection of Public Trees and Chapter 19.12 Preservation and Protection of Private Trees. Detailed explanations of the results of the data collected during the tree survey are presented in the arborist report, included as Appendix E to this Draft EIR.

Table 3.4-2 Summary of Trees in the Arborist Survey Area

Tree Species	Number of Trees
Native Trees	
Quercus lobata valley oak	214
Quercus wislizeni interior live oak	98
Quercus agrifolia coast live oak	20
Fraxinus latifolia Oregon ash	16
Populus fremontii ssp. *fremontii* Fremont cottonwood	6
Non-Native Trees	
Prunus sp.	23
Juniperus sp. Juniper	2
Ligustrum lucidum glossy privet	1
Robinia pseudoacacia black locust	1
Unknown ornamental[1]	13

[1] Due to the timing of the tree survey (January and February), deciduous ornamental trees were not bearing leaves which made identification of some tree species difficult.

Federal and State Protected Aquatic Resources

A formal delineation of aquatic resources was not conducted for the survey area; however, based on the reconnaissance-level survey, potentially jurisdictional aquatic resources exist within and adjacent to the survey area. Potentially jurisdictional aquatic resources include riparian and riverine (i.e., the American River) habitats. The expected work area closest to potentially jurisdictional resources associated with the American River would be within Rossmoor Drive and within a dirt/cobble access road. The base of the power pole where work activities would end is approximately 125 feet from the nearest red willow riparian habitat and approximately 200 feet from the wet portion of the American River. Based on the Central Valley Flood Protection Board, a portion of the survey area is within the designated floodway of the American River.

The abandoned irrigation ditch and canal are man-made drainage features that do not connect to the American River. Therefore, these features would not be regulated as waters of the U.S. under the CWA. These features may be regulated as waters of the State under the Porter-Cologne Water Quality Control Act.

No other aquatic features were observed during the surveys. Outside of the American River, the USFWS National Wetlands Inventory does not show other aquatic resources within the survey area (USFWS 2022b).

Sensitive Natural Communities

Sensitive natural communities are those native plant communities defined by CDFW as having limited distribution statewide or within a county or region and that are often vulnerable to environmental effects of projects (CDFW 2022). These communities may or may not contain special-status plants or their habitat (CDFW 2022). CDFW designates sensitive natural communities based on their State rarity and threat ranking using NatureServe's Heritage Methodology. Natural communities with rarity ranks of S1 to S3 (where S1 is critically imperiled, S2 is imperiled, and S3 is vulnerable) are considered sensitive natural communities to be addressed in the environmental review processes of CEQA and its equivalents (CDFW 2022). Many riparian plant communities qualify as sensitive natural communities based on the plant associations therein. In addition, riparian habitats are protected under Section 1602 of California Fish and Game Code and wetlands are protected under the CWA and Porter-Cologne Water Quality Protection Act.

Sensitive natural communities are generally identified at the alliance level of vegetation classification hierarchy using the Manual of California Vegetation (Sawyer et al. 2009; CNPS 2022). The following sensitive natural communities are present in the survey area: red willow riparian woodland, valley oak woodland (S3) and Fremont cottonwood forest (S3). Vegetation alliances with a State rarity ranking of S3 are considered sensitive natural communities under CEQA. Refer to descriptions of these sensitive natural communities under "Land Cover", above.

Critical Habitat

The Federal Endangered Species Act requires that USFWS and National Marine Fisheries Service (NMFS) designate critical habitat for species listed as federally endangered or threatened. Critical habitat includes areas identified under Section 4 of ESA and is described in Code of Federal Regulations Title 50 Parts 17 and 226. Federally designated critical habitat consists of geographic areas that contain physical or biological features essential to the conservation of a federally listed threatened or endangered species and which may require special management considerations or protection. Critical habitat may include areas that are not currently occupied by the species but that are essential for the conservation of the species. A critical habitat designation only applies to activities performed by federal agencies or that involve a federal permit, license, or funding, and that are likely to destroy or adversely affect the area of critical habitat.

A review of GIS-based habitat data for USFWS *Critical Habitat for Threatened and Endangered Species* (USFWS 2022c) shows that the survey area is not located within designated critical habitat for any listed species. However, critical habitat for the following species is found within close proximity to the survey area:

- Valley Elderberry Longhorn Beetle
- Central Valley Spring-run Chinook Salmon Evolutionary Significant Unit (ESU)
- California Central Valley Steelhead Distinct Population Segment (DPS)

USFWS designated critical habitat for the valley elderberry longhorn beetle on September 15, 1980. The American River Parkway Zone include two separate areas. One includes the American River Parkway south bank from approximately El Manto River Access south along El Manto Drive to Ambassador Drive and its extension east to approximately to Sunriver Park. The other area includes Goethe Park (now River Bend Park), and that portion of the American River Parkway northeast of Goethe Park, west of the Jedediah Smith Memorial Bicycle Trail, and north to a line extended eastward from Palm Drive. The survey area is approximately 0.11 mile south and 0.38 mile west of the two areas designated as critical habitat.

The lower American River is designated by NMFS as critical habitat for steelhead California Central Valley DPS from the confluence of the Sacramento River to Nimbus Dam, and for chinook salmon – Central Valley spring-run ESU from the confluence of the Sacramento River to Watt Avenue Bridge. The nearest project work area is approximately 200 feet from the wetted portion of the American River.

Essential Fish Habitat

The lower American River is also designated by NMFS as Essential Fish Habitat (EFH) for Chinook salmon, as defined by the Magnuson-Stevens Fisheries Conservation and Management Act of 1994, as amended. EFH refers to those waters and substrates

necessary for spawning, breeding, feeding, or growth to maturity. The nearest project work area is approximately 200 feet from the wetted portion of the American River.

3.4.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance/Significance Criteria

Based on Appendix G of the State CEQA Guidelines, the project would result in a potentially significant impact related to biological resources if it would:

- have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS;
- have a substantial adverse effect on state or federally protected wetlands (including but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

Analysis Methodology

Potential impacts on biological resources resulting from implementation of the project were determined by evaluating the project in relation to the habitat characteristics of the project alignments and immediate surrounding area, identifying potential loss of common and sensitive habitats, and evaluating potential effects to common and special-status species that could result indirectly from this habitat loss or directly from construction activities. As noted above, reconnaissance-level surveys were conducted in 2021 and 2022 to determine habitat conditions and potential presence of sensitive biological resources. The surveys conducted also included an assessment of potential sensitive habitat in and around the project alignments that could be affected by project implementation.

Issues or Potential Impacts Not Discussed Further

Impacts on Special-status Plants

The survey area does not support suitable habitat for special-status plant species; therefore, the proposed project would have no impact on special-status plants and this issue will not be analyzed further.

Impacts on State or federally protected wetlands

The survey area does not support State or federally protected wetlands; therefore, the proposed project would have no impact on State or federally protected wetlands and this issue will not be analyzed further.

Impact Analysis

Impact 3.4-1: Result in a Substantial Adverse Effect on Riparian Habitat or Other Sensitive Natural Community

Project implementation would occur within the dripline of riparian habitat and sensitive natural communities and within the floodway of the American River. Working, trimming or removing vegetation within riparian, oak woodland habitat and sensitive natural communities could result in degradation of habitat value. This would be a **potentially significant** impact.

The survey area contains areas of riparian habitat (i.e., red willow riparian woodland and Fremont cottonwood forest) and valley oak woodland, which are considered sensitive vegetation alliances by CDFW. As discussed in Chapter 2, “Project Description,” design for both the 12kV and 69kV alignments has not yet occurred and the exact placement of the alignments within the study area will be determined based on existing utility infrastructure location, avoidance of identified environmental resources, and engineering/construction considerations. SMUD would be required to notify CDFW before commencing project activities within riparian habitat. If activities trigger the need for a Lake and Streambed Alteration Agreement under California Fish and Game Code Section 1602, SMUD will obtain an agreement from CDFW before project implementation. SMUD would be required to conduct construction activities in accordance with the agreement, including implementing identified measures in the agreement necessary to protect fish and wildlife resources when working within the bank of waterways that function as a fish or wildlife resource or in riparian habitats associated with those waterways or when working within the flood plain of a water body. Similarly, because a portion of the 69kV alignment is within a Designated Floodway and subject to regulation by the CVFPB. Approval by CVFPB would be required for all proposed work or uses which encroach into rivers, waterways, and floodways, within and adjacent to federal and State authorized flood control projects, Regulated Streams and within Designated Floodways that have been adopted by the Board. SMUD will be required to obtain an encroachment permit from CVFBP prior to project implementation. Because the alignments follow previously disturbed areas and would involve small areas of land that would be returned to their pre-project condition, the project would not eliminate areas of red

willow riparian woodland, Fremont cottonwood forest or valley oak woodland habitat but could affect individual trees and vegetation. As discussed in Impact 3.4-4 and Mitigation Measure 3.4-4 below, the impacts on individual trees would be minimized and removal subject to permits from Sacramento County and/or City of Rancho Cordova depending on location. Because the project would not involve the conversion of riparian habitat, a sensitive natural community or sensitive vegetation alliance, this impact would be **less than significant,** and no mitigation would be required.

Impact 3.4-2: Result in the Loss of or Disturbance of Valley Elderberry Longhorn Beetle and Habitat.

Project implementation would result in construction disturbances within 165 feet of an elderberry shrub. The single elderberry shrub is located in grassland habitat but near riparian habitat that is known to support valley elderberry longhorn beetle. Construction activities would occur a minimum of 100 feet from the shrub so no direct effects to this elderberry would occur. However, project construction could cause indirect effects to valley elderberry longhorn beetle and its habitat. This impact would be **potentially significant**.

Valley elderberry longhorn beetle is listed as threatened under the federal ESA. This species is dependent upon elderberry shrubs for egg-laying and development. Only one elderberry was found within the survey area. Although there is designated critical habitat for this species in the vicinity, the designated habitat does not occur within the survey area. The USFWS Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus)* (Framework) (USFWS 2017) details a protocol for determining occupancy of valley elderberry longhorn beetle. Based on this protocol, any elderberry shrub within the study area is assumed to be occupied by valley elderberry longhorn beetle because of its close proximity to occupied riparian habitat. Construction activities could occur as close as 100 feet to this elderberry shrub. Direct effects to this elderberry (i.e., cutting) would be avoided but indirect effects from construction activities (i.e., dust deposition, accidental trampling or crushing by construction personnel or equipment, etc.) could occur. This impact would be considered **potentially significant**.

Mitigation Measure 3.4-2: Avoid and protect elderberry shrubs.

- The elderberry shrub and a 20-foot buffer from the dripline of the shrub shall be fenced or flagged as close to the edge of construction as feasible and avoided during construction activities.

- A qualified biologist will provide training for all contractors, work crews, and any onsite personnel on the status of valley elderberry longhorn beetle, its host plant and habitat, the need to avoid damaging elderberry shrubs, and the possible penalties for non-compliance.

- As much as feasible, all activities that could occur within 165 feet of an elderberry shrub (but outside of the 20-foot no disturbance buffer), shall be conducted outside

of the flight season of the valley elderberry longhorn beetle (the flight season typically occurs between March-July).

- Project activities such as truck traffic or other use of machinery, shall not create excessive dust on the project site, such that the growth or vigor of elderberry shrubs could be adversely affected. Establishing and enforcing a 15 miles per hour speed-limit for off-road usage and watering non-paved access roads shall be implemented as needed to minimize excessive dust.

- A qualified biologist (i.e., a biologist that holds a wildlife biology, botany, ecology, or other relevant degree from an accredited university and: 1) be knowledgeable in relevant species life histories and ecology, 2) be able to correctly identify relevant species and habitats, 3) have experience conducting field surveys of relevant species or resources, 4) be knowledgeable about survey protocols, 5) be knowledgeable about State and federal laws regarding the protection of special-status species, and 6) have experience with CDFW's CNDDB and Biogeographic Information and Observation System (BIOS). The project proponent will review the resume and approve the qualifications of biologists.) shall monitor the work area within 165 feet of the elderberry shrub at project-appropriate intervals to ensure the avoidance and minimization measures listed above are implemented.

Significance after Mitigation

Implementation of Mitigation Measure 3.4-2 would avoid disturbance to and protect valley elderberry longhorn beetle and its habitat by fencing or flagging the limits of construction, developing and providing a Workers Environmental Awareness Training to construction personnel, limiting construction activities within 165 feet of the elderberry shrub to occur outside of the flight season of the valley elderberry longhorn beetle (March-July), implementing measures to reduce excessive dust, and monitoring the construction in proximity to the elderberry to ensure that all avoidance and minimization measures are being implemented. With implementation of this mitigation measure, a **less-than-significant** impact would occur.

Impact 3.4-3: Disturbance of nesting Swainson's hawk, white-tailed kite, or other avian species.

Project implementation would result in construction disturbances that could cause Swainson's hawk, white-tailed kite, or other avian species to abandon their nests, if located nearby. Therefore, project construction could cause direct mortality of chicks and eggs. This impact would be **potentially significant**.

Two special-status birds are present or may occur within the project site (see Table 3.4-3): Swainson's hawk and white-tailed kite. While no Swainson's hawks or nests were identified during the field survey, the survey area is within the breeding range of the species and this species is regularly observed in the area. During the field survey, a pair of white-tailed kites was observed nesting west of the intersection of Rossmoor Drive and Ambassador Drive

(see Figure 3.4-2). Mature trees in the project alignments and adjacent areas provide potential nesting sites for special-status raptors, such as Swainson's hawk and white-tailed kite, and common raptors and birds, which are protected under sections 3503 and 3503.5 of the California Fish and Game Code and the MBTA. Implementation of the project, particularly construction activities proximate to trees, could result in impacts to special-status species and other common bird species if active nests are located in or near on-site construction. Construction activities, and the associated elevated noise and increased human presence, could cause Swainson's hawk, white-tailed kite, or other avian species to abandon their nests, if located nearby. Nest abandonment would result in direct mortality of chicks and eggs. This impact would be considered **potentially significant**.

Mitigation Measure 3.4-3: Avoid disturbance of active nests.

- For project activities, including tree trimming or removal, that begin between February 1 and September 15, a qualified biologist will conduct preconstruction surveys for Swainson's hawk, white-tailed kite, and other nesting birds to identify active nests on and within 0.25 mile of the alignments for Swainson's hawk and on or within 500 feet for other birds. The survey for Swainson's hawks will be conducted before the beginning of any construction activities between March 1 and September 15, following the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000).

- If active nests are found, a qualified biologist will establish appropriate buffers around the active nest sites identified during preconstruction bird surveys such that project-related activities are unlikely to result in nest abandonment or disruption of normal nesting activities. No project activity will commence within the buffer areas until a qualified biologist has determined the young have fledged, the nest is no longer active, or reducing the buffer would not likely result in nest abandonment. CDFW guidelines recommend implementation of 0.25-mile buffer for Swainson's hawk and white-tailed kite and 500-feet for other raptors, but the size of the buffer may be adjusted if a qualified biologist, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest. Monitoring of the nest by a qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest.

Significance after Mitigation

Implementation of Mitigation Measure 3.4-3 would avoid disturbance of active nests, consistent with the California Fish and Game Code and MBTA requirements. In addition, implementation of these mitigation measures would minimize impacts to special-status bird species by conducting vegetation removal outside of the nesting season for common and special-status bird species, and if that is not possible, by conducting pre-construction nesting surveys for nesting birds, setting no-disturbance buffers around active nests, and monitoring the project site to prevent new nests from being established during construction. With implementation of this mitigation measure, a **less-than-significant** impact would occur.

Impact 3.4-4: Conflict with provisions of the City of Rancho Cordova Municipal Code or Sacramento County Code of Ordinances intended to protect biological resources.

The alignments are located within the City of Rancho Cordova and Sacramento County and are subject to the provisions of the Rancho Cordova Municipal Code and Sacramento County Code of Ordinances. Construction associated with the project may require the removal of trees, some of which could be considered protected trees under the City of Rancho Cordova Municipal Code and Sacramento County Code of Ordinances. Without acquisition of a permit from the City and County prior to tree removal, the project would conflict with local ordinances, which would constitute a **significant** impact.

The project survey area supports trees that meet the criteria for Public Trees and Private Trees requiring protection established by City of Rancho Cordova Municipal Code Chapter 19.04 Protection of Public Trees, and Chapter 19.12 Preservation and Protection of Private Trees, and Sacramento County Code of Ordinance Chapter 19.04 and Chapter 19.12. Project construction activities could result in the removal of trees that qualify as protected trees. Depending on the final alignment with the survey area, it possible that construction activities could directly or indirectly impact up to 240 trees protected under City and/or County ordinances. Without acquisition of a permit from the City of Rancho Cordova and Sacramento County prior to tree removal or any activities within the dripline of protected trees, conflicts with the City of Rancho Cordova Tree Preservation Ordinance and Sacramento County Code of Ordinances could occur, and impacts would be considered **significant**.

Mitigation Measure 3.4-4: Tree Protection

Prior to site disturbance, SMUD shall provide to the City of Rancho Cordova and Sacramento County a plan for all tree work. A Certified Arborist shall approve all work plans prior to submittal to the City of Rancho Cordova and Sacramento County. Tree planting will comply with the City of Rancho Cordova's and Sacramento County's landscaping requirements.

For those trees that will be preserved on site during project construction, the following guidelines are recommended to ensure the long-term survival and stability of the trees.

- **Educate Workers:** Educate all workers on site about tree protection guidelines and requirements prior to construction.

- **Establish a Tree Protection Zone:** Establish a tree protection zone (TPZ) around any tree or group of trees designated for retention. The TPZ should at minimum be equal to 1.5 times the radius of the dripline. The TPZ may be adjusted on a case-by-case basis after consultation with a Certified Arborist.

- **Install Fencing and Signage:** Install fencing around the TPZ of all trees or groups of trees designated for retention. The fencing should remain in place for the duration

of construction activities. Post appropriate signage to help convey the importance of the TPZ to workers.

- **Prohibit Construction Activities within the TPZ:** Prohibit construction-related activities, including grading, trenching, construction, demolition, or other work, within the TPZ. No heavy equipment or machinery should be operated within the TPZ. No construction materials, equipment, machinery, or other supplies should be stored within the TPZ. Vehicle and foot traffic should not be permitted within the TPZ. No wires or signs should be attached to any trees designated for retention.

- **Prune Selected Trees:** Prune selected trees to provide necessary clearance during construction and to remove any defective limbs or other tree parts that may pose a failure risk. All pruning should be completed by a Certified Arborist or Tree Worker and adhere to the Tree Pruning Guidelines of the International Society of Arboriculture.

- **Monitor Trees and TPZs:** Monitor the integrity of the TPZs and the health of the trees designated for retention regularly throughout the construction process. A Certified Arborist should monitor the health and condition of the protected trees and, if necessary, recommend additional mitigations and appropriate actions. This could include the monitoring of trees adjacent to project facilities to determine if construction activities (including the removal of nearby trees) would affect protected trees in the future.

- **Treat Impacted Trees:** Provide supplemental irrigation and other care, such as mulch and fertilizer, as deemed necessary by a Certified Arborist, to any trees impacted by construction. Treatment of any injuries should be performed by a Certified Arborist.

Significance after Mitigation

Implementation of this mitigation measure would require SMUD to acquire permits and implement the conditions of those permits in accordance with existing guidelines established by the City of Rancho Cordova for the protection of trees. Therefore, implementation of Mitigation Measure 3.4-4 would avoid any conflict with local policies/ordinances intended to protect biological resources, thereby reducing this impact to a **less-than-significant** level.

Impact 3.4-5: Conflict with provisions of the County of Sacramento American River Parkway Plan and the American River Parkway Natural Resources Management Plan.

Portions of the alignments are located within the American River Parkway and subject to the provisions of the County of Sacramento American River Parkway Plan and the American River Parkway Natural Resources Management Plan (which is in preparation). Construction associated with the project may require the trimming of vegetation, removal of trees, and construction in access roads and pedestrian trails within the American River Parkway. However, the project would be constructed within existing access/trail areas, and on either a paved road or fire break and includes project design features that are consistent with the American River Parkway Plan Goals and Policies and as such it would not conflict with the Plan. Therefore, this impact would be **less than significant**.

Portions of the project alignments are within the American River Parkway and are subject to the provision of the County of Sacramento American River Parkway Plan.

The American River Parkway NRMP is still in preparation. Because the American River Parkway – NRMP is still under development and has not yet been finalized or adopted, it is uncertain whether the proposed project would conflict with the goals or policies outlined within the forthcoming NRMP. However, given that the proposed project will be constructed underground primarily within access road/trail, paved roads, or fire break within the parkway and will not result in total conversion of natural habitats, it would not conflict with the NRMP as currently drafted.

Similarly, the American River Parkway Management Plan allows for the development of facilities within the Parkway. Under Policy 3.1 “any development of facilities within the Parkway, including but not limited to building, roads, turfed areas, trails, bridges, tunnels, pipelines, *overhead electrical lines* [emphasis added], levees and parking areas, shall be designated and located such that any impact upon native vegetation is minimized and appropriate mitigation measures are incorporated into the project.”

Since SMUD is proposing a project that minimizes vegetation trimming and removal, has adopted a less damaging alternative that uses either an existing paved road and/or a fire break, and provides mitigation measures consistent with the policies within the American River Parkway Management Plan, it does not conflict with the goals and policies of the American River Parkway Management Plan. This impact would be **less than significant,** and no mitigation would be required.

Mitigation Measures

No mitigation is required.

Impact 3.4-6: Interfere with Wildlife Movement or Migration or Impede the Use of Nursery Sites.

While the 69kV alignment includes areas within the American River Parkway, which provides a movement corridor and nursery sites for wildlife, the project would install underground features and would not interfere with wildlife movement in the area. This impact would be **less than significant**.

The project alignments include area within the American River Parkway, a large riparian area that provides a movement corridor and nursery sites for wildlife (City of Rancho Cordova 2006:4.10-56). Although the American River Parkway is an important wildlife movement area, construction activities would be temporary and not result in any new, substantially different, permanent structures that would interfere with wildlife movement in the area. Therefore, this impact would be **less than significant,** and no mitigation would be required.

Mitigation Measures

No mitigation is required.

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3.5 Transportation

This chapter includes a discussion and analysis of the transportation impacts related to the project. No comment letters related to transportation were received in response to the Notice of Preparation (see Appendix A).

3.5.1 *Regulatory Setting*

Federal

No federal plans, policies, regulations, or laws related to transportation are applicable to the project.

State

Senate Bill 743

Senate Bill (SB) 743, passed in 2013, required the Governor's Office of Planning and Research (OPR) to develop new State CEQA guidelines that address traffic metrics under CEQA. As stated in the legislation, upon adoption of the new guidelines, "automobile delay, as described solely by LOS or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the guidelines, if any."

In December of 2018, OPR published the most recent version of the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) which provides guidance for VMT analysis. The Office of Administrative Law approved the updated State CEQA Guidelines and lead agencies had an opt-in period until July 1, 2020 to implement the updated guidelines regarding VMT. As of July 1, 2020, implementation of CCR Section 15064.3 of the updated CEQA Guidelines applies statewide.

3.5.2 *Environmental Setting*

The project involves open trenching and other construction activities within existing rights-of-way and open space, including public roads and bike/pedestrian paths. Nearly the entire 0.6-mile 12kV alignment is within Ambassador Drive. Approximately 0.8 mile of the 69kV alignment is within Rossmoor Drive, with the balance of the work occurring on school, SMUD, or American River Parkway property. Within the American River Parkway property, the 69kV alignment follows an existing unpaved path frequently used by pedestrians and bicyclists. There are no transit stops along the project alignments.

3.5.3 *Environmental Impacts and Mitigation Measures*

Thresholds of Significance/Significance Criteria

Based on the threshold identified in CEQA Guidelines Appendix G, the project would result in a significant transportation impact if it would:

- Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities;
- Conflict or be inconsistent with CEQA Guidelines section 15064.3(b), which pertains to vehicle miles travelled;
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- Result in inadequate emergency access.

Issues or Potential Impacts Not Discussed Further

All issues applicable to transportation listed under the significance criteria above, are addressed in this chapter.

Impact Analysis

Impact 3.5-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Project construction would temporarily interfere with existing vehicle, bicycle, and pedestrian circulation as it would include temporary closures of roads, pathways, and bike lanes. Because project construction activities could affect the existing circulation system, this impact would be **potentially significant**.

Project construction would temporarily interfere with existing vehicle, bicycle, and pedestrian circulation as it would include temporary closures of roads, pathways, and bike lanes. Upon completion of construction, all facilities would be returned to their pre-project condition. Project operation would not generate additional vehicle, transit, pedestrian, or bicycle use, so there would be no conflicts with programs, plans, ordinances, or policies related to circulation. Because project construction activities could affect the existing circulation system, this impact would be potentially significant.

Mitigation Measures

Mitigation Measure 3.5-1: Traffic Control Plan

Prior to project construction within or adjacent to public roadways, SMUD's construction contractor shall develop a traffic control plan for the project and submit the plan to the City

of Rancho Cordova's Department of Public Works. The plan shall identify temporary lane, sidewalk, bicycle lane, and transit stop closures and provide information regarding how access and connectivity will be maintained during construction activities. The plan shall include details regarding traffic controls that would be employed, including signage, detours, and flaggers. The traffic control plan shall be implemented by the contractor during construction to allow for the safe passage of vehicles, pedestrians, and cyclists along the project route.

Significance after Mitigation

Implementation of Mitigation Measure 3.5-1 would reduce impacts related to the circulation system by ensuring that accessibility and connectivity are maintained during construction activities. Therefore, this impact would be reduced to a **less-than-significant** level.

Impact 3.5-2: Conflict or be inconsistent with CEQA Guidelines section 15064.3(b), which pertains to vehicle miles travelled.

Because the project would not change the amount of development projected for the area, would be consistent with the population growth and VMT projections in regional and local plans, and would have only a slight increase in VMT during construction, this impact would be **less than significant**.

Temporary construction activities would result in slight increases in vehicle trips associated with worker commutes and materials delivery. However, these additional trips would only occur during the construction period. During operation, no new vehicle trips would be generated as the project involves replacement of existing facilities with existing maintenance and operations activities. Because the project would not change the amount of development projected for the area, would be consistent with the population growth and VMT projections in regional and local plans, and would have only a slight increase in VMT during construction, this impact would be **less than significant**, and no mitigation would be required.

Mitigation Measures

No mitigation is required.

Impact 3.5-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)

Implementation of the project would not result in any changes in road geometry or use, but would require temporary closure of vehicle lanes, bicycle lanes, and pathways. This impact would be **potentially significant**.

Project operation would not result in any changes in road geometry or use. As discussed above, project construction would require temporary closure of vehicle lanes as well as pathways and bike lanes. This impact would be potentially significant.

Mitigation Measures

Implement Mitigation Measure 3.5-1: Traffic Control Plan

Significance after Mitigation

Implementation of Mitigation Measures 3.5-1 would reduce impacts related to traffic hazards during construction by requiring a plan to maintain access and provide safety information. As part of the plan, requirements would be established to allow for the safe, controlled passage of vehicles through the project area. Therefore, impacts related to traffic hazards would be reduced to a ***less-than-significant*** level.

Impact 3.5-4: Result in inadequate emergency access.

While project operation would not change any roadways in the area, project construction would require temporary closures of roadways used for emergency access. This impact would be **potentially significant**.

As discussed above, project operation would not change any existing roads, including areas provided for emergency access. Project construction would involve temporary lane closures, which has the potential to impact access for emergency vehicles. This impact would be potentially significant.

Mitigation Measures

Implement Mitigation Measure 3.5-1: Traffic Control Plan

Significance after Mitigation

Implementation of Mitigation Measures 3.5-1 would reduce impacts related to inadequate emergency access during construction by requiring development and implementation of a plan that would maintain access for emergency vehicles during construction. Therefore, impacts related to emergency access would be reduced to a ***less-than-significant*** level.

4 Other CEQA Sections

As required by Section 15126 of the California Environmental Quality Act (CEQA) Guidelines, this chapter presents significant environmental effects that cannot be avoided if the project is implemented, significant irreversible environmental changes that would result from implementation of the project, and growth-inducing impacts of the project. In addition, an environmental justice evaluation is presented in this chapter.

4.1 Significant Unavoidable Impacts

Section 21100(b)(2)(A) of CEQA provides that an EIR shall include a detailed statement setting forth "in a separate section: any significant effect on the environment that cannot be avoided if the project is implemented." As discussed in Sections 3.1 through 3.5 of this Draft EIR, there are no environmental impacts that cannot be mitigated to a less-than-significant level.

4.2 Significant Irreversible Environmental Changes

Section 15126.2(c) of the State CEQA Guidelines requires a discussion of any significant irreversible environmental changes that would be caused by the project. Section 15126.2(c) states:

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible, because a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Generally, a project would result in significant irreversible environmental changes if:

- the primary and secondary impacts would generally commit future generations to similar uses,
- the project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project,
- the project would involve a large commitment of nonrenewable resources, or
- the proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Implementation of the Cordova Park Underground Cable Replacement Project would result in the commitment of new alignment areas to underground utility-related uses. While this underground use would preclude some types of future development or use above the ground, the land above the alignments would still be available for use as roadways, open space, and pathways. Following project construction, the Sacramento Municipal Utility District (SMUD) would restore the project alignments to their pre-project conditions above ground.

Resources that would be permanently and continually consumed by project implementation include electricity, natural gas, and fossil fuels; however, the amount and rate of consumption of these resources would not result in significant environmental impacts related to the unnecessary, inefficient, or wasteful use of resources as stated in Section 3.7, “Energy,” and Section 3.9, “Greenhouse Gas Emissions,” of the Initial Study (IS) (included as Appendix B of this Draft EIR. Construction and operational activities related to the project would result in the irretrievable commitment of nonrenewable energy resources, primarily in the form of fossil fuels (including fuel oil), natural gas, and gasoline for automobiles and construction equipment. The use of these nonrenewable resources is expected to account for a minimal portion of the region’s resources and would not affect the availability of these resources for other needs within the region. Construction activities would not result in inefficient use of energy or natural resources. Construction contractors selected would use best available engineering techniques, construction and design practices, and equipment operating procedures. Long-term project operation would not result in substantial long-term consumption of energy and natural resources because the project would be designed using energy efficient technologies, as stated in Chapter 2, “Project Description.”

With respect to operational activities, as described in Section 3.7, “Energy,” and Section 3.9, “Greenhouse Gas Emissions,” of the IS (Appendix B of this Draft EIR), the project would generate minimal vehicle trips associated with periodic maintenance of the underground infrastructure, which would not be greater than the existing maintenance activities that currently occur to maintain the existing cables. Therefore, the project would not generate any additional greenhouse gas (GHG) emissions beyond existing conditions during operational activities. These maintenance trips and activities would be essential to ensuring that the 12 kilovolts (kV) and 69kV alignments and associated infrastructure would remain functional to transmit and supply energy to customers within the SMUD service area.

4.3 Growth-Inducing Impacts

CEQA specifies that growth-inducing impacts of a project must be addressed in an EIR (Public Resources Code Section 21100[b][5]). Specifically, the State CEQA Guidelines Section 15126.2[d] states that the EIR shall discuss the ways in which the project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this analysis are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases

in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also, the EIR should discuss the characteristics of the project which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

Direct growth inducement would result if a project involved construction of new housing. Indirect growth inducement would result, for instance, if implementing a project resulted in any of the following:

- substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises);

- substantial short-term employment opportunities (e.g., construction employment) that indirectly stimulates the need for additional housing and services to support the new temporary employment demand; and/or

- removal of an obstacle to additional growth and development, such as removing a constraint on a required public utility or service (e.g., construction of a major sewer line with excess capacity through an undeveloped area).

The State CEQA Guidelines do not distinguish between planned and unplanned growth for purposes of considering whether a project would foster additional growth. Therefore, for purposes of this EIR, to reach the conclusion that a project is growth-inducing as defined by CEQA, the EIR must find that the project would foster (i.e., promote or encourage) additional growth in economic activity, population, or housing, regardless of whether the growth is already approved by and consistent with local plans. The conclusion does not determine that induced growth is beneficial or detrimental, consistent with the State CEQA Guidelines 15126.2[d].

If the analysis conducted for the EIR results in a determination that a project is growth-inducing, the next question is whether that growth may cause adverse effects on the environment. Environmental effects resulting from induced growth fit the CEQA definition of “indirect” effects in the State CEQA Guidelines Section 15358(a)(2). These indirect or secondary effects of growth may result in significant environmental impacts. CEQA does not require that the EIR speculate unduly about the precise location and site-specific characteristics of significant, indirect effects caused by induced growth, but a good-faith effort is required to disclose what is feasible to assess. Potential secondary effects of growth could include consequences – such as conversion of open space to developed uses, increased demand on community and public services and infrastructure, increased traffic and noise, degradation of air and water quality, or degradation or loss of plant and wildlife habitat – that are the result of growth fostered by the project.

4.3.1 Growth-Inducing Impacts of the Project

This analysis examines the following potential growth-inducing impacts related to implementation of the project and assesses whether these effects are significant and adverse:

1. foster population growth and construction of housing;
2. eliminate obstacles to population growth;
3. foster economic growth;
4. affect service levels, facility capacity, or infrastructure demand; and
5. encourage or facilitate other activities that could significantly affect the environment.

Implementation of the project would minimally foster short-term economic growth within the City of Rancho Cordova as a result of new construction employment opportunities. Construction of Phase 1 could begin as soon as summer 2022 and would last for approximately 3 weeks. Phase 2 would not begin until Phase 1 is complete, though Phase 2 may not start for several years after the completion of Phase 1. During construction, the estimated peak level of construction workers at any given time is estimated to be approximately 15 workers and it would not be reasonable to expect that any construction workers would relocate to the project area for a temporary job. There would be no long-term operational employment opportunities associated with the project.

In conclusion, the project does not have the potential to stimulate the economy directly (by providing jobs) or indirectly (by creating a demand for local goods and services) in the region. Further, the project would not meaningfully affect employment or other growth in the region, given the size of the regional economy. Therefore, the project would not contribute to substantial population growth.

4.4 Environmental Justice Evaluation

4.4.1 Introduction

At present, there are no direct references to the evaluation of environmental justice (EJ) as an environmental topic in the Appendix G Environmental Checklist, CEQA statute, or State CEQA Guidelines; however, requirements to evaluate inconsistencies with general, regional, or specific plans (State CEQA Guidelines Section 15125[d]) and determine whether there is a “conflict” with a “policy” “adopted for the purpose of avoiding or mitigating an environmental effect” (Environmental Checklist Section XI[b]) can implicate EJ policies. As additional cities and counties comply with Senate Bill (SB) 1000 (2016), which requires local jurisdictions to adopt EJ policies when two or more general plan elements are amended, environmental protection policies connected to EJ will become more common.

"Environmental Justice" is defined in California law as the fair treatment and meaningful involvement of people of all races, cultures, incomes, and national origins with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies (California Government Code Section 30107.3[a]). "Fair treatment" can be defined as a condition under which "no group of people, including racial, ethnic, or socioeconomic group, shall bear a disproportionate share of negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies" (EPA 2011).

SMUD created the Sustainable Communities Initiative, which encompasses the framework of EJ, to help bring environmental equity and economic vitality to all communities in SMUD's service area with special attention to historically underserved neighborhoods. The initiative focuses on the development of holistically sustainable neighborhoods through partnerships and collaboration. The goal of this effort is to ensure the advancement of prosperity in the Sacramento region regardless of zip code or socioeconomic status by focusing on equitable access to mobility, a prosperous economy, a healthy environment, and social well-being. To support the initiative, SMUD teams are working internally and with community partners to improve equitable access to healthy neighborhood environments, energy efficiency programs and services, environmentally friendly transit modes (including electric vehicles), and energy-related workforce development and economic development prospects. To the extent these goals seek to avoid environmental impacts affecting vulnerable communities, the State CEQA Guidelines already require consideration of whether a proposed project may conflict with goals that support sustainable communities. The following analysis has been provided by SMUD, as a proactive evaluation in excess of CEQA requirements, to identify any localized existing conditions to which the project, as proposed, may worsen adverse conditions and negatively impact the local community and identifies the need for implementation of additional site or local considerations, where necessary. Environmental justice issues are being considered in this CEQA document to help inform decision makers about whether the project supports SMUD's goal of helping to advance environmental justice and economic vitality to all communities in SMUD's service area with special attention to historically underserved neighborhoods.

4.4.2 Regulatory Context

California legislation, state agency programs, and guidance have been issued in recent years that aim to more comprehensively address EJ issues, including SB 1000 (2016), SB 535 (2012) and Assembly Bill (AB) 1550 (2016), AB 617 (2017), the California Department of Justice Bureau of Environmental Justice, the California Communities Environmental Health Screening Tool (CalEnviroScreen), and the Governor's Office of Planning and Research's (OPR's) 2020 General Plan Guidelines, Environmental Justice Element. In particular, SB 1000 has provided an impetus to more broadly address EJ; coupled with the existing requirements of CEQA, SMUD addresses significant environmental impacts in the context of EJ in its environmental documents. These other bills have also provided the necessary policy direction to address EJ under CEQA.

Senate Bill 1000

SB 1000, which was enacted in 2016, amended California Government Code Section 65302 to require that general plans include an EJ element or EJ-related goals, policies, and objectives in other elements of general plans with respect to disadvantaged communities (DACs) beginning in 2018. The EJ policies are required when a city or county adopts or revises two or more general plan elements, and the city or county contains a DAC. EJ-related policies must aim to reduce the disproportionate health risks in DACs, promote civic engagement in the public decision-making process, and prioritize improvements that address the needs of DACs (California Government Code Section 65302[h]). Policies should focus on improving the health and overall well-being of vulnerable and at-risk communities through reductions in pollution exposure, increased access to healthy foods and homes, improved air quality, and increased physical activity.

Senate Bill 535 and Assembly Bill 1550

Authorized by the California Global Warming Solutions Act of 2006 (AB 32), the cap-and-trade program is one of several strategies that California uses to reduce GHGs that cause climate change. The state's portion of the cap-and-trade auction proceeds are deposited in the Greenhouse Gas Reduction Fund (GGRF) and used to further the objectives of AB 32. In 2012, the California Legislature passed SB 535 (de Leon), directing that 25 percent of the proceeds from the GGRF go to projects that provide a benefit to DACs. In 2016, the legislature passed AB 1550 (Gomez), which now requires that 25 percent of proceeds from the GGRF be spent on projects located in DACs. The law requires the investment plan to allocate (1) a minimum of 25 percent of the available moneys in the fund to projects located within and benefiting individuals living in DACs; (2) an additional minimum of 5 percent to projects that benefit low-income households or to projects located within, and benefiting individuals living in, low-income communities located anywhere in the state; and (3) an additional minimum of 5 percent either to projects that benefit low-income households that are outside of, but within 0.5 mile of, DACs, or to projects located within the boundaries of, and benefiting individuals living in, low-income communities that are outside of, but within 0.5 mile of, DACs.

Assembly Bill 617

AB 617 of 2017 aims to help protect air quality and public health in communities around industries subject to the state's cap-and-trade program for GHG emissions. AB 617 imposes a new state-mandated local program to address nonvehicular sources (e.g., refineries, manufacturing facilities) of criteria air pollutants and toxic air contaminants. The bill requires the California Air Resources Board (CARB) to identify high-pollution areas and directs air districts to focus air quality improvement efforts through the adoption of community emission reduction programs in these identified areas. Currently, air districts review individual stationary sources and impose emissions limits on emitters based on best available control technology, pollutant type, and proximity to nearby existing land uses. This bill addresses the cumulative and additive nature of air pollutant health effects by requiring communitywide air quality assessment and emission reduction planning,

called a community risk reduction plan in some jurisdictions. CARB has developed a statewide blueprint that outlines the process for identifying affected communities, statewide strategies to reduce emissions of criteria air pollutants and toxic air contaminants, and criteria for developing community emissions reduction programs and community air monitoring plans.

California Department of Justice's Bureau of Environmental Justice

In February 2018, California Attorney General Xavier Becerra announced the establishment of a Bureau of Environmental Justice within the Environmental Section at the California Department of Justice. The purpose of the bureau is to enforce environmental laws, including CEQA, to protect communities disproportionately burdened by pollution and contamination. The bureau accomplishes this through oversight and investigation and by using the law enforcement powers of the Attorney General's Office to identify and pursue matters affecting vulnerable communities.

In 2012, then Attorney General Kamala Harris published a fact sheet titled, "Environmental Justice at the Local and Regional Level," highlighting existing provisions in the California Government Code and CEQA principles that provide for the consideration of EJ in local planning efforts and CEQA. Attorney General Becerra cites the fact sheet on his web page, indicating its continued relevance.

California Communities Environmental Health Screening Tool

CalEnviroScreen is a mapping tool developed by the Office of Environmental Health Hazards Assessment to help identify low-income census tracts in California that are disproportionately burdened by and vulnerable to multiple sources of pollution. It uses environmental, health, and socioeconomic information based on data sets available from state and federal government sources to produce scores for every census tract in the state. Scores are generated using 20 statewide indicators that fall into four categories: exposures, environmental effects, sensitive populations, and socioeconomic factors. The exposures and environmental effects categories characterize the pollution burden that a community faces, whereas the sensitive populations and socioeconomic factors categories define population characteristics.

CalEnviroScreen prioritizes census tracts based on their combined pollution burden and population characteristics score, from low to high. A percentile for the overall score is then calculated from the ordered values. The California Environmental Protection Agency has designated the top 25 percent of highest scoring tracts in CalEnviroScreen (i.e., those that fall in or above the 75th percentile) as DACs, which are targeted for investment proceeds under SB 535, the state's cap-and-trade program.

Governor's Office of Planning and Research's 2020 Updated EJ Element Guidelines

OPR published updated General Plan Guidelines in June 2020 that include revised EJ guidance in response to SB 1000. OPR has also published example policy language in

an appendix document along with several case studies to highlight EJ-related policies and initiatives that can be considered by other jurisdictions. Section 4.8 of the General Plan Guidelines contains the EJ guidance. The guidelines offer recommendations for identifying vulnerable communities and reducing pollution exposure related to health conditions, air quality, project siting, water quality, and land use compatibility related to industrial and large-scale agricultural operations, childcare facilities, and schools, among other things. It provides many useful resources, including links to research, tools, reports, and sample general plans.

4.4.3 Sensitivity of Project Location

Community Description

As part of its Sustainable Communities Initiative, SMUD created and maintains the Sustainable Communities Resource Priorities Map,[1] which reflects several data sets related to community attributes that SMUD uses to identify historically underserved communities. One of the key components of the map is the California Communities Environmental Health Screening Tool (CalEnviroScreen Version 3.0), which identifies communities facing socioeconomic disadvantages or health disadvantages such as multiple sources of pollution. The Sustainable Communities Resource Priorities Map provides an analysis of current data sets to indicate areas ranging from low to high sensitivity and can be used to describe the relevant socioeconomic characteristics and current environmental burdens of the project area can be described. SMUD has determined that it will evaluate EJ effects for projects located in, adjacent to, or proximate to (e.g., within 500 feet of) a high-sensitivity area as shown on the Sustainable Communities Resource Priorities Map or located in a census tract with a CalEnviroScreen score of 71 percent or greater.

The project alignment is located in areas identified as low and medium sensitivity areas per the Sustainable Communities Resource Priorities Map (SMUD 2022). The project site is not located in an area designated as an Opportunity Zone, a Sacramento Promise Zone, a Health Equity Focus Area by the Sierra Health Foundation, or as a DAC by state SB 535, which are used as tools for targeting economic development, designated by the Healthy Sacramento Coalition as an area with consistent high rates of poor health outcomes, and designated as located in an area with a population that is highly vulnerable and susceptible to harm from exposure to a hazard, and its ability to prepare for, respond to, and recover from hazards.

The proposed project is located in a census tract with a CalEnviroScreen 4.0 score of 49 percent (OEHHA 2021). Scores are calculated for all census tracts with values being 1 to 100 and based on pollution burden and population characteristics. A tract with a value of 95 indicates the area is confronted with many burdens and vulnerabilities from

[1] The Sustainable Communities Resource Priorities Map is available at https://usage.smud.org/SustainableCommunities/?_ga=2.265711818.475465144.1588267723-524375244.1533058938.

environmental pollutants. In the case of the census tract containing the project alignments, the score of 49 indicates that the area is not substantially burdened by vulnerabilities due to environmental pollutants.

4.4.4 Environmental Conditions

This discussion references the analysis conducted in the Environmental Checklist of the IS, as well as this EIR, and provides additional detail with respect to the current environmental conditions in the project area. The focus of this discussion is on environmental justice issues relevant to the project.

- **Aesthetics:** The visual characteristics of the project alignments are typical of a suburban environment with open space and low-rise structures. The visual characteristics of the project alignments include vegetation and open space in the American River Parkway, single- and two-story single-family and multi-family residences, school buildings, residential landscaping, and roadways. Construction activities would be visible in the area, but there would be no changes to the visual character of the area upon completion as all infrastructure would be located underground.

- **Air Quality:** The project alignments are located in a suburban area adjacent to existing schools and open space. Nearby uses are largely residential and are not considered substantial generators of toxic air contaminants to the area. Nearby receptors are located immediately adjacent to the project alignments include single- and multi-family residences and schools. The nearby structures with sensitive receptors are located at the same elevation as the project site, although individual living quarters are located above the first floor.

- **Cultural Resources and Tribal Cultural Resources:** There are known cultural resources and Tribal cultural resources immediately adjacent to and potentially within the boundaries of the project alignments (refer to Section 3.1, “Tribal Cultural Resources,” and Section 3.2, “Cultural Resources,” of this Draft EIR).

- **Energy:** The project area is served by SMUD, which offers the Greenergy program, which offers electricity generated with 100 percent renewable and carbon-free resources.

- **Greenhouse Gas Emissions and Climate Change Vulnerabilities:** The project area would likely be subject to increased heat stress from climate change. The northern portion of the 69kV alignments is within a 100-year flood zone while the residential areas are generally protected by levees (City of Rancho Cordova 2006:4.9-6). Furthermore, climate change can exacerbate any issues with levees (Romero 2020).

- **Hazards and Hazardous Materials:** The project alignments and surrounding areas are not identified as a hazardous materials sites or included on the State Hazardous Waste and Substances List (“Cortese List”) compiled pursuant to Government Code 65962.5 and referenced at Public Resources Code 21092.6.

- **Noise:** Noise sources in the project area include vehicle traffic, as well as noise associated with nearby schools and parks. Multi-family residences, which are considered sensitive receptors, are located adjacent to the 69kV alignment's southern boundary.

- **Public Services:** Public services such as police and fire protection are available in the area.

- **Recreation:** Hagan Community Park is adjacent to the 69kV alignment and the Cordova Park Substation, and a large portion of the 69kV alignment is within the American River Parkway.

- **Transportation:** The project alignments include school sites, an existing electrical substation, paved roads, and unpaved recreational pathways. Most of the project alignments are generally accessible to the public, though access is controlled within school property and the substation is not open to the public. The area around the project alignments includes paved roads, recreational pathways, sidewalks, and bicycle lanes.

- **Utilities:** Existing utility service is provided by SMUD, the City of Rancho Cordova, and Sacramento County to nearby uses, including the two public schools located adjacent to the southern end of the 69kV alignment.

4.4.5 Evaluation of the Project's Contribution to a Community's Sensitivity

As noted previously, the project would involve installation of a 12kV underground cable, underground conduit duct banks to house 69kV cable, and up to 13 underground utility vaults. The existing underground cable in the area would be abandoned in place. Following installation of all project features, the new 12kV and 69kV alignments would operate in a manner substantially similar to existing conditions. The project's contributions to the community's sensitivity are as follows:

- **Aesthetics:** Implementation of the project would result in the installation of new underground infrastructure. Because project features would be at or below ground level, the project would not result in a substantial modification of the project alignments. However, construction activities would be visible during installation of the 12kV and 69kV equipment. Once construction activities have been completed, publicly accessible views would be returned to their pre-project conditions.

- **Air Quality:** Excavation and general construction activities would be required during project construction. This would result in emissions of diesel particulate matter and fugitive dust from the project alignments, as discussed in Section 3.3, "Air Quality," of this Draft EIR. Considering the highly dispersive properties of diesel particulate matter (PM), the relatively low mass of diesel PM emissions that would be generated at any single place during project construction, and the relatively short period during which diesel-PM-emitting construction activities would take place, construction-related toxic

air contaminants would not expose sensitive receptors to an incremental increase in cancer risk that exceeds 10 in one million. As also discussed in the IS, on-site construction activities would be conducted in a manner consistent with the requirements of Fugitive Dust Rule 403, set forth by the Sacramento Metropolitan Air Quality Management District (SMAQMD), which would minimize emissions of PM_{10} and $PM_{2.5}$. These measures would be consistent with the best management practices and best available control technology practices required by SMAQMD.

- **Cultural Resources and Tribal Cultural Resources:** As noted in Section 3.1, "Tribal Cultural Resources," and Section 3.2, "Cultural Resources," of this Draft EIR, the project would affect known cultural resources or Tribal cultural resources. However, mitigation measures identified in Sections 3.1 and 3.2 would be implemented and would reduce these impacts to a less-than-significant level.

- **Energy:** The project would not affect access to electricity because electrical service would be maintained throughout construction.

- **Hazards and Hazardous Materials:** The use and handling of hazardous materials during construction would be conducted in a manner consistent with existing regulations, including CCR Title 27. Upon completion of construction, no on-site operations would involve the use, transport, or disposal of potential hazardous materials.

- **Noise:** Noise would be generated during construction, but it would be temporary, conducted in compliance with the City of Rancho Cordova Noise Ordinance, and similar to other construction type noise that occurs in the Rancho Cordova area. No substantial increases in ambient noise levels at sensitive receptors in the area would occur.

- **Public Services:** As the project would involve the installation of new underground cable to replace aging infrastructure, project implementation would not interrupt or otherwise affect the provision of public services to the area.

- **Recreation:** Project construction could temporarily interfere with use of some areas of the American River Parkway. However, these effects would be temporary. Following completion of construction activities, all recreational facilities would be restored to their pre-project condition.

- **Transportation:** Project construction would temporarily affect bike lanes, but the traffic control plan required by Mitigation Measure 3.5-1 would ensure that access is maintained. Following completion of construction activities, all bike lanes and other pathways would be returned to their pre-project condition. There are no transit stops located along or near the project alignments, so the project would not affect access to transit.

- **Utilities:** The project would not adversely affect the provision of utilities to existing and future uses in the project area. The project is intended to ensure continued and reliable electrical service within the Rancho Cordova area, and no interruption or reduction in service capacity would occur as a result of the project.

As described above for each environmental resource area, the project would not contribute to the community's current sensitivity.

4.4.6 Summary of Environmental Justice Assessment

Per SMUD's Sustainable Communities Resource Priorities Map,[2] which reflects several data sets related to community attributes that SMUD uses to identify historically underserved communities, the project alignments are located in areas of low to medium sensitivity (SMUD 2022). The project involves the installation of new underground cable and infrastructure to replace aging equipment. These activities could affect Tribal cultural resources, cultural resources, air quality, biological resources, and transportation in the area, however, mitigation measures are included that would reduce the potential contribution of the project and in cooperation with tribal community members to ensure that any impacts to resources are treated appropriately and with respect to the community(ies) in question. Further, objectives of the project include providing safe and reliable electrical service to existing and proposed development in the Rancho Cordova area, which is intended to maintain or improve living conditions for residents and communities in the area. As a result, the project does not have the potential to further affect the community and/or worsen existing adverse environmental conditions. Therefore, ***no existing adverse environmental justice conditions would be worsened*** as a result of the project.

Although the project would not worsen existing environmental justice conditions, as a leader in building healthy communities, one of SMUD's Sustainable Communities goals is to help bring environmental equity and economic vitality to all communities. By investing in underserved neighborhoods and working with community partners, SMUD is part of a larger regional mission to deliver energy, health, housing, transportation, education and economic development solutions to support sustainable communities.

Sustainable Communities currently maintains two partnerships in the region encompassing the project area:

- Sierra Nevada Journeys: With an investment from SMUD's Sustainable Communities, Sierra Nevada Journeys is conducting a community needs assessment in order to develop cultural relevant education materials. This information will be shared with SMUD/other local partners and will be used to develop curriculum that is pertinent to historically marginalized communities as

[2] The Sustainable Communities Resource Priorities Map is available at https://usage.smud.org/SustainableCommunities/?_ga=2.265711818.475465144.1588267723-524375244.1533058938.

well as inclusive of Black, Indigenous, and People of Color. The new curriculum will be deployed through Sierra Nevada Journeys' Classroom Unleashed Program.

The mission of Sierra Nevada Journeys is to deliver innovative outdoor, science-based education programs for youth to develop critical thinking skills and to inspire natural resource stewardship. More than 50 percent of the students they serve are from low-income families and 61 percent are students of color, working with Title 1 schools in the area. In addition, Sierra Nevada Journeys strong working relationships with local Tribes.

- Sacramento Native American Health Center(s): The Sacramento Native American Health Center Inc. (SNAHC) is a non-profit, Federally Qualified Health Center, located in Midtown Sacramento. The health center is committed to enhancing quality of life by providing a culturally competent, holistic, and patient-centered continuum of care. There are no Tribal or ethnic requirements to receive care here.

  SNAHC is community-owned and operated; a Board of Directors governs the center. Since the grand opening the center staff has grown to meet the needs of the community, 26% are Native American from both local and out-of-state Tribes.

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5 Alternatives

5.1 Introduction

The California Code of Regulations (CCR) Section 15126.6(a) (State California Environmental Quality Act [CEQA] Guidelines) requires environmental impact reports (EIRs) to describe "… a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather, it must consider a range of potentially feasible alternatives that will avoid or substantially lessen the significant adverse impacts of a project, and foster informed decision making and public participation. An EIR is not required to consider alternatives that are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the "rule of reason." This section of the State CEQA Guidelines also provides guidance regarding what the alternatives analysis should consider. Subsection (b) further states the purpose of the alternatives analysis is as follows:

> Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code [PRC] Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

The State CEQA Guidelines require that the EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the project. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative must be discussed, but in less detail than the significant effects of the project as proposed (State CEQA Guidelines Section 15126.6[d]).

The State CEQA Guidelines further require that the "no project" alternative be considered (Section 15126.6[e]). The purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving a project with the impacts of not approving the project. If the no project alternative is the environmentally superior alternative, CEQA requires that the EIR "…shall also identify an environmentally superior alternative among the other alternatives." (State CEQA Guidelines 15126[e][2]).

In defining "feasibility" (e.g., "… feasibly attain most of the basic objectives of the project …"), CCR Section 15126.6(f) (1) states, in part:

> Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.

In determining what alternatives should be considered in the EIR, it is important to consider the objectives of the project, the project's significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in Section 15126.6(a). Although, as noted above, EIRs must contain a discussion of "potentially feasible" alternatives, the ultimate determination as to whether an alternative is feasible or infeasible is made by the lead agency's decision-making body, here the Sacramento Municipal Utility District (SMUD) Board of Directors. (See PRC Sections 21081.5, 21081[a] [3].)

No comments were received during the scoping period related to project alternatives (see Table 1-1 in Chapter 1, "Introduction," of this Draft EIR).

5.2 Considerations for Selection of Alternatives

5.2.1 Attainment of Project Objectives

As described above, one factor that must be considered in selection of alternatives is the ability of a specific alternative to attain most of the basic objectives of the project (State CEQA Guidelines Section 15126.6[a]). Chapter 2, "Project Description," articulated SMUD's project objectives for the proposed project. The project objectives are to:

- Provide safe and reliable electrical service to existing and proposed development in the Rancho Cordova area.
- Facilitate efficient maintenance of underground cables and infrastructure.
- Maximize the use of available SMUD property and resources.
- Minimize impacts to nearby sensitive receptors.
- Minimize potential conflicts with existing planning efforts within the City of Rancho Cordova.

5.2.2 Summary of Project Impacts

The Initial Study (IS) prepared for the project and included as Appendix B of this Draft EIR evaluated whether the project would result in potentially significant impacts. For several topic areas evaluated in the IS, the project would not result in any potentially significant impacts. For some topic areas, impacts were determined to be potentially significant. Accordingly, those resources determined to not result in any potentially significant impacts are not addressed further in this Draft EIR. As noted in the IS, impacts related to Tribal cultural resources, cultural resources, air quality, biological resources, and transportation were identified as potentially significant and are evaluated in this Draft EIR. After additional analysis conducted during preparation of the Draft EIR, some issues in these categories were determined to have a less-than-significant impact or no impact. The following impacts of the project would be reduced to a less-than-significant level with implementation of mitigation presented in this Draft EIR:

- Impact 3.1-1: Cause a substantial adverse change in the significance of a Tribal cultural resource, including human remains;
- Impact 3.1-2: Potential for the project, in combination with other development, to contribute to a significant cumulative impact to Tribal cultural resources including human remains;
- Impact 3.2-1: Change the significance of a known archaeological resource;
- Impact 3.2-2: Change the significance of unknown archaeological resources;
- Impact 3.2-3: Potential for the project, in combination with other development, to contribute to a significant cumulative impact to cultural resources;
- Impact 3.2-2: 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;
- Impact 3.4-1: Result in a Substantial Adverse Effect on Riparian Habitat or Other Sensitive Natural Community;
- Impact 3.4-2: Result in the Loss of or Disturbance of Valley Elderberry Longhorn Beetle and Habitat;
- Impact 3.4-3: Disturbance of nesting Swainson's hawk, white-tailed kite, or other avian species;
- Impact 3.4-4: Conflict with provisions of the City of Rancho Cordova Municipal Code or Sacramento County Code of Ordinances intended to protect biological resources;
- Impact 3.4-5: Conflict with provisions of the County of Sacramento American River Parkway Plan and the American River Parkway Natural Resources Management Plan;

- Impact 3.4-6: Interfere with Wildlife Movement or Migration or Impede the Use of Nursery Sites;
- Impact 3.5-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities;
- Impact 3.5-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); and
- Impact 3.5-4: Result in inadequate emergency access.

For the project, the consideration of alternatives that fulfill CEQA requirements is complicated by a simple factor: the project would not result in any significant and unavoidable impacts. The significant impacts of the project are highly limited and can be clearly mitigated. Significant impacts have been identified for Tribal cultural resources, cultural resources, air quality, biological resources, and transportation.

Although there are no alternatives that could avoid or substantially reduce (unmitigated) significant effects of the project (because none exist), the alternatives evaluated below are presented to satisfy CEQA's requirement to identify a range of potentially feasible alternatives (State CEQA Guidelines Section 15126.6(a)). Therefore, SMUD could have prepared an Initial Study/Mitigated Negative Declaration (MND) in compliance with CEQA; public review of an MND is typically limited to 30 days prior to adoption. However, SMUD prepared an EIR, which requires more public review, to maximize public involvement in the environmental review process, not because there are any potentially significant effects of the proposed project to which alternatives must be considered.

5.2.3 Alternatives Considered but Not Evaluated Further

State CEQA Guidelines Section 15126.6(c) provides guidance for selecting a range of reasonable alternatives for the project. The range of potential alternatives for the project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should also identify any alternatives that were considered by the lead agency, but were rejected during the planning or scoping process, and briefly explain the reasons underlying the lead agency's determination.

Overhead Lines Alternative

The Overhead Lines Alternative was considered by SMUD but not evaluated further in this Draft EIR. Under this alternative, the entire 12kV and 69kV alignments would not be placed underground but would be installed above ground on poles (overhead) along the proposed alignments with the goal of reducing potential impacts on Tribal cultural resources. Existing subsurface cables would be abandoned in place. Due to considerations surrounding the potential interference with overhead utility lines from trees

or during storm events this alternative is not considered feasible. This alternative would require ground disturbance for installation of utility poles, which could potentially impact Tribal cultural resources. In addition, this alternative would likely require the removal or alteration of mature trees along the alignments, potentially resulting in greater impacts to biological resources as compared to underground cables. Further, this alternative would conflict with Policy ISF.2.7 of the Rancho Cordova General Plan, which requires minimization of visual impacts and physical impediments of utility sites, infrastructure, and equipment. Also, while SMUD's standards for new 69vV lines generally call for overhead placement, it is SMUD's practice to replace underground lines with new underground lines. In conclusion, the Overhead Lines Alternative would not be feasible, would not reduce environmental impacts, would not meet the project objectives, and would not be consistent with SMUD's standard practices. Therefore, this alternative was not considered in greater detail.

5.3 Alternatives Considered in Detail

Alternatives evaluated in this Draft EIR are:

- **Alternative A (No Project)**, which assumes the existing 12kV or 69kV lines would not be replaced and that the existing equipment would continue to be used until it is no longer considered viable, and then abandoned in place; and
- **Alternative B (Existing Cable Alignment)**, which assumes the 12kV and 69kV alignments would be reoriented to follow the existing cable alignment; and,
- **Alternative C (Ambassador Drive Alignment)**, which assumes that the 69kV alignment between the substation and Rossmoor Drive would be within Ambassador Drive.

Each of these alternatives is described in more detail and analyzed below. The degree of impact relative to the proposed project is noted in parentheses at the conclusion of each resource area analysis to facilitate the comparison of alternatives presented in Section 5.4, "Comparison of Alternatives."

5.3.1 Alternative A (No Project)

State CEQA Guidelines Section 15126.6(e)(1) requires that the no project alternative be described and analyzed "to allow decision makers to compare the impacts of approving the project with the impacts of not approving the project." The no project analysis is required to discuss "the existing conditions at the time the notice of preparation is published…as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services" (Section 15126.6[e][2]).

Under this alternative, the existing 12kV and 69kV lines would continue to be used until they are no longer considered viable and then abandoned in place, without replacement.

Under this alternative, SMUD would not be able to provide reliable and safe electrical service to existing and proposed development in the Rancho Cordova area.

This alternative would not meet any of the objectives identified in Section 5.2.1, "Attainment of Project Objectives."

Environmental Analysis

Tribal Cultural Resources

Under Alternative A, existing 12kV and 69kV cables would continue to operate until such time that they are no longer viable. The lines would eventually be abandoned in place. Because there would be no ground disturbance associated with the installation of new underground cables, Alternative A would avoid impacts on Tribal cultural resources. *(Less Impact)*

Cultural Resources

Under Alternative A, existing 12kV and 69kV cables would continue to operate until such time that they are no longer viable. The lines would eventually be abandoned in place. Because there would be no ground disturbance associated with the installation of new underground cables, Alternative A would avoid impacts on cultural resources. *(Less Impact)*

Air Quality

Under Alternative A, there would be no construction as the existing cables would continue to be used and abandoned in place without replacement until they are no longer viable. Because there would be no construction activities, this alternative would not result in any air pollutant emission and there would be no air quality impacts. *(Less Impact)*

Biological Resources

Under Alternative A, there would be no ground disturbance as the existing cables would remain in use until they are no longer viable, at which time they would be abandoned in place. Because no construction would occur, there would be no impacts to biological resources under Alternative A. *(Less Impact)*

Transportation

Under Alternative A, there would be no ground disturbance as the existing cables would remain in use until they are no longer viable, at which time they would be abandoned in place. This alternative would not include any construction activities. Because there would be no construction on the project alignments under Alternative A, there would be no potential impacts on transportation. *(Less Impact)*

Source: adapted by Ascent Environmental in 2022

Figure 5-1. Project Alternatives

5.3.2 Alternative B (Existing Cable Alignment)

Under this alternative, new 12kV and 69kV cable lines would be installed along the existing alignment that extends from Coloma Road to SMUD's Cordova Park Substation and through the American River Parkway (see Figure 5-1). Existing direct-buried cable would be abandoned in place and the new cables would be installed within 40 feet of the existing cable alignment. While the southern portion of this alternative (from Coloma Road to the substation) would be identical to the proposed project, it would differ in that the 12kV line would be installed in the same alignment as the 69kV alignment within the open space of the American River Parkway. From the substation, the alignment would extend approximately 0.70 mile east where it would then turn north and run through the open space of the Parkway. This alternative would not include any construction activities within roadway rights-of-way as all work would occur within school property, SMUD property, or open space.

This alternative would achieve most of the project objectives but not to the degree of the project. It would potentially conflict the City of Rancho Cordova's the tree preservation ordinance, indicating that this alternative would not meet the objective of minimizing potential conflicts with existing planning efforts within the City of Rancho Cordova.

Environmental Analysis

Tribal Cultural Resources

Under the project, there would be potential impacts to Tribal cultural resources, but these would be reduced to a less-than-significant impact with implementation of mitigation. Alternative B seeks to reduce potential impacts to nearby sensitive receptors (one of the project objectives) by locating construction activities further from residences, but would likely increase the potential for impacts to Tribal cultural resources by including construction activities in closer proximity to known resources in open space areas. It should be noted that this alignment was not surveyed by forensic canines, so there is the potential for additional, as-yet-undiscovered resources in the area. *(Greater Impact)*

Cultural Resources

Alternative B would locate construction activities more distant from sensitive receptors by following the alignment of existing underground cable. This alternative seeks to maximize use of SMUD's existing property and resources (e.g., SMUD's existing easement), and reduce potential impacts to nearby sensitive receptors by locating construction within the open space to the maximum extent possible. However, there are known archaeological resource sites within the open space. Because Alternative B would place the alignment in the open space instead of staying along established pathways or paved roadways, this alternative could have a greater impact on archaeological resources, particularly as a large portion of the existing alignment has not been surveyed. *(Greater Impact)*

Air Quality

Under Alternative B, the length of the project alignment would likely be slightly shorter than the proposed 69kV alignment because the alternative would not extend to Rossmoor Drive and would instead turn and cross the open space of the American River Parkway. The existing alignment is estimated to be approximately 1.96 miles while the proposed 69kV alignment is 2.12 miles. Thus, Alternative B would result in a reduction of approximately 0.16 miles of construction activities, which would result in lower emissions as compared to the project. *(Less Impact)*

Biological Resources

Under Alternative B, project construction would require greater ground disturbance within the American River Parkway and would route the 69kV alignment through an area densely populated by native tree species that were planted as part of a mitigation effort. By routing the 69kV alignment through this heavily-treed area, Alternative B would have greater impacts on biological resources as compared to the proposed project. *(Greater Impact)*

Transportation

Under Alternative B, construction activities would take place exclusively within school, park, and SMUD property, which would cause temporary disruption to pedestrian and bicycle users in the American River Parkway. Because no work would take place within public roadways, this alternative would not interfere with vehicle movement on Ambassador Drive or Rossmoor Drive, including evacuation routes or emergency access. *(Less Impact)*

5.3.3 Alternative C (Ambassador Drive Alignment)

Under this alternative, both the 12kV and 69kV alignments would be placed within Ambassador Drive as shown in Figure 5-1. For the 12kV alignment, this is the same as the proposed project. For the 69kV alignment, this alternative would change the location of the alignment between SMUD's Cordova Park Substation and Rossmoor Drive. Instead of the 69kV alignment crossing through open space behind homes facing Ambassador Drive, that portion of the 69kV alignment would instead be located within Ambassador Drive.

This alternative would achieve most of the project objectives but not to the degree of the project. By locating both alignments within Ambassador Drive instead of the open space of the Parkway, Alternative C would not maximize the use of available SMUD property and easements and would not minimize impacts to nearby sensitive receptors as it would entail additional work within roadways used by local residents and would place noise-generating construction equipment closer to residences.

Environmental Analysis

Tribal Cultural Resources

Alternative C would avoid potential impacts to Tribal cultural resources within the open space of the Parkway, but would conduct additional work in areas that were not able to be evaluated by forensic canines due to existing pavement. While this area of Rancho Cordova is known to be sensitive for Tribal cultural resources, work within Ambassador Drive would be in areas of existing development, including underground infrastructure, and less likely to contain Tribal cultural resources because of previous disturbance. *(Less Impact)*

Cultural Resources

Alternative C would avoid potential impacts to archaeological resources within the open space of the American River Parkway. Because of the developed nature of Ambassador Drive, including existing underground utility infrastructure that serves the surrounding neighborhood, it is unlikely that construction in this area would impact undiscovered archaeological resources. *(Less Impact)*

Air Quality

Under Alternative C, the alignment would not be within the open space of the American River Parkway but would follow Ambassador Drive until its intersection with Rossmoor Drive, then the alignment would continue north along Rossmoor Drive. The mileage of this alignment would be similar to the proposed project length, so air emissions associated with construction activities would likely be similar to the proposed project. *(Similar Impact)*

Biological Resources

Under this alternative, no work would occur in the open space of the American River Parkway, though there would be construction within and directly adjacent to Rossmoor Drive as it traverses the Parkway towards the American River. Alternative C would include more work within the developed area of Ambassador Drive, so this alternative could affect landscaping on private properties, which could affect nesting birds. Mitigation Measure 3.4-1 requires SMUD to avoid disturbance of nesting birds, which would also be required under Alternative C. Thus, impacts to nesting birds under this alternative would be similar to those of the project. *(Similar Impact)*

Transportation

Under Alternative C, additional construction would occur within Ambassador Road, as compared to the proposed project. Also, work within Ambassador Drive would occur at greater depths than anticipated for just the 12kV alignment (i.e., the proposed project). Because installation of the 69kV alignment within Ambassador Drive would have a wider and deeper footprint than the proposed project, interruptions to regular traffic patterns along Ambassador Drive would be extended beyond those anticipated under the proposed project. Thus, this alternative could result in impacts greater than the project. *(Greater Impact)*

5.4 Comparison of Alternatives

Table 5-1 summarizes the environmental analyses provided above for the evaluated alternatives to the Cordova Park Underground Cable Replacement Project.

Table 5-1 Comparison of the Environmental Impacts of the Alternatives in Relation to the Project

Resource Area	Project	Alternative A (No Project)	Alternative B (Existing Cable Alignment)	Alternative C (Ambassador Drive Alignment)
Tribal Cultural Resources	LTS/M	Less	Greater	Less
Cultural Resources	LTS/M	Less	Greater	Less
Air Quality	LTS/M	Less	Less	Similar
Biological Resources	LTS/M	Less	Greater	Similar
Transportation	LTS/M	Less	Less	Greater

Notes: LTS – Less-than-significant impacts; LTS/M – Less-than-significant impacts with mitigation incorporated.
Source: Compiled by Ascent Environmental in 2022

5.5 Environmentally Superior Alternative

CCR Section 15126.6 suggests that an EIR should identify the "environmentally superior" alternative. "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." As stated above in Section 5.2.2, the consideration of alternatives that fulfill CEQA requirements, in the instance of the project, is complicated by a simple factor: the project would not result in any significant and unavoidable impacts. The significant impacts of the project, which would be to Tribal cultural resources, cultural resources, air quality, biological resources, and transportation, can be clearly mitigated.

When considering objectives, the proposed project would best meet the project objectives, as stated in Chapter 2, "Project Description." In contrast, Alternative B, by keeping all project construction out of existing roadways, could conflict with existing planning efforts within the City of Rancho Cordova, specifically the tree preservation ordinance. Similarly, Alternative C, by moving the 69kV alignment from the open space of the American River Parkway to within Ambassador Drive, would increase impacts to nearby sensitive receptors.

Consistent with State CEQA Guidelines (CCR Section 15126.6 [e][2]), because the environmentally superior alternative was identified as the No Project Alternative, another environmentally superior alternative shall be identified. Based on the environmental analysis contained in this Draft EIR, Alternative C would result in lesser impacts compared to the project. However, and as noted above, Alternative C could still result in potential impacts on Tribal cultural resources, cultural resources, air quality, biological resources, and transportation. Therefore, the environmental impact differences between the project and Alternative C are not substantial enough that one is clearly superior over the other.

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**CALIFORNIA ENVIRONMENTAL QUALITY ACT FINDINGS
IN CONNECTION WITH**

Cordova Park Underground Cable Replacement Project

SACRAMENTO MUNICIPAL UTILITY DISTRICT, CORDOVA PARK UNDERGROUND CABLE REPLACEMENT PROJECT

I. Introduction

The Sacramento Municipal Utility District (SMUD) is lead agency under the California Environmental Quality Act (CEQA) for purposes of the Cordova Park Underground Cable Replacement Project, hereafter the Project. CEQA prohibits an agency from approving or carrying out a project for which significant effects have been identified, unless the agency can make one or more of a set of three findings set forth in Public Resources Code (PRC) section 21081, subdivision (a):

> (1) Changes or alterations have been required in, or incorporated into, the project which mitigate or avoid the significant effects on the environment.
>
> (2) Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.
>
> (3) Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or alternatives identified in the environmental impact report. (See also California Code of Regulations [CCR] Title 14, section 15091.)

When significant effects are subject to a finding under paragraph (3) of subdivision (a), it means that a significant and unavoidable environmental impact would result from project implementation. If this occurs, the public agency must find that specific overriding economic, legal, social, technological, or other benefits of the project outweigh the significant effects on the environment, if the agency approves the project. (PRC section 21081, subd.(b).)

CEQA requires public agencies to prepare a program for monitoring or reporting on the revisions which it requires in the project and the measures it has imposed to mitigate or avoid significant environmental effects. (CCR Title 14, section 15097, subd. (a).)

Under PRC section 21002.1, subdivision (d), when issuing an approval for an aspect of a project for which a lead agency has performed CEQA review, a responsible agency considers only the aspects of the project that the agency is required by law to carry out or approve. SMUD therefore provides the following CEQA findings and mitigation monitoring and reporting plan (MMRP) (Attachment 1) that concern potentially significant impacts to resources identified by the lead agency as part of the CEQA review and in fulfillment of CCR Title 14, section 15097, subd. (a).

II. CEQA Compliance

SMUD, as the lead agency pursuant to CEQA, has prepared a Draft and Final Environmental Impact Report (EIR) for the proposed Cordova Park Underground Cable Replacement Project (Project). The SMUD Board of Directors (Board) hereby issues these Findings and concurrently certifies the EIR.

The Final EIR has been assigned State Clearinghouse Number 2022030186. The Final EIR consists of both the Draft EIR, as amended through the Final EIR, and an MMRP. The Final EIR assesses the potential environmental effects of implementation of the Project, identifies the means to eliminate or reduce potentially significant adverse environmental impacts, and evaluates a reasonable range of alternatives to the Project. The Final EIR explains Project updates and includes an MMRP that outlines the substance and timing of mitigation measures required for the Project.

Pursuant to PRC section 21081 and CCR Title 14, section 15090, the Board hereby certifies that it completed the following activities prior taking action related to activities/phases evaluated under the Cordova Park Underground Cable Replacement Project EIR: the Board has received the Final EIR; the Board has reviewed and considered the information contained in the Final EIR and received through public comments; and the Board has considered all additional written and oral statements received prior to or at its public hearing on the Final EIR. The Board additionally certifies that the Final EIR was completed in compliance with CEQA (PRC section 21000 et seq.), the CEQA Guidelines (CCR Title 14, section 15000 et seq.), and SMUD's policies and procedures for the implementation of CEQA and that the Final EIR reflects SMUD's independent judgment and analysis. The conclusions presented in these Findings are based on the Final EIR and other evidence in the administrative record.

The findings set forth below pertain to the certification of the EIR for the Cordova Park Underground Cable Replacement Project.

Findings

Having received, reviewed, and considered the Final EIR and all other information in the administrative record, the Board hereby adopts the following Findings for the Cordova Park Underground Cable Replacement Project EIR in compliance with CEQA, the CEQA Guidelines, and SMUD's procedures for implementing CEQA. The Board adopts these Findings in conjunction with its approval of the Cordova Park Underground Cable Replacement Project EIR, as set forth below.

a. Project Description and Background

SMUD replaces aging electrical infrastructure as part of its routine maintenance and upgrade protocols. Accordingly, SMUD proposes to install approximately 0.6 miles of 12 kilovolt (kV) underground cable, approximately 2.12 miles of 69kV underground cable and up to 13 new utility vaults in the City of Rancho Cordova, near the location of existing 12kV and 69kV underground cables that are approaching the end of their operational lives. Installation of the new conduit (cables would later be pulled through the conduit) and utility vaults would be done by open trenching. Where possible, the new conduit will be installed to align with the existing cable, which would be abandoned in place.

The Project involves the installation of approximately 0.6 miles of new underground 12kV electrical lines (cable) and approximately 2.12 miles of new underground 69kV cable to replace existing underground 12kV and 69kV cable buried directly in the ground (direct-buried) that was installed in the 1970s. The new 12kV cable would be installed in conduits buried in dirt while the new 69kV cable would be installed in conduits housed in concrete-encased duct banks to provide pathways and adequate spacing. The Project also involves installation of up to 13 new utility vaults along the 69kV alignment to allow access for electric cable pulling, splicing and maintenance.

The existing direct-buried 12kV cable begins at SMUD's Cordova Park Substation and extends approximately 0.6 miles east, where it connects to existing riser poles.

The existing direct-buried 69kV cable begins on the northwest side of Coloma Road, approximately 200 feet southeast of Sierra Madre Court, and extends north across the eastern property lines of Mills Middle School, Cordova High School and Hagen Park until it enters SMUD's Cordova Park Substation located near the intersection of Ambassador Drive and Trails Court (approximately 0.45 miles). From SMUD's substation, the existing 69kV cable extends east beneath a dirt path for approximately 0.70 miles when it turns north and cuts across the American River Parkway towards the American River for approximately 0.75 miles. Note that the total existing 69kV alignment is approximately 1.9 miles and the proposed 69kV alignment is approximately 2.12 miles. The extra mileage is due to deviating from the existing route to align with Rossmoor Drive.

Since installation of the existing 12kV and 69kV cable in the 1970s, native trees have established within the existing alignment along the Parkway. SMUD has coordinated with Sacramento County to install the new conduit outside of the existing alignment to reduce potential impacts to these trees and other biological resources within the American River Parkway and to facilitate easier access for future maintenance.

Accordingly, SMUD proposes to install the conduit for the new 12kV cable beneath the pavement, sidewalks, or curbs and gutters of Ambassador Drive. The proposed 69kV alignment would deviate from the existing alignment by continuing east until it heads north at Rossmoor Drive. While the exact location of the 69kV alignment along Rossmoor Drive is not yet known and would be determined once existing utilities beneath the pavement are identified, the 69kV alignment would generally be within Rossmoor Drive or the fuel break immediately west of the pavement. The 69kV alignment would continue along Rossmoor Drive as it intersects with the American River Parkway bike trail and continue beyond the edge of pavement at the end of Rossmoor Drive. The 69kV alignment would connect to existing riser poles located between the boundaries of Rossmoor Drive and the edge of the American River. Within the American River Parkway, the existing direct-buried 69kV cable would be abandoned in place.

The Project would include up to 13 utility vaults to be installed at various points along the 69kV alignment. The proposed utility vaults would consist of pre-cast concrete, measuring 8 feet x 14 feet x 8 feet inside, requiring an excavation area of approximately 15 feet x 20 feet x 15 feet, and would generally be spaced evenly throughout the alignment to allow for cable pulling, splicing and maintenance.

Construction activities would occur in two phases. Phase 1 would include the 12kV alignment, while Phase 2 would include the 69kV alignment and utility vaults. Construction activities would occur during hours identified in City of Rancho Cordova Zoning Code Section 6.68.090(E). If there is a need for work to occur outside of these hours, SMUD will provide additional notification to customers adjacent to the Project boundary.

Most construction would include open trenching to a maximum depth of 7 feet, though some deeper excavation may be necessary to avoid conflicts with existing utility lines. Removing water from the construction area (dewatering) may be necessary due to the high water-table of the area. SMUD would use Baker tanks and/or filtration bags, if needed, to treat water prior to discharge into the existing storm drain system in a manner consistent with regulatory requirements. For the 12kV alignment, the 12kV cable would be installed in conduit in the trenches. The 69kV electrical cable would be placed in a duct bank, which is a series of conduits encased in concrete. The trenches would then be backfilled with a cement-like slurry mixture or compacted aggregate base to the roadway subgrade elevation followed by replacement of the appropriate cover (e.g., pavement or dirt). Construction activities would generally be conducted in existing alignments or along

the roadway and would include the temporary closure of footpaths and roads. Alternative routes of travel will be provided where feasible. Following construction activities each day, the open trenches would be covered, and equipment removed to allow safe use of footpaths and roadways.

As design for both the 12kV and 69kV proceed, the exact placement of the alignments will be determined based on existing utility infrastructure location, avoidance of identified environmental resources, and engineering/construction considerations.

Project operation would include the active use of the underground electrical components installed during construction. SMUD would maintain the new 12kV and 69kV lines in the same way as it maintains the existing 12kV and 69kV lines under baseline conditions. Maintenance would entail regular inspection including testing and addressing issues warranting repair as identified during inspection. Components in vaults would be inspected to verify stability, structural integrity, and condition. Utility covers would be visually inspected to check for damaged lids, disposition of lid covers (for safety and trip hazards), and the presence of water. While inspecting utility covers, crews inspect the condition of cable splices and grounding for the cable.

SMUD would access components associated with SMUD's underground electrical facilities in pickup trucks or service trucks using existing roads; no off-road travel would be necessary. Inspections would take less than a day. There would not be any above-ground structures installed as part of the Project, and operation of Project elements would not create sources of noise, light, or other features that would be noticeable to residents and recreationists in the area. Maintenance of the Project could result in vehicle movement, vehicle noise, and human presence.

Construction for Phase 1 (12kV alignment) is anticipated take up to 3 weeks and would begin in the summer of 2022. Phase 2 (69kV alignment) construction would take approximately 12 months once initiated and is anticipated to begin in the next 5 to 7 years, after the completion of Phase 1.

b. Absence of Significant New Information

CEQA Guidelines section 15088.5 requires a lead agency to recirculate an EIR for further review and comment when significant new information is added to the EIR after public notice is given of the availability of the draft EIR but before certification. New information includes: (i) changes to the project; (ii) changes in the environmental setting; or (iii) additional data or other information. CEQA Guidelines section 15088.5 further provides that "[n]ew information added to an EIR is not 'significant' unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an

effect (including a feasible project alternative) that the project's proponents have declined to implement."

No comments were received on the Draft EIR. The revisions to the Draft EIR, as presented in the Final EIR were to clarify information in the environmental setting for tribal cultural resources.

Having reviewed the information contained in the Draft and Final EIR, and in the administrative record, including all comments received, as well as the requirements under CEQA Guidelines section 15088.5 and interpretive judicial authority regarding recirculation of draft EIRs, The Board hereby finds that no significant new information was added to the Draft EIR after the public review period. The Board specifically finds that: no new significant environmental impact would result from the Project or from the implementation of a mitigation measure; no substantial increase in the severity of an environmental impact would result, or if such an increase would result, SMUD has adopted mitigation measures to reduce the impact to a level of insignificance; SMUD has not declined to adopt any feasible Project alternative or mitigation measures considerably different from others previously analyzed that would clearly lessen the environmental impacts of the Project; and the Draft EIR is not so fundamentally and basically inadequate in nature that it precluded meaningful public review.

Having reviewed the information in the Draft EIR, Final EIR, and administrative record, the Board finds that no new significant information was added to the EIR following public review, and recirculation of the EIR is therefore unnecessary and not required by CEQA.

c. Environmental Impacts Summary

As required by CEQA and the CEQA Guidelines, the following section summarizes the direct, indirect, and cumulative environmental impacts of the Project identified in the Final EIR and includes the Board's Findings regarding those impacts and any mitigation measures set forth in the Final EIR, adopted by the Board, and incorporated as requirements of the Project. These Findings summarize the determinations of the Final EIR with respect to the Project's impacts before and after mitigation and do not attempt to describe the full analysis of each environmental impact considered in the Final EIR. Instead, the Findings provide a summary of each impact, describe the applicable mitigation measures identified in the Final EIR and adopted by the Board, and state the Board's Findings regarding the significance of each impact with the adopted mitigation measures. The Final EIR contains a full explanation of each impact, mitigation measure, and the analysis that led SMUD to its conclusions on that impact. These Findings hereby incorporate by reference the discussion and analysis in the Final EIR, which support the Final EIR's determinations regarding the Project's environmental impacts and mitigation measures. In making these Findings, the Board ratifies, adopts, and incorporates by

reference the Final EIR's analysis, determinations, and conclusions relating to environmental impacts and mitigation measures. The substantial evidence supporting these findings and conclusions is are set forth in the Final EIR and the record of proceedings.

The Board hereby adopts, and incorporates as conditions of approval, the mitigation measures set forth in the findings below to reduce or avoid the potentially significant impacts of the Project. In adopting the mitigation measures described below, the Board intends to adopt each of the mitigation measures recommended in the Final EIR. Accordingly, in the event that a mitigation measure recommended in the Final EIR has been inadvertently omitted from these Findings, that mitigation measure is hereby adopted and incorporated by reference in the Findings. Additionally, in the event that the description of mitigation measures set forth below fails accurately to capture the substance of a given mitigation measure due to a clerical error (as distinct from specific and express modification by the Board through these Findings), the language of the mitigation measure as set forth in the Final EIR shall govern.

1. Significant and Unavoidable Adverse Impacts and Related Mitigation Measures

Pursuant to PRC section 21081(b) and CEQA Guidelines section 15093, where the lead agency identifies significant adverse environmental impacts that cannot feasibly be mitigated to a less-than-significant level, the lead agency may nonetheless approve the project if it finds that specific economic, legal, social, technological, or other benefits of the project outweigh the unavoidable significant environmental impacts.

As detailed in the Draft EIR and Final EIR, there are no significant and unavoidable impacts associated with the Project. Therefore, there are no findings required for significant and unavoidable impacts.

2. Issues for which the Project would have a Less-than-Significant Impact with Project-specific Mitigation Measures Incorporated

Pursuant to PRC section 21081(a)(1) and CEQA Guidelines section 15091(a)(1), the following potentially significant impacts identified in the Final EIR will be reduced to less-than-significant impacts through the implementation of the mitigation measures hereby incorporated into the Project.

Tribal Cultural Resources

Impact 3.1-1: Cause a substantial adverse change in the significance of a Tribal cultural resource, including human remains. Consultation with Wilton Rancheria, UAIC, and the SSBMI identified three Tribal cultural resources to be present within the

study area and that the entire project location is sacred and sensitive for the presence of Tribal cultural resources including Native American burials. Because project-related ground-disturbing activities could result in damage to Tribal cultural resources, the project could cause a potentially significant impact.

Mitigation Measure 3.1-1a: Avoid TCRs through Project Design.

During the design phase of the 69kV alignment portion of the Project, SMUD will consult with consulting Tribes on the adequacy of the plans to avoid and protect in place the identified Tribal cultural resources. The consulting Tribes will review the plans starting at 30 percent design, or a similar milestone, and will continue to be consulted with until the design plans are finalized (100 percent design). To avoid impacts and protect the Tribal cultural resources in place, a qualified archaeologist, in collaboration with consulting Tribes, will ensure that no staging, storage, or work will come within a minimum of a 15-foot protection buffer from each Tribal cultural resource. If the archaeologist and consulting Tribes find at any time that the plans do not meet the 15-foot protection buffer, the design engineers will work with the archaeologist and consulting Tribes to modify the plans. If sufficient modifications to the plans cannot be achieved to ensure a 15-foot protection buffer, additional consultation with the participating tribes will be required to develop appropriate avoidance and mitigation measures. Such measures may include creation of a treatment plan, data recovery, reburial, or additional plan redesign. The project plans will not be considered final until the archaeologist has deemed them to be adequate for the avoidance and protection in place of the Tribal cultural resources.

Mitigation Measure 3.1-1b: Prepare and implement worker cultural resources awareness and respect training program.

A cultural resources awareness and respect training program will be provided to all construction personnel active on the project site prior to the start of project implementation and to any new workers who start on the project after starting. A representative or representatives from culturally affiliated Native American Tribe(s) will be invited to participate in the development and delivery of the cultural resources awareness and respect training program in coordination with a professional archaeologist meeting the United States Secretary of Interior's qualification standards for archaeology. The program will include relevant information regarding Tribal cultural resources, including applicable laws and regulations, the consequences of violating said laws and regulations, protocols for resource avoidance, and protocols for discoveries, including who to contact in the event of a discovery and what to do upon the discovery of human remains. The program will also underscore the requirement for confidentiality and culturally-

appropriate treatment of any find of significance to Native Americans and protocols, consistent to the extent feasible, with Native American Tribal values.

Mitigation Measure 3.1-1c: Implement Tribal and Archaeological Monitoring.

All ground disturbing activities, including any preparatory grading, tree removal, or vegetation clearing, within the project site will be monitored by a Tribal monitor and a qualified archaeologist. SMUD shall contact the participating Tribes a minimum of seven days prior to beginning earthwork or other ground disturbing activities to ensure a Tribal monitor is available; construction activities will proceed if no response is received 48 hours prior to ground disturbing activities. The Tribal and archaeological monitor shall complete daily monitoring logs that describe each day's activities, including construction activities, locations, soil, and any cultural materials identified. In the event that unanticipated archaeological or Tribal cultural resources are discovered, including human remains, compliance with Mitigation Measure 3.1-1d would be required. Both the Tribal monitor and the archaeological monitor have the ability to halt work if a discovery occurs.

Mitigation Measure 3.1-1d: Halt Ground Disturbance Upon Discovery of Subsurface Tribal Cultural Resources and Evaluate Discovered Resource.

If any suspected Tribal cultural resources or unique archaeological resources are discovered during ground disturbing construction activities, all work shall cease within 100 feet of the find, or a distance agreed upon by the Tribal monitor, archaeological monitor, SMUD, and the construction foreman based on the location and nature of the find and type of work occurring. The Tribal monitor shall determine if the find is a Tribal cultural resource. The Tribal monitor will make recommendations for further evaluation and culturally appropriate treatment of discovered Tribal cultural resources as necessary in consultation with the archaeological monitor.

Unless another type of treatment is recommended, resources will be preserved in place by redesigning the project; however, if project redesign is determined by SMUD, with evidence, to be technologically, regulatorily, or economically infeasible. Redesign could include modifying the route of the alignment; and route modification would remain within the boundary of the project study area. If redesign is demonstrated to be infeasible, culturally appropriate treatment would be developed in consultation with the participating Tribes. Culturally appropriate treatment may include, but is not limited to, processing materials for reburial, minimizing handling of cultural objects, leaving objects in place within the landscape, returning objects to a location within the project area where they will not be subject to future impacts from the project. Because curation of Tribal cultural

resources is not considered by the participating Tribes to be appropriate or respectful, participating Tribes request that materials not be permanently curated, unless approved by the participating Tribes.

Work at the discovery location cannot resume until all necessary investigation, evaluation, and treatment of the discovery under the requirements of the CEQA, including AB 52, have been satisfied. Implementation of this mitigation measure would also satisfy State and local regulations regarding the treatment of Tribal cultural resources as well as Section 7050.5 of the Health and Safety Code and PRC 5097 regarding the treatment of human remains.

Finding: The Board finds that implementation of the Cordova Park Underground Cable Replacement Project could damage Tribal cultural resources. Adoption and incorporation of Mitigation Measures 3.1-1a, -1b, -1c, and -1d into the Project would reduce potential impacts to Tribal cultural resources by avoiding and protecting them in place prior to the start of work to the extent feasible as defined in Mitigation Measure 3.1-1d. If avoidance is not possible, Tribally accepted and legally compliant procedures for the protection and treatment of Tribal cultural resources would be implemented. With implementation of these mitigation measures, impacts to tribal cultural resources would be reduced to a less-than-significant level. Therefore, the Project with mitigation will not cause significant impacts to Tribal cultural resources.

Cultural Resources

Impact 3.2-1: Change the significance of a known archaeological resource. Results of the records search for the study area indicate that the project would occur entirely within the boundaries of an historic-period archaeological resource, the Folsom Mining District (P-34-000335/CA-SAC-308H). Six newly-identified features which are contributing elements of the District are located within the study area. Each could be impacted by project-related ground-disturbing activities. This would be a potentially significant impact.

Mitigation Measure 3.2-1: Establish Work Exclusion Zones to Avoid Archeological Features.

Prior to the start of operations, a 15-foot work exclusion zone (WEZ) will be established around each of the identified archeological features. The WEZ will be shown on project plans and will be installed prior to the start of work on Rossmoor Drive. The WEZ will be delineated by the installation of high visibility temporary construction fencing set 15 feet away from the edge of the feature. The installation of the WEZ fencing will be overseen by a professionally qualified archaeologist who meets the Secretary of the Interior's standards for archaeology. The

archaeologist will review the WEZ location and mark the location of the WEZ on the ground prior to installation. No access, staging, storage, equipment, or personnel shall enter any portion of the WEZ.

The WEZ for each archaeological feature will remain in place until all work on Rossmoor Drive is complete.

Finding: The Board finds that implementation of the Cordova Park Underground Cable Replacement Project could damage a known archaeological resource. Adoption and incorporation of Mitigation Measure 3.2-1 into the Project would ensure that each feature of the District is avoided by project activities and preserved in place. Therefore, this measure meets the requirements of PRC Section 21083.1(b) for the preservation and avoidance of unique archaeological resources in place. Implementation of this measure would reduce impacts to known archaeological resources to a less-than-significant level. Therefore, the Project with mitigation will not cause significant impacts to a known archaeological resource.

Impact 3.2-2: Change the significance of unknown archaeological resources. The project area is known to have been used by Native Americans and Euro-American for settlement, mining, and agricultural activities. Project-related ground-disturbing activities could result in discovery or damage of yet undiscovered archaeological resources as defined in State CEQA Guidelines Section 15064.5. This would be a potentially significant impact.

Mitigation Measure 3.2-2a: Halt Ground-Disturbing Activity Upon Discovery of Archaeological Resources and Evaluate Discovered Resource.

In the event that a historic-period archaeological resource (such as concentrated deposits of bottles or bricks with makers marks, amethyst glass, ceramic or metal pipes, or other historic refuse) or a prehistoric archaeological resource (such as lithic scatters, midden soils), is uncovered during grading or other construction activities, all ground-disturbing activity within 100 feet of the discovery shall be halted until a qualified archaeologist can assess the significance of the find. SMUD will be notified of the potential find and a qualified archeologist shall be retained to investigate its significance. If the find is suspected to be Native American in origin, Mitigation Measure 3.1-1d shall be implemented. Any previously undiscovered resources found during construction will be recorded on appropriate California Department of Parks and Recreation 523 forms and evaluated for significance under all applicable regulatory criteria. If the archaeologist determines that the find does not meet the CRHR standards of significance for cultural resources, construction may proceed. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either an historical resource or a unique archaeological resource), the archaeologist shall work with SMUD to follow accepted professional

standards such as further testing for evaluation or data recovery, as necessary. The results of the identification, evaluation, and/or data recovery program for any unanticipated discoveries shall be presented in a professional-quality report that details all methods and findings, evaluates the nature and significance of the resources, analyzes and interprets the results.

Mitigation Measure 3.2-2b: Implement Native American and Archaeological Monitoring.

Implement Mitigation Measure 3.1-1c.

Finding: The Board finds that implementation of the Cordova Park Underground Cable Replacement Project could damage unknown archaeological resources. Adoption and incorporation of Mitigation Measures 3.2-2a and 3.2-2b would reduce impacts associated with archaeological resources to a less-than-significant level by requiring the performance of professionally accepted and legally compliant procedures in the event of a discovery, as well as the protection of any previously undocumented significant archaeological resources. Therefore, the Project with mitigation will not cause significant impacts to unknown archaeological resources.

Air Quality

Impact 3.3-2: 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. Project construction would not generate emissions in excess of the SMAQMD thresholds for ROG and NOX. However, the project, without the application of BMPs and BACT, would generate daily and annual emissions of PM10 and PM2.5 in excess of the SMAQMD thresholds during construction activities. Therefore, this impact would be potentially significant.

Mitigation Measure 3.3-1: Implement SMAQMD Basic Construction Emission Control Practices.

During construction, the contractor shall comply with and implement SMAQMD's Basic Construction Emission Control Practices, which includes SMAQMD-recommended BMPs and BACT, for controlling fugitive dust emissions. Measures to be implemented during construction include the following:

- Water all exposed surfaces at least 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 two (2) feet of freeboard 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 track-out 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.
- All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- 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 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 will be checked by a certified mechanic and determined to be running in proper condition before it is operated.

Finding: The Board finds that implementation of the Cordova Park Underground Cable Replacement Project would result in temporary construction-generated emissions of air pollutants in excess of SMAQMD thresholds. Adoption and incorporation of Mitigation Measure 3.3-1 into the Project will reduce the cumulative impact to a less-than-significant level. Therefore, the Project with mitigation will not cause significant cumulative air quality impacts during construction activities associated with project implementation.

Biological Resources

Impact 3.4-1: Result in a Substantial Adverse Effect on Riparian Habitat or Other Sensitive Natural Community. Project implementation would occur within the dripline of riparian habitat and sensitive natural communities and within the floodway of the American River. Working, trimming or removing vegetation within riparian, oak woodland habitat and sensitive natural communities could result in degradation of habitat value. This would be a potentially significant impact.

Mitigation Measure 3.4-4: Tree Protection.

Prior to site disturbance, SMUD shall provide to the City of Rancho Cordova and Sacramento County a plan for all tree work. A Certified Arborist shall approve all work plans prior to submittal to the City of Rancho Cordova and Sacramento County. Tree planting will comply with the City of Rancho Cordova's and Sacramento County's landscaping requirements.

For those trees that will be preserved on site during project construction, the following guidelines are recommended to ensure the long-term survival and stability of the trees.

- Educate Workers: Educate all workers on site about tree protection guidelines and requirements prior to construction.
- Establish a Tree Protection Zone: Establish a tree protection zone (TPZ) around any tree or group of trees designated for retention. The TPZ should at minimum be equal to 1.5 times the radius of the dripline. The TPZ may be adjusted on a case-by-case basis after consultation with a Certified Arborist.
- Install Fencing and Signage: Install fencing around the TPZ of all trees or groups of trees designated for retention. The fencing should remain in place for the duration of construction activities. Post appropriate signage to help convey the importance of the TPZ to workers.
- Prohibit Construction Activities within the TPZ: Prohibit construction-related activities, including grading, trenching, construction, demolition, or other work, within the TPZ. No heavy equipment or machinery should be operated within the TPZ. No construction materials, equipment, machinery, or other supplies should be stored within the TPZ. Vehicle and foot traffic should not be permitted within the TPZ. No wires or signs should be attached to any trees designated for retention.
- Prune Selected Trees: Prune selected trees to provide necessary clearance during construction and to remove any defective limbs or other tree parts that may pose a failure risk. All pruning should be completed by a Certified Arborist or Tree Worker and adhere to the Tree Pruning Guidelines of the International Society of Arboriculture.
- Monitor Trees and TPZs: Monitor the integrity of the TPZs and the health of the trees designated for retention regularly throughout the construction process. A Certified Arborist should monitor the health and condition of the protected trees and, if necessary, recommend additional mitigations and

appropriate actions. This could include the monitoring of trees adjacent to project facilities to determine if construction activities (including the removal of nearby trees) would affect protected trees in the future.

- Treat Impacted Trees: Provide supplemental irrigation and other care, such as mulch and fertilizer, as deemed necessary by a Certified Arborist, to any trees impacted by construction. Treatment of any injuries should be performed by a Certified Arborist.

Finding: The Board finds that implementation of the Cordova Park Underground Cable Replacement Project could impact individual trees, which could result in the degradation of habitat value. With adoption and incorporation of Mitigation Measure 3.4-4 into the Project, the impacts on individual trees would be minimized and removal subject to permits from Sacramento County and/or City of Rancho Cordova depending on location. Because the project would not involve the conversion of riparian habitat, a sensitive natural community or sensitive vegetation alliance, this impact would be less than significant. Therefore, the Project with mitigation will not cause significant impacts to riparian habitat or other sensitive natural communities.

Impact 3.4-2: Result in the Loss of or Disturbance of Valley Elderberry Longhorn Beetle and Habitat. Project implementation would result in construction disturbances within 165 feet of an elderberry shrub. The single elderberry shrub is located in grassland habitat but near riparian habitat that is known to support valley elderberry longhorn beetle. Construction activities would occur a minimum of 100 feet from the shrub so no direct effects to this elderberry would occur. However, project construction could cause indirect effects to valley elderberry longhorn beetle and its habitat. This impact would be potentially significant.

Mitigation Measure 3.4-2: Avoid and protect elderberry shrubs.

- The elderberry shrub and a 20-foot buffer from the dripline of the shrub shall be fenced or flagged as close to the edge of construction as feasible and avoided during construction activities.

- A qualified biologist will provide training for all contractors, work crews, and any onsite personnel on the status of valley elderberry longhorn beetle, its host plant and habitat, the need to avoid damaging elderberry shrubs, and the possible penalties for non-compliance.

- As much as feasible, all activities that could occur within 165 feet of an elderberry shrub (but outside of the 20-foot no disturbance buffer), shall be

conducted outside of the flight season of the valley elderberry longhorn beetle (the flight season typically occurs between March-July).

- Project activities such as truck traffic or other use of machinery, shall not create excessive dust on the project site, such that the growth or vigor of elderberry shrubs could be adversely affected. Establishing and enforcing a 15 miles per hour speed-limit for off-road usage and watering non-paved access roads shall be implemented as needed to minimize excessive dust.

- A qualified biologist (i.e., a biologist that holds a wildlife biology, botany, ecology, or other relevant degree from an accredited university and: 1) be knowledgeable in relevant species life histories and ecology, 2) be able to correctly identify relevant species and habitats, 3) have experience conducting field surveys of relevant species or resources, 4) be knowledgeable about survey protocols, 5) be knowledgeable about State and federal laws regarding the protection of special-status species, and 6) have experience with CDFW's CNDDB and Biogeographic Information and Observation System (BIOS). The project proponent will review the resume and approve the qualifications of biologists.) shall monitor the work area within 165 feet of the elderberry shrub at project-appropriate intervals to ensure the avoidance and minimization measures listed above are implemented.

Finding: The Board finds that implementation of the Cordova Park Underground Cable Replacement Project could cause indirect effects to valley elderberry longhorn beetle and its habitat. Adoption and incorporation of Mitigation Measure 3.4-2 would avoid disturbance to and protect valley elderberry longhorn beetle and its habitat by fencing or flagging the limits of construction, developing and providing a Workers Environmental Awareness Training to construction personnel, limiting construction activities within 165 feet of the elderberry shrub to occur outside of the flight season of the valley elderberry longhorn beetle (March-July), implementing measures to reduce excessive dust, and monitoring the construction in proximity to the elderberry to ensure that all avoidance and minimization measures are being implemented. With implementation of this mitigation measure, a less-than-significant impact would occur.

Impact 3.4-3: Disturbance of nesting Swainson's hawk, white-tailed kite, or other avian species. Project implementation would result in construction disturbances that could cause Swainson's hawk, white-tailed kite, or other avian species to abandon their nests, if located nearby. Therefore, project construction could cause direct mortality of chicks and eggs. This impact would be potentially significant.

Mitigation Measure 3.4-3: Avoid disturbance of active nests.

- For project activities, including tree trimming or removal, that begin between February 1 and September 15, a qualified biologist will conduct preconstruction surveys for Swainson's hawk, white-tailed kite, and other nesting birds to identify active nests on and within 0.25 mile of the alignments for Swainson's hawk and on or within 500 feet for other birds. The survey for Swainson's hawks will be conducted before the beginning of any construction activities between March 1 and September 15, following the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee 2000).

- If active nests are found, a qualified biologist will establish appropriate buffers around the active nest sites identified during preconstruction bird surveys such that project-related activities are unlikely to result in nest abandonment or disruption of normal nesting activities. No project activity will commence within the buffer areas until a qualified biologist has determined the young have fledged, the nest is no longer active, or reducing the buffer would not likely result in nest abandonment. CDFW guidelines recommend implementation of 0.25-mile buffer for Swainson's hawk and white-tailed kite and 500-feet for other raptors, but the size of the buffer may be adjusted if a qualified biologist, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest. Monitoring of the nest by a qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest.

Finding: The Board finds that implementation of the Cordova Park Underground Cable Replacement Project could disturb nesting avian species. Adoption and incorporation of Mitigation Measure 3.4-3 would avoid disturbance of active nests, consistent with the California Fish and Game Code and MBTA requirements. In addition, implementation of these mitigation measures would minimize impacts to special-status bird species by conducting vegetation removal outside of the nesting season for common and special-status bird species, and if that is not possible, by conducting pre-construction nesting surveys for nesting birds, setting no-disturbance buffers around active nests, and monitoring the project site to prevent new nests from being established during construction. With implementation of this mitigation measure, a less-than-significant impact would occur.

Impact 3.4-4: Conflict with provisions of the City of Rancho Cordova Municipal Code or Sacramento County Code of Ordinances intended to protect biological resources. The alignments are located within the City of Rancho Cordova and Sacramento County and are subject to the provisions of the Rancho Cordova Municipal

Code and Sacramento County Code of Ordinances. Construction associated with the project may require the removal of trees, some of which could be considered protected trees under the City of Rancho Cordova Municipal Code and Sacramento County Code of Ordinances. Without acquisition of a permit from the City and County prior to tree removal, the project would conflict with local ordinances, which would constitute a significant impact.

Mitigation Measure 3.4-4: Tree Protection.

Prior to site disturbance, SMUD shall provide to the City of Rancho Cordova and Sacramento County a plan for all tree work. A Certified Arborist shall approve all work plans prior to submittal to the City of Rancho Cordova and Sacramento County. Tree planting will comply with the City of Rancho Cordova's and Sacramento County's landscaping requirements.

For those trees that will be preserved on site during project construction, the following guidelines are recommended to ensure the long-term survival and stability of the trees.

- Educate Workers: Educate all workers on site about tree protection guidelines and requirements prior to construction.
- Establish a Tree Protection Zone: Establish a tree protection zone (TPZ) around any tree or group of trees designated for retention. The TPZ should at minimum be equal to 1.5 times the radius of the dripline. The TPZ may be adjusted on a case-by-case basis after consultation with a Certified Arborist.
- Install Fencing and Signage: Install fencing around the TPZ of all trees or groups of trees designated for retention. The fencing should remain in place for the duration of construction activities. Post appropriate signage to help convey the importance of the TPZ to workers.
- Prohibit Construction Activities within the TPZ: Prohibit construction-related activities, including grading, trenching, construction, demolition, or other work, within the TPZ. No heavy equipment or machinery should be operated within the TPZ. No construction materials, equipment, machinery, or other supplies should be stored within the TPZ. Vehicle and foot traffic should not be permitted within the TPZ. No wires or signs should be attached to any trees designated for retention.
- Prune Selected Trees: Prune selected trees to provide necessary clearance during construction and to remove any defective limbs or other tree parts

that may pose a failure risk. All pruning should be completed by a Certified Arborist or Tree Worker and adhere to the Tree Pruning Guidelines of the International Society of Arboriculture.

- Monitor Trees and TPZs: Monitor the integrity of the TPZs and the health of the trees designated for retention regularly throughout the construction process. A Certified Arborist should monitor the health and condition of the protected trees and, if necessary, recommend additional mitigations and appropriate actions. This could include the monitoring of trees adjacent to project facilities to determine if construction activities (including the removal of nearby trees) would affect protected trees in the future.

- Treat Impacted Trees: Provide supplemental irrigation and other care, such as mulch and fertilizer, as deemed necessary by a Certified Arborist, to any trees impacted by construction. Treatment of any injuries should be performed by a Certified Arborist.

Finding: The Board finds that implementation of the Cordova Park Underground Cable Replacement Project could conflict with local regulations intended to protect biological resources. Adoption and incorporation of Mitigation Measure 3.4-4 into the Project would require SMUD to acquire permits and implement the conditions of those permits in accordance with existing guidelines established by the City of Rancho Cordova for the protection of trees. Therefore, implementation of Mitigation Measure 3.4-4 would avoid any conflict with local policies/ordinances intended to protect biological resources, thereby reducing this impact to a less-than-significant level.

Transportation

Impact 3.5-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Project construction would temporarily interfere with existing vehicle, bicycle, and pedestrian circulation as it would include temporary closures of roads, pathways, and bike lanes. Because project construction activities could affect the existing circulation system, this impact would be potentially significant.

Mitigation Measure 3.5-1: Traffic Control Plan.

Prior to project construction within or adjacent to public roadways, SMUD's construction contractor shall develop a traffic control plan for the project and submit the plan to the City of Rancho Cordova's Department of Public Works. The plan shall identify temporary lane, sidewalk, bicycle lane, and transit stop closures and provide information regarding how access and connectivity will be maintained

during construction activities. The plan shall include details regarding traffic controls that would be employed, including signage, detours, and flaggers. The traffic control plan shall be implemented by the contractor during construction to allow for the safe passage of vehicles, pedestrians, and cyclists along the project route.

Finding: The Board finds that implementation of the Cordova Park Underground Cable Replacement Project would potentially temporarily interfere with the existing circulation system during construction activities. Adoption and incorporation of Mitigation Measure 3.5-1 would reduce impacts related to the circulation system by ensuring that accessibility and connectivity are maintained during construction activities. Therefore, this impact would be reduced to a less-than-significant level.

Impact 3.5-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). Implementation of the project would not result in any changes in road geometry or use, but would require temporary closure of vehicle lanes, bicycle lanes, and pathways. This impact would be potentially significant.

Mitigation Measure 3.5-1: Traffic Control Plan.

Prior to project construction within or adjacent to public roadways, SMUD's construction contractor shall develop a traffic control plan for the project and submit the plan to the City of Rancho Cordova's Department of Public Works. The plan shall identify temporary lane, sidewalk, bicycle lane, and transit stop closures and provide information regarding how access and connectivity will be maintained during construction activities. The plan shall include details regarding traffic controls that would be employed, including signage, detours, and flaggers. The traffic control plan shall be implemented by the contractor during construction to allow for the safe passage of vehicles, pedestrians, and cyclists along the project route.

Finding: The Board finds that implementation of the Cordova Park Underground Cable Replacement Project would require temporary closure of vehicle lanes, bicycle lanes, and pathways in the area during construction activities. Adoption and incorporation of Mitigation Measure 3.5-1 would reduce impacts related to traffic hazards during construction by requiring a plan to maintain access and provide safety information. As part of the plan, requirements would be established to allow for the safe, controlled passage of vehicles through the project area. Therefore, impacts related to traffic hazards would be reduced to a less-than-significant level.

Impact 3.5-4: Result in inadequate emergency access. While project operation would not change any roadways in the area, project construction would require temporary closures of roadways used for emergency access. This impact would be potentially significant.

Mitigation Measure 3.5-1: Traffic Control Plan.

> Prior to project construction within or adjacent to public roadways, SMUD's construction contractor shall develop a traffic control plan for the project and submit the plan to the City of Rancho Cordova's Department of Public Works. The plan shall identify temporary lane, sidewalk, bicycle lane, and transit stop closures and provide information regarding how access and connectivity will be maintained during construction activities. The plan shall include details regarding traffic controls that would be employed, including signage, detours, and flaggers. The traffic control plan shall be implemented by the contractor during construction to allow for the safe passage of vehicles, pedestrians, and cyclists along the project route.

Finding: The Board finds that implementation of the Cordova Park Underground Cable Replacement Project would require temporary closures of roadways used for emergency access during construction activities. Adoption and incorporation of Mitigation Measure 3.5-1 would reduce impacts related to inadequate emergency access during construction by requiring development and implementation of a plan that would maintain access for emergency vehicles during construction. Therefore, impacts related to emergency access would be reduced to a less-than-significant level.

d. Alternatives

In compliance with CEQA and the CEQA Guidelines, Chapter 5, "Alternatives" of the Draft EIR evaluated a reasonable range of alternatives to the Project, including the No Project Alternative, followed by identification of an environmentally superior alternative. For the project, the consideration of alternatives that fulfill CEQA requirements is complicated by a simple factor: the project would not result in any significant and unavoidable impacts. The significant impacts of the project are highly limited and can be clearly mitigated. Significant impacts have been identified for Tribal cultural resources, cultural resources, air quality, biological resources, and transportation.

Although there are no alternatives that could avoid or substantially reduce (unmitigated) significant effects of the project (because none exist), the alternatives evaluated below are presented to satisfy CEQA's requirement to identify a range of potentially feasible alternatives (State CEQA Guidelines Section 15126.6(a)). The EIR examined each alternative's feasibility and ability to meet the following Project Objectives:

- Provide safe and reliable electrical service to existing and proposed development in the Rancho Cordova area.
- Facilitate efficient maintenance of underground cables and infrastructure.
- Maximize the use of available SMUD property and resources.
- Minimize impacts to nearby sensitive receptors.
- Minimize potential conflicts with existing planning efforts within the City of Rancho Cordova.

A potential alternative found to be clearly infeasible (i.e., Overhead Lines Alternative) was rejected because they would not achieve most of the basic project objectives without further environmental review in Section 5.2.3 of the Draft EIR.

The No Project Alternative (Alternative A) and Alternatives that might have been feasible and that would attain many of the Project Objectives to some extent (i.e., Alternative B (Existing Cable Alignment) and Alternative C (Ambassador Drive Alignment)) were carried forward and analyzed with regard to whether they would reduce or avoid significant impacts of the Project.

In connection with certification of the Final EIR for the Project, the Board certifies that it has independently reviewed and considered the information on alternatives provided in the Final EIR and the record of proceedings. The Board finds that no new alternatives have been identified and that the feasibility of the analyzed alternatives has not changed since the Draft EIR was circulated for public review. The Board certifies that it has independently reviewed and considered the information on alternatives provided in the Final EIR and the administrative record, and find, for the reasons set forth below, that each of the following alternatives cannot feasibly attain, either at all or to the same extent as the proposed Project, one or more of the Project Objectives, is otherwise infeasible or fails to avoid or substantially lessen the significant effects of the Cordova Park Underground Cable Replacement Project.

1. Alternative A (No Project)

Under this alternative, the existing 12kV and 69kV lines would continue to be used until they are no longer considered viable and then abandoned in place, without replacement. Under this alternative, SMUD would not be able to provide reliable and safe electrical service to existing and proposed development in the Rancho Cordova area.

This alternative would not meet any of the objectives identified above for the Project. Because this alternative would not attain any project objectives and for the reasons set forth above, Alternative A is rejected by the Board from further consideration.

2. Alternative B (Existing Cable Alignment)

Under this alternative, new 12kV and 69kV cable lines would be installed along the existing alignment that extends from Coloma Road to SMUD's Cordova Park Substation and through the American River Parkway. Existing direct-buried cable would be abandoned in place and the new cables would be installed within 40 feet of the existing cable alignment. While the southern portion of this alternative (from Coloma Road to the substation) would be identical to the proposed project, it would differ in that the 12kV line would be installed in the same alignment as the 69kV alignment within the open space of the American River Parkway. From the substation, the alignment would extend approximately 0.70 mile east where it would then turn north and run through the open space of the Parkway. This alternative would not include any construction activities within roadway rights-of-way as all work would occur within school property, SMUD property, or open space.

This alternative would achieve most of the project objectives but not to the degree of the project. It would potentially conflict the City of Rancho Cordova's the tree preservation ordinance, indicating that this alternative would not meet the objective of minimizing potential conflicts with existing planning efforts within the City of Rancho Cordova. Because this alternative would not attain project objectives and for the reasons set forth above, Alternative B is rejected by the Board from further consideration.

3. Alternative C (Ambassador Drive Alignment)

Under this alternative, both the 12kV and 69kV alignments would be placed within Ambassador Drive. For the 12kV alignment, this is the same as the proposed project. For the 69kV alignment, this alternative would change the location of the alignment between SMUD's Cordova Park Substation and Rossmoor Drive. Instead of the 69kV alignment crossing through open space behind homes facing Ambassador Drive, that portion of the 69kV alignment would instead be located within Ambassador Drive.

This alternative would achieve most of the project objectives but not to the degree of the project. By locating both alignments within Ambassador Drive instead of the open space of the Parkway, Alternative C would not maximize the use of available SMUD property and easements and would not minimize impacts to nearby sensitive receptors as it would entail additional work within roadways used by local residents and would place noise-generating construction equipment closer to residences. Because this alternative would

not attain project objectives and for the reasons set forth above, Alternative C is rejected by the Board from further consideration.

4. Environmentally Superior Alternative

CCR Section 15126.6 suggests that an EIR should identify the "environmentally superior" alternative. "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." As stated above in Section 5.2.2, the consideration of alternatives that fulfill CEQA requirements, in the instance of the project, is complicated by a simple factor: the project would not result in any significant and unavoidable impacts. The significant impacts of the project, which would be to Tribal cultural resources, cultural resources, air quality, biological resources, and transportation, can be clearly mitigated.

When considering objectives, the proposed project would best meet the project objectives, as stated in Chapter 2, "Project Description." In contrast, Alternative B, by keeping all project construction out of existing roadways, could conflict with existing planning efforts within the City of Rancho Cordova, specifically the tree preservation ordinance. Similarly, Alternative C, by moving the 69kV alignment from the open space of the American River Parkway to within Ambassador Drive, would increase impacts to nearby sensitive receptors.

Consistent with State CEQA Guidelines (CCR Section 15126.6 [e][2]), because the environmentally superior alternative was identified as the No Project Alternative, another environmentally superior alternative shall be identified. Based on the environmental analysis contained in this Draft EIR, Alternative C would result in less severe impacts compared to the Project. However, and as noted above, Alternative C could still result in potential impacts on Tribal cultural resources, cultural resources, air quality, biological resources, and transportation. Therefore, the environmental impact differences between the Project and Alternative C are not substantial enough that one is clearly superior over the other.

e. Additional Findings

1. These Findings incorporate by reference in their entirety the text of the Final EIR prepared for the Cordova Park Underground Cable Replacement Project. Without limitation, this incorporation is intended to elaborate on the scope and nature of the Project, related mitigation measures, and the basis for determining the significance of such impacts.

2. All of the environmental effects of the Cordova Park Underground Cable Replacement Project have been adequately addressed in the Final EIR and have been mitigated or avoided, where feasible.

3. Section 15093(b) of the CEQA Guidelines provides that when the decision of the public agency results in the occurrence of significant impacts that are not avoided or substantially lessened, the agency must state in writing the reasons to support its actions. The Findings adopted by the Board, in connection with its approval of the Cordova Park Underground Cable Replacement Project and certification of the associated EIR, addressed all of the potentially significant impacts associated with implementation of the Cordova Park Underground Cable Replacement Project. The EIR concluded that all potentially significant impacts would be adequately mitigated and that the Project would not result in any significant and unavoidable impacts even with the adoption of identified mitigation measures. As a result, the adoption of a Statement of Overriding Considerations for the Cordova Park Underground Cable Replacement Project is not required.

4. CEQA Guidelines section 15074 requires the Lead Agency approving a Project to adopt an MMRP for changes to the Project that it adopts or makes a condition of Project approval in order to ensure compliance during Project implementation. The Board adopts the MMRP for Cordova Park Underground Cable Replacement Project and the specific mitigation measures will be monitored in conjunction with SMUD's Final EIR MMRP and Reporting process.

f. Record of Proceedings

For purposes of CEQA and these Findings, the record of proceedings for the Project (Record of Proceedings) consists of the following documents and other evidence, at a minimum:

- The Notice of Preparation (NOP) distributed on March 7, 2022 and comments received during its 30-day public review;

- The EIR for the Project, including, without limitation, the Draft EIR, Final EIR, and all of its appendices;

- All studies, EIRs, maps, rules, regulations, guidelines, permits and other documents and materials incorporated by reference in any portion of the EIR;

- All presentation materials from every noticed public meeting and public hearing for the Project;

- The MMRP for the proposed Project;
- Matters of common knowledge, including but not limited to federal, state and local laws and regulations, including, without limitation, SMUD's adopted CEQA Procedures and other adopted plans, policies and programs;
- Any documents expressly cited in these Findings; and
- All materials not otherwise identified which are expressly required to be in the Record of Proceedings by PRC section 21167.6(e).

g. Custodian and Location of Records

The documents and other materials which constitute the Record of Proceedings are located at SMUD Headquarters. Copies of those documents are and at all relevant times have been and will be available upon request at the Customer Service Center (6300 S Street, Sacramento, CA 95817). The custodian of the Record of Proceedings may be contacted as follows:

Rob Ferrera
Sacramento Municipal Utility District
6201 S Street, MS B203
Sacramento, CA 95817-1899
(916) 732-6676
rob.ferrera@smud.org

This information is provided in compliance with PRC section 21081.6(a)(2) and CEQA Guidelines section 15091(e).

III. Project Benefits

The fundamental purpose of the Cordova Park Underground Cable Replacement Project is to provide safe and reliable electrical service to existing and proposed development in the Rancho Cordova area. The Project would not add additional service capacity but would help SMUD reliably meet electric demand, meet SMUD's goals of ensuring the reliability of electrical service in the Rancho Cordova area, facilitate efficient maintenance of underground cables and infrastructure, maximize the use of available SMUD property and resources, minimize impacts to nearby sensitive receptors, and minimize potential conflicts with existing planning efforts within the City of Rancho Cordova.

a. Need for Power in SMUD's Rancho Cordova Service Area

SMUD generates, transmits, and distributes electric power to a 900-square-mile service area that includes Sacramento County and small portions of Placer and Yolo counties. The City of Rancho Cordova's Housing Element accounts for 9,067 new residential units between 2021 and 2029 (City of Rancho Cordova 2021: 4). As the city continues to grow, SMUD will need to provide electricity for all customers.

SMUD's existing 12kV line in the project area currently experiences failures and is in need of replacement. While the existing 69kV line is not yet failing, it is nearing the end of its operational life and could experience failure in the future. With existing and future demand in the Rancho Cordova area, replacement of the 12kV and 69kV lines will be crucial to providing service to all SMUD customers.

b. Electrical Reliability

Responsibility for maintaining safe, reliable, and dependable operation of the electric grid in California is divided among various "balancing authorities," including SMUD. A balancing authority assumes responsibility for operational and system reliability for electric customers within a specific electrical and geographic area. The Cordova Park Underground Cable Replacement is a necessary component of SMUD's future plans for electrical reliability.

c. Environmental Benefits

The existing 12kV line is experiencing failure and needs to be replaced. While the 69kV line is not yet failing, it is aging and may experience failure in the future. The replacement of existing lines allows SMUD to take advantage of newer technologies by installing and operating new, more efficient equipment and placing such equipment in a way that is easier to access and maintain into the future. As a general rule, newer equipment is more efficient and provides a benefit to the environment by being more efficient, less wasteful, and/or utilizing materials or techniques that are more environmentally-friendly. By replacing the outdated equipment with newer equipment, SMUD will improve the efficiency of its operations.

As discussed in the EIR, the Project would result in potentially significant impacts related to Tribal cultural resources, cultural resources, air quality, biological resources, and transportation. However, as demonstrated in the EIR, each of these impacts would be reduced to a less-than-significant level with the adoption and implementation of mitigation measures. As a result of these mitigation measures, the Project would not result in any significant and unavoidable environmental impacts.

Finding: The SMUD Board finds the approval of the proposed Cordova Park Underground Cable Replacement Project will result in continuing and enhanced benefits to SMUD customers in form of an important and reliable power transmission system.

IV. Statement of Overriding Considerations

This section of the findings document addresses the requirement in CEQA Guidelines section 15093. It requires the approving agency to balance the benefits of a proposed project against its unavoidable significant impacts and to determine whether the impacts are acceptably overridden by the project benefits. As described previously, the Project would not result in any unavoidable significant impacts. Therefore, a Statement of Overriding Considerations is not required for the Project.

V. Summary

Based on the foregoing findings and the information contained in the record, it is hereby determined that:

1. The Project would not result in any significant and unavoidable impacts.

2. The environmental impact differences between the Project and Alternative C are not substantial enough that one is clearly superior over the other, particularly as neither would include any significant and unavoidable environmental impacts. Because none of the project alternatives would be environmentally superior to the Project and would also fail to achieve the project objectives, all alternatives are rejected as infeasible.

This determination reflects the Board’s independent judgment and analysis.

References

City of Rancho Cordova. 2021. *City of Rancho Cordova 2021-2029 Housing Element.* Rancho Cordova, CA. Prepared by Placeworks, Folsom, CA.

DRAFT

RESOLUTION NO. _____

WHEREAS, this Board has adopted policies stating this Board is committed to meeting customers' electrical energy needs (SD-4); demonstrating energy reliability and environmental leadership (SD-7); and ensuring high levels of customer satisfaction (SD-5); and

WHEREAS, SMUD's primary purpose is to supply electrical energy to customers in the Sacramento area; and

WHEREAS, the **Cordova Park Underground Cable Replacement Project (Project)** was prepared, as part of SMUD's routine maintenance and upgrade protocols to replace aging electrical infrastructure, to install approximately 0.6 miles of 12 kilovolt (kV) underground cable, approximately 2.12 miles of 69kV underground cable, and up to 13 new utility vaults in the City of Rancho Cordova near the location of existing 12kV and 69kV underground cables that are approaching the end of their operational lives; and

WHEREAS, installation of new cable, conduit and utility vaults would be done by open trenching and, where possible, new conduit will be installed to align with existing cable, which existing cable would be abandoned in place; and

WHEREAS, the **Project** will occur over two phases, with the first phase including only the 12kV elements, and is anticipated to occur between July 2022 and September 2022, and the second phase consisting of 69kV and utility vault elements to occur over the next five to eight years; and

WHEREAS, a **Notice of Preparation** was made available for public review from March 7, 2022, to April 6, 2022, and a public meeting was held on March 24, 2022, which was attended by no members of the public; and

WHEREAS, SMUD prepared the draft **Environmental Impact Report (EIR)**, which provides the **California Environmental Quality Act (CEQA)** analysis for the **Project**, and the **Mitigation Monitoring and Reporting Program** incorporated environmental avoidance, mitigation and improvement measures; and

WHEREAS, the **EIR** and **Mitigation Monitoring and Reporting Program** were posted on the SMUD website, distributed to approximately 500 interested parties including agencies and the public, inviting public comment; the comment period was open for a 45-day period from May 11, 2022, through June 27, 2022; a public meeting was held on June 9, 2022, which was attended by no members of the public; and three comments were received from local agencies; and

WHEREAS, the **Final Environmental Impact Report (FEIR)** included mitigation measures for cultural resources and tribal cultural resources to reduce impacts to a less-than-significant level and concluded the **Project** would not result in any significant and unavoidable impacts; and

WHEREAS, all comments received during the public review period have been responded to as appropriate and incorporated into the **FEIR** and **Mitigation Monitoring and Reporting Program**, which was made available for comments on July 11, 2022, and will require certification by the SMUD Board of Directors; and

DRAFT

WHEREAS, the **FEIR** and **Mitigation Monitoring and Reporting Program** are located in the records of SMUD under the custody of the Environmental Management Department; **NOW THEREFORE,**

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

Section 1. This Board has reviewed and considered information in the **Cordova Park Underground Cable Replacement Project (Project) Final Environmental Impact Report (FEIR)** and **Mitigation Monitoring and Reporting Program** and (1) adopts the **Findings** as set forth in **Attachment ___**, (2); certifies that the **Project FEIR** complies with the **California Environmental Quality Act (CEQA)**; (3) adopts the **Mitigation Monitoring and Reporting Program,** as set forth in **Attachment ___**; and (4) approves the **Project**.

Section 2. This Board, exercising its independent judgment, finds, on the basis of the **Project FEIR** and **Mitigation Monitoring and Reporting Program**, and comments received during the public review period that there is no substantial evidence that the **Project** will have a significant effect on the environment.

Section 3. The Environmental Services Department is directed to file with the County Clerk of Sacramento County a Notice of Determination, which shall set forth the information required by **CEQA**.

SSS No. SCS 22-195

BOARD AGENDA ITEM
STAFFING SUMMARY SHEET

Committee Meeting & Date
N/A
Board Meeting Date
July 21, 2022

TO		TO	
1.	Casey Fallon	6.	
2.	Frankie McDermott	7.	
3.	Jennifer Davidson	8.	
4.		9.	**Legal**
5.		10.	**CEO & General Manager**

Consent Calendar		**Yes**	x	**No** *If no, schedule a dry run presentation.*	**Budgeted**	x	**Yes**		**No** *(If no, explain in Cost/Budgeted section.)*

FROM (IPR)	DEPARTMENT	MAIL STOP	EXT.	DATE SENT
Andrew Littlefield	Procurement Operations	EA404	7278	7/12/2022

NARRATIVE:

Requested Action: Approve Contract Change No. 4 to Contract No. 4600000965 with Cooper Power Systems, LLC to extend the contract expiration date by five years from March 20, 2023, to March 20, 2028, and to increase the contract amount by $70 million from $49.5 million to $119.5 million plus sales/use tax.

Summary: This contract was awarded on a competitive basis to Cooper Power Systems, LLC in March 2016 (Board Resolution No. 16-03-08) for the continuous supply of distribution transformers. The original contract was awarded for the period from March 20, 2016, to March 20, 2021, for a not-to-exceed amount of $45,000,000. Contract Change No. 01 extended the contract term by two years, from March 20, 2021, to March 20, 2023. Contract Change No. 02 added five new transformers to the contract. Contract Change No. 3 increased the contract funding by 10% (GM Contingency) from $45,000,000 to $49,500,000.

Since 2020, we have seen increased supply chain risk in the distribution transformer market due to raw material supply shortages and difficulties securing the necessary internal components to keep up with demand. Additionally, prices have risen more than 60% during the past two years, which has forced buyers to place orders earlier to avoid rising prices. To mitigate these risks, SMUD has worked closely with Cooper Power Systems, LLC to reserve manufacturing capacity and prioritize orders in the production queue. SMUD has also increased safety stock levels in our warehouse and planned orders further out into the future to combat increasing delivery lead times.

The proposed Contract Change No. 04 for an additional five (5) year term and $70 million in contract value will ensure SMUD has adequate funding to support upcoming orders and to further mitigate supply chain disruptions for this critical equipment. Due to the current market conditions, it is in SMUD's best interest to continue our partnership with Cooper Power Systems, LLC. SMUD staff will continue to closely monitor the distribution transformer market and will work to establish a secondary source(s) of supply.

Vendor Name	Current Expiration Date	Current Contract Amount	Release Amount	Invoice Amount	Contract Balance
COOPER POWER SYSTEMS, LLC	3/20/2023	$49,500,000	$43,120,201	$33,306,913	$6,379,798

Contract Actions	Amount	Cumulative Total	Description
Original Contract	$45,000,000		
Change No. 01	$0	$45,000,000	Extend contract term by two years, through 2023.
Change, No. 02	$0	$45,000,000	Source five new transformers to contract.
Change No. 03	$4,500,000	$49,500,000	Increase funding by 10% (GM Contingency).
Pending Change No. 4	$70,000,000	$119,500,000	Extend contract term by five years, through 2028, and increase funding by $70 million.

Board Policy: *(Number & Title)*	BL-8, Delegation to the Chief Executive Officer and General Manager with Respect to Procurement; This contract supports Strategic Direction SD-4, Reliability with critical infrastructure distribution transformers and Strategic Direction SD-7, Environmental Leadership through the use of Natural Ester Based insulating fluid used in the transformers.
Benefits:	A longer contract term with the Cooper Power Systems, LLC will provide opportunities for increased manufacturing capacity and expedited delivery while mitigating disruption to our supply of distribution transformers.
Cost/Budgeted:	$119,500,000; Budgeted for 2016-2028 by Corporate Financial and Enterprise Services, Warehouse Operations.
Alternatives:	Purchase distribution transformers on a spot buy basis at the prevailing prices and lead times. Increase safety stock levels to account for variable delivery lead times.
Affected Parties:	Warehouse Operations, Supply Chain Services
Coordination:	Warehouse Operations, Supply Chain Services
Presenter:	Casey Fallon, Director, Procurement, Warehouse & Fleet

Additional Links:

SUBJECT		ITEM NO. *(FOR LEGAL USE ONLY)*
	Contract Change No. 4 to Contract No. 4600000965 with Cooper Power Systems, LLC	**6**

ITEMS SUBMITTED AFTER DEADLINE WILL BE POSTPONED UNTIL NEXT MEETING.

DRAFT

RESOLUTION NO. _____

WHEREAS, by Resolution No. 16-03-08, adopted on March 17, 2016, this Board authorized the Chief Executive Officer and General Manager to award Contract No. 4600000965 to **Cooper Power Systems, LLC** for a five-year inventory requirement for distribution transformers, including pole bolt and pad mount services, in the amount of $45,000,000 plus sales/use tax; and

WHEREAS, the original contract was awarded on a competitive basis for the period from March 20, 2016, to March 20, 2021; and

WHEREAS, Contract Change No. 1 extended the contract term by two years from March 20, 2021, to March 20, 2023; and

WHEREAS, Contract Change No. 2 added five new transformers to the contract; and

WHEREAS, Contract Change No. 3 increased the contracting funding by the allowable contingency amount of $4,500,000; and

WHEREAS, since 2020, supply chain risk in the distribution transformer market has increased due to a global shortage of raw material and difficulties in securing the necessary components; and

WHEREAS, due to these supply chain shortages and delays, prices have increased more than 60% in the past two years, which has resulted in an increase of early orders by buyers in order to preserve lower pricing; and

WHEREAS, to mitigate these risks, SMUD has worked closely with **Cooper Power Systems, LLC** to reserve manufacturing capacity and prioritize orders in the production queue while also increasing internal warehouse safety stock levels

and planning orders further out in the future to combat increasing delivery lead times; and

WHEREAS, extending the contract by five years and increasing the contract amount by $70 million will ensure adequate funding to support future orders and mitigate supply chain disruptions for critical equipment; **NOW, THEREFORE,**

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

Section 1. That this Board hereby authorizes the Chief Executive Officer and General Manager, or his designee, to extend the expiration date by five years from March 20, 2023, to March 20, 2028, and to increase the contract amount by $70 million, from $49.5 million to $119.5 million plus sales/use tax, for Contract No. 4600000965 with **Cooper Power Systems, LLC**.

Section 2. The Chief Executive Officer and General Manager, or his designee, is authorized to make future changes to the terms and conditions of the contract that, in his prudent judgment: (a) further the primary purpose of the contract; (b) are intended to provide a net benefit to SMUD; and (c) do not exceed the authorized contract amount and applicable contingencies.

7

SSS No. LEG 2022-0104

BOARD AGENDA ITEM
STAFFING SUMMARY SHEET

Committee Meeting & Date
N/A
Board Meeting Date
July 21, 2022

TO		TO	
1.	Casey Fallon	6.	
2.	Jennifer Davidson	7.	
3.	Frankie McDermott	8.	
4.		9.	**Legal**
5.		10.	**CEO & General Manager**

Consent Calendar		**Yes**	X	**No** *If no, schedule a dry run presentation.*	**Budgeted**	X	**Yes**		**No** *(If no, explain in Cost/Budgeted section.)*

FROM (IPR)	DEPARTMENT	MAIL STOP	EXT.	DATE SENT
Gigi Capuyan	Legal Department	B406	5670	07/08/22

NARRATIVE:

Requested Action: Determine and declare that a "great emergency" exists and authorize the Chief Executive Officer and General Manager to enter into a direct procurement contract with one or more qualified suppliers to provide a secondary source of distribution transformers for a period of up to five years for a total aggregate contract amount not to exceed $30 million.

Summary: California Public Utilities Code, Division 6, section 12753 ("MUD Act"), authorizes the Board of Directors, by resolution passed by five-seventh vote of all members to declare and determine that a great emergency exists, and thereupon to enter into contracts and expend any sum needed in such emergency without observance of the provisions requiring contracts, bids, or notice. Accordingly, pursuant to the MUD Act, SMUD requests the Board to determine and declare a "great emergency" exists and seeks Board approval to authorize the Chief Executive Officer and General Manager (CEO/GM) to enter into emergency direct procurement contract(s) with one or more qualified manufacturer(s) to provide secondary supply of distribution transformers for a period of up to five years and for an aggregate contract amount not to exceed $30 million.

Due to a number of events affecting the global supply chain (e.g., war in Ukraine, COVID-19 pandemic, economic sanctions, inflation), the electric utility industry is currently experiencing a shortage of distribution transformer supply. These widespread events led to President Biden issuing Presidential Determination No. 2022-19 on June 6, 2022, declaring, in pertinent part, that, "transformers and electric power grid components are industrial resources, materials, or critical technology items essential to the national defense;" and further, "that action to expand the domestic production capability for transformers and electric power grid components is necessary to avert an industrial resource or critical technology item shortfall that would severely impair national defense capability."

The aforementioned events are making it increasingly difficult for SMUD's current sole supplier for distribution transformers, Cooper Power Systems, LLC, to assure sufficient inventory for SMUD's planned and unplanned demand forecast through 2022 and beyond. Making matters worse is that the lead times for manufacturing and delivering open orders have significantly increased (e.g., 1-Phase Pad is 178 weeks, 1-Phase Pole is 102-143 weeks, 3 Phase Pad is 68-76 weeks). The expected shortfall of transformers (if realized) will undoubtedly impact SMUD's ability to deliver safe, reliable and affordable electricity, which is the core of our mission.

Given the current financial climate, tight labor market, and supply chain imbalance, posting a solicitation is not anticipated to be a fruitful endeavor and would only serve to further delay securing necessary supply of transformers available in the market.

Under the authority in the MUD Act and in a case of great emergency, by resolution, this Board may allow SMUD to enter into contracts without observance of the provisions requiring public notice and bidding. The issuance of Presidential Determination No. 2022-19 is indicative of such emergency; and in acknowledging that a shortfall of transformers is imminent if not averted, specifically calling for action to expand the domestic production capability for such critical technology items.

Board Policy: *(Number & Title)*	Governance Process GP-1, Purpose of Board; Board-Staff Linkage BL-8, Delegation to the Chief Executive Officer and General Manager with Respect to Procurement; Strategic Direction SD-4, Reliability
Benefits:	Provides SMUD the ability to expeditiously secure direct procurement contract(s) for a secondary source of distribution transformers. Making the determination will allow for efficient conduct of SMUD business and diversify options for transformer supply to ensure reliability.
Cost/Budgeted:	Supplies funded from enterprise business unit.
Alternatives:	Take no action and proceed with solicitations for transformer inventory and risk disruption in supply.
Affected Parties:	Warehouse Operations, Supply Chain Services, SMUD Customers
Coordination:	Executive Office, Board Office, Supply Chain Services, Warehouse Operations, and Legal Department
Presenter:	Casey Fallon, Director, Procurement, Warehouse & Fleet

Additional Links:

SUBJECT	ITEM NO. *(FOR LEGAL USE ONLY)*
Determine and Declare "Great Emergency" Exists and Authorize Direct Procurement Contract(s) for Transformers	**7**

ITEMS SUBMITTED AFTER DEADLINE WILL BE POSTPONED UNTIL NEXT MEETING.

DRAFT

RESOLUTION NO. _____

WHEREAS, SMUD's facilities, systems and personnel have critical functions to perform in providing electric service to the public under all reasonable conditions; and

WHEREAS, continued and expanded electric power is vital to sustain the health and safety of SMUD's customers; and

WHEREAS, various potential local, regional, state, federal, and global emergencies and disasters could affect SMUD's ability to provide that service; and

WHEREAS, the Municipal Utility District Act ("MUD Act"), California Public Utilities Code section 12753 authorizes the Board of Directors by resolution passed by five-sevenths vote of all members to declare and determine that a "great emergency" exists and thereupon to enter into contracts and expend any sum needed in such emergency without observance of the provisions requiring contracts, bids or notice pursuant to California Public Utilities Code section 12751; and

WHEREAS, due to several substantial events affecting the global supply chain (e.g., war in Ukraine, COVID-19 pandemic, economic sanctions, inflation), the electric utility industry is currently experiencing a serious shortage of distribution transformers; and

WHEREAS, these widespread events led to President Biden issuing Presidential Determination No. 2022-19 on June 6, 2022, declaring, in pertinent part, that "transformers and electric power grid components are industrial resources, materials, or critical technology items essential to the national defense;" and further, "that action to expand the domestic production capability for transformers and electric

power grid components is necessary to avert an industrial resource or critical technology item shortfall that would severely impair national defense capability"; and

WHEREAS, the aforementioned events are making it increasingly difficult for SMUD's current sole supplier for distribution transformers, **Cooper Power Systems, LLC**, to assure sufficient inventory for SMUD's planned and unplanned demand forecast through 2022 and beyond; and

WHEREAS, due to these same events, the lead times for manufacturing and delivering open orders have significantly increased (e.g., 1-Phase Pad is 178 weeks, 1-Phase Pole is 102-143 weeks, 3 Phase Pad is 68-76 weeks) and the expected shortfall of transformers (if realized) will undoubtedly impact SMUD's ability to deliver safe, reliable and affordable electricity, which is the core of our mission; and

WHEREAS, given the current financial climate, tight labor market, and supply chain imbalance, posting a solicitation is not anticipated to be a fruitful endeavor and would only serve to further delay securing necessary supply of transformers available in the market; and

WHEREAS, the issuance of Presidential Determination No. 2022-19 is indicative of an emergency, acknowledging that a shortfall of transformers will be imminent if not averted, and specifically calling for action to expand the domestic production capability for such critical technology items; and

WHEREAS, these conditions constitute a "great emergency" and SMUD requires the ability to expeditiously secure direct procurement contract(s) for a secondary source of distribution transformers to ensure reliability; **NOW, THEREFORE,**

DRAFT

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

Section 1. That this Board determines and declares that a "great emergency" exists that threatens the provision of critical SMUD services and the safety and health of staff or the public due to an imminent supply shortage of distribution transformers.

Section 2. This Board authorizes the Chief Executive Officer and General Manager (CEO/GM), or his designee, to enter into a direct procurement contract with one or more qualified suppliers to provide a secondary source of distribution transformers for a period of up to five years for a total aggregate contract amount not to exceed $30,000,000 without observing the provisions of California Public Utilities Code section 12751 requiring notice and formal bidding.

Section 3. The CEO/GM, or his designee, is authorized to make future changes to the terms and conditions of the contract(s) that, in his prudent judgment: (a) further the primary purpose of the contract(s); (b) are intended to provide a net benefit to SMUD; and (c) do not exceed the authorized contract amount(s) and applicable contingencies.

8

SSS No.	Committee Meeting & Date
CFO 21-018	N/A
	Board Meeting Date: July 21, 2022

BOARD AGENDA ITEM
STAFFING SUMMARY SHEET

TO		TO	
1.	Jennifer Davidson	6.	
2.	Lora Anguay	7.	
3.	Scott Martin	8.	
4.		9.	**Legal**
5.		10.	**CEO & General Manager**

Consent Calendar		**Yes**		**No** *If no, schedule a dry run presentation.*	**Budgeted**		**Yes**		**No** *(If no, explain in Cost/Budgeted section.)*

FROM (IPR)	DEPARTMENT	MAIL STOP	EXT.	DATE SENT
Lisa Limcaco	Accounting	B352	6957	12/28/21

NARRATIVE:

Requested Action: Provide SMUD's financial results for the year-to-date period in 2022.

Summary: Staff will present SMUD's financial results for the year-to-date period in 2022 to the Board of Directors.

Board Policy: *(Number & Title)* GP-3, Board Job Description

Benefits: Provides Board members with information regarding SMUD's financial condition.

Cost/Budgeted: N/A

Alternatives: N/A

Affected Parties: Accounting

Coordination: Accounting

Presenter: Lisa Limcaco

Additional Links:

SUBJECT	ITEM NO. ***(FOR LEGAL USE ONLY)***
SMUD's 2022 Year-to-Date Financial Results	8

ITEMS SUBMITTED AFTER DEADLINE WILL BE POSTPONED UNTIL NEXT MEETING.

SACRAMENTO MUNICIPAL UTILITY DISTRICT
OFFICE MEMORANDUM

TO: Distribution

DATE: June 30, 2022
ACC 22-017

FROM: Kathy Ketchum / Lisa Limcaco

SUBJECT: **MAY 2022 FINANCIAL RESULTS AND OPERATIONS DATA**

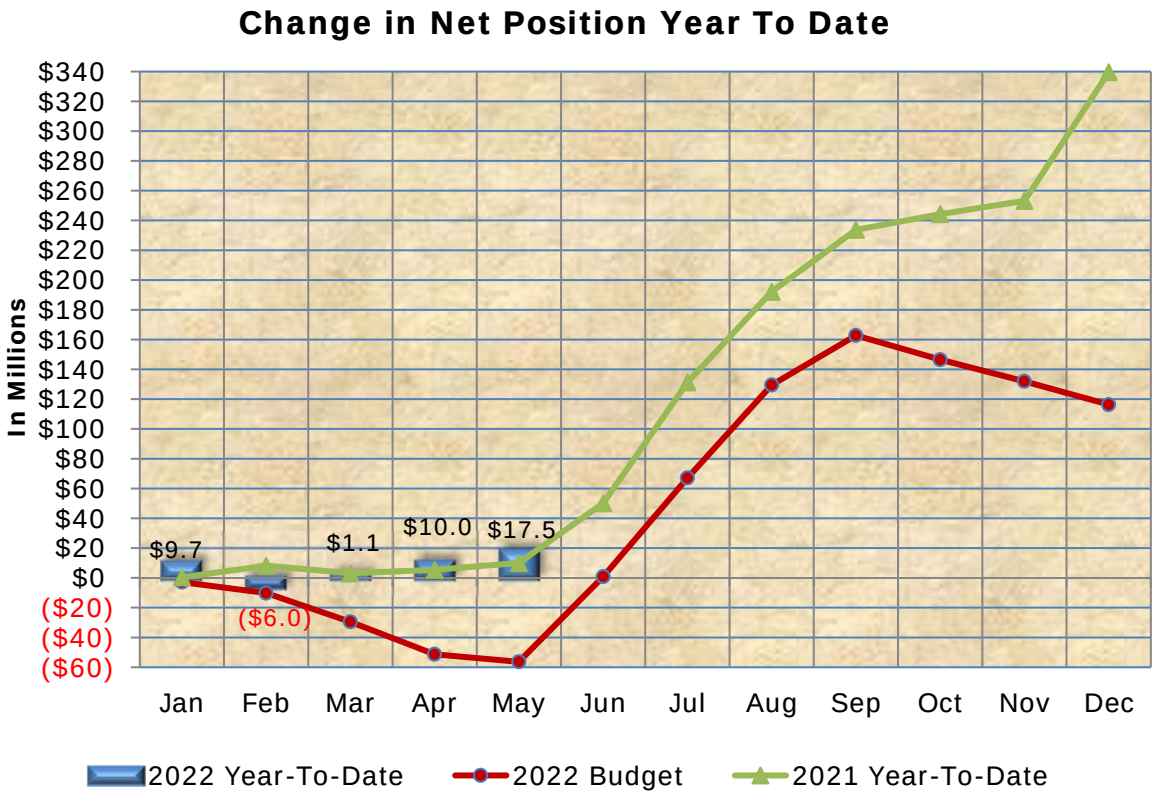
We are attaching the financial and operating reports for the five months of 2022. They include sales and generation statistics and other selected data.

The change in net position is an increase of $17.5 million compared to a budgeted decrease of $56.3 million, resulting in a favorable variance of $73.9 million.

We prepared these statements on the accrual basis of accounting, and they conform to generally accepted accounting principles. The bases for the budget amounts are:

1) Budgeted electric revenues are based on the Forecast of Revenues by the Pricing Department, adjusted for unbilled revenues; and

2) Budgeted operating expenses reflect the 2022 Budget approved by the Board of Directors on December 9, 2021.



SACRAMENTO MUNICIPAL UTILITY DISTRICT
EXECUTIVE SUMMARY
For the Five Months Ended May 31, 2022

Net Position

- The change in net position is an increase of $17.5 million compared to a budgeted decrease of $56.3 million, resulting in a favorable variance of $73.9 million.

Revenues

- Revenues from sales to customers were $528.8 million, which was $26.1 million higher than planned.
    - The increase is primarily due to higher commercial customer revenues of $24.7 million, higher residential sales of $5.1 million, and lower provision for uncollectible accounts of $8.8 million, offset by a $13.3 million year-to-date adjustment of commercial customer revenues related to the 2021 estimated unbilled revenues.
- Revenues under the California Global Warming Solutions Act (Assembly Bill [AB] - 32) were $12.0 million. This is due to carbon allowances sold through the state sanctioned quarterly auctions.
- Low Carbon Fuel Standard (LCFS) revenues were $1.1 million, which was $5.9 million lower than planned due to a decrease in price per credit and the timing of credit sales.
- Non-cash revenues transferred to the rate stabilization fund were $13.1 million, of which $12.0 million was for AB-32 and $1.1 million was for LCFS. Funds are deferred until SMUD has qualified program expenses (projects that reduce carbon emissions or electric vehicle programs) to recognize revenue.
- Non-cash revenues transferred from the rate stabilization fund were $28.0 million, of which $25.1 million was for revenue recognized for the annual Hydro rate adjustment, $2.7 million was for revenues recognized from LCFS electric vehicle programs expenses, and $0.2 million was from AB-32 program expenses.

Commodities, Purchased Power and Production

Overall, load was higher than planned. Both hydro and thermal generation were lower than planned due to precipitation levels and outages, respectively. This resulted in lower fuel usage, decreased net price per MMBTU (due to fuel sales), and additional purchased power expense.

- SMUD's generation was lower by 322 GWh (13.7 percent); JPA and other generation was lower by 219 GWh (12.0 percent); Hydro generation was lower by 103 GWh (19.4 percent).
- Purchased power expense of $177.7 million, less surplus power sales of $41.7 million, was $136.0 million, which was $47.6 million higher than planned. Purchased power expense increased because of higher prices of $27.7 million and higher quantities purchased of $19.9 million.
- Production operations cost of $157.7 million, less surplus gas sales of $75.5 million, was $82.2 million, which was $18.0 million lower than planned.
    - Fuel costs of $104.8 million, less surplus gas sales of $75.5 million, was $29.3 million, which was $21.8 million lower than planned. This is primarily due to lower fuel prices of $17.3 million and lower fuel usage of $4.5 million. The lower price variance is due to surplus gas sales, natural gas hedging activities, and higher sales price per Renewable Identification Number (RIN), which resulted in sales of $2.0 million higher than planned.
    - Carbon allowances were higher by $3.4 million due to higher Calpine purchases due to lower hydro generation.
- The "power margin", or sales to customers less cost of purchased power, production operations costs and gas hedges included in investment revenue was $314.5 million, which was $0.4 million higher than planned. Power margin as a percentage of sales to customers was 59.5 percent, which was 3.0 percent lower than planned.

Other Operating Expenses

- All other operating expenses were $311.9 million, which was $46.4 million lower than planned.
    - Customer accounts expenses were $2.6 million lower than planned primarily due to lower labor and outside services in Revenue Assurance offset by higher outside services in Customer Payments.
    - Customer service and information expenses were $7.5 million lower than planned primarily due to lower than anticipated transportation electrification expenses due to a DOE grant not awarded for the Equity EV program, customer program expenses are lower due to supply chain issues and delays that

affected customer participation, lower load flexibility planning and support outside services, and lower Greenergy Recs and Carbon Offsets.

- Public good expenses were $4.1 million lower than planned primarily due to a delay in Storage and Generation Programs, delays in annual pilot fees and incentives, and overall fewer projects completed than planned. Activity is expected to increase over the summer.
- Transmission and distribution maintenance expenses were $3.5 million higher than planned. This is primarily due to higher service reconnect and repair expenses caused by completing more work than planned for year-to-date, and higher station equipment preventative maintenance and onboarding/training of 13 new apprentices.
- Negative non-cash amortization of pension and other post-employment benefits (OPEB) was $38.0 million lower than planned, which resulted in a positive impact to net position. This is due to Governmental Accounting Standards Board (GASB) 68 Pension and GASB 75 OPEB negative amortizations.

Non-operating Revenues and Expenses

Other revenue, net, was $8.1 million higher than planned primarily due to higher investment revenue of $4.0 million due to natural gas hedging activities, $1.9 million higher contributions in aid of construction due to differences between accounting treatment of offsets and amounts recorded for budget purposes, and $1.1 million due to a refund stemming from prior years purchased power expense.

SACRAMENTO MUNICIPAL UTILITY DISTRICT
STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION
For the Month Ended May 31, 2022
(thousands of dollars)

	Actual	Budget	Over (Under)	Percent of Increase (Decrease)
OPERATING REVENUES				
Sales to customers	$ 121,738	$ 104,850	$ 16,888	16.1 %
Sales of surplus power	12,633	9,695	2,938	30.3
Sales of surplus gas	19,413	-	19,413	*
AB32 revenue	6,170	-	6,170	*
LCFS revenue	-	1,615	(1,615)	(100.0)
Other electric revenue	3,294	2,736	558	20.4
Revenue to rate stabilization fund	(6,170)	-	(6,170)	*
Total operating revenues	157,078	118,896	38,182	32.1
OPERATING EXPENSES				
Operations				
Purchased power	48,976	29,610	19,366	65.4
Production	34,126	15,183	18,943	124.8
Transmission and distribution	7,413	6,398	1,015	15.9
Customer accounts	4,964	4,821	143	3.0
Customer service and information	4,831	6,789	(1,958)	(28.8)
Administrative and general	13,096	13,213	(117)	(0.9)
Public good	4,228	4,606	(378)	(8.2)
Total operations	117,634	80,620	37,014	45.9
Maintenance				
Production	4,787	3,892	895	23.0
Transmission and distribution	8,467	10,412	(1,945)	(18.7)
Total maintenance	13,254	14,304	(1,050)	(7.3)
Depreciation and amortization				
Depreciation	18,491	18,347	144	0.8
Amortization of pension and OPEB	(6,515)	1,087	(7,602)	(699.4)
Amortization of regulatory asset	3,043	2,881	162	5.6
Total depreciation and amortization	15,019	22,315	(7,296)	(32.7)
Total operating expenses	145,907	117,239	28,668	24.5
OPERATING INCOME	11,171	1,657	9,514	574.2
NON-OPERATING REVENUES AND EXPENSES				
Other revenues/(expenses)				
Interest income	780	345	435	126.1
Investment revenue (expense)	(192)	(173)	(19)	(11.0)
Other income (expense) - net	2,508	770	1,738	225.7
Unrealized holding gains (losses)	282	-	282	*
Revenue - CIAC	1,561	1,162	399	34.3
Total other revenues	4,939	2,104	2,835	134.7
Interest charges				
Interest on long-term debt	8,608	8,643	(35)	(0.4)
Interest on commercial paper	(1)	169	(170)	(100.6)
Total interest charges	8,607	8,812	(205)	(2.3)
CHANGE IN NET POSITION	$ 7,503	$ (5,051)	$ 12,554	248.5 %

* Equals 1000% or greater.

SACRAMENTO MUNICIPAL UTILITY DISTRICT
STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION
For the Five Months Ended May 31, 2022
(thousands of dollars)

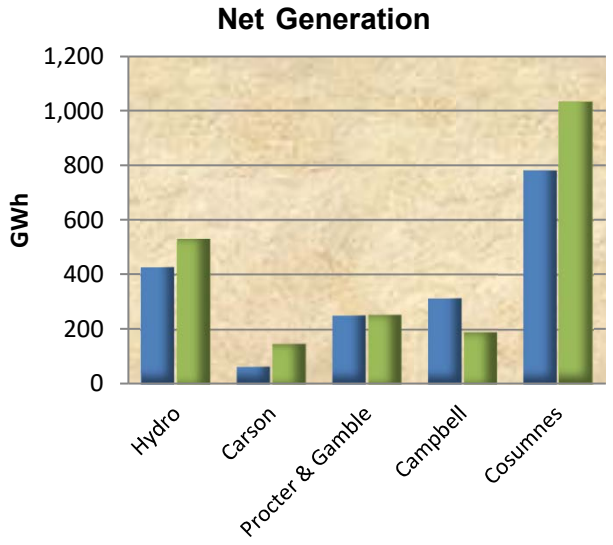
	Actual	Budget	Over (Under)	Percent of Increase (Decrease)
OPERATING REVENUES				
Sales to customers	$ 528,814	$ 502,719	$ 26,095	5.2 %
Sales of surplus power	41,694	64,078	(22,384)	(34.9)
Sales of surplus gas	75,482	-	75,482	*
AB32 revenue	12,000	-	12,000	*
LCFS revenue	1,107	7,016	(5,909)	(84.2)
Other electric revenue	15,915	14,682	1,233	8.4
Revenue to rate stabilization fund	(13,107)	-	(13,107)	*
Revenue from rate stabilization fund	27,963	-	27,963	*
Total operating revenues	689,868	588,495	101,373	17.2
OPERATING EXPENSES				
Operations				
Purchased power	177,740	152,497	25,243	16.6
Production	157,712	100,181	57,531	57.4
Transmission and distribution	34,847	33,395	1,452	4.3
Customer accounts	21,465	24,046	(2,581)	(10.7)
Customer service and information	26,044	33,553	(7,509)	(22.4)
Administrative and general	66,869	67,870	(1,001)	(1.5)
Public good	18,042	22,099	(4,057)	(18.4)
Total operations	502,719	433,641	69,078	15.9
Maintenance				
Production	21,825	22,013	(188)	(0.9)
Transmission and distribution	47,648	44,136	3,512	8.0
Total maintenance	69,473	66,149	3,324	5.0
Depreciation and amortization				
Depreciation	92,350	91,377	973	1.1
Amortization of pension and OPEB	(32,577)	5,433	(38,010)	(699.6)
Amortization of regulatory asset	15,403	14,404	999	6.9
Total depreciation and amortization	75,176	111,214	(36,038)	(32.4)
Total operating expenses	647,368	611,004	36,364	6.0
OPERATING INCOME (LOSS)	42,500	(22,509)	65,009	288.8
NON-OPERATING REVENUES AND EXPENSES				
Other revenues/(expenses)				
Interest income	2,153	1,675	478	28.5
Investment revenue (expense)	3,161	(863)	4,024	466.3
Other income (expense) - net	5,822	3,604	2,218	61.5
Unrealized holding gains (losses)	(543)	-	(543)	*
Revenue - CIAC	7,746	5,805	1,941	33.4
Total other revenues	18,339	10,221	8,118	79.4
Interest charges				
Interest on long-term debt	42,946	43,208	(262)	(0.6)
Interest on commercial paper	369	846	(477)	(56.4)
Total interest charges	43,315	44,054	(739)	(1.7)
CHANGE IN NET POSITION	$ 17,524	$ (56,342)	$ 73,866	131.1 %

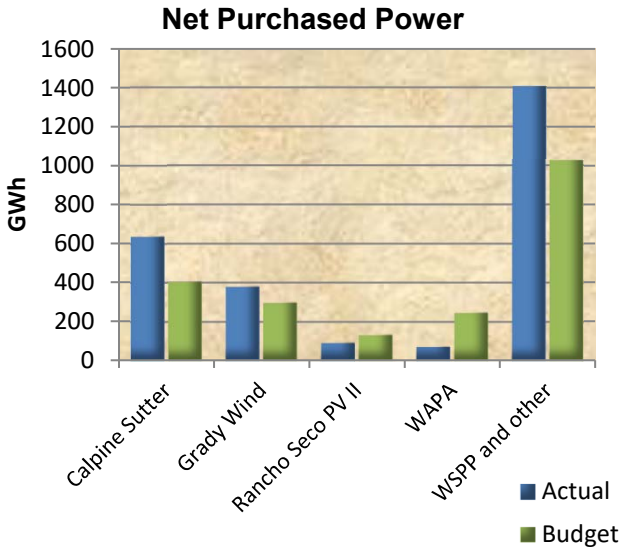
* Equals 1000% or greater.

SACRAMENTO MUNICIPAL UTILITY DISTRICT
SOURCES AND USES OF ENERGY - COMPARED TO BUDGET
For the Period Ended May 31, 2022

	Month		Increase (Decrease)	Year to Date		Increase (Decrease)
Sources of Energy (GWh)	Actual	Budget	Percentage	Actual	Budget	Percentage
Net Generated						
Hydro	129	188	(31.4)	427	530	(19.4)
Carson Power Plant	14	19	(26.3)	64	147	(56.5)
Procter & Gamble Power Plant	63	30	110.0	250	253	(1.2)
Campbell Power Plant	85	3	*	313	189	65.6
Cosumnes Power Plant	-	113	(100.0)	781	1,034	(24.5)
Other	78	70	11.4	201	205	(2.0)
Total net generation	369	423	(12.8)	2,036	2,358	(13.7)
Purchased Power less transmission losses:						
CalEnergy	21	19	10.5	95	92	3.3
Calpine Sutter	151	22	586.4	636	404	57.4
Drew Solar	-	33	(100.0)	-	108	(100.0)
Feed in Tariff	25	25	0.0	89	85	4.7
Grady Wind	72	82	(12.2)	379	297	27.6
Rancho Seco PV II	33	38	(13.2)	91	132	(31.1)
WAPA	28	96	(70.8)	71	246	(71.1)
WSPP and other	346	269	28.6	1,407	1,026	37.1
Other long term power	54	68	(20.6)	221	262	(15.6)
Total net purchases	730	652	12.0	2,989	2,652	12.7
Total sources of energy	1,099	1,075	2.2	5,025	5,010	0.3
Uses of energy:						
SMUD electric sales and usage	831	773	7.5	3,875	3,734	3.8
Surplus power sales	239	251	(4.8)	1,002	1,031	(2.8)
System losses	29	51	(43.1)	147	245	(40.0)
Total uses of energy	1,099	1,075	2.2 %	5,025	5,010	0.3 %

* Change equals 1000% or more.





Net generation is lower than planned for the five-month period.

- Hydro generation is lower than planned (19.4 percent).
- JPA generation is lower than planned (13.2 percent).

Purchased power, less surplus power sales, is higher than plan (22.6 percent).

SACRAMENTO MUNICIPAL UTILITY DISTRICT
STATEMENTS OF NET POSITION
May 31, 2022 and 2021
(thousands of dollars)

	SMUD	Cosumnes	NCEA	NCGA #1	Intercompany Eliminations	Total 2022	Total 2021
ELECTRIC UTILITY PLANT							
Plant in service, original cost	$ 5,828,831	$ 946,971	$ -	$ -	$ -	$ 6,775,802	$ 6,419,445
Less accumulated depreciation	2,736,942	659,326	-	-	-	3,396,268	3,206,910
Plant in service - net	3,091,889	287,645	-	-	-	3,379,534	3,212,535
Construction work in progress	435,672	10,369	-	-	-	446,041	530,049
Investment in Joint Power Agencies	309,693	-	-	-	(282,656)	27,037	22,601
Total electric utility plant - net	3,837,254	298,014		-	(282,656)	3,852,612	3,765,185
RESTRICTED ASSETS							
Revenue bond reserves	2,931	-	-	-	-	2,931	3,813
Restricted for payment of debt service	107,403	-	-	-	-	107,403	107,449
JPA funds	-	12,604	15,763	20,485	-	48,852	46,727
Nuclear decommissioning trust fund	8,876	-	-	-	-	8,876	8,874
Rate stabilization fund	174,137	-	-	-	-	174,137	157,529
Net pension asset	35,738	-	-	-	-	35,738	-
Net OPEB asset	57,532	-	-	-	-	57,532	770
Other funds	25,719	-	3,000	1,634	-	30,353	22,413
Due (to) from unrestricted funds (decommissioning)	(6,684)	-	-	-	-	(6,684)	(6,684)
Due (to) from restricted funds (decommissioning)	6,684	-	-	-	-	6,684	6,684
Less current portion	(118,196)	(12,604)	(18,763)	(22,119)	-	(171,682)	(173,659)
Total restricted assets	294,140	-	-	-	-	294,140	173,916
CURRENT ASSETS							
Cash, cash equivalents and investments							
Unrestricted	525,409	62,786	-	-	-	588,195	590,847
Restricted	118,196	12,604	18,763	22,119	-	171,682	173,659
Accounts receivable - net	219,527	38,355	-	2,311	(54,229)	205,966	197,404
Energy efficiency loans due within one year	201	-	-	-	-	201	2,691
Interest receivable	1,152	51	-	19	-	1,222	1,363
Regulatory costs to be recovered within one year	35,252	104	-	105	-	35,461	38,415
Derivative financial instruments maturing within in one year	134,755	-	-	-	-	134,755	11,927
Inventories	86,884	19,570	-	-	-	106,454	95,142
Prepaid gas to be delivered within one year	-	-	3,981	23,482	-	27,463	24,400
Prepayments and other	15,667	7,805	24	16	-	23,512	24,299
Total current assets	1,137,043	141,275	22,768	48,052	(54,229)	1,294,911	1,160,147
NONCURRENT ASSETS							
Regulatory costs for future recovery							
Decommissioning	74,058	-	-	-	-	74,058	79,908
Pension	333,450	-	-	-	-	333,450	350,477
OPEB	275,688	-	-	-	-	275,688	288,461
Bond Issues	-	740	-	428	-	1,168	1,377
Derivative financial instruments	1,845	-	-	-	-	1,845	5,949
Derivative financial instruments	123,145	-	-	-	-	123,145	14,938
Prepaid gas	-	-	527,625	127,412	-	655,037	682,499
Prepaid power and capacity	294	-	-	-	-	294	502
Energy efficiency loans - net	807	-	-	-	-	807	15,407
Other	74,071	4	-	64	-	74,139	50,459
Total noncurrent assets	883,358	744	527,625	127,904	-	1,539,629	1,489,977
TOTAL ASSETS	$ 6,151,795	$ 440,033	$ 550,393	$ 175,956	$ (336,885)	$ 6,981,292	$ 6,589,225
DEFERRED OUTFLOWS OF RESOURCES							
Accumulated decrease in fair value of hedging derivatives	14,174	-	-	-	-	14,174	35,006
Deferred pension outflows	63,723	-	-	-	-	63,723	163,038
Deferred OPEB outflows	23,357	-	-	-	-	23,357	24,930
Deferred ARO outflows	-	1,590	-	-	-	1,590	1,589
Unamortized bond losses - other	9,583	1,360	-	-	-	10,943	13,770
TOTAL DEFERRED OUTFLOWS OF RESOURCES	110,837	2,950	-	-	-	113,787	238,333
TOTAL ASSETS AND DEFERRED OUTFLOWS OF RESOURCES	$ 6,262,632	$ 442,983	$ 550,393	$ 175,956	$ (336,885)	$ 7,095,079	$ 6,827,558

SACRAMENTO MUNICIPAL UTILITY DISTRICT
STATEMENTS OF NET POSITION
May 31, 2022 and 2021
(thousands of dollars)

	SMUD	Cosumnes	NCEA	NCGA #1	Intercompany Eliminations	Total 2022	Total 2021
LONG-TERM DEBT - NET	$ 2,273,023	$ 98,527	$ 549,754	$ 142,935	$ -	$ 3,064,239	3,242,286
CURRENT LIABILITIES							
Accounts payable	101,197	13,708	-	799	-	115,704	88,491
Purchased power payable	83,888	15,955	-	-	(54,229)	45,614	33,866
Credit support collateral obligation	9,880	-	-	1,634	-	11,514	3,558
Long-term debt due within one year	100,150	11,450	-	20,550	-	132,150	127,390
Accrued decommissioning	6,889	-	-	-	-	6,889	6,751
Interest payable	27,017	2,108	9,064	372	-	38,561	40,504
Accrued salaries and compensated absences	47,252	-	-	-	-	47,252	41,144
Derivative financial instruments maturing within one year	12,439	-	-	-	-	12,439	19,540
Customer deposits	1,317	-	-	-	-	1,317	3,367
Other	44,268	-	-	-	-	44,268	25,196
Total current liabilities	434,297	43,221	9,064	23,355	(54,229)	455,708	389,807
NONCURRENT LIABILITIES							
Accrued decommissioning - net	76,250	9,021	-	-	-	85,271	90,731
Derivative financial instruments	5,874	-	-	-	-	5,874	23,092
Net pension liability	-	-	-	-	-	-	416,820
Other	83,233	-	161	-	-	83,394	93,243
Total noncurrent liabilities	165,357	9,021	161	-	-	174,539	623,886
TOTAL LIABILITIES	2,872,677	150,769	558,979	166,290	(54,229)	3,694,486	4,255,979
DEFERRED INFLOWS OF RESOURCES							
Accumulated increase in fair value of hedging derivatives	254,167	-	-	-	-	254,167	26,842
Deferred pension inflows	205,563	-	-	-	-	205,563	8,290
Deferred OPEB inflows	81,708	-	-	-	-	81,708	51,053
Regulatory credits	532,518	-	-	-	-	532,518	508,275
Unamortized bond gains - other	8,638	-	-	-	-	8,638	6,108
Unearned revenue	3,342	35	-	-	-	3,377	3,500
TOTAL DEFERRED INFLOWS OF RESOURCES	1,085,936	35	-	-	-	1,085,971	604,068
NET POSITION							
Balance at beginning of year	2,292,641	283,722	(6,565)	9,838	(282,539)	2,297,097	1,957,512
Net increase (decrease) for the year	11,378	8,457	(2,092)	(219)	-	17,524	9,999
Member contributions (distributions) - net	-	-	71	47	(118)	-	-
TOTAL NET POSITION	2,304,019	292,179	(8,586)	9,666	(282,656)	2,314,622	1,967,511
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND NET POSITION	$ 6,262,632	$ 442,983	$ 550,393	$ 175,956	$ (336,885)	$ 7,095,079	$ 6,827,558

SACRAMENTO MUNICIPAL UTILITY DISTRICT
STATEMENTS OF CASH FLOWS
For the Period Ended May 31, 2022
(thousands of dollars)

	Month	Year to Date
CASH FLOWS FROM OPERATING ACTIVITIES		
Receipts from customers	$ 108,477	$ 580,929
Receipts from surplus power and gas sales	35,904	112,783
Other receipts	10,669	47,275
Payments to employees - payroll and other	(25,609)	(151,372)
Payments for wholesale power and gas purchases	(53,544)	(267,615)
Payments to vendors/others	(44,388)	(168,983)
Net cash provided by operating activities	31,509	153,017
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES		
Interest on debt	-	(14,395)
Net cash used in noncapital financing activities	-	(14,395)
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES		
Construction expenditures	(24,965)	(110,923)
Contributions in aid of construction	1,949	12,092
Other receipts	4,906	4,906
Interest on debt	(14,017)	(59,077)
Net cash used in capital and related financing activities	(32,127)	(153,002)
CASH FLOWS FROM INVESTING ACTIVITIES		
Sales and maturities of securities	53,037	168,056
Purchases of securities	(157,067)	(380,728)
Interest and dividends received	437	1,848
Investment revenue/expenses - net	(198)	3,147
Net cash used in investing activities	(103,791)	(207,677)
Net decrease in cash and cash equivalents	(104,409)	(222,057)
Cash and cash equivalents at the beginning of the month and year	671,000	788,648
Cash and cash equivalents at May 31, 2022	$ 566,591	$ 566,591
Cash and cash equivalents included in:		
Unrestricted cash and cash equivalents	$ 431,327	$ 431,327
Restricted and designated cash and cash equivalents	44,862	44,862
Restricted and designated assets (a component of the total of $294,140 at May 31, 2022)	90,402	90,402
Cash and cash equivalents at May 31, 2022	$ 566,591	$ 566,591

SSS No.	Committee Meeting & Date
CFO 21-017	N/A
	Board Meeting Date: July 21, 2022

BOARD AGENDA ITEM

STAFFING SUMMARY SHEET

TO		TO	
1.	Jennifer Davidson	6.	
2.	Lora Anguay	7.	
3.	Scott Martin	8.	
4.		9.	**Legal**
5.		10.	**CEO & General Manager**

Consent Calendar		**Yes**		**No** *If no, schedule a dry run presentation.*	**Budgeted**		**Yes**		**No** *(If no, explain in Cost/Budgeted section.)*

FROM (IPR)	DEPARTMENT	MAIL STOP	EXT.	DATE SENT
Russell Mills	Treasury	B355	6509	12/28/21

NARRATIVE:

Requested Action: Provide the summary of SMUD's current Power Supply Costs.

Summary: Staff will present the summary of SMUD's current Power Supply Costs to the Board of Directors.

Board Policy: *(Number & Title)* GP-3, Board Job Description

Benefits: Provides Board members with current power supply costs information for SMUD.

Cost/Budgeted: N/A

Alternatives: N/A

Affected Parties: SMUD

Coordination: Accounting and Treasury

Presenter: Lisa Limcaco

Additional Links:

SUBJECT	ITEM NO. ***(FOR LEGAL USE ONLY)***
Summary of SMUD's current Power Supply Costs	9

ITEMS SUBMITTED AFTER DEADLINE WILL BE POSTPONED UNTIL NEXT MEETING.

SSS No. AQS 2022-6

BOARD AGENDA ITEM
STAFFING SUMMARY SHEET

Committee Meeting & Date
N/A
Board Meeting Date
July 21, 2022

TO		TO	
1.	Suresh Kotha	6.	
2.		7.	
3.		8.	
4.		9.	**Legal**
5.		10.	**CEO & General Manager**

Consent Calendar		**Yes**	X	**No** *If no, schedule a dry run presentation.*	**Budgeted**	X	**Yes**		**No** *(If no, explain in Cost/Budgeted section.)*

FROM (IPR)	DEPARTMENT	MAIL STOP	EXT.	DATE SENT
Claire Rogers	Audit and Quality Services	ME-2	7122	7/6/22

NARRATIVE:

Requested Action: Informational agenda item to provide Board Members with the opportunity to ask questions and/or discuss recent reports issued by Audit and Quality Services.

Summary: Reports Issued by Audit and Quality Services:

Title	Report Number
• Status of Recommendations Report for Q2 2022	n/a

Board Policy: *(Number & Title)* Board-Staff Linkage, Board-Internal Auditor Relationship (BL-3)

Benefits: n/a

Cost/Budgeted: n/a

Alternatives: n/a

Affected Parties: Board, Internal Auditor

Coordination: n/a

Presenter: Claire Rogers, Director, Audit Services

Additional Links

SUBJECT	ITEM NO. *(FOR LEGAL USE ONLY)*
Reports Issued by Audit and Quality Services	**10**

ITEMS SUBMITTED AFTER DEADLINE WILL BE POSTPONED UNTIL NEXT MEETING.

SACRAMENTO MUNICIPAL UTILITY DISTRICT

OFFICE MEMORANDUM

TO: Board of Directors **DATE:** July 6, 2022

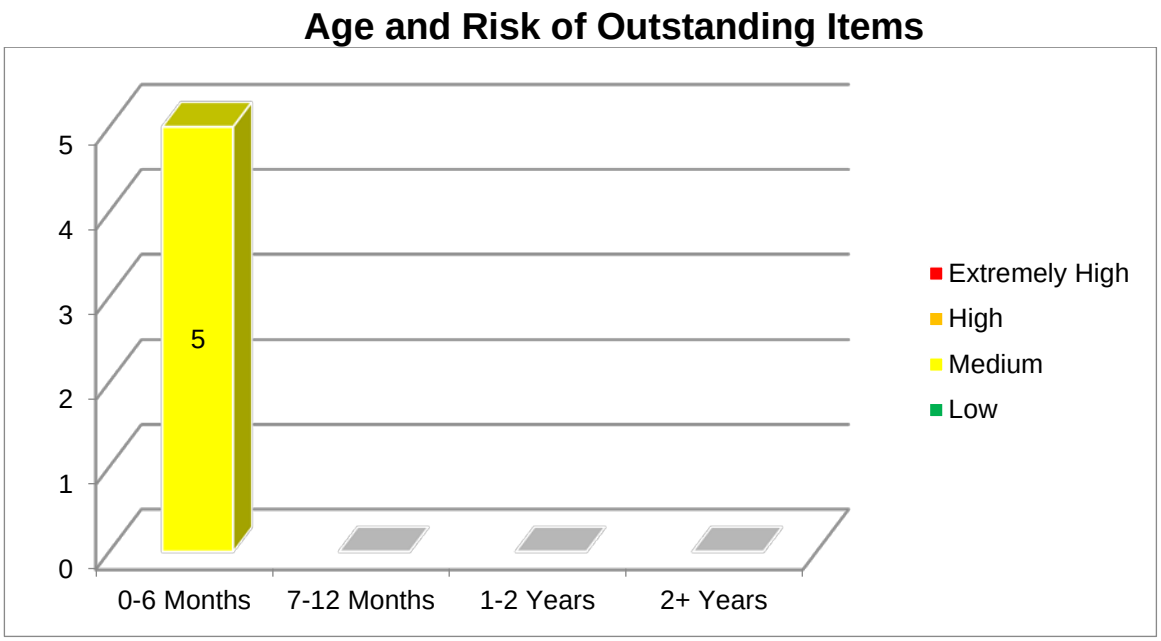
FROM: Claire Rogers

SUBJECT: **QUARTERLY REPORT ON THE STATUS OF RECOMMENDATIONS AS OF JUNE 30, 2022**

Attached for your review is the Status of Recommendations report for the Second Quarter of 2022. Prior to this report being finalized, all outstanding recommendations were given to the responsible department Manager/Director for follow up.

The attached report includes all outstanding items as of June 30, 2022 regardless of their risk ranking.

None of the 5 open items is currently overdue. The chart below is a breakdown by age and risk of the outstanding items regardless of their risk ranking:



If you need further information or wish to discuss any aspect of the report, please contact me at 732-7122, or Claire.Rogers@smud.org.

STATUS OF RECOMMENDATIONS AT 06/30/2022

RISK	RECOMMENDATION	RESPONSIBLE DEPARTMENT	STATUS / DATE	COMMENTS
Data Sharing 2022 28007441-01 **Medium** Process Improvement	AQS recommends Data Governance enhance the data sharing process when sharing SCI with a third party to ensure that a security assessment of the third party's system/data repository is completed for data sharing requests that do not go through the procurement process.	IT Strategic Initiatives and Operations Technology	**Date Issued** 06/06/2022 **Outstanding** 10/31/2022	The Data Governance Program agrees with AQS's recommendation. Data Governance Program will mature the data sharing process by adding an additional workflow task to include the Information Security Team. They will have their own task to complete a security assessment. This will ensure that a security assessment can be completed on all data sharing request that requires SCI to be shared. It is anticipated that all corrective actions will be implemented by October 31, 2022.
Data Sharing 2022 28007441-02 **Medium** Process Improvement	AQS recommends Data Governance: a) Work with Cybersecurity to enhance MP 07.03.01.122, Data Sharing regarding staff's responsibility to obtain the data destruction letter from the third party for SCI data sharing requests as well as where the letter should be retained. b) Capture the actual data sharing end date for each data sharing request that involves sharing SCI with a third party. c) Develop a process to periodically monitor that SMUD staff have received the data destruction letter from the third party.	IT Strategic Initiatives and Operations Technology	**Date Issued** 06/06/2022 **Outstanding** 10/31/2022	a. The Data Governance Program agrees with AQS's recommendation. Data Governance will partner with Cybersecurity to revamp the MP 07.03.01.122 to identify the responsible staff and their role to obtain the data destruction letter from the vendor for SCI data sharing request as well as where the letter should be stored. Data Governance will also work with responsible staff to develop a communication plan to notify Data Owners and Category Owners of the changes and address any questions they may have. b. The Data Governance Program agrees with AQS's recommendation. Data Governance will update the process to require a start and end date before closing the request in ServiceNow. c. The Data Governance Program agrees with AQS's recommendation. Data Governance will develop an annual process to ensure business areas have

STATUS OF RECOMMENDATIONS AT 06/30/2022

RISK	RECOMMENDATION	RESPONSIBLE DEPARTMENT	STATUS / DATE	COMMENTS
				received a data destruction letter from the third party after the end date. In addition, we will work with all business area who own data and inform them about the new process and to get it implemented within their processes. It is anticipated that all corrective actions will be implemented by October 31, 2022.
Data Sharing 2022 28007441-03 **Medium** Process Improvement	AQS recommends Data Governance develop a process to periodically assess the continued need of data sharing requests that involve sharing SCI with a third party with an ongoing data sharing period/no data sharing end date.	IT Strategic Initiatives and Operations Technology	**Date Issued** 06/06/2022 **Outstanding** 10/31/2022	The Data Governance Program agrees with AQS's recommendation. Data Governance will develop a process to track data share requests that have been listed as ongoing. A part of that process will be to use the ongoing requests that are being tracked to reach out to the business area to confirm that there is an ongoing business need to continue sharing the data. It is anticipated that all corrective actions will be implemented by October 31, 2022.
Data Sharing 2022 28007441-04 **Medium** Process Improvement	AQS recommends Data Governance document/clarify within ServiceNow as well MP 07.03.01.122 that for data sharing requests involving sharing SCI with a third party, the Directors' approval in ServiceNow includes an affirmation that the data sharing request is for primary business purposes unless otherwise specified within the data sharing request.	IT Strategic Initiatives and Operations Technology	**Date Issued** 06/06/2022 **Outstanding** 10/31/2022	The Data Governance Program agrees with AQS's recommendation. Data Governance will partner with the ServiceNow administrator to update the data sharing request submission screen to include the approvals that are required when SCI is involved. In addition, Data Governance will partner with Information Security to update MP 07.03.01.122 to document what approval is needed when SCI data is being requested to be shared. It is anticipated that all corrective actions will be implemented by October 31, 2022.
Data Sharing 2022	AQS recommends Cybersecurity update MP 07.01.01.100, MP 07.03.01.122 and the Data Sharing Process Reference	Cybersecurity	**Date Issued** 06/06/2022	Cybersecurity agrees with AQS' recommendation regarding Observation #5 – Data Sharing Procedures. Cybersecurity will

STATUS OF RECOMMENDATIONS AT 06/30/2022

RISK	RECOMMENDATION	RESPONSIBLE DEPARTMENT	STATUS / DATE	COMMENTS
28007441-05 **Medium** Policies and Procedures	Guide to ensure they are in alignment and reflect current processes.		**Outstanding** 10/31/2022	ensure that the Data Sharing Process Reference Guide and SMUD policies addressing sensitive and confidential information and data sharing (currently MP 07.01.01.100-Sensitive and Confidential Information and MP 07.03.01.122-Data Sharing) are aligned with current processes, to include updates made as a result of the observations shared in this report. It is anticipated that all corrective actions will be implemented by October 31, 2022.

SSS No.	Committee Meeting & Date
BOD 2021-021	N/A
	Board Meeting Date: July 21, 2022

BOARD AGENDA ITEM
STAFFING SUMMARY SHEET

TO		TO	
1.	Jennifer Davidson	6.	
2.	Suresh Kotha	7.	
3.	Brandy Bolden	8.	
4.	Farres Everly	9.	**Legal**
5.		10.	**CEO & General Manager**

Consent Calendar		**Yes**	x	**No** *If no, schedule a dry run presentation.*	**Budgeted**		**Yes**		**No** *(If no, explain in Cost/Budgeted section.)*

FROM (IPR)	DEPARTMENT	MAIL STOP	EXT.	DATE SENT
Brandon Rose / Donna Lofton	Board Office	B307	5079	12/21/2021

NARRATIVE:

Requested Action: Enable the Board of Directors and Executive Staff an opportunity to review the Board Work Plan.

Summary: The Board President reviews the Board Work Plan at the Policy Committee meeting to ensure agenda items support the work of the Board.

Board Policy: *(Number & Title)* This review of the work plan supports GP-6 Role of the Board President which states that the Board President shall give progress reports on the Board's work plan.

Benefits: Reviewing the Work Plan allows the Board members and Executive staff to make changes to the Work Plan and Parking Lot items as necessary.

Cost/Budgeted: N/A

Alternatives: Not review the Work Plan at this time

Affected Parties: Board and Executive staff

Coordination: Donna Lofton

Presenter: Brandon Rose, Board President

Additional Links:

SUBJECT	ITEM NO. ***(FOR LEGAL USE ONLY)***
Board Work Plan	11

ITEMS SUBMITTED AFTER DEADLINE WILL BE POSTPONED UNTIL NEXT MEETING.