El Dorado Irrigation District

AGENDA
REGULAR MEETING OF THE BOARD OF DIRECTORS

District Board Room, 2890 Mosquito Road, Placerville, California
March 12, 2018 — 9:00 A.M.

Board of Directors

Michael Raffety—Division 3
President

Alan Day—Division 5
Vice President

George Osborne—Division 1
Director

Greg Prada—Division 2
Director

Dale Coco, MD—Division 4
Director

Executive Staff

Jim Abercrombie
General Manager

Brian D. Poulsen, Jr.
General Counsel

Jennifer Sullivan
Clerk to the Board

Jesse Saich
Communications

Brian Mueller
Engineering

Mark Price
Finance

Jose Perez
Human Resources

Tim Ranstrom
Information Technology

Margaret Washko
Operations

PUBLIC COMMENT: Anyone wishing to comment about items not on the Agenda may do so during the public comment period. Those wishing to comment about items on the Agenda may do so when that item is heard and when the Board calls for public comment. Public comments are limited to five minutes per person.

PUBLIC RECORDS DISTRIBUTED LESS THAN 72 HOURS BEFORE A MEETING: Any writing that is a public record and is distributed to all or a majority of the Board of Directors less than 72 hours before a meeting shall be available for immediate public inspection in the office of the Clerk to the Board at the address shown above. Public records distributed during the meeting shall be made available at the meeting.

AMERICANS WITH DISABILITIES ACT: In accordance with the Americans with Disabilities Act (ADA) and California law, it is the policy of El Dorado Irrigation District to offer its public programs, services, and meetings in a manner that is readily accessible to everyone, including individuals with disabilities. If you are a person with a disability and require information or materials in an appropriate alternative format; or if you require any other accommodation for this meeting, please contact the EID ADA coordinator at 530-642-4045 or email at adacoordinator@eid.org at least 72 hours prior to the meeting. Advance notification within this guideline will enable the District to make reasonable accommodations to ensure accessibility.

CALL TO ORDER

Roll Call
Pledge of Allegiance
Moment of Silence

ADOPT AGENDA

COMMUNICATIONS

General Manager's Employee Recognition

PUBLIC COMMENT

COMMUNICATIONS

General Manager
Clerk to the Board
Board of Directors

Brief reports on community activities, meetings, conferences and seminars attended by the Directors of interest to the District and the public.

APPROVE CONSENT CALENDAR

Action on items pulled from the Consent Calendar

CONSENT CALENDAR

1. **Finance (Pasquarello)**
   Ratification of EID General Warrant Registers for the periods ending February 20 and February 27, 2018, and Board and Employee Expense Reimbursements for these periods.

   Option 1: Ratify the EID General Warrant Register as submitted to comply with Section 24600 of the Water Code of the State of California. Receive and file Board and Employee Expense Reimbursements.
   Option 2: Take other action as directed by the Board.
   Option 3: Take no action.

   Recommended Action: Option 1.

2. **Clerk to the Board (Sullivan)**
   Approval of the minutes of the February 26, 2018 regular meeting of the Board of Directors.

   Option 1: Approve as submitted.
   Option 2: Take other action as directed by the Board.
   Option 3: Take no action.

   Recommended Action: Option 1.

3. **Operations / Engineering (Washko/Mueller)**
   Consideration to ratify Resolution No. 2017-014 to maintain the emergency declaration as a result of ongoing storm-related activities.

   Option 1: Ratify Resolution No. 2017-014 (*thus maintaining the emergency declaration*).
   Option 2: Decline to ratify Resolution No. 2017-014 (*thus terminating the emergency declaration*) or take other action as directed by the Board.
   Option 3: Take no action (*thus terminating the emergency declaration*).

   Recommended Action: Option 1 (*four-fifths vote required*).

4. **Operations (Gibson)**
   Consideration to authorize the General Manager to execute an addendum to the interagency Sponsor Agreement with the California Conservation Corps in the not-to-exceed amount of $133,160, and authorize funding of $165,160 for fuels reduction at District facilities.

   Option 1: Authorize the General Manager to execute an addendum to the interagency Sponsor Agreement with the California Conservation Corps in the not-to-exceed amount of $133,160, and authorize funding of $165,160 for fuels reduction at District facilities.
   Option 2: Take other action as directed by the Board.
   Option 3: Take no action.

   Recommended Action: Option 1.

5. **Finance (Pasquarello)**
   Consideration to authorize funding approval for District Capital Improvement Plan (CIP) Projects: FERC C46-49 Recreation Resource Management, Project No. 06098H in the amount of $20,000.

   Option 1: Authorize funding approval for District Capital Improvement Plan (CIP) Projects: FERC C46-49 Recreation Resource Management, Project No. 06098H in the amount of $20,000.
   Option 2: Take other action as directed by the Board.
   Option 3: Take no action.

   Recommended Action: Option 1.

END OF CONSENT CALENDAR

ACTION ITEMS

6. **Engineering (Mutschler)**
   Consideration to award a professional services contract to Sage Engineering in the not-to-exceed amount of $208,955 for design of the Flume 47C Replacement Project, and authorize funding of $393,955; Project No. 17026.

   Option 1: Award a professional services contract to Sage Engineering in the not-to exceed amount of $208,955 for design of the Flume 47C replacement, and approve funding of $393,955; Project No. 17026.
   Option 2: Take other action as directed by the Board.
   Option 3: Take no action.

   Recommended Action: Option 1.

CLOSED SESSION

A. **Conference with General Counsel – Existing Litigation**
   Government Code Section 54956.9(d)(1): *Access Limited Construction v. Excavating Engineers, Inc. et al.,* Sacramento County Superior Court Case No. 34-2016-00197663-CU-BC-GDS

B. **Closed session pursuant to Government Code section 54957.6 (Poulsen)**
   Conference with Labor Negotiators
   Agency designated representatives: Directors Day and Coco
   Unrepresented employee: General Counsel

C. **Closed session pursuant to Government Code section 54957.6 (Abercrombie)**
   Conference with Labor Negotiators
   Agency designated representatives: Directors Day and Coco
   Unrepresented employee: General Manager

REVIEW OF ASSIGNMENTS

ADJOURNMENT

TENTATIVELY SCHEDULED ITEMS FOR FUTURE MEETINGS

Engineering

- Forebay dam remediation update, Information, April (Kessler)
- Solar Basis of Design Report, Action, April (Money)

EL DORADO IRRIGATION DISTRICT
March 12, 2018

General Manager Communications

Awards and Recognitions

a) Congratulations, Greg Royal. Greg has been promoted to the position of Senior Heavy Equipment Mechanic in the Fleet Maintenance Division.

Staff Reports and Updates

None

CONSENT ITEM NO. 1
March 12, 2018

EL DORADO IRRIGATION DISTRICT

Subject: Ratification of EID General Warrant Registers for the periods ending February 20 and February 27, 2018, and Board and Employee Expense Reimbursements for these periods.

Previous Board Action

February 4, 2002 – The Board approved to continue weekly warrant runs, and individual Board member review with the option to pull a warrant for discussion and Board ratification at the next regular Board meeting.

August 16, 2004 – Board adopted the Board Expense Payments and Reimbursement Policy.

August 15, 2007 – The Board re-adopted the Board Expense Payments and Reimbursement Policy as Board Policy 12065 and Resolution No. 2007-059.

Board Policies (BP), Administrative Regulations (AR) and Board Authority

Section 24600 of the Water Code of the State of California provides no claim is to be paid unless allowed by the Board.

Summary of Issue

The District's practice has also been to notify the Board of proposed payments by email and have the Board ratify the Warrant Registers. Copies of the Warrant Registers are sent to the Board of Directors on the Friday preceding the Warrant Register's date. If no comment or request to withhold payment is received from any Director by the following Tuesday morning, the warrants are mailed out and formal ratification of said warrants is agendized on the next regular Board agenda.

On April 1, 2002, the Board requested staff to expand the descriptions on the Warrant Registers and modify the current format of the Warrant Registers.

On July 30, 2002, the Board requested staff to implement an Executive Summary to accompany each Warrant Register which includes all expenditures greater than $3,000 per operating and capital improvement plan (CIP) funds.

Staff Analysis/Evaluation

Warrant registers submitted for February 20, February 27, 2018 totaling $777,273.89, and Board and Employee Expense Reimbursements for these periods.

Current Warrant Register Information
Warrants are prepared by Accounts Payable; reviewed and approved by the Accounting Manager; the Director of Finance and the General Manager or their designee.

Register Date	Check Numbers	Amount
February 20, 2018	665857 – 665995	$ 522,564.79
February 27, 2018	665996 – 666111	$ 254,709.10

Current Board/Employee Expense Payments and Reimbursement Information
The items paid on Attachment B and C are expense and reimbursement items that have been reviewed and approved by the Clerk to the Board, Accounting Manager and the General Manager before the warrants are released. These expenses and reimbursements are for activities performed in the interest of the District in accordance with Board Policy 12065 and Resolution No. 2007-059.

Additional information regarding employee expense reimbursement is available for copying or public inspection at District headquarters in compliance with Government Code Section 53065.5.

Board Decision/Options

Option 1: Ratify the EID General Warrant Register as submitted to comply with Section 24600 of the Water Code of the State of California. Receive and file Board and Employee Expense Reimbursements.

Option 2: Take other action as directed by the Board.

Option 3: Take no action.

Staff/General Manager's Recommendation

Option 1.

Support Documents Attached

Attachment A: Executive Summaries

Attachment B: Board Expenses/Reimbursements

Attachment C: Employee Expenses/Reimbursements totaling $100 or more

Tony Pasquarello
Finance Manager

Mark Price
Finance Director (CFO)

Jennifer Sullivan
Clerk to the Board

Jim Abercrombie
General Manager

Executive Summary for February 20, 2018 -- $522,564.79:

This summary highlights significant disbursements made by major business activity:

General District Operations (Fund 110)

- $17,146—AT&T for phone service
- $12,077—Dataprose, LLC for January billing services
- $3,161—Guardian Life Insurance Company for January vision claims
- $15,795—Hunt & Sons, Inc. for card lock fuel and fuel deliveries at various locations
- $3,729—L&H Airco for labor and materials for HVAC tech support
- $3,029—Lennar Homes Calif., Inc. CA Corp for a credit balance refund on customer account
- $4,096—Life Insurance Company of North America for February 2018 life insurance premiums

Engineering Operations (Fund 210) none to report

Water Operations (Fund 310)

- $21,462—Aqua Tech Company for cleaning and sediment removal of Reservoir 11
- $94,747—PG&E for electric service
- $76,585—State Water Resources Control Board for water system fees

Wastewater Operations (Fund 410)

- $5,877—Culligan Water Conditioning for a water softener system
- $3,063—El Dorado Disposal Service, Inc. for grit hauling at DCWWTP and EDHWWTP
- $4,619—Industrial Electrical Company for labor and materials to repair a pump
- $6,682—Kaeser Compressors, Inc. for labor and materials to repair an air compressor
- $10,130—Musol Limited for chlorite solution at DCWWTP
- $97,453—PG&E for electric service
- $4,702—Univar USA, Inc. for caustic soda at EDHWWTP

Recycled Water Operations (Fund 510)

- $4,136—PG&E for electric service

Hydroelectric Operations (Fund 610)

- $5,069—PG&E for electric service

Recreation Operations (Fund 710) none to report

Capital Improvement Projects (Construction Funds 140, 340, 440, 540, 640 and 740)

- $12,291—Area West Engineers, Inc. for topographical surveys and title reports:
  >Project #17031.01 – Forest Road Waterline Relocation ($1,186)
  >Project #17048.01 – Strawberry Raw Water Pump Station ($3,480)
  >Project #17014.01 – Green Valley PRS #2 Upgrade ($4,575)
  >Project #17015.01 – Lakeview PRS #1 Upgrade ($3,050)
- $3,675—Associated Right of Way Services, Inc. for acquisition services – Main Ditch-Forebay to Reservoir 1 Land Purchase/Easement (Project #11032.02)
- $8,810—Nline Energy, Inc. for engineering and design services – Tank 7 In-Conduit Hydro Assessment (Project #13013.01)
- $15,831—TCB Industrial, Inc. for engineering services ($16,664) – Tank 7 In-Conduit Hydro Assessment (Project #13013.01). Retention held $833

Executive Summary for February 27, 2018 -- $254,709.10:

This summary highlights significant disbursements made by major business activity:

General District Operations (Fund 110)

- $14,996—Golden State Flow Measurement, Inc. for warehouse inventory
- $5,425—Les Schwab Tire Centers of California, Inc. for tires
- $3,578—UC Davis Extension for Supervisory Skills training

Engineering Operations (Fund 210) none to report

Water Operations (Fund 310)

- $5,586—Aqua Tech Company for Reservoir 7A tank cleaning service
- $5,318—E&M Electric & Machinery, Inc. for an inspection camera system for Reservoir 1 floating cover

Wastewater Operations (Fund 410)

- $9,380—California Water Environment Association for CWEA annual conference
- $11,615—Ferguson Enterprises, Inc. for 20 pipe patch kits
- $9,822—Hach Company for equipment service contract
- $9,985—Lhoist North America of Arizona, Inc. for quicklime at DCWWTP
- $5,871—Polydyne, Inc. for clarifloc at DCWWTP
- $8,927—Suez Treatment Solutions, Inc. for 300 UV lamps
- $5,966—UC Davis Extension for Supervisory Skills training
- $9,137—Univar USA, Inc. for caustic soda at EDHWWTP and DCWWTP
- $5,939—Xylem Water Solutions USA, Inc. for an impeller and two wear rings

Recycled Water Operations (Fund 510) none to report

Hydroelectric Operations (Fund 610)

- $5,950—GEI Consultants, Inc. for dam safety assessment at Silver Lake and Forebay spillway
- $4,770—UC Davis Extension for Supervisory Skills training

Recreation Operations (Fund 710)

- $15,750—Garrett Forest Management for slash pile cleanup at Sly Park Recreation

Capital Improvement Projects (Construction Funds 140, 340, 440, 540, 640 and 740)

- $36,279—Domenichelli and Associates, Inc. for engineering design services:
  >Project #06082H.01 – FERC:C50.1 Silver Lake ($7,715)
  >Project #17031.01 – Forest Road Waterline Relocation ($8,690)
  >Project #11032.01 – Main Ditch-Forebay to Reservoir 1 ($12,143)
  >Project #13015.01 – Outingdale Lower Tank Replacement ($3,276)
  >Project #16040.01 – Carson Creek 2 and Business Park 3 Lift Stations Abandonment ($4,455)

Attachment B

Board Expenses/Reimbursements
Warrant Registers dated 02/20/18 - 02/27/18

DESCRIPTION	George Osborne	Michael Raffety	Greg Prada	Dale Coco, MD	Alan Day	Total
Personal Vehicle Expense			$65.08			$65.08
Hotel						$0.00
Meals or Incidentals Allowance						$0.00
Airfare, Car Rental, Misc Travel						$0.00
Fax, Cell or Internet Service			$80.00			$80.00
Meeting or Conference Registration						$0.00
Meals with Others						$0.00
Membership Fees/Dues						$0.00
Office Supplies			$43.07			$43.07
Reimburse prepaid expenses						$0.00
Miscellaneous Reimbursements						$0.00
	$0.00	$0.00	$188.15	$0.00	$0.00	$188.15

Attachment C

Employee Expenses/Reimbursements
Warrant Registers dated 02/20/18 - 02/27/18

EMPLOYEE	DESCRIPTION	AMOUNT
Raymond Salerno	Wastewater Treatment Plant Operator Certification Exam Fees	$350.00
Dianne Matteson	Food for LCW Workshop	$199.19
John Chavers	Grade I Operator-In-Training Fee and Grade III Exam Fees	$520.00
		$1,069.19

El Dorado Irrigation District

MINUTES
REGULAR MEETING OF THE BOARD OF DIRECTORS

District Board Room, 2890 Mosquito Road, Placerville, California
February 26, 2018 — 9:00 A.M.

Board of Directors

Michael Raffety—Division 3
President

Alan Day—Division 5
Vice President

George Osborne—Division 1
Director

Greg Prada—Division 2
Director

Dale Coco, MD—Division 4
Director

Executive Staff

Jim Abercrombie
General Manager

Brian D. Poulsen, Jr.
General Counsel

Jennifer Sullivan
Clerk to the Board

Jesse Saich
Communications

Brian Mueller
Engineering

Mark Price
Finance

Jose Perez
Human Resources

Tim Ranstrom
Information Technology

Margaret Washko
Operations

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CALL TO ORDER

President Raffety called the meeting to order at 9:00 A.M.

Roll Call
Board

Present: Directors Osborne, Raffety and Day
Absent: Directors Prada and Coco

Staff

Present: General Manager Abercrombie, General Counsel Poulsen and Clerk to the Board Sullivan

Pledge of Allegiance and Moment of Silence

President Raffety led the Pledge of Allegiance followed by a moment of silence dedicated to Donald D. Courtwright, Retired Colonel U.S. Army and WWII Veteran. President Raffety read a George Washington quote: "When one side only of a story is heard and often repeated, the human mind becomes impressed with it insensibly."

ADOPT AGENDA

ACTION: Agenda was adopted.

MOTION PASSED

Ayes: Directors Osborne, Day and Raffety
Absent: Directors Prada and Coco

COMMUNICATIONS

General Manager's Employee Recognition

Awards and Recognitions

a) Welcome to the District, Jim Bragg. Jim has been hired to the position of Construction Inspector II in the Engineering Department.
b) Welcome to the District, Kailee Delongchamp. Kailee has been hired to the position of Assistant Engineer I in the Engineering Department.
b) Congratulations, Mallory Sisneros. Mallory has been promoted to the position of Business Systems Analyst in the Operations Department.
d) Congratulations, Mitch Wydeveld. Mitch has been promoted to the position of Senior Electrical and Instrumentation Technician in the Operations Department.

PUBLIC COMMENT

None

COMMUNICATIONS

General Manager

Staff Reports and Updates
None

Clerk to the Board

None

Board of Directors

None

APPROVE CONSENT CALENDAR

ACTION: Consent Calendar was approved.

MOTION PASSED
Ayes: Directors Osborne, Day and Raffety
Absent: Director Prada and Coco

CONSENT CALENDAR

1. **Finance (Pasquarello)**
   Ratification of EID General Warrant Registers for the periods ending February 6 and February 13, 2018, and Board and Employee Expense Reimbursements for these periods.

   ACTION: Option 1: Ratified the EID General Warrant Register as submitted to comply with Section 24600 of the Water Code of the State of California. Received and filed Board and Employee Expense Reimbursements.

   MOTION PASSED
   Ayes: Directors Osborne, Day and Raffety
   Absent: Director Prada and Coco

2. **Clerk to the Board (Sullivan)**
   Approval of the minutes of the February 12, 2018 regular meeting of the Board of Directors.

   ACTION: Option 1: Approved as submitted.

   MOTION PASSED
   Ayes: Directors Osborne, Day and Raffety
   Absent: Director Prada and Coco

3. **Operations / Engineering (Washko/Mueller)**
   Consideration to ratify Resolution No. 2017-014 to maintain the emergency declaration as a result of ongoing storm-related activities.

   ACTION: Option 1: Ratified Resolution No. 2017-014 (*thus maintaining the emergency declaration*).

   MOTION PASSED
   Ayes: Directors Osborne, Day and Raffety
   Absent: Director Prada and Coco

4. **Engineering (Mueller)**
   Consideration to adopt a resolution authorizing an application for funding assistance through the United States Bureau of Reclamation's WaterSMART Drought Response Program - Drought Resiliency Projects for the Sly Park Intertie Improvements; Project No 15009.

   ACTION: Option 1: Adopted Resolution No. 2018-003, authorizing an application for funding assistance through the United States Bureau of Reclamation's WaterSMART Drought Response Program; Drought Resiliency Projects for the Sly Park Intertie Improvements; Project No 15009.

   MOTION PASSED
   Ayes: Directors Osborne, Day and Raffety
   Absent: Director Prada and Coco

END OF CONSENT CALENDAR

ACTION ITEMS

5. **Engineering (Wilson)**
   Consideration of funding for the Construction Responsibility and Reimbursement Agreement between the City of Placerville (City) and the El Dorado Irrigation District, and related Caltrans Utility Agreement, in the amount of $879,159 for the City of Placerville Western Placerville Interchange Phase 2; Project No. 16039.

   ACTION: Option 1: Approved funding for the Construction Responsibility and Reimbursement Agreement between the City of Placerville (City) and the El Dorado Irrigation District, and related Caltrans Utility Agreement, in the amount of $879,159 for the City of Placerville Western Placerville Interchange Phase 2; Project No. 16039.

   MOTION PASSED
   Ayes: Directors Day, Osborne and Raffety
   Absent: Director Prada and Coco

6. Engineering (Deason)

Update on implementation of the Federal Energy Regulatory Commission Project No. 184 license conditions and request to authorize total funding of $254,000 for FERC-related Capital Improvement Plan projects: C37.8 Water Temperature Monitoring; Project No. 06021H, C37.9 Water Quality Monitoring; Project No. 07003H, C46-9 Recreation Resources; Project No. 06098H, C15 Pesticide use; C38 Adaptive Management; Project No. 07011H, C44 Noxious Weed Monitoring; Project No. 08025H, and C51.2 Recreation Management Caples Boat Launch; Project No. 10007.

ACTION: Option 1: Authorized total funding of $254,000 for FERC-related Capital Improvement Plan projects: C37.8 Water temperature monitoring; Project No. 06021H, C37.9 Water quality monitoring; Project No. 07003H, C46-9 Recreation Resources; Project No. 06098H, C15 Pesticide Use; C38 Adaptive Management; Project No. 07011H, C44 Noxious Weed Monitoring; Project No. 08025H, and C51.2 Recreation Management for Caples Boat Launch; Project No. 10007.

MOTION PASSED
Ayes: Directors Osborne, Day and Raffety
Absent: Director Prada and Coco

7. Engineering (Wells)

Request for approval of a Utility Agreement between the County of El Dorado Department of Transportation (County), the State of California Department of Transportation (State) and the El Dorado Irrigation District, and authorize total funding of $194,100 for the Diamond Springs Parkway Phase 1a Project; Project No. 16005.

ACTION: Option 1:
- Considered the Final EIR and Supplemental EIR for the Diamond Springs Parkway Project.
- Specified that documents or other material, which constitute the record of proceedings upon which this decision is based, shall be in the custody of the Clerk to the Board at EID Headquarters.
- Approved the Utility Agreement between the County of El Dorado Department of Transportation, the State of California Department of Transportation and the El Dorado Irrigation District, and authorized total funding of $194,100 for the Diamond Springs Parkway Phase 1A Project; Project No. 16005.

MOTION PASSED
Ayes: Directors Day, Osborne and Raffety
Absent: Director Prada and Coco

CLOSED SESSION

A. Conference with General Counsel – Existing Litigation
Government Code Section 54956.9(d)(1): *Access Limited Construction v. Excavating Engineers, Inc. et al.,* Sacramento County Superior Court Case No. 34-2016-00197663-CU-BC-GDS

ACTION: The Board met and conferred with Counsel and provided direction to Counsel and staff but took no reportable action.

B. Conference with General Counsel – Anticipated Litigation
Significant exposure to litigation pursuant to Government Code section 54956.9(d)(2) & (h): (one potential case: District and Director Prada responses to California Public Record Act requests from Tom Cumpston)

ACTION: The Board met and conferred with Counsel and provided direction to Counsel and staff but took no reportable action.

REVIEW OF ASSIGNMENTS

None

ADJOURNMENT

President Raffety adjourned the meeting at 10:15 A.M.

_____
Michael Raffety
Board President
EL DORADO IRRIGATION DISTRICT

ATTEST:

_____
Jennifer Sullivan
Clerk to the Board
EL DORADO IRRIGATION DISTRICT

Approved: _____

EL DORADO IRRIGATION DISTRICT

Subject: Consideration to ratify Resolution No. 2017-014 to maintain the emergency declaration as a result of ongoing storm-related activities.

Previous Board Actions

February 13, 2017 – Board adopted Resolution No. 2017-007 declaring an emergency under the Public Contract Code and Public Resources Code as a result of recent and ongoing storm activities; ratified a construction contract to Doug Veerkamp General Engineering for emergency replacement of a failed section of the Town Center force main; ratified a pumping and hauling contract to Doug Veerkamp for emergency pumping of raw sewage from the El Dorado lift station; ratified a pumping and hauling contract with Advance Septic for emergency pumping of raw sewage from the Camino Heights wastewater treatment plant; and authorized and directed the General Manager and his designees to take all further actions reasonably deemed necessary to respond to the emergency.

February 27, 2017 – Board ratified Resolution No. 2017-007 to maintain the emergency declaration and ratified contracts awarded to Doug Veerkamp for landslide stabilization and Syblon Reid General Engineering Contractors (SRC) for drainage diversion, access road development, landslide stabilization and canal repair near Flumes 5 and 10.

March 13, 2017 – Board ratified Resolution No. 2017-007 to maintain the emergency declaration; ratified a professional services contract with GHD Inc. in the amount of $150,000 for geotechnical and engineering services; awarded a construction contract to Syblon Reid Contractors in the not-to-exceed amount of $5,780,386 and approved total project funding in the amount of $8,855,343 for Flume 10 construction.

March 27, 2017 – Board ratified Resolution No. 2017-007 to maintain the emergency declaration.

April 10, 2017 –

- Ratified Resolution No. 2017-007 to maintain the emergency declaration;
- Ratified professional services Change Order No. 1 with GHD Inc. in the not-to-exceed amount of $600,224;
- Ratified construction contract Change Order No. 1 for Doug Veerkamp General Engineering in the not-to-exceed amount of $300,000;
- Approved Change Order No. 2 with GHD Inc. in the not-to-exceed amount of $1,310,016;
- Approved a construction contract Change Order No. 1 to SRC in the not-to-exceed amount of $4,024,404;
- Awarded a construction contract to Doug Veerkamp General Engineering in the not-to-exceed amount of $1,462,479 for slides at Flume 45A; and
- Approved project funding of $5,970,595 for the following projects:
    - $3,044,560, Project No. 17004.01 (Hazard Mitigation at Flume 5);
    - $987,030, Project No. 17008.01 (Hazard Mitigation at Flume 9);
    - $568,588, Project No. 17007.01 (Hazard Mitigation #1 downstream Flume 45A);
    - $1,220,417, Project No. 17007.03 (Hazard Mitigation #3 downstream Flume 45A);
    - $150,000, Project No. 17002.01 (Town Center Force Main Emergency Replacement Phase 2 Schedule B).

May 22, 2017 – Board adopted Resolution 2017-014 to update the emergency declaration resulting from the 2017 storm activity.

June 12, 2017 – Board ratified Resolution No. 2017-014 to maintain the emergency declaration.

July 24, 2017 – Board ratified Resolution No. 2017-014 to maintain the emergency declaration as a result of the 2017 storm activity and ratified the construction contract with Mining Construction Inc. in the not-to-exceed amount of $539,677.

August 14 and August 28, 2017 – Board ratified Resolution No. 2017-014 to maintain the emergency declaration.

September 11, 2017 – Board ratified Resolution No. 2017-014 to maintain the emergency declaration and ratified a contract amendment to GHD in the not-to-exceed amount of $55,000 for inspection services on the Montclair Townhome sewer repair project.

October 10, 2017 – Board ratified Resolution No. 2017-014 to maintain the emergency declaration as a result of ongoing storm activities, and was updated on the status of the SAD bridge repair.

October 23, November 13 and December 11, 2017 – Board ratified Resolution No. 2017-014 to maintain the emergency declaration.

January 8, January 22, February 12, and February 26, 2018 – Board ratified Resolution No. 2017-014 to maintain the emergency declaration.

Board Policies (BP), Administrative Regulations (AR), and Board Authority

Public Contract Code section 22050(a)(1) provides that in the case of an emergency, a public agency, pursuant to a four-fifths vote of its governing body, may repair or replace a public facility, take any directly related and immediate action required by that emergency, and procure the necessary equipment, services, and supplies for those purposes, without giving notice for bids to let contracts. Subsection (c)(1) of that statute requires the governing body to review the emergency action at its next regularly scheduled meeting and at every regularly scheduled meeting thereafter until the action is terminated, to determine, by a four-fifths vote, that there is a need to continue the action.

Public Contract Code sections 1102, 20567, and 22050 authorize the District to forgo public bidding requirements in emergency circumstances.

Public Resources Code section 21080(b) and CEQA Guidelines section 15269 exempt emergency projects from the requirements of the California Environmental Quality Act ("CEQA").

Summary of Issue(s)

On February 13, 2017, the Board unanimously adopted Resolution 2017-007 declaring an emergency as a result of the severe storms during January and February of 2017 and subsequently adopted Resolution 2017-014 to update the declaration. For the emergency declaration to remain in effect, the Board must find (by four-fifths vote for bidding and contracting purposes) at each regular Board meeting that the need for the emergency action still exists. The Board can do so today by ratifying Resolution No. 2017-014.

Staff Analysis/Evaluation

There have been over 40 separate storm related work tasks that have been documented since January 7, 2017. The remaining work is primarily related to the repair of the failure near Flume 10. However, due to winter conditions, ongoing construction work has been limited to inspection and maintenance of erosion control systems required by the State Water Resources Control Board. The remaining work includes completion of the final site grading, access road, Alarm 3, permanent fencing, security gate, and permanent erosion control. As long as active construction work authorized under the emergency declaration continues, staff recommends the Board continue to maintain the emergency declaration.

Board Decisions/Options

Option 1: Ratify Resolution No. 2017-014 *(thus maintaining the emergency declaration).*

Option 2: Decline to ratify Resolution No. 2017-014 *(thus terminating the emergency declaration)* or take other action as directed by the Board.

Option 3: Take no action *(thus terminating the emergency declaration).*

Staff/General Manager's Recommendation

Option 1 *(four-fifths vote required)*

Supporting Documents Attached

Attachment A: Resolution No. 2017-014

Brian Mueller, P.E.
Engineering Director

Mark Price
Finance Director

Margaret P. Washko, P.E.
Operations Director

Elizabeth Leeper
Deputy General Counsel

Jim Abercrombie
General Manager

Resolution No. 2017-014

RESOLUTION OF THE BOARD OF DIRECTORS OF EL DORADO IRRIGATION DISTRICT DECLARING AN EMERGENCY

WHEREAS, El Dorado County received intense rainfall during the early months of 2017, saturating soils and causing collapses, soil failures, and earth movement all around the County; and

WHEREAS, multiple significant collapses of soil occurred on the District's El Dorado Canal, resulting in the canal being taken out of service; and

Whereas, multiple slope failures occurred on District property off of 8-mile Road in Pollock Pines; and

WHEREAS, such storm activity has overwhelmed the District's wastewater collections facilities at the El Dorado Lift Station and the Camino Heights Wastewater Treatment Plant increasing the risk of sanitary sewer overflows; and

WHEREAS, the District has encountered a break of a sanitary sewer collection main pipeline, the Town Center force main; and

WHEREAS, slope failure over a District sewer line near Montclair Road in Cameron Park has put the sewer pipeline at unacceptable risk of failure; and

WHEREAS, District staff have undertaken over 40 separate storm related work tasks since January 7, 2017 as a result of the incidents described above; and

WHEREAS, on February 13, 2017, the District's Board of Directors adopted Resolution No. 2017-007, declaring an emergency within the meaning of several statutes included in the Government, Public Resources, and Public Contract Codes and directed the District General Manager and his designees to take all actions reasonably deemed necessary to respond to the emergency declared therein; and

WHEREAS, the District's Board of Directors ratified Resolution No. 2017-007 at its regularly held Board meetings on February 27, March 13, March 27, and April 10; and

WHEREAS, as a result of continuously developing conditions, there exists real and reasonable potential for the District to discover and/or experience additional damage to critical infrastructure necessitating immediate repair; and

WHEREAS, all of these occurrences require prompt action to prevent or mitigate impairment to life, health, safety, property, and/or essential public services; and

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WHEREAS, Government Code section 54956.5(a)(1) defines "emergency" as "a work stoppage, crippling activity, or other activity that severely impairs public health, safety, or both, as determined by a majority of the members of the legislative body;" and

WHEREAS, Government Code section 54956.5(a)(2) defines "dire emergency" as "a crippling disaster, mass destruction, terrorist act, or threatened terrorist activity that poses peril so immediate and significant that requiring a legislative body to provide one-hour notice before holding an emergency meeting may endanger the public health, safety, or both, as determined by a majority of the members of the legislative body;" and

WHEREAS, Public Contract Code section 1102 defines "emergency" as "a sudden, unexpected occurrence that poses a clear and imminent danger, requiring immediate action to prevent or mitigate the loss or impairment of life, health, property, or essential public services;" and

WHEREAS, CEQA Guidelines section 15359 defines "emergency" as "a sudden, unexpected occurrence, involving a clear and imminent danger, demanding immediate action to prevent or mitigate loss of, or damage to life, health, property, or essential public services;" and

WHEREAS, Government Code section 54956.5(b)(1) and (2) authorize legislative bodies to hold emergency meetings in the case of an emergency or dire emergency involving matters upon which prompt action is necessary due to the disruption or threatened disruption of public facilities; and

WHEREAS, District Board Policy 2050 authorizes the District's General Manager to act "in emergency situations where no Board Policies or Administrative Regulations exist;" and

WHEREAS, Public Contract Code sections 22050(a)(1) and 20567 authorize irrigation districts to let contracts without notice for bids in case of an emergency; and

WHEREAS, Public Contract Code section 22050(b)(1) authorizes the Board of Directors, by a four-fifths (4/5ths) vote, to delegate to the General Manager the authority to order any action pursuant to paragraph (1) of subdivision (a); and

WHEREAS, District Board Policy 3060, delegates to the General Manager authority to approve any and all contracts necessary to abate an emergency after first informing the President of the Board of Directors and scheduling an emergency meeting of the Board of Directors at the earliest possible opportunity; and

WHEREAS, Public Resources Code section 21080(b)(2) exempts from the California Environmental Quality Act (CEQA) emergency repairs to public service facilities necessary to maintain services; and

WHEREAS, Public Resources Code section 21080(b)(4) and CEQA Guidelines section 15269(c) exempt from CEQA specific actions necessary to prevent or mitigate an emergency from CEQA;

NOW, THEREFORE, BE IT AND IT IS HEREBY RESOLVED by the Board of Directors of the El Dorado Irrigation District (Board) as follows:

1. The Board finds and declares that an emergency situation exists within the meaning of the enactments listed below:

   Public Contract Code section 11102
   CEQA Guidelines section 15359
   Public Contract Code section 20567
   District Board Policy 3060
   Public Contract Code section 22050(a)(1)
   Public Resources Code section 21080(b)(2)
   Public Resources Code section 21080(b)(4) and CEQA Guidelines section 15269(c)

2. The foregoing findings and declarations are based upon written, oral, and visual evidence, including both facts and professional opinions, presented to the Board at the hearing of this Resolution and upon the Minutes of the meeting at which this Resolution was adopted.

3. The Board hereby ratifies all actions taken by the District General Manager and his designees, prior to the adoption of this Resolution, which the General Manager and his designees reasonably deemed necessary to respond to the emergency declared herein.

4. The Board hereby delegates, authorizes, and directs the District General Manager and his designees to take all further actions reasonably deemed necessary to respond to the emergency declared herein. The General Manager or his designees shall report to and seek ratification of the Board of Directors for each action taken in excess of their normal authority, at the first regular Board of Directors meeting held after each such action.

5. This Resolution shall take effect immediately upon adoption, and shall supersede Resolution No. 2017-007. Subject to the ratification required by Public Contract Code sections 22050(b)(3), (c)(1), and (c)(2), and by Board Policy 3060, this Resolution shall remain in full force an effect until rescinded by a subsequent Resolution of the Board of Directors.

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The foregoing Resolution was introduced at a regular meeting of the Board of Directors of the EL DORADO IRRIGATION DISTRICT, held on the 22nd day of May 2017, by Director Day who moved its adoption. The motion was seconded by Director Prada and a poll vote taken which stood as follows:

AYES: Directors Day, Prada, Osborne, Raffety and Coco

NOES:

ABSENT:

ABSTAIN:

The motion having a majority of votes "Aye", the resolution was declared to have been adopted, and it was so ordered.

George W. Osborne, President
Board of Directors
EL DORADO IRRIGATION DISTRICT

ATTEST:

Jennifer Sullivan
Clerk to the Board
EL DORADO IRRIGATION DISTRICT

(SEAL)

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I, the undersigned, Clerk to the Board of the EL DORADO IRRIGATION DISTRICT hereby certify that the foregoing resolution is a full, true and correct copy of a Resolution of the Board of Directors of the EL DORADO IRRIGATION DISTRICT entered into and adopted at a regular meeting of the Board of Directors held on the 22nd day of May 2017.

Jennifer Sullivan
Clerk to the Board
EL DORADO IRRIGATION DISTRICT

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EL DORADO IRRIGATION DISTRICT

Subject: Consideration to authorize the General Manager to execute an addendum to the interagency Sponsor Agreement with the California Conservation Corps in the not-to-exceed amount of $133,160, and authorize funding of $165,160 for fuels reduction at District facilities.

Previous Board Actions

None

Board Policies (BP), Administrative Regulations (AR) and Board Authority

BP 3060 and AR 3061.04 states in part contracts greater than $50,000 must be approved by the Board.

BP 0010 states the El Dorado Irrigation District is a public agency dedicated to providing high quality water, wastewater treatment, recycled water, hydropower, and recreation service in an environmentally and fiscally responsible manner.

Prior to approving a project, the District must consider its environmental effects as required by the California Environmental Quality Act (CEQA), CEQA Guidelines, and the EID's Procedures for implementing CEQA.

Summary of Issue

The District is required to maintain a defensible space surrounding our facilities throughout the service area. The seasonal work of removing and/or maintaining vegetation fuel loads requires seasonal contract services in order to complete work within the short time-period after the rains have stopped and fire season begins. The California Conservation Corps (CCC) is a department of the government of California that performs this type of work using men and women between the ages of 18 to 25. The District has an existing Sponsor Agreement with the CCC and may execute an addendum to that Sponsor Agreement for an individual project. The District has over 170 facilities that need work in order to be ready for the fire season and the CCC can perform this work. The proposed agreement will cover those facilities with the highest fire risk priority.

Staff Analysis/Evaluation

The District covers over 220 square miles or 140,800 acres with facilities from the alpine lakes to El Dorado Hills. Most of these facilities are in wildland interface locations that make them susceptible to wildland fires. In order to protect EID assets it is important to seasonally maintain and/or remove vegetative growth within the property boundaries for each of these facilities as required by California Public Resources Code §4291. The CCC crew is skilled in this type of work and is available as a resource.

The District has an existing Sponsor Agreement with the CCC, which was executed in 2017, and which remains in effect unless terminated by either party. Under the Sponsor Agreement, the District may submit specific project proposals to the CCC and execute an addendum to the Sponsor Agreement for individual projects. Entering into such an inter-agency Sponsor Agreement addendum with the CCC to conduct a portion of the seasonal vegetative maintenance

at the facilities listed below will help the District meet the defensible space criteria in a timely manner. The CCC crew is based out of South Lake Tahoe requiring daily travel time. In order to reduce travel costs for EID's lower elevation facilities, CCC will provide 12 able bodied men and women plus one civil service staff to camp at a local location for 8 days at a time and perform the work.

The six sites where the CCC crew will work are:

1. El Dorado Hills Wastewater Treatment Plant
2. Deer Creek Wastewater Treatment Plant
3. Camino Heights Wastewater Treatment Plant
4. Reservoir A Water Treatment Plant
5. Reservoir 2 Storage Tanks Site
6. Oakridge Tanks Site

The remaining sites not worked on by the CCC will have the perimeters cleared by the Growlersburg Inmate Crew and District staff. The CCC crew will work from mid – March until 1 June 2018. Staff anticipates having vegetation clearances established at all District facilities prior to the start of the fire season to reduce the risk from catastrophic wildfire.

Environmental Review

The proposed fuel reduction activities covered by the agreement are exempt from the California Environmental Quality Act (CEQA) under CEQA Guidelines Section 15304(i) (Minor Alterations to Land, Fuel Management Activities). The proposed activities would remove vegetation near and around fence lines at the identified facilities to guard against the risk of wildfire. The proposed activities would occur within a minimum of 30 feet of structures located at District facilities and may involve up to 100 feet if the fire official determines that extra high fire conditions warrant the greater clearance distance. Pursuant to the Native Plant Protection Act (Section 1913(c) of the California Fish and Game Code et. seq.) the District will notify the California Department of Fish and Wildlife 10 days prior to any fuel reduction activities at applicable sites that have the potential to affect California rare or endangered plants. Staff will post the exemption to the County Recorder's office upon Board approval of the agreement.

Funding

Funding for the project described above will come from the operating budgets for hydro, water and wastewater in the amount of time spent in each area.

California Conservation Corps (CCC) Funding Requirements

	Amount
CCC Labor – 6,100 hours at $21.00 per hour, overtime	$133,160
Showers & Restrooms	7,000
Environmental clearance survey as needed	25,000
TOTAL	**$165,160**

Board Decisions/Options

Option 1: Authorize the General Manager to execute an addendum to the interagency Sponsor Agreement with the California Conservation Corps in the not-to-exceed amount of $133,160 and authorize funding of $165,160 for fuels reduction at District facilities.

Option 2: Take other action as directed by the Board.

Option 3: Take no action.

Staff/General Manager's Recommendation

Option 1

Supporting Documents Attached

Attachment A: California Conservation Corps Sponsor Agreement
Attachment B: State of California Agreement Addendum
Attachment C: California Conservation Corps Project Evaluation
Attachment D: Estimate for Showers and Toilet Services
Attachment E: Draft CEQA Notice of Exemption

Dan Gibson
Hydro Operations Manager

Tracy Crane
Waste Water Operations Manager

Dana Strahan
Water Operations Manager

Greg Hawkins
Recreation Operations Manager

Dan Corcoran
Environmental and Water Resources Manager

Margaret P. Washko, P.E.
Operations Director

Mark Price
Finance Director

Elizabeth Leeper
Deputy General Counsel

Jim Abercrombie
General Manager

STATE OF CALIFORNIA - THE NATURAL RESOURCES AGENCY
EDMUND G. BROWN JR., Governor
CALIFORNIA CONSERVATION CORPS
1719 24th Street, Sacramento, CA 95816
www.ccc.ca.gov

CCC-96 (REV. 06/2016)

SPONSOR AGREEMENT (CCC-96)
(for Governmental Entity – Local)

This Sponsor Agreement (Agreement) is entered into by the California Conservation Corps (CCC), State of California and

Sponsor's Name: EL DORADO IRRIGATION DISTRICT, a State of California Local Public Entity (Sponsor).

WHEREAS, the CCC is statutorily mandated to provide job skills training, educational opportunities and an increasing awareness of the State's natural resources to young adults;

WHEREAS, the CCC is authorized to work on projects in rural and urban areas that, provide a benefit to the public by, among other things, preserving, maintaining and/or enhancing the lands and water of the State of California, directly contributing to the conservation of energy and/or assisting in fire prevention and suppression;

WHEREAS, the CCC is authorized pursuant to the California Public Resources Code Section 14306 to execute contracts for furnishing the services of the CCC to any federal, state or local public entity, any local or statewide private organizations, and any person, firm, partnership, or corporation concerned with the objectives of the CCC program as specified in California Public Resources Code Sections 14000 and 14300;

WHEREAS, the Sponsor can provide opportunities for public service through meaningful and productive work projects;

WHEREAS, each party to this Agreement is duly authorized to enter into this Agreement; and

WHEREAS, the parties to this Agreement find and determine that it would be to their mutual advantage and the public benefit to join together to accomplish the purpose herein, and coordinate their power, authority and expertise for the CCC to use its corpsmembers and employees to accomplish projects specified by Sponsor and agreed to by the CCC;

NOW THEREFORE, in consideration and recognition of the above, the Sponsor and CCC (collectively referred to herein as "the parties") agree as follows:

A. Documentation of Projects
   1. Sponsor shall submit project proposals to the CCC.
   2. The CCC shall work with Sponsor to include details of project proposals in a CCC Form 58 and/or other appropriate forms and documentation where applicable ("the project paperwork").

3. No project work will begin without a CCC Form 58 (or its replacement) being signed by the parties' representatives.
4. The project paperwork for any project necessarily incorporates into it this Agreement.
5. Unless otherwise specified in the project paperwork, the parties agree to accept documents that are digital signed in accordance with Government Code Section 16.5.

B. Parties Obligations:
   1. Sponsor agrees:
      a. To pay for all costs, including but not limited to, labor, material and supply costs negotiated and agreed to by the parties that are directly related to and necessitated by the project and that are set forth in the project paperwork;
      b. To make available to the CCC adequate plans, specifications, materials, supplies, equipment and/or special labor requirements to complete the project as determined and agreed to by the parties as specified in the project paperwork;
      c. To provide adequate technical supervision as determined and agreed to by the parties;
      d. To obtain approvals and permits required by any local, state or federal entity necessary to commence working on and/or completing the work identified in the project paperwork;
      e. To the extent any project involves the CCC performing work on private property, it will obtain and/or has obtained all necessary approvals, authorizations and/or permits from the owners of said private property before the CCC begins project work on said property and that the CCC is authorized to perform the project work on said private property;
      f. To the extent any project involves trade unions or labor organizations, to obtain clearances and/or meet requirements, if any, of trade unions or other labor organizations occasioned by the participation of the CCC in the project;
      g. To the provide project sites that, to the best of the Sponsor's knowledge, are free of any known hazardous materials, but if there are any known hazardous materials present, the Sponsor will provide the location, identity, and amounts of such hazardous materials as well as the Safety Data Sheets associated therewith;
      h. To provide or reimburse the CCC for acceptable temporary living accommodations for CCC personnel actually engaged in working on a project if: (1) the project is located at a site that is more than a one hour drive from the designated CCC base center; and, (2) provision of such living accommodation is determined necessary by the parties;
      i. To conduct an orientation with CCC personnel at the commencement of each project to explain the technical aspects, safety requirements and other relevant information necessary for the CCC to successfully complete the project including the identification of restroom facilities or alternatives thereto;
      j. To work with the CCC to conduct an additional educational or training presentation at the CCC base center or project site to CCC corpsmembers; and,

k. To explore the possibility of authorizing the CCC to place a sign, plaque or emblem on the project site that presents the CCC's contribution to the project and the date. Any such sign, plaque or emblem shall be consistent in size and design to its surroundings at the project site.

2. CCC agrees to:
   a. Review project proposals submitted by the Sponsor and work with Sponsor to prepare project paperwork for those proposed projects that are covered by the CCC's statutory mandate, consistent with the CCC's organizational priorities and within the CCC's operational capabilities.
   b. Provide CCC personnel, equipment and materials to perform the obligations specified in the project paperwork. The CCC shall only use personnel who have received adequate prior training and are sufficiently equipped for and alerted to the general nature of the hazards inherent in the scope of work; and,
   c. Provide its personnel with Workers' Compensation coverage and benefits that are administered by the State Compensation Insurance Fund in accordance with the California Labor Code.

3. The Sponsor and CCC mutually agree to the following:
   a. This Agreement is not intended to affect the legal liability of either of the parties by imposing any standard of care other than the standard of care imposed by law;
   b. Mutual Indemnification:
      i. To the extent permitted by law including Article XVI, sections 1 and 6 of the California Constitution, and the California Claims Act, the CCC agrees to hold harmless and indemnify the Sponsor against any liability, damage, or loss legally determined to have occurred as a result of performance or failure to perform under this Agreement and/or the project paperwork caused by the acts and/or omissions of any person directly employed by, enrolled in or under the control or supervision of the CCC while performing the work set forth in this Agreement and/or the project paperwork.
      ii. The Sponsor agrees to hold harmless and indemnify the CCC against any liability, damage, or loss legally determined to have occurred as a result of performance or failure to perform under this Agreement and/or the project paperwork caused by the acts and/or omissions of any person directly employed by or under the control or supervision of the Sponsor while performing the work set forth in this Agreement and/or the project paperwork;
   c. Insurance:
      i. The State of California has elected to cover its motor vehicle and general liability exposure through claims procedures instituted in accordance with the California Government Code provisions and the other provisions of the law relating to such liability. Pursuant to those procedures, tort liability claims should be submitted to the California Victims Compensation and Government Claims Board (Government Claims Division, P.O. Box 3034, Sacramento, CA

95812-3035) in accordance with the California Government Code provision and the other provisions of the law governing submission of such claims. In addition, unless notified otherwise or on behalf of the CCC, motor vehicle liability claims may be forward to the California Department of Generals Services, Office of Risk and Insurance Management (hereinafter "ORIM"), Claims Unit. 1325 J Street, Suite 1800, Sacramento, California 95814. It should be noted, however, that the willingness of ORIM to receive such motor vehicle liability claims does not constitute a waiver by the State of California or the CCC of the time limits or procedures provided by law or the filing of claims relating to such motor vehicle liability. It also should be noted that the addresses set forth in this paragraph are subject to change; any claimant is advised to verify the accuracy of and currency of the addresses for filing claims, and by setting forth addresses in this paragraph, neither the State of California nor the CCC is waiving any time limits or procedures provided by law for filing claims related to alleged motor vehicle or general liability or any other alleged liability.

ii. The California Department of Personnel Administration has entered into a Master Agreement with the State Compensation Insurance Fund to administer Workers' Compensation benefits for State employees and corpsmembers as required by the California Labor Code.

d. The California Labor Code Section 1720.4(c) specifically exempts the CCC from paying state prevailing wages to corpsmembers when engaged in public works projects. The CCC is not subject to the federal prevailing wage requirements set forth in the Davis-Bacon Act (Title 40 USC 276A et seq.) when providing labor on federal government contracts. Title 29 of the Code of Federal Regulations (CFR), Section 5.2(h) specifically provides that a State is not considered a contractor under statutes providing loans, grants, or other federal assistance in situations where construction is performed by its own employees and/or personnel;

e. The California Business and Professions Code, Section 7040 exempts the State of California from contractor licensing requirements. The CCC is a state entity subject to the exemption;

f. Improvements and Land Use:

i. All improvements constructed in whole, or in part by the CCC on lands owned or controlled by the Sponsor shall remain the property of the Sponsor;

ii. Permission to camp and/or perform work on lands owned or controlled by Sponsor does not in any way convey to the CCC, its staff or any person or persons working with the CCC in the performance of said work, employee status that would extend to them the benefits afforded to permanent employees of Sponsor;

g. Emergency Services and Possible Delays:

i. The CCC is required to provide emergency services if directed by the Governor of the State of California pursuant to an Executive Order, the

Office of Emergency Services, Department of Forestry and other agencies charged with responding to emergencies throughout California arising from fire, flood, wind, and other natural and man-caused disasters.

ii. The CCC may be required to temporarily suspend or permanently cease work on projects due to required emergency response or emergency conditions. The parties agree that any delay in completing the work by the CCC due to response to an emergency shall be excused and costs incurred by the delay shall be the responsibility of the Sponsor;

iii. The resources of the CCC are limited and the public service conservation work of the CCC may be altered in priority from time-to-time. The parties agree that other than delays caused by the CCC's response to an emergency, all other delays by either party shall be excused and costs caused by delays shall be borne by the party incurring such costs.

h. All contracts relating to the construction or operation of a project shall contain a clause prohibiting discrimination and/or harassment against any person, employee or employee applicant engaged in the project work on the basis of sex, race, color, ancestry, religious creed, national origin, physical disability (including HIV and AIDS), mental disability, medical condition (e.g., cancer), age (over 40), marital status, and denial of family care leave;

i. Budget Contingencies:

i. It is mutually agreed that if the Budget Act of the current year and/or any subsequent years covered under this Agreement does not appropriate sufficient funds for the program, this Agreement shall be of no further force and effect. In this event, the State of California and the CCC shall have no liability to pay any funds whatsoever to Sponsor or to furnish any other considerations under this Agreement or related project paperwork and Sponsor shall not be obligated to perform any provisions of this Agreement or related project paperwork.

ii. If funding for any fiscal year is reduced or deleted by the Budget Act for purposes of this program, the State of California and the CCC shall have the option to either cancel this Agreement with no liability occurring to the State of California or CCC, or offer to an Agreement amendment to Sponsor reflecting the reduced amount.

j. Subject to the provisions herein, all remedies allowed by law are available to either party for enforcement of this Agreement. Any waiver of rights by either party or any matter relating to this Agreement shall not be deemed to be a waiver unless in writing and approved by both parties and shall not be a waiver to any other provision or matter relating to this Agreement;

k. If any part of this Agreement is found to be invalid the remainder of the Agreement shall continue in full force and effect;

l. Neither the CCC nor the Sponsor may assign this Agreement or any interest therein without the written consent of the other party;

m. No amendment or variation of the terms of this Agreement shall be valid unless made in writing, signed by the parties and approved as required. No oral understanding or Agreement not incorporated in the Agreement is binding on any of the parties;

n. This Agreement is governed by and shall be interpreted in accordance with the laws of the State of California;
o. This Agreement shall remain in effect unless terminated upon thirty (30) days written notice from either party; and
p. Each Party and its respective agents executing this Agreement warrants and represents that it has the full power and authority to execute, deliver and perform the obligations under this Agreement and that each Party's performance hereunder has been duly authorized by all requisite actions on the part of that Party.

DATE 4/27/17 DATE 4/28/17

Sponsor Information: ELIZABETH WELLS BRIAN MUELLER

Sponsor Name:	Sponsor Department:
EL DORADO IRRIGATION DISTRICT	
Address: 2890 MOSQUITO ROAD PLACERVILLE CA 95667	
Contact Person: PAMELA WILSON	Phone: 530-642-4074
Email Address: PWILSON@EID.ORG	

SIGNATURES

In Witness Whereof, the parties have agreed to the condition of this Agreement as of the date shown below.

Sponsor Representative Signature:	
Print Name: JIM ABERCROMBIE, GENERAL MANAGER	Date: 5/3/17

CCC District Director/Region Deputy Signature:	
Print Name: John Winder	Date: 5/9/2017

Reviewed & Approved as to Form on: 5/1/17

EID, Office of the General Counsel

STATE OF CALIFORNIA
AGREEMENT ADDENDUM
CCC-96A (REV. 12/02/2015) Page 1 of 3

CALIFORNIA CONSERVATION CORPS

Agreement #	Index#	CCC Work Code
	6619	R-17-6619-2647
(CCC Contract Officer Assigns)	(Center Index Code is Four digits)	(Center Project Manager Assigns)

A] The California Conservation Corps (CCC), agrees to provide crew labor for the project titled:

E.I.D Fuel Reduction

See CCC-58: Project Evaluation Form for details.

B] The term of this agreement shall be:
Agreement Start Date: March 1 2018
Agreement Expiration Date: June 30 2018
☐ Check here if multi-year

C] Sponsor agrees to reimburse the CCC for estimated costs in accordance with the Fiscal Summary. (Fiscal Year displays are shown on page 2 & 3.)

NOTE TO SPONSOR: Budget detail will not be provided on performance based contracts.

LABOR	Hours	Rate/Hr	Totals
CM Regular Time:	3600.00	$ 21.00	$ 75,600.00
CM Overtime:	0.00	$ -	$ -
Performance-Based Labor:			$ -
Staff BILLABLE Regular Time :			$ -
Staff Overtime :			$ 3,000.00
EXPENSES			
Equipment (greater than $5,000):			$ -
Tools (includes equipment less than $5,000):			$ -
Materials:			$ -
Vehicle Operations:			$ -
Consulting:			$ -
Other:			$ 2,000.00

D] The total amount payable by Sponsor to CCC under this agreement shall not exceed: **$ 80,600.00**

E] The CCC shall forward billing for labor and/or operating expenses with supporting documentation in triplicate to sponsor
☐ Monthly ☐ Quarterly ☐ At end of contract
Sponsor agrees to pay CCC within 50 days from receipt of bill.
Negotiated Advanced Payments: $ -

Sponsor	
Organization:	
Date:	
Signature:	
Print:	
Title:	
SPONSOR EMAIL ADDRESS	
SPONSOR MAILING ADDRESS	
SPONSOR BILLING ADDRESS:	

STATE OF CALIFORNIA	
California Conservation Corps	
Date:	
Signature:	
Print:	Dawne Bortolazzo
Title:	Administrative Chief
CCC DISTRICT VERIFICATION	
Date:	2/20/18
Signature:	Mark A Hanson
Print:	Mark A Hanson
Title:	Conservation Supervisor
FORWARD PAYMENTS TO:	
California Conservation Corps Attention: Accounting/Receivables 1719 24th Street, Sacramento Sacramento, CA 95816	

STATE OF CALIFORNIA
AGREEMENT ADDENDUM
CCC-96A (REV. 09/10) Page 2 of 3

CALIFORNIA CONSERVATION CORPS

First Fiscal Year Display			LABOR	Hours	Rate/Hr	Totals
	FROM:	March 1 2018	CM Regular Time:	3600.00	$ 21.00	$ 75,600.00
	TO:	June 30 2018	CM Overtime:	0.00	$ -	$ -
					Performance-Based Labor:	$ -
					Staff BILLABLE Regular Time :	$ -
					Staff Overtime :	$ 3,000.00
			EXPENSES			
					Equipment (greater than $5,000):	$ -
					Tools (includes equipment less than $5,000):	
					Materials:	$ -
					Vehicle Operations:	$ -
					Consulting:	$ -
					Other:	$ 2,000.00
					First Fiscal Year TOTAL:	**$ 80,600.00**

Second Fiscal Year Display			LABOR	Hours	Rate/Hr	Totals
	FROM:		CM Regular Time:	0.00	$ 21.00	$ -
	TO:		CM Overtime:	0.00	$ -	$ -
					Performance-Based Labor:	$ -
					Staff BILLABLE Regular Time :	$ -
					Staff Overtime :	$ -
			EXPENSES			
					Equipment (greater than $5,000):	$ -
					Tools (includes equipment less than $5,000):	$ -
					Materials:	$ -
					Vehicle Operations:	$ -
					Consulting:	$ -
					Other:	$ -
					Second Fiscal Year TOTAL:	**$ -**

Third Fiscal Year Display			LABOR	Hours	Rate/Hr	Totals
	FROM:		CM Regular Time:	0.00	$ 21.00	$ -
	TO:		CM Overtime:	0.00	$ -	$ -
					Performance-Based Labor:	$ -
					Staff BILLABLE Regular Time :	$ -
					Staff Overtime :	$ -
			EXPENSES			
					Equipment (greater than $5,000):	$ -
					Tools (includes equipment less than $5,000):	$ -
					Materials:	$ -
					Vehicle Operations:	$ -
					Consulting:	$ -
					Other:	$ -
					Third Fiscal Year TOTAL:	**$ -**

Fourth Fiscal Year Display			LABOR	Hours	Rate/Hr	Totals
	FROM:		CM Regular Time:	0.00	$ 21.00	$ -
	TO:		CM Overtime:	0.00	$ -	$ -
					Performance-Based Labor:	$ -
					Staff BILLABLE Regular Time :	$ -
					Staff Overtime :	$ -
			EXPENSES			
					Equipment (greater than $5,000):	$ -
					Tools (includes equipment less than $5,000):	$ -
					Materials:	$ -
					Vehicle Operations:	
					Consulting:	$ -
					Other:	$ -
					Forth Fiscal Year TOTAL:	**$ -**

The total amount payable by Sponsor to CCC under this agreement shall not exceed:	**$ 80,600.00**

State of California
California tural Resources Agency
CALIFORNIA CONSERVATION CORPS PROJECT EVALUATION
R-17-6619-2647
EID Fuel Reduction

Project Data

Project Title: EID Fuel Reduction

Project Number: R-17-6619-2647

Center Information: 6619 - Tahoe Center
Contract Information: -
Project Description:
CCC will perform the work of weed eating and removal of small brush and trees from around and within the perimeter of EID facilities for the purpose of creating more defensible space in the event of potential encroaching wild fires. All materials will be either cut and broadcast or chipped and broadcast on EID sites.

Sponsor Information

Agency Name: EL DORADO IRRIGATION DISTRICT **Agency Code:** 65013

Mailing Address	Mailing City	Mailing State	Mailing ZIP Code
7225 HWY 50	Pollock Pines	CA	95726
7225 HWY 50	Pollock Pines	CA	95726

Sponsor Contact Information:

Contact type	Title	First name	Last name	Phone number	Email address
Sponsor Representative	Hydro Ops & Maintenance Supervisor	Matt	Heape	(530) 295-6757	mheape@eid.org
Technical Advisor		Matt	Warden	(530) 391-5657	mwarden@eid.org

Estimate Information

Estimated Number of Hours: 3,600

Estimated Start and End Dates: 3/12/18-6/30/18

Work Site Information:

Address	City	State	ZIP code	Geolocation latitude	Geolocation longitude
		CA	95726		

Direction to site location	Special instructions

Fiscal Summary

Total OE&E	Total CM labor amount	Total fiscal summary amount
$2,000.00	$75,600.00	$80,600.00

Equipment, Materials and Labor

Sponsor Supplied Materials, Equipment and Labor:

Materials: None

Equipment: None

Labor: Clear instruction provided clear expectations, follow up instruction or approval of work completed.

BY SIGNING THIS DOCUMENT:

The CCC Representative agrees to the following:

- A Sponsor Agreement (CCC 96 or, where applicable, an Inter Agency Agreement or other Master Agreement) is on file at Headquarters (HQ).
- If the Sponsor is a non-profit entity, a Private Property/Sponsor Authorization form has been submitted to HQ.
- If the Sponsor is a for-profit entity, a Private Property/Sponsor Authorization form has been submitted to HQ.
- The project conforms to the CCC's Injury and Illness Prevention Program (IIPP).
- The signing CCC Representative has the authority to enter into a contractual agreement of this amount with the Sponsor.

The Sponsor Representative agrees to the following:

- Hazardous Materials
  - If there are hazardous materials present, the Sponsor has provided the location, identity, and amounts of any hazardous substances at the worksite and provided all Material Safety Data Sheets (MSDS) for hazards that are present at the worksite.
    - OR
  - To the best knowledge of the Sponsor, the worksite is free of any known hazardous materials.
- All applicable local, state, and federal permits, approvals, and clearances have been obtained.
- The Sponsor agrees to reimburse the CCC for estimated costs in accordance with the fiscal details shown in this document.
- The signing Sponsor Representative has the authority to enter into a contractual agreement of this amount with the CCC.

Sponsor Representative Approves the **Scope of Work** of the project:

State of California
California Natural Resources Agency
CALIFORNIA CONSERVATION CORPS PROJECT EVALUATION
R-17-6619-2647
EID Fuel Reduction

Print Name: _____

Title: _____

Signature: _____

Date: _____

Sponsor Representative Approves the **Fiscal Details** of the project:

Print Name: _____

Title: _____

Signature: _____

Date: _____

CCC Representative:

Print Name: Mark Hansen

Title: Conservation Corps Supervisor

Signature: Mark Hansen

Date: 2/20/18

CCC Representative:

Print Name: John Martinez

Title: District Director

Signature: [signature]

Date: 2/20/18

Sierra Site Services LLC
1878 Union Ridge Rd
Placerville, CA 95667 US
SierraSiteServices@comcast.net

ESTIMATE

ADDRESS
Matt Heape
El Dorado Irrigation Dist
2890 Mosquito Rd
Placerville, Ca 95667

ESTIMATE # 1003
DATE 02/01/2018

DATE	ACTIVITY	QTY	RATE	AMOUNT
02/01/2018	**Shower-Toilet Combination** Combination Trailer 2 Showers, 2 Toilets, 2 Sinks 1 week (7 days) Rental	1	2,500.00	2,500.00T
02/01/2018	**Shower-Toilet Combination** Combination Trailer 2 Showers, 2 Toilets, 2 Sinks Additional Day Rental	1	357.00	357.00T
02/01/2018	**Delivery Charge** Delivery Charge	1	200.00	200.00
02/01/2018	**Pick Up Charge** Pick Up Charge	1	200.00	200.00

SUBTOTAL	3,257.00
TAX (7.25%)	207.13
TOTAL	**$3,464.13**

Accepted By

Accepted Date

Notice of Exemption

PLEASE POST – DO NOT REMOVE BEFORE 04/20/2018

To: *County Clerk*
County of El Dorado
360 Fair Lane
Placerville, CA 95667

From: *El Dorado Irrigation District*
2890 Mosquito Road
Placerville, CA 95667

Project Title: Interagency Agreement with California Conservation Corps for *Fuel Reduction Activities at EID facilities*

Project Location - Specific: *Various District Properties (See Attached Maps)*

Project Location - City: *Various* ***Project Location - County:*** *El Dorado County*

Description of Project: The proposed fuel reduction activities covered by the agreement are exempt from the California Environmental Quality Act (CEQA) under CEQA Guidelines Section 15304(i) (Minor Alterations to Land, Fuel Management Activities). The proposed activities would remove vegetation near and around fence lines at the identified facilities to guard against the risk of wildfire. The proposed activities would occur within a minimum of 30 feet of structures located at District facilities and may involve up to 100 feet if the fire official determines that extra high fire conditions warrant the greater clearance distance. Pursuant to the Native Plant Protection Act (Section 1913(c) of the California Fish and Game Code et. seq.) the District will notify the California Department of Fish and Wildlife 10 days prior to any fuel reduction activities at applicable sites that have the potential to affect California rare or endangered plants.

Name of Public Agency Approving and Carrying Out Project: *El Dorado Irrigation District*

Exempt Status: *(check one)*

- ☒ *Categorical Exemption – Class 4– Minor Alterations to Land (CCR, Title 14, Sec. 15304 (i))*
- ☐ *Statutory Exemption – Declared Emergency (CCR, Title 14, Sec. 15269(a);*
- ☐ *Statutory Exemption – Emergency Project (CCR, Title 14, Sec. 15269(b)(c);*
- ☐ *Statutory Exemption – Ministerial (CCR, Title 14, Sec. 15268);*
- ☐ *Statutory Exemption – California Public Resources Code Section 21080.21 and Other Statutory Exemption (CCR, Title 14, Sec 15282(k))*
- ☐ *Other Exemption - [Title] (CCR, Title 14, Sec)*

Reasons why project is exempt: *The Project involves fuel management activities to address hazardous fire conditions at District facilities.*

Lead Agency Contact Person: *Bret Sampson* ***Area Code/Telephone/Extension:*** *(530) 642-4058*

Signature: _____ ***Date:*** _____
Name: *Bret Sampson*
Title: *Environmental Review Analyst*

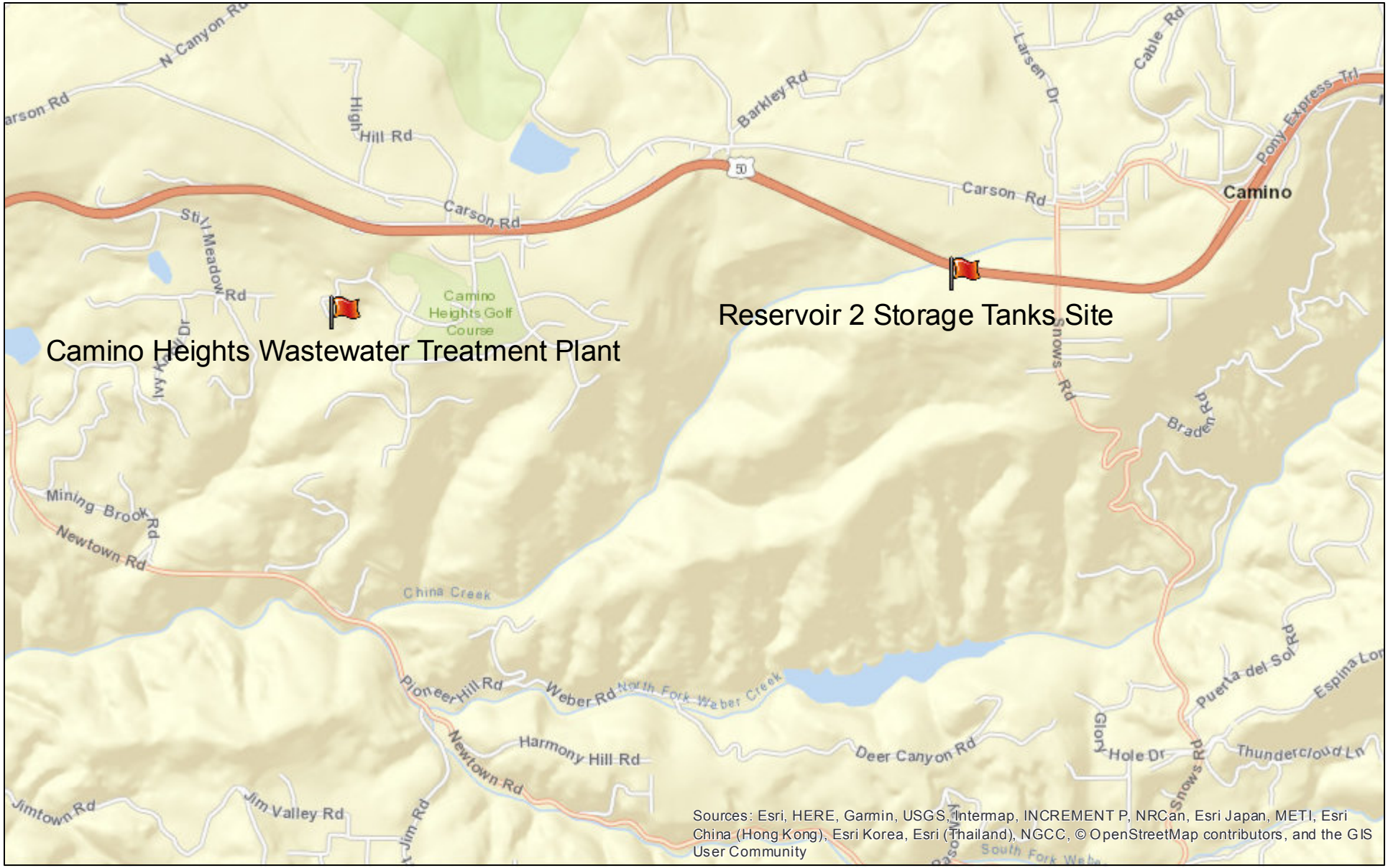
☒ *Signed by Lead Agency*

Project Locations Map

Author: EID
3/5/2018 3:02:19 PM

WARNING: No accuracy of map implied until field checked by EID. Exact pipe locations must be field verified.

Project Locations Map



Author: EID
3/5/2018 3:08:08 PM

WARNING: No accuracy of map implied until field checked by EID. Exact pipe locations must be field verified.

Project Locations Map

Author: EID
3/5/2018 3:11:03 PM

WARNING: No accuracy of map implied until field checked by EID. Exact pipe locations must be field verified.

EL DORADO IRRIGATION DISTRICT

Subject: Consideration to authorize funding approval for District Capital Improvement Plan (CIP) Projects: FERC C46-49 Recreation Resource Management, Project No. 06098H in the amount of $20,000.

Recent Board Action

November 13, 2017 – The Board adopted the 2018-2022 CIP, subject to available funding.

Board Policies (BP), Administrative Regulations (AR) and Board Authority

Staff advised that each CIP project would be presented to the Board for funding approval.

Summary of Issue

Board approval is required to authorize CIP funding prior to staff proceeding with work on the projects.

Staff Analysis/Evaluation

The CIP projects identified in Table 1-1 on page 2 requires immediate funding. Some funding requests are in excess of the original CIP plan estimates. The increase is related to the refinement of capitalized EID labor cost as the project design was completed.

Funding Source

The primary funding source for the District CIP project is listed in Table 1-1. Table 1-1 also lists the project currently in progress and the amount of funding requested.

The CIP project description for this project is also attached for review. (Attachment A)

Table 1-1
CIP Funding Request

	Project Name and Number	2018-2022 CIP Plan[1]	Funded to Date	Actual Costs to date[2]	Amount Requested	Funding Source
1.	**FERC C46-49 Recreation Resource Management 06098H**	**$299,070**	**$284,888**	**$274,415**	**$20,000**	**53% Water FCC's 47% Water rates**
	TOTAL FUNDING REQUEST				**$20,000**	

[1] Includes all existing costs plus any expected costs in the 5 year CIP Plan.
[2] Actual costs include encumbrances.

The following section contains a brief breakdown and description of the project in the table. For complete description of the CIP project see Attachment A.

CIP Funding Request

Project No.	06098H	**Board Date**	03/12/2018
Project Name	FERC C46-49 Recreation Resource Management		
Project Manager	Hawkins		

Budget Status	**$**	**%**
Funded to date	$ 284,888	--
Spent to date	$ 274,415	96%
Current Remaining	$ 10,473	4%

Funding Request Breakdown	**$**
Capitalized labor	$ 20,000
Total	$ 20,000

Funding Source
53% Water FCC's 47% Water rates

Description
This project is a mandatory requirement pursuant to United States Forest Service (USFS) Section 4(e) Condition Nos. 46 - 49 Recreation Resource Management of the FERC Project No. 184 license: Condition No. 46 – Implementation Plan requires a recreation implementation plan be developed by EID in coordination with the FS. Condition No. 47 - Recreation Survey requires EID to conduct a Recreational Survey and prepare a Report on Recreational Resources every 6 years. Condition No. 48 – Forest Service Liaison requires EID and FS each provide an individual for liaison whenever planning or construction of recreation facilities, other major Project improvements, and maintenance activities are taking place within the National Forest. Condition No. 49 - Review of Recreation Developments requires EID to meet with the FS at least every 6 years to review all recreation facilities and areas associated with the Project and to agree upon necessary maintenance, rehabilitation, construction, and reconstruction work needed and its timing and develop a 6-year schedule for maintenance, rehabilitation, and reconstruction work. Funding is requested in 2018 for staff time to consult with FS on the results of the Recreation Survey and conduct the Review of Recreation Developments.

Board Decisions/Options:

Option 1: Authorize funding approval for District Capital Improvement Plan (CIP) Projects: FERC C46-49 Recreation Resource Management, Project No. 06098H in the amount of $20,000.

Option 2: Take other action as directed by the Board.

Option 3: Take no action.

Staff/General Manager Recommendation

Option 1.

Support Documents Attached

Attachment A: Capital Improvement Project Description and Justifications.

Tony Pasquarello
Finance Manager

Greg Hawkins
Parks and Recreation Manager

Margaret P. Washko, P.E.
Operations Director

Mark Price
Finance Director (CFO)

Jim Abercrombie
General Manager

2018 CAPITAL IMPROVEMENT PLAN Program: FERC

Project Number: 06098H

Project Name: FERC: C46 thru C49 Recreation Resource Management

Project Category: Regulatory Requirements

Priority: 1 **PM:** Hawkins **Board Approval:** 11/13/17

Project Description:

Required by the new FERC License, Settlement Agreement, and the USFS 4(e) Conditions. Conditions 46-49: Condition No. 46 – Implementation Plan. A recreation implementation plan shall be developed by the licensee in coordination with the FS within 6 months of license issuance. Condition No. 47 - Recreation Survey. The licensee shall conduct a Recreational Survey and prepare a Report on Recreational Resources that is approved by the FS every 6 years from the date of license issuance. Condition No. 48 – Forest Service Liaison. The FS and the licensee shall each provide an individual for liaison whenever planning or construction of recreation facilities, other major Project improvements, and maintenance activities are taking place within the National Forest. Condition No. 49 - Review of Recreation Developments. The FS and the licensee shall meet at least every 6 years to review all recreation facilities and areas associated with the Project and to agree upon necessary maintenance, rehabilitation, construction, and reconstruction work needed and its timing, as described in Conditions No. 49 and 50. Following the review, the licensee shall develop a 6-year schedule for maintenance, rehabilitation, and reconstruction.

This is a mandatory requirement of the October 18, 2006 FERC Order Issuing New License

Basis for Priority:

EID would not be able to comply with the FERC License, Settlement Agreement and USFS 4(e) Condition requirements.

Project Financial Summary:			
Funded to Date:	$ 284,888	Expenditures through end of year:	$ 274,070
Spent to Date:	$ 229,935	2018 - 2022 Planned Expenditures:	$ 25,000
Cash flow through end of year:	$ 44,135	Total Project Estimate:	$ 299,070
Project Balance	$ 10,818	Additional Funding Required	$ 14,182

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Survey						$ -
Reporting	$ 25,000					$ 25,000
						$ -
TOTAL	$ 25,000	$ -	$ -	$ -	$ -	$ 25,000

Funding Sources	Percentage	2018 Amount
Water FCCs	53%	$7,516
Water Rates	47%	$6,665
		$0
Total	100%	$14,182

Funding Comments:

EL DORADO IRRIGATION DISTRICT

Subject: Consideration to award a professional services contract to Sage Engineering in the not-to-exceed amount of $208,955 for design of the Flume 47C Replacement Project, and authorize funding of $393,955; Project No. 17026.

Previous Board Actions

November 13, 2017 – The Board adopted the 2018-2022 CIP, which included this project subject to funding availability.

Board Policies (BP), Administrative Regulations (AR) and Board Authority

BP 3060, AR 3061.04: contracts greater than $50,000 must be approved by the Board.

BP 8010: The District maintains and operates its hydroelectric generating facilities in a safe, efficient, and environmentally responsible manner, and in compliance with all applicable federal and state permits and regulations, the terms of the Federal Energy Regulatory Commission (FERC) license, and all related agreements.

BP 8013: The District shall operate and maintain its hydroelectric system of ditches and powerhouse in a safe and cost-effective manner, in compliance with regulatory requirements and industry standards.

Summary of Issue

Flume 47C is an elevated wooden flume, approximately 150 feet in length, and was constructed by PG&E in the mid 1950's. It was repaired in 1990, and in 2016 District construction crews made interim repairs to ensure the continued safe operation until a complete replacement of the flume can occur. This agenda item requests Board approval to award a professional services contract and authorize funding to proceed with the design and environmental review for the Flume 47C Replacement Project.

Staff Analysis/Evaluation

Flume 47C is located south of Highway 50 near Fresh Pond and was originally constructed by PG&E in the 1950's to replace a section of canal that was destroyed due to a landslide.

The District believes PG&E repaired Flume 47C in 1990, but the full extent of the work that was done is unknown. In 2016, District crews buttressed the cross sills and strapped and shimmed the posts to provide additional support to the flume and extend its serviceable life until a full replacement could be completed. In 2017 the flume was relined to minimize the leakage that was occurring. Crews had to attach the new plywood to flume posts with lag bolts because the existing liner boards were so deteriorated that the new plywood could not be nailed to the existing liner boards.

As currently envisioned, the Flume 47C replacement will be constructed in one construction season during the 2019 fall maintenance outage running from October through mid-December. Staff anticipates replacing the wooden flume with a new in-ground concrete canal on a mechanically stabilized earth bench.

As part of the design the consultant will also evaluate access alternatives to the project site, including improving the bench from Old Carson Road to the flume or installing bridge access along the road that parallels the canal to provide construction and maintenance access.

Request for Proposals
A Request for Proposals (RFP) was released on January 8, 2018 and also emailed to the Engineering On-Call list. The following two proposals were received:

Proposal Fee Summary

Engineering Firm	Fee Proposal
Sage Engineers	$208,955
GHD	$294,591

Proposal Evaluation and Ranking
The proposals were measured against the following criteria established in the RFP:

- Responsiveness to RFP
- Experience and expertise on similar projects
- Project team makeup and capabilities
- Rates and charges, affordability and reasonableness of cost for expertise required to meet project needs
- Client references

Sage's proposal received the highest overall score, primarily due to its lower proposed fee. Reference checks confirm other agencies have had satisfactory experiences with Sage. Based on relevant experience, a strong team and reasonable rates, staff is recommending the Board award a professional services contract to Sage.

Environmental Review

The District is evaluating California Environmental Quality Act (CEQA) review and regulatory permitting requirements for the Project. The appropriate level of CEQA review and regulatory permitting requirements will continue to be evaluated as the design of the Project is further developed.

Funding

Funding for the project will be from 53% FCCs and 47% water rates. Staff is requesting funding in the amount of $393,955 for the Flume 47C Project as summarized below:

Flume 47C Funding Requirements

	Amount
Sage – Design, surveying, geotechnical, regulatory support	$208,955
Capitalized Labor – Engineering, environmental staff support	155,000
Environmental review / permitting professional services	30,000
TOTAL	**$393,955**

The 2018-2022 CIP indicates Flume 47C was to have studies/planning and design done in 2019 for $107,500. At the time this project was analyzed, it was anticipated that District construction crews could perform the work and therefore would require a scaled down plan set. However,

after further review of the project there are additional items that need to be considered in the scope such as removal of the adjacent spillway, the expected geotechnical finding of uncompacted fill, evaluation of access improvements to perform the work, and the potential need for additional permits associated with the replacement project. Given these factors and anticipated hydro staff workload during the 2019 outage, formal bidding of the project will be necessary. In order to maintain the scheduled replacement in 2019, the design, environmental review and permitting work needs to begin in 2018.

Board Decisions/Options

Option 1: Award a professional services contract to Sage Engineering in the not-to exceed amount of $208,955 for design of the Flume 47C replacement, and approve funding of $393,955; Project No. 17026.

Option 2: Take other action as directed by the Board.

Option 3: Take no action.

Staff/General Manager's Recommendation

Option 1

Supporting Documents Attached

Attachment A: Sage proposal
Attachment B: CIP summary

Cary Mutschler
Senior Civil Engineer

For Elizabeth D. Wells, P.E.
Engineering Manager

Brian Mueller, P.E.
Engineering Director

Margaret P. Washko, P.E.
Operations Director

Mark Price
Finance Director

Elizabeth Leeper
Deputy General Counsel

Jim Abercrombie
General Manager

TRANSMITTAL LETTER

February 12, 2018

Cary Mutschler
Senior Civil Engineer
El Dorado Irrigation District
2890 Mosquito Road
Placerville, CA 95667

Re: Proposal for Professional Services – RFP18-01
Flume 47C Replacement – Project No. 17026.01
El Dorado County, CA

Dear: Mr. Mutschler:

SAGE Engineers, Inc. (SAGE) has formed a team of professionals, which includes Gasch Geophysical Services, Inc., Gulf Shore Exploration and Testing Services, Inc. and CBC Geospatial Consulting, Inc., who have the unique and solid experience necessary to assist El Dorado Irrigation District (District) with the Flume 47 Replacement Project. Specifically, the design to remove an existing timber flume and replace it with a new mechanically stabilized earth (MSE) bench and air-placed concrete (shotcrete) lined canal, represents a significant portion of our team's engineering investigation and design expertise.

Our project team has carefully reviewed the comprehensive Scope of Work (SOW) described in the Request for Proposals (RFP18-01) dated January 8, 2018, and Addendum 1 dated February 6, 2018, and is prepared to support the District in completing the design tasks and maintaining the project schedule. Moreover, the SAGE team is experienced at meeting regulatory compliance requirements and maintaining safe working practices while on the job site.

Our team identified possible efficiencies in tasks identified in the Statement of Work (SOW), in part A of the proposal. These efficiencies have been identified in bold and we would be pleased to discuss these possible cost savings with the District if awarded the project. As matter of course for the project we expect to continue to find ways to save the District both time and money, and further improve the project as a whole.

SAGE Team Brings Added Value to Flume 47C Replacement Project

District Knowledge & Experience – As the Project Manager for this contract, Amy Deakyne, PE, has worked extensively with the District since 2006. She specializes in structural design and project management of water conveyance facilities. Ms. Deakyne presently services as Project Manager on the District's Echo Lake Conduit Bridge and previously served as the Project Engineer on several District projects, including Flume 51 and Flume 41 on the El Dorado Canal, to name a few.

Short Duration Outages – SAGE has extensive experience in short-duration, fixed-end-date outages. For the last five years, we have been the Engineer-of-Record for annual canal lining replacement projects on the Lower Drum canal system. The projects have replaced 2,000 to 3,000 feet of canal liner per year, on average, along with construction of associated site improvements, during the five-week long annual outages. SAGE has proven our ability to successfully carry out challenging projects on demanding schedules. We understand that diligent design, clear detailing, thorough constructability review, comprehensive specifications, expedient review response, and that frequent field observations are critical to making fast-paced outages a success.

Remote Access – Constructability challenges with linear access sites are common among many of the issues we have dealt with on projects we've worked on in the foothills' hydropower systems. Whether using our specialized rope access capabilities to access the site, evaluating helicopter access limitations and costs, or performing constructability review, we understand the unique challenges inherent to these sites.

Knowledge of Local Geologic/Geotechnical Conditions – SAGE has provided on-call geotechnical engineering and structural engineering services to Placer County Water Agency and Turlock Irrigation District for over 12 years, and PG&E for nearly 7 years. Our local knowledge of the geologic conditions includes projects ranging from the Tahoe basin to the Sacramento Valley with extensive work in the Sierra Foothills. We have performed investigations and structural design for hard rock sites and the variable metamorphic terrains of the Sierra Nevada and the sedimentary deposits of the lower foothills. SAGE will use this extensive knowledge during the early phases of the project to suggest efficiencies to the District for the prescribed geotechnical/geologic investigation.

Small Business Advantage – SAGE, Gasch Geophysical Services, and CBC Geospatial Consulting, are all Certified California Small Businesses (SBEs). Doing business with an SBE may be beneficial to the District in areas of compliance.

The SAGE team is immediately available and excited to begin work with the District's team. By demonstrating our exceptional local knowledge, experience, and expertise throughout the life of this contract, we're confident you will find that we are the ideal partner to assist with the Flume 47 Replacement Project.

If you have any questions, please do not hesitate to contact us.

Sincerely,
SAGE Engineers, Inc.

Darren A. Mack, PE, GE
Vice President/Principal Engineer
(916) 677-4770
dmack@SAGEengineers.com

Amy R. Deakyne, PE
Senior Engineer
(916) 677-4766
adeakyne@SAGEengineers.com

Appendices:
Resumes
Budget Backup

PART A. CONTENT

INTRODUCTION

The El Dorado Irrigation District's (District) upgrading of important infrastructure is exactly how our SAGE Engineers, Inc. (SAGE) team has focused its expertise in helping Northern California water districts, cities, counties and other public agencies for over 20 years. Based on years of successful canal design and construction in the foothills of the Sierra Nevadas and our understanding of geologic/geotechnical constraints anticipated at the project site, SAGE is more than qualified to provide the District with a designed replacement of Flume 47C:

- Our team's knowledge of the District's standards will be complimented by SAGE's comprehensive water infrastructure design experience and a highly-experienced, professional, and qualified project team who will produce a constructible and cost-effective design for the District.
- SAGE has proven we can successfully carry out challenging projects on demanding schedules in similar terrain.
- Remote sites often require thinking outside the box. SAGE has expertise in considering constructability for difficult to access locations. We anticipate equipment or materials, such as fiber-reinforced concrete, that could be used to improve constructability in any location by reducing the amount of reinforcing steel brought to the site.
- SAGE provides engineering services for emergency projects requiring immediate response, evaluation, and repair. For this reason an Emergency Response Hotline has been set up where we are available 24/7 to react to emergency situations and our staff is dedicated to working under accelerated schedules for emergencies and outages in order to help owners quickly restore services. Our emergency phone number is (844) 452–SAGE.
- Our team has extensive knowledge of the geologic conditions from the Tahoe Basin to the Sacramento Valley with widespread work in the Sierra Foothills. We have performed investigations and structural design for water conveyance systems and hydroelectric projects under FERC guidelines.

SAGE is pleased to submit the following proposal to provide Professional Services for Flume 47C Replacement to the District. Our proposal has been prepared in accordance with the RFP 18-01, Project No. 17026.01 Request for Proposals (RFP) dated January 8, 2018, and Addendum 1 dated February 6, 2018.

SECTION 1 – SCOPE OF WORK

Project Understanding

The District owns and operates over 22 miles of canal and flumes along Highway 50. The District's FERC Hydroelectric Project No. 184 (Project 184) traverses steep walls of the South Fork of the American River and delivers water to the District's powerhouse which is capable of generating 21 MW power.

The District's Flume 47C is approximately 150 feet of elevated wood flume, located just south of Fresh Pond below an unpaved residential access road. The flume was constructed to span a small draw/past washout area through the canal berm that drains into the same outlet as the existing spillway structure. The SAGE team understands the District's desire to remove the timber flume, as well as existing lined canal and a spillway, and replace this section with a new air-placed concrete (shotcrete) canal. The canal replacement will extend approximately 100 feet upstream and 25 feet downstream for Flume 47C to mitigate localized hydraulic inefficiencies. While not the only potentially viable option for replacement, SAGE expects the most likely solution involves constructing a new mechanically stabilized earth (MSE) bench to replace the 150-foot span, including drainage features to accommodate the flows from the washout/draw as well as the uphill drainage.

Access is important to the District, not only during construction, but also to allow for future maintenance along the canal. Improvements to the residential access road and development of permanent access to the canal bench will be included in this scope of work. With respect to the latter, SAGE noted that there may be an existing access road extending from the residential access road approximately 500' downstream of the site. This road extends down towards the canal but has become overgrown with vegetation and trees. As part of this project, SAGE will work with the District to identify whether this is a viable access point that can be reestablished. If not, we will work with the District to identify other potential options for access. In addition, the District has indicated a desire to relocate an above-grade portion of a 6" waterline that spans over the canal, and which provides water from SMUD to the Fresh Pond community, to a below-grade pipeline under the canal. As this pipe presents a possible conflict to construction access, this might be added to the scope of work as an Add Alternate.

Consultant Services

1. Meetings and Site Visits:

The SAGE team will organize, prepare for and facilitate meetings and site visits throughout the duration of the project. These tasks include the following:

a. Upon issuance of the notice to proceed, key members from our SAGE team will attend one 3-hour kickoff meeting at the District's Headquarters.
b. To ensure project coordination, our SAGE Project Manager, Amy Deakyne, will attend design review meetings for 30%, 50%, 75% and 90% reviews totaling four (4) hours each. SAGE will attend 99%, and 100% design review meetings totaling two (2) hours each. These meetings will be held at the District's headquarters. At least one week prior to each meeting, we will prepare agendas for distribution and approval. Meeting notes will be submitted within one week for District approval.

c. Our team anticipates visiting the project site for a total of four (4) site visits at five (5) hours each.

Deliverables: Electronic copies of meeting agendas, and meeting minutes.

2. Progress Reports and Schedules:

SAGE will appoint a dedicated Project Manager responsible for the following:

a. Each month SAGE will prepare a report describing, in sufficient detail, the work completed during the previous month according to task and coinciding with that month's billing period. Major accomplishments and problems having the potential to affect the quality, or schedule of deliverable will be included. The progress report will also include District action items, team action items, budget expenses vs. anticipated, and anticipated upcoming work.

b. Our Project Manager will provide and maintain a design schedule for the project. This schedule will be kept up to date and submitted each month with our monthly invoice. The schedule will be prepared in Microsoft Project, and will include all phases of the project from Planning though Construction.

Deliverables: Electronic copies of progress reports and updated schedule will be included with monthly invoices.

3. Field Topographic and LiDAR Surveys

Following the project kickoff meeting our team will conduct a field topographic survey. This task includes the following:

3.1 Topographic Survey of Flumes 47C

a. Our team will obtain pertinent record information for control surveys, topographic surveys, and right of way engineering surveys for the properties within the project corridor. Our team will perform control surveys to precisely fit the recently completed LiDAR surveys conducted for the District. All supplemental topographic surveys, right of way engineering monument ties, landnet generation, and hard copy mapping will be tied from the control established in this effort and will later serve as construction control. A minimum of three project control points shall be listed and shown on the base sheets. A table shall be given on the topographic survey listing all control points with their graphical representation giving northing, easting, elevation, and description.

b. Our team will conduct a field topographic survey as needed to augment the existing LiDAR survey for mapping and design. This survey will include trees greater than 6" DBH within the FERC boundary; borrow sites, FERC Boundary, construction areas, and any feature that was not picked up clearly with the LiDAR survey. Trees that require removal will be numbered and marked in the field and shown on the drawings; Post process field data and incorporate data into the LiDAR base mapping.

c. After conducting research of surveys and deeds, our team will build a land net from record data, sources of which include: the El Dorado County Assessor's Parcel Maps; Records of Surveys; Parcel Maps; Final Subdivision Maps; deeds; and preliminary title reports. Ties made to legal survey evidence during the course of conducting the topographic survey will enable incorporating the record land net information into the base mapping for "preliminary" right of way analysis. We will digitally incorporate the land net of record into the existing base mapping, enabling the design team to delineate areas where right of way acquisitions will be, if necessary. Right of way engineering acquisition documents will then be produced from the final land net resolution.

Deliverables: A comma-delimited ASCII point file in Point, Northing, Easting, Elevation, Description format of points gathered in the field together with an accompanying control diagram. Digital terrain model composed from terrestrial LiDAR scanning and topographic mapping with planimetrics compiled at a scale of 1" = 40' with 1-foot contour interval for the project in AutoCAD Civil 3D 2016 format, Three (3) copies in 11x17 format and one (1) copy in 24x36 format of the project basemapping will be provided to the District. Digital incorporation of land net compiled from field ties and record data into project basemapping with right of way data on separate layer. List of affected properties including assessor's parcel numbers, owner's name, owner's address, parcel address, and a map locating the affected parcels relative to the proposed project limits. This Scope of Work assumes a level of effort to write and prepare a total of one (1) legal description with 8 ½" x 11" plat for right of way acquisition including: 1 draft submittal, 1 set of written comments, and 1 final submittal.

Assumptions: The above scope of work does not include the following services, which if deemed necessary at a later date, could be added by an amendment to this proposal. Potholing of utilities; Preparation and/or filing of a Record of Survey; Right of way negotiations or landowner meetings; nor Reconciliation of boundary disputes, conflicts, or clouds on title of any adjoining parcels.

4. Geotechnical Investigations

SAGE will perform a geotechnical investigation in conformance with the RFP requirements that will inform the design and construction of the project. The anticipated primary potential geotechnical concerns associated with the project are stability of the slope in the vicinity of the project site; subgrade strength for wall or structure support; depth to and excavatability of the bedrock; existing soil moisture conditions; and the acceptability of the existing on-site soils for use as wall backfill. The findings of the investigation will be documented in a report that will also be provided to the contractor as part of the bid documents.

This section summarizes the proposed investigation as it is outlined in the RFP, as we understand the District is requesting this particular scope to allow them to make direct comparisons between consultants. However, based on our observations during the pre-bid walk, it is our opinion that some efficiencies can be realized in the investigation. For example, it may be possible to reduce or eliminate the seismic refraction survey from the scope as weathered bedrock is exposed on the upstream side of the existing flume and is likely relatively shallow on the downstream side such that shallow exploration can locate the bedrock surface. Additionally, given the exposure, rippability of the bedrock – a common objective of performing a seismic refraction survey – does not appear to be an issue. When awarded the project, SAGE will work with the District to finalize the geotechnical scope and the associated cost impacts. The geotechnical tasks to be provided are presented below:

4.1 Field Investigations

a. Prior to conducting the field investigation, SAGE will perform the following tasks:

- Review available regional geologic mapping and geotechnical data to develop an understanding of the anticipated surface and subsurface conditions and to identify project geotechnical constraints.
- Review available historical aerial photographs.
- Prepare a subsurface exploration plan, submitted to the District, for discussion and to finalize the geotechnical scope.
- Perform a site reconnaissance to mark the proposed exploration areas with white paint and stakes, and notify Underground Service Alert (USA) as required by law and in accordance with our Gold Shovel certification.
- Review available published geotechnical data applicable to the project.

b. A SAGE engineer or engineering geologist will conduct a field investigation to identify the surface and subsurface soil and bedrock conditions in the area of the proposed project, as well as at the potential borrow site. For purposes of this proposal, we have assumed that the field investigation will comprise discrete borings and seismic refraction methods, performed in a single site visit. The following tasks are anticipated:

- Perform a site reconnaissance to observe and map the existing conditions, including the bedrock exposures on the site, and areas of potential instability, if any.
- Conduct a field exploration program to sample the subsurface soils and measure depth to bedrock by excavating a minimum of three (3) test holes to an approximate depth of 10 to 15 feet using a hand auger and dynamic penetrometer.
  - Two test holes will be completed from the top of the berm. The other test hole will be completed at the native ground surface at the toe of the berm.
  - The dynamic penetrometer test (DPT) consists of a 1-inch-diameter rod with a 1.1-inch diameter steel cone that is driven into the ground using a 35-lb safety hammer with an 18-inch manual drop. The blows required to drive every 10-centimeter rod increment are recorded and can be converted to equivalent SPT N-values.
  - Obtaining samples using a slide hammer equipped with Shelby tubes and by collecting bag samples.
  - The soils will be classified using the Unified Soil Classification System.
- Visit the potential borrow site at the SPI staging area to collect representative samples of the existing soil stockpiles.

4.2 Field and Laboratory Tests

The samples obtained from the field investigation, including from the proposed borrow site, will be returned to the office for an in-house review by a California-licensed Geotechnical Engineer to confirm or revise the field classifications (to be included as USCS), refine the field logs, and select soil samples for testing. Laboratory testing is anticipated to include the following: grain size/sieve analysis, Atterberg limits, strength testing of soil and rock (if a suitable sample can be obtained), moisture content/dry density, compaction curve, and corrosion potential (pH, minimum resistivity, sulfates, and chlorides).

4.3 Seismic Refraction Studies

SAGE will retain Gasch Geophysical Services, Inc. (GGSI) to conduct a geophysical (seismic refraction) survey to provide a detailed subsurface topographic profile, including the depth to bedrock, along the length of the project. If we move forward with the geophysics, GGSI is proposing an alternative approach that will result in higher resolution data to be collected in the near-surface, thereby generating a more precise subsurface topographical section than would be possible using the minimum specifications in the RFP.

- GGSI will acquire approximately 552 lineal feet (split into three lines approximately 184 foot each) of refraction seismic data. Exact line locations are to be field determined, taking into account accessibility and safety, and will be recorded using a handheld GPS device.
- GGSI is proposing to use 45 active geophone stations, spaced at 4-foot intervals, with shot points located 4 feet off the ends of each line and between each successive geophone station (4-foot intervals). This configuration results in a maximum resolution of 2 feet in the near surface, which is achieved on every shot except those off the end of the line (which are at 4-foot resolution by design).
- GGSI will process the seismic refraction data using the Rayfract® version 3.34 software, correlate the data to the subsurface information gathered by SAGE during the field investigation, and prepare a report of the findings. The report will be attached as an appendix to the Geotechnical Investigation and will include a color-coded seismic velocity (in ft/s) cross-section of the subsurface profile for each refraction line.

4.4 CBC Seismic Study

SAGE will provide seismic design information in accordance with the 2016 California Building Code and included in the Geotechnical Report as identified below.

4.5 Geotechnical Report

SAGE will prepare a draft and a final Geotechnical Report for the project to be used for design and construction of the project. The final report will incorporate changes based on comments from the District. Both draft and final reports will be issued as hard and electronic copies. The report will include the following:

- A description of the project and site, including a review of historical photographs
- General and local site geology, including geologic and geotechnical hazards such as slope stability, liquefaction potential, ground shaking, corrosivity, expansive soils, etc.

- Subsurface soil, bedrock and groundwater conditions, including expected excavatability concerns
- A plan showing the location of test holes and seismic refraction lines
- Logs of test borings, seismic refraction surveys, and geologic cross sections, including lab test data
- A statement that the report was prepared to provide information to the District for design purposes
- Conclusions and design recommendations including:
  - Active, at-rest, and passive soil pressures, including effects from surcharges
  - Acceptability of the potential borrow materials for use in the project
  - Seismic design parameters in accordance with the 2016 CBC
  - MSE wall design criteria (backfill requirements, unit weight, friction angles, cohesion, friction factor)
  - Expected total and differential settlement
  - Recommended foundation type and preparation requirements
  - Expansive soil mitigation
  - Drainage and trench requirements
  - Temporary and permanent slope inclinations
  - Grading, fill, and compaction requirements

4.6 General Information

(INCLUDED ABOVE IN 4.5 GEOTECHNICAL REPORT)

4.7 Conclusions and Recommendations

(INCLUDED ABOVE IN 4.5 GEOTECHNICAL REPORT)

4.8 Deliverables

Deliverables: two (2) bound copies and 1 electronic copy on a flash drive of the Draft Geotechnical and Seismic Report. 4 bound copies and 1 electronic copy on a flash drive of the Final Geotechnical and Seismic Report.

5. 30% Design

SAGE will develop 30% design level plans used to evaluate replacement options for the project. SAGE will use these plans to accompany a brief Design Alternatives Memorandum (DAM) identifying structure, drainage, foundation, and bridge/access alternatives. The DAM will assess material alternatives, specifically: air-placed concrete canal, precast concrete, and wood flume, as well as MSE bench options. The DAM will rate the alternatives based on criteria based on the District's needs including but not limited to: construction cost, constructability, design life, maintenance, and hazard resistance. Life cycle costs and engineer's opinion of probable construction costs will be determined for each alternative. The DAM will include, at a minimum the following:

- Introduction/Project Summary
- Geotechnical Investigation
- Flume Replacement Alternatives
- Cost Analysis
- Alternatives Project Schedule
- Conclusions and Recommendations

Deliverables:Three (3) copies in 11x17 format and one (1) copy in 24x36 format of 30% design drawings, one (1) electronic and three (3) hard copies of the DAM.

6. Project Design and Design Documents

SAGE has prepared the following design scope in accordance with the information provided in the RFP. We believe the design for this site is relatively straightforward, and that it is likely efficiencies and cost-savings could be gained if we reduce the overall number of submittals for the project, while still achieving the desired level of design. When selected, we would be pleased to discuss our ideas and adjustments to the design scope with the District.

SAGE will provide construction documents, in conformance with California codes, laws, regulations, FERC guidelines and professional standards, based on the outcome of the 30% design task identified above. Construction documents will include; drawings, written specifications in conformance with the CSI sixteen-division format, opinion of probable construction cost (OPCC), Quality Control Inspection Program (QCIP), and a separate list of tests and inspections. These documents will clearly identify site specific design requirements, access routes; including berm access, possibly utilizing Rock Crusher Road Bridge, relocation of the SMUD water line, schedule constraints, requirements for testing and inspection, and site construction constraints. The design documents will be submitted in the following phases, incorporating the District's comments at each design review phase:

a. 30% Design Submittal (Preliminary Design)
b. 50% Design Submittal
c. 75% Design Submittal
d. 90% Design Submittal
e. 99% Design Submittal
f. 100% Design Submittal

Deliverables: For each of the 30%, 50%, 75%, 90%, and 99% submittals, we will submit: four (4) copies 11x17 and four (4) copies 24x36 of design drawings; written response to comments; Microsoft Project schedule; OPCC; and a detailed written project description used for permitting. Additionally, the 75%, 90%, and 99% submittals will include an electronic copy of technical and front end specifications in Microsoft Word; electronic copies of drawings in AutoCAD and high resolution PDF in both 11x17 and 24x36; four (4) copies of 8 ½ x 11 design calculations; and an electronic copy of the FERC QCIP. The 100% design submittal will include a flash drive with electronic copies in Microsoft Word "Final" construction specifications including front end sections 00400, 00520, 01100, 01200, 10330 and technical specifications; a complete plan set (AutoCAD and high resolution PDF) in 11x17 and 24X36 format; 8 printed 24x36 plan sets stamped and signed by the Engineer-of-Record; and a Final updated OPCC and Microsoft Project schedule.

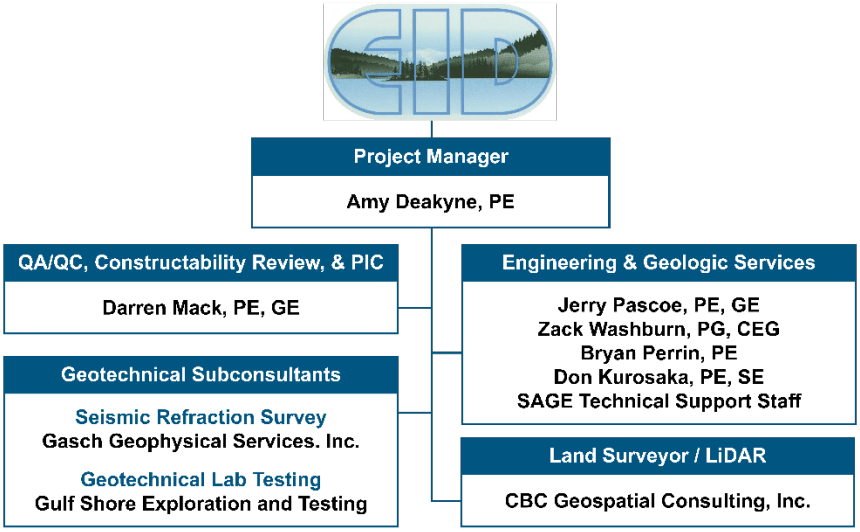
7. Regulatory and FERC / Legal Descriptions

SAGE understands the District will obtain the regulatory and environmental permits required for the work. SAGE will support the District's effort and understands that it is anticipated the 50% design drawings will be used to obtain the regulatory permits and the 90% design drawings will be submitted for FERC notification.

Deliverables: Utilizing the same submittal documents above, SAGE will provide 50% design drawings, OPCC, and a written project description to obtain regulatory permits. Using the same submittal documents above, SAGE will provide 90% design drawings, OPCC, calculations, QCIP, and specifications to be submitted for FERC notification. SAGE will provide written responses and update the 99% submittal based on comments received from the reviewing agencies.

8. Qualifications

The proposed organization of the project team is shown below on the organization chart. Lines of communication are shown, with all communication between the District and the project team through the Project Manager, Ms. Deakyne. SAGE will be the primary design consultant for the project and will lead the design team. Survey and LiDAR processing will be performed by CBC Geospatial. Other subconsultants and subcontractors will assist us in the geotechnical investigation, as noted below.



The SAGE team has extensive knowledge and experience with FERC engineering guidelines and working under unique and demanding project schedules. Below are some highlights demonstrating our experience with the following:

- ✓ Experience with the current "Federal Energy Regulation Commission Guidelines for Evaluation of Hydropower Projects"

  SAGE has years of experience providing FERC approved designs in accordance with their Engineering Guidelines, and constructed and inspected in accordance with their Quality Control Inspection Program.

- ✓ Completion of a minimum of two projects under the FERC Guidelines within the last 5 years

  SAGE is dedicated to providing exceptional support for hydroelectric projects and has completed multiple FERC approved projects within the last 5 years. These include but are not limited to: South Yuba Canal Landslide Remediation and Flume Replacement (Construction Completed 2017), Lake Valley Canal Pipe Replacement Project (Construction completed 2017), YB-56 Control Gate Installation (Construction completed 2017), North Battle Creek Dam Face Restoration (Construction Completed 2017), Lake Sterling Parapet Wall (Construction Completed 2017), and Halsey Forebay Seepage Berm (Construction completed 2014).

- ✓ Implementation of "Quality Control Inspection Programs (QCIP)" in accordance with FERC Guidelines

  SAGE currently works with numerous water and power agencies on projects following FERC Guidelines. Not only does SAGE support and implement QCIP in accordance with FERC Guidelines for all hydroelectric projects within the FERC boundary, but our design team consistently support similar Quality Programs for clients at their requests. SAGE developed and implemented QCIP programs and prepared final construction reports for submittal to FERC for each of the projects listed above.

- ✓ Design of a minimum of three similar scope projects

  Most notably, for each of the past seven years SAGE has designed canal liner replacement projects on Pacific Gas & Electric's (PG&E's) Lower Drum system, replacing flumes and canals in over 60 locations since 2011 under similar access constraints. Very similarly, these designs typically begin a year or two before the typical construction outage window and need to be constructed during a short period of time, sometimes as short as four weeks.

  SAGE has also prepared system-wide design standards for replacement of canal lining throughout the PG&E Hydro system, including technical specifications.

  In 2017, SAGE designed a slope regrading and flume replacement project for the South Yuba Canal. The prior flume had been damaged by landslides following intense winter rains. SAGE evaluated the geologic conditions, performed an alternatives analysis, and determine the most cost-effective solution to be regrading of the slope and construction of a new timber box flume.

- ✓ Ability to complete all of the project elements in the RFP by dates identified in the project schedule

  Our SAGE team is staffed with the right people and resources to complete all the project elements in the RFP by the dates in the current project schedule. Mr. Mack has been involved in every one of the projects listed above, Ms. Deakyne has been involved in all but two of the projects, and each of our other primary team members have been involved in at least two projects.

- ✓ Ability to report to the site by the next calendar day to respond to construction issues

  SAGE is familiar with working in short construction outage windows and has supported similar type projects since 2011. Our office is located less than one hour from the project site and our staff is available to report to the site within 24 hours. Our team understands accelerated construction schedules and is dedicated to react to construction needs as they arise order to help owners quickly restore services.

9. Schedule

SAGE understands the following schedule is anticipated for this project:

Task	Date
Request for District Board Approval of Contract	March 12, 2018
Geotechnical Investigation	Between March and October 2018
Topographic Survey	March/April 2018
30% DAM and Project Description	May 2018
50% Design Submittal	July 2018
75% Design Submittal	October 2018
90% Design Submittal	November 2018
99% Design Submittal	January 2019
100% Design Submittal	Mid-January 2019
District Bids Project	February 2019
Construction	August 2019-December 2019

SECTION 2 – RELEVANT EXPERIENCE, QUALIFICATIONS, AND EXPERTISE

SAGE is a professional consulting engineering firm that specializes in water resources, hydropower, infrastructure, and asset management projects and a California Certified Small Business (DGS#33325). We understand the engineering challenges unique to water agencies and power producers – particularly in the Sierra Nevada foothills. Our approach is to apply innovative thinking to engineering challenges to provide our clients with practical and cost-efficient designs for a wide range civil and structural applications related to water resources, hydropower, and equipment controls. We have decades of project experience solving engineering challenges unique to water and power agencies.

For over 20 years, SAGE has been providing clients with high-quality technical services and seamless client support for multidiscipline engineering, construction observation, and bid-support services. Whether coordinating with engineers, planners, or asset managers, we have developed strong, lasting relationships with organizations similar to the District in terms of size, location in the Sierra Nevada and foothills, and organizational structure and activities. These clients include Placer County Water Agency (PCWA), Nevada Irrigation District NID), Tri-Dam Project (Tri-Dam), Turlock Irrigation District (TID), Merced Irrigation District (MID), and PG&E.

> SAGE has worked aggressively to always meet schedule on my projects. The quality of their work is always outstanding. They obviously have a good quality assurance/quality control procedure. Their staff all have extensive experience in the field in which they work and it shows.
>
> Ross Hooper, Hydro Engineer, Placer County Water Agency

The professional staff at SAGE includes civil, structural, geotechnical, mechanical, and electrical engineers, as well as geologists who specialize in analysis and design of a wide variety of infrastructure projects associated with water supply and flood control, including canals, flumes, pipelines, siphons, pumping stations, spillways, flood-control channels, roads, and bridges. On design projects, the geotechnical engineers and engineering geologists at SAGE provide support to evaluate and interpret challenging geologic and foundation conditions. We are experienced with structural evaluation, plan review, special inspection, and on-site construction observation. Our experience in preparing calculations, plans, specifications, and estimates, as well as providing engineering support during bidding and construction, is superior. SAGE is both qualified and well versed in the work scope presented in the District's RFP.

Along with our extensive project experience and proven expertise, SAGE provides the following benefits to the District:

- ✓ District Knowledge & Experience – Project Manager Amy Deakyne, PE has worked extensively with the District since 2006. She specializes in structural design and project management of water conveyance facilities and has provided the District with feasibility studies/reports, engineering calculations, preliminary design, preparation of plans and specifications, assistance during bidding, engineering services during construction, and peer review. Her knowledge of the District's standards will be complimented by SAGE's comprehensive water experience to produce a highly experienced, professional, and qualified project team.
- ✓ Responsiveness – SAGE is dedicated to providing exceptional on-call engineering services. Whether it is an emergency repair project that requires full-time field and office support to quickly bring services back on line, mobilizing engineers for construction support during planned outages, or completing design from contract submittal to final design and construction drawings, SAGE has proven we can successfully carry out challenging projects on demanding schedules. We understand that diligent design, clear

detailing, comprehensive specifications, expedient review response, and frequent field observations are critical to making fast-paced outages a success.

- ✓ Commitment to Safety – SAGE has an outstanding safety record and takes care to not only comply with OSHA and CAL-OHSA requirements, but our Clients' specific facility and policy requirements as well. Job Safety Analysis (JSA) worksheets are completed prior to every site visit, and we reinforce a safety culture year-round. Our safety program has been validated by ISNetworld with a "Grade A" rating, and we are Gold Shovel Standard Certified for excavation safety and dig-in prevention.
- ✓ Emergency Repair – SAGE provides civil/structural, geologic, and geotechnical engineering services for emergency repair/storm damage projects requiring immediate response, evaluation, and repair that can be implemented quickly while ensuring safety of construction crews and the community. We are available 24/7 to react to emergency situations and our staff is dedicated to working under accelerated schedules for emergencies and outages in order to help owners quickly restore services.
- ✓ Remote Access – Remote sites often require thinking outside the box to obtain information necessary for design. We have experience utilizing LiDAR and drones to obtain information in difficult to access locations. We also have engineers and geologist trained and certified in rope access techniques by the Society of Professional Rope Access Technicians (SPRAT) for situations in which remote sensing can't provide the information required.
- ✓ Knowledge of Local Geologic/Geotechnical Conditions – SAGE has provided on-call geotechnical engineering and structural engineering services to PCWA and TID for over 12 years, and PG&E for 7 years. Our local knowledge of the geologic conditions includes projects ranging from the Tahoe basin to the Sacramento Valley with extensive work in the Sierra Foothills. We have performed investigations and structural design for hard rock sites including tunnels, water conveyance systems, and hydroelectric projects in the High Sierras. Our geologists and engineers are also well versed in the variable metamorphic terrains of the Sierra Nevadas and the sedimentary deposits of the lower foothills. They are able to support our civil/structural design staff and provide insight into constructability and engineering issues unique to certain Foothills terrains.

The table below summarizes relevant projects and highlights our staff's experience in performing work on water conveyance systems and earth retaining structures. As the project examples show, the clients include a mix of irrigation and water districts, public agencies, and municipalities. Descriptions include the key team members, client, year of completion, and services provided. Key staff are discussed in greater detail in Section 3.

Project Name	Owner	Year Completed	Services Provided	Key Staff
EID Echo Lake Conduit Pacific Crest Trail Crossing	El Dorado Irrigation District (District)	On-going	▪ Alternatives Analysis for Bridge Selection ▪ Structural and Civil Design Drawings ▪ Concrete Cast in Place Bridge Abutment Wall Design ▪ Plans and Specifications ▪ Construction support services	Amy Deakyne
South Yuba Canal Landslide Remediation and Flume Replacement	PG&E	2017	▪ Alternatives Analysis ▪ Emergency Landslide Repair ▪ Geotechnical Investigation ▪ Geologic Mapping ▪ Civil/Structural Analysis & Design ▪ Plans & Specifications ▪ Construction Support and Observation ▪ Limited Access and Short Duration Outage (Emergency) ▪ FERC QCIP, Review & Approval	Amy Deakyne Darren Mack Zack Washburn Bryan Perrin Don Kurosaka
Water Conveyance System Canal Liner Standards and Lower Drum Annual Maintenance Repairs	PG&E	2011-on-going	▪ Structural Design ▪ Standards Benchmarking ▪ Research of Alternative Materials ▪ Plans and Specifications & OPCC (Annual) ▪ Construction Support (Annual) ▪ Constructability Review (Annual) ▪ Limited Access and Short Duration Outage (Annual) ▪ FERC QCIP ▪ Geologic Evaluation of Bank Slopes (Annual)	Amy Deakyne Darren Mack Zack Washburn Don Kurosaka
Lake Valley Canal Replacement Project	PG&E	2017	▪ Replace 1,200 feet of canal with a buried HDPE pipe ▪ Alternative Analysis ▪ Civil Layout and Design ▪ Pipeline Design ▪ Structural Analysis & Design ▪ Plans and Specifications ▪ Opinion of Probable Cost ▪ Construction Support	Darren Mack Don Kurosaka
Chicago Park Flume Repairs	NID	2017	▪ Brief Alternatives Analysis ▪ Structural Analysis & Design ▪ Plans & Specifications ▪ Construction Support and Observation	Amy Deakyne Darren Mack
Union Valley Bike Trail	SMUD	On-going	▪ Geotechnical Engineering ▪ Structural Retaining Wall Design ▪ Research of Alternative Materials ▪ Concrete Bridge Abutment and Foundation Design ▪ Plans and Specifications, OPCC	Amy Deakyne Zack Washburn
Pit 5 Storm Damage Repair	PG&E	2012/2013 and 2017/2018	▪ Geotechnical and Geologic Investigation ▪ Hydrologic and Hydraulic Analysis ▪ MSE Wall Civil/Structural Analysis & Design ▪ Culvert design and replacement	Darren Mack Jerry Pascoe Bryan Perrin
Bear River Canal Emergency Repair at STA 80+80	PG&E	2011	▪ Emergency Landslide Repair ▪ Geotechnical Investigation ▪ Geologic Mapping ▪ Structural Analysis & Design ▪ Civil Layout & Design ▪ Plans & Specifications ▪ Construction Observation ▪ FERC Review and Approval	Darren Mack
Pit 3, 4 & 5 Relicensing Implementation	PG&E	2008 - 2011	▪ Engineering Design based on conditions set by FERC for relicensing ▪ Coordination with key project stakeholders ▪ Civil and Structural Design ▪ Geotechnical investigation ▪ Input during permitting to address sensitive habitat and cultural resource issues ▪ Geotechnical test pits and seismic refraction ▪ Construction support services	Darren Mack

SECTION 3 – PROJECT TEAM

PROJECT TEAM

A brief synopsis for each of our key engineering staff is presented below. Additional information regarding individual team members can be found on the resumes presented in Appendix A.

Amy Deakyne, PE – Senior Engineer – Project Manager

Ms. Deakyne has nearly 12 years of extensive canal and flume design experience related to El Dorado Irrigation District's El Dorado Canal System, as well as ongoing experience working with various local water agencies. She served as the Project Engineer for both the Flume 51 and the Flume 41/Spillway 23 projects, among many others. She has gained valuable experience with canal design opportunities/constraints, particularly with respect to structural design, canal/flume transitions, and flume support structures. She specializes in design and PM of water conveyance structures, flumes, canals, spillways, tunnels, bridges, buildings, retaining structures, and foundations for clients of all industries. She is adept at reviewing, monitoring, and meeting budgets and project schedules; conducting site visits; performing construction observation; organizing internal engineering disciplines; and managing projects with limited site access and providing designs to address these constraints. She is a Registered Civil Engineer in the State of California.

Darren Mack, PE, GE – Principal-in-Charge – QA/QC & Constructability Review

Mr. Mack is a Principal Engineer with over 20 years of professional engineering experience and is a registered Civil and Geotechnical Engineer in the State of California. His diverse background in both geotechnical engineering and civil/structural design makes him a true "geostructural" engineer. His experience includes design of concrete hydraulic structures and other water conveyance structures, including shotcrete canal linings; hydropower facility design and rehabilitation; drainage facilities; and geotechnical investigation. He has also provided consultation on dam safety projects, including input to FERC Part 12D reviews and coordination with FERC and the Division of Safety of Dams (DSOD), and Safety Assurance Review for the USACE. Mr. Mack is the SAGE Program Manager for a Hydropower Master Services Agreement for a major Utility Client in California. He and his team have completed over 600 individual task orders related to evaluation and maintenance of a hydropower water conveyance system since 2011.

Jerry Pascoe, PE, GE – Geotechnical Engineer

Mr. Pascoe's professional experience, in the geotechnical field, includes performing geotechnical investigations and consultation for various projects including roadways, pipelines, canals, water tanks, bridges, parks, schools, military facilities, commercial/industrial/retail complexes, and residential. He has managed projects from design through construction including scope/cost development, review of plans and specifications, construction observation services, installation and monitoring of geotechnical instrumentation, materials testing and special inspection. He has managed engineering staff, field technicians, special inspectors and subcontractors. He specializes in foundation and retaining wall design, settlement analysis and monitoring; mitigation of expansive soils; slope stability analysis; landslide evaluations, geotechnical instrumentation and monitoring; forensic investigations including crack and settlement monitoring; pavement evaluations and design; and liquefaction studies.

Zack Washburn, PG, CEG – Geologist

Zack Washburn's professional experience, in engineering geology, specializes in geotechnical/geologic investigation, slope stability evaluation, fault evaluation, and installation/monitoring of geotechnical instrumentation. With project experience throughout California, Mr. Washburn has evaluated geologic conditions for hydropower and infrastructure projects throughout California, using geological reconnaissance, subsurface exploration, and geotechnical instrumentation to answer key questions. He has wide-ranging construction experience, from installing equipment and building structures, to providing engineering support for large infrastructure projects. His geotechnical instrumentation experience includes design, installation, and implementation of monitoring systems ranging from simple tell-tale crack monitors to complex automated data acquisition systems. He has extensive experience performing work in steep mountainous terrain.

Bryan Perrin, PE – Civil Engineer

Mr. Perrin has performed civil design and construction observation for public projects associated with both civil works projects and military construction. His design experience includes hydrologic analysis, site grading, and the design of earth dams, spillways, levees, roads, parking lots, gravity drain systems, culverts, erosion protection, pressure pipe networks, and concrete retaining walls. His technical experience also includes construction observation of mass concrete structures, levee jet-grouting, and asphalt paving. He has also completed the following USACE Training: Civil Works Cost Engineering; 2014, Risk Analysis for Water Resources Planners & Managers; 2014, Earthwork Construction; 2013, Specs for Construction Contracts; 2013.

Don Kurosaka, PE, SE – Senior Consultant – Structural Review

Don Kurosaka has more than 40 years of experience civil and structural engineering in the design and construction of projects in California. Mr. Kurosaka has specific expertise in developing projects from the planning phase including reconnaissance, technical and economic feasibility, environmental assessment, and financial funding; through implementation phase from final design, right-of-way acquisition, permitting, and construction; to the operations phase with the preparation of operations and maintenance manuals and standard operating procedures.

We believe that the components to a successful project are knowledge, proper planning, communication, and organization. Your SAGE Project Manager will closely track task budgets and schedules and work diligently with the technical design team to identify and correct potential problems before they significantly impact budgets and/or scheduling. In addition, your project manager will communicate effectively and frequently with you and our subconsultants/contractors.

Subconsultants

SAGE has worked with the following subconsultants on many projects and rely on them for accurate and quality support for our clients' projects. Resumes can be found in Appendix A.

Gasch Geophysical Services, Inc.

Gasch & Associates (G&A) is located in Rancho Cordova. G&A provides geophysical services for a wide variety of applications related to the engineering, geotechnical, environmental and exploration professions. Founded in 1969, Gasch & Associates (G&A) has been providing geophysical consulting services to the engineering, groundwater, environmental and legal professions. The experience of thousands of geological and geophysical investigations throughout the western hemisphere and the Pacific Rim gives G&A insight into the appropriate application of geophysical techniques. California Certified Micro Small Business (DGS# 1575460)

Gulf Shore Exploration and Testing Services, Inc.

Gulf Shore Exploration and Testing Services is a registered Small Business and certified HUBZone Contractor, working as an engineering services firm providing the following services to the geotechnical, environmental and construction industries: Exploration and Instrumentation, Contractor Quality Control / Quality Assurance, and Soils and Materials Laboratory Testing

CBC Geospatial Consulting, Inc.

Based in Sacramento, California, CBC Geospatial Consulting is a geomatics engineering firm that specializes in providing accurate and comprehensive surveying, mapping, right of way engineering, and 3D analyses which serve as foundational components for successful civil engineering infrastructure projects, forensic investigations, and litigation. California Certified Micro Small Business (DGS# 42815)

SECTION 4 – QUALITY ASSURANCE AND CONTROL; CONFLICTS

SAGE will incorporate a multi-faceted Quality Assurance and Quality Control (QA/QC) program for the Flume 47C Replacement project. Our QA/QC program generally consists of three tiers—technical team review, management QC review, and production/delivery review. Quality control begins with the production team, who perform self-reviews of all documents in accordance with our Quality Control Plan, which was developed as part of our overall QA program. Following an internal technical team review, at least two qualified senior team members will review design reports, field data, laboratory test results, design calculations, construction drawings, specifications, and other documentation prior to any submittal. The first reviewer is a qualified technical expert that reviews the technical adequacy of the documents. The second reviewer performs an overall QC review of the concepts, proposed solutions, conclusions, constructability, etc., as well as overall QC of the document (readability, grammar, consistency). Our internal review process is designed so that work products submitted to the District provide constructible, cost-effective solutions based on the collective experience of the project team.

SAGE routinely elects a green approach with our projects, often performing electronic review and markup of interim work products. When feasible, SAGE will similarly use email to quickly share/transfer project information with the District, other consultants, and contractors in electronic format. For larger electronic documents or projects that demand significant document sharing, SAGE uses ShareFile, a secure third-party FTP service, to facilitate document sharing and management across the project team.

Timely responses to client inquiries and adherence to demanding schedules are part of our excellence in service culture at SAGE. In fact, your SAGE Project Management Team are accessible through our main office number as well as through dedicated direct phone lines, mobile phones (voice and text), and emails.

SAGE is not aware of any current and/or reasonably foreseeable conflicts that could hinder the provision of the requested services.

SECTION 5 – CLIENT REFERENCES

Name	Client	Scope of Work	Address	Phone
Ross Hooper, Hydro Engineer - Power System	Placer County Water Agency	Spillway Modifications, Part 12 D Safety Inspections, Landslide Repairs, Civil/ Structural Designs	P.O. Box 667 Foresthill, CA 95631	(530) 367-6710
John Kessler, Chief Dam Safety Engineer	El Dorado Irrigation District	Civil, Mechanical, Structural Design	2890 Mosquito Road Placerville, CA 95667	(530) 642-4056
JackRyan Naylor, Power Generation Engineer	Pacific Gas & Electric	Canal Replacement, Landslide Repair, Emergency Response	1649 Canal St., Auburn, CA 95603	(530) 889-6471
Rob Bowers, Power Generation - Senior Project Engineer	Pacific Gas & Electric	Emergency Storm Damage Repairs, Retaining Wall Design, Landslide Mitigation	31295 Manton Road Manton, CA 96059	(530) 347-7564

SECTION 6 – CONTRACT AND INSURANCE REQUIREMENTS

We have reviewed the contract included in Exhibit C of the RFP and generally accept the terms. There is, however, some limited language that we would appreciate the opportunity to discuss and revise if agreeable to the District. In particular, we request the phrase "incidental and consequential damages" be stricken from *Paragraph 6. Indemnity and Liability*. This change was previously accepted in our current on-call professional services contract with EID dated January 1, 2017. We also request that the cost of defense be limited to no more than $50,000 prior to a final determination of fault.

We meet the contract insurance requirements listed in Appendix C and can provide insurance certificates upon request. Please note that our professional liability insurance deductible is $50,000.

SECTION 7 – ADDENDA

SAGE has reviewed and acknowledges receipt of the following addenda for the project, which have been considered in the preparation of this submittal: Addendum No. 1, dated February 6, 2016.

PART B – COST OF SERVICES

Our proposed Schedule of Charges for SAGE personnel is shown below as requested, and is consistent with our current on-call contract for General Engineering services. We understand that no administrative charges will be allowed for this contract, except a markup of (5%) on subconsultant billings.

SAGE Personnel Category	Hourly Rate ($)	SAGE Personnel Category	Hourly Rate ($)	SAGE Personnel Category	Hourly Rate ($)
Sr. Principal Eng/Geologist	$285	Associate Engineer/Geologist	$210	Staff Electrical Engineer	$135
Principal Electrical Engineer	$276	Senior Electrical Engineer	$230	Staff Engineer/Geologist	$135
Principal Engineer/Geologist	$276	Senior Engineer/Geologist	$194	Senior CADD/GIS Technician	$150
Sr. Associate Elect. Engineer	$260	Sr. Project Engineer/Geologist	$173	CADD/GIS Technician	$125
Sr. Associate Eng/Geologist	$231	Project Electrical Engineer	$160	Administration/Support Services	$105
Senior Consultant	$220	Project Engineer/Geologist	$157		
Associate Electrical Engineer	$245	Senior Staff Engineer/Geologist	$144		

Our estimated cost to provide the services described above is presented in the summary Table below. A detailed breakdown of labor hours and subconsultant/subcontractor fees per task is included in Attachment C.

Task/Subtask	No. of Units	Cost per Unit	Extended Cost	Estimated Fee
1 & 2 – Meetings, Site Visits, and Progress Reports & Schedules	1	$18,488	$18,488	$18,488
3 – Field Topo and LiDAR Surveys	1			$25,032
4.1 – Field Investigations				$13,215
• Pre-Investigation	1	$2,352	$2,352	
• Test hole, Mob/Demob, Borrow Site, General	1	$938	$938	
• Test Holes	3	$3,075	$9,925	
4.2 – Field and Laboratory Testing				$4,487
• Lab Testing – Native	3	$874	$2,622	
• Lab Testing – Borrow	1	$1,012	$1,012	
• Lab Testing Review/Coordination	1	$853	$853	
4.3 – Seismic Refraction Studies				$5,719
• Seismic Lines Mob/Demob	1	$345	$345	
• Seismic Lines	3	$1,500	$4,500	
• Seismic Refraction Report	1	$874	$874	
4.4, 4.5, 4.6, 4.7, 4.8 – Geotechnical Report	1	$9,456	$9,456	$9,436
5 – 30% Design Criteria Memorandum	1	$17,674	$17,674	$17,674
6 – Project Design and Design Documents	1	$104,984	$104,984	$104,984
7 – Prepare Regulatory and FERC/Legal Documents	1	$9,920	$9,920	$9,920
Total				**$208,955**

If required on a project-specific basis, specialty design software will be charged at an hourly rate on a per use basis, as follows: I-Site ($40/hr); Arc GIS, GeoStudios (SEEP/W, SLOPE/W, SIGMA/W), RISA-3D, and SAFE ($35/hr), SAP 2000 and RockWorks ($25/hr); Dips, Swedge, RocPlane, and RocFall ($15/hr). Specialty field equipment will be charged at a daily rate on a per use basis: Trimble GPS Unit+Antenna ($130/day); Rope Access ($200/day). These charges will be discussed on a case-by-case basis with the District Project Manager and only billed if approved in advance in writing.

C. NON-DISCLOSURE AND DISCLOSURE OF PROPOSALS

No information within this proposal contains confidential or proprietary information.

APPENDIX

Resumes

AMY DEAKYNE, PE
Senior Engineer
Role: Project Manager

REGISTRATIONS

Professional Engineer
CA | No. C74859

EDUCATION

BS | Architectural Engineering | 2006
California Polytechnic
State University, San Luis Obispo

EXPERIENCE

Professional Start Date: 08/2006

SAGE Start Date: 04/2013

ASSOCIATIONS

American Institute of
Steel Construction (AISC)

Structural Engineers
Association of California (SEAOC)

PROFESSIONAL SUMMARY

Amy Deakyne's professional experience in the structural engineering field includes structural analysis, construction review and oversight, and project management for various water resources projects. Ms. Deakyne specializes in structural design and project management of water conveyance structures, flumes, canals, spillways, tunnels, bridges, buildings, retaining structures, and foundations for clients ranging from water/power agencies, municipal, commercial, industrial, and private industries. She is adept at reviewing, monitoring, and meeting budgets and project schedules; conducting site visits; performing construction observation; organizing internal engineering disciplines; and managing projects with limited site access and providing designs to address these constraints.

Ms. Deakyne has extensive canal design experience related to El Dorado Irrigation District's El Dorado Canal System in El Dorado County as well as ongoing experience working with various local water agencies. She has gained valuable experience with canal design opportunities/constraints, particularly with respect to structural design, canal/flume transitions, and flume support structures. Her hands-on management approach and technical expertise will ensure deliverables are consistent with regulatory requirements and will be provided within schedule and budget constraints. She has performed structural analysis for small and mid-rise buildings, single-and multi-family residential buildings, commercial structures, hydraulic structures, bridge structures and tenant improvements. She is experienced with management of multiple engineering staff, field technicians, and subconsultants, all within fixed budgets. Her structural design experience includes the design of shallow foundations; CMU and CIP concrete retaining walls; mechanically-stabilized earth walls; steel, concrete, timber and CMU structures.

REPRESENTATIVE PROJECT EXPERIENCE

EID Echo Lake Conduit Bridge - Pacific Crest Trail
El Dorado Irrigation District | El Dorado County, CA

Project Manager and Engineer of Record responsible for the preparation of construction documents and construction administration for a new steel bridge crossing over the Districts Echo Lake Conduit along the Pacific Crest Trail. Specific responsibilities included preforming an alternatives analysis to determine the preferred bridge type which meets all design constraints as well as each stakeholder's aesthetic preferences. The selected alternative consisted of a new weathering steel bridge to be placed on concrete bridge abutments, utilizing stamped and colored concrete. Ms. Deakyne's roll includes support of preparation of construction documents, procurement support during bridge procurement, and construction administration.

South Yuba Landslide Mitigation
Confidential Utility Client | Nevada County, CA

Project Manager and Technical Lead for preparation of construction documents for emergency storm damage repairs at the 8/2 Flume on the South Yuba Canal. The South Yuba Canal is a water conveyance canal that carries water from Lake Spaulding to Deer Creek Forebay in Nevada County, California. SAGE performed an abbreviated alternatives analysis to determine the preferred method for stabilizing the slope and returning the canal to service. The selected alternative consisted of reshaping the existing slope to construct a new, wider bench and constructing a timber flume based on client standard designs. Additionally, shotcrete transition structures were constructed at the upstream and downstream ends of the timber flume to tie into the existing gunite-lined canal. The new timber flume was approximately 240-feet in

length and constructed on a bench that was cut into the slope with a minimum width of 22 feet. A mid-slope shotcrete drainage ditch was constructed to direct surface water from the upper slope to outlet into the gunite-lined canal downstream of the timber flume. The area above the slope was graded to drain away from the new slope so that the slope is only exposed to surface water resulting from direct precipitation. Specific construction responsibilities included construction support for multiple during construction to address modifications to the details and address site-specific conditions. Responding to contractors requests for information, reviewing contractor submittals and reviewing field change notifications were all part of the duties required for construction support.

Chicago Park Flume Repair

Nevada Irrigation District | Nevada County, CA

Project Manager responsible for preparation of construction documents, and support during construction for the repair for an elevated concrete flume located in Chicago Park along one of Nevada Irrigation Districts canal systems. The elevated flume along two sections of canal was seeing locations of settlement of the supporting soil below causing local distress. The flume required an underpinning and installation of new foundation support features used to support the flume edges. Specific responsibilities included engineering oversight and QC for the design required for repair of the flume. Additional services included support during construction including; responding to RFI's and reviewing construction submittals.

Canal System Design Standards

Confidential Utility Client | Various Counties, CA

Technical Review to evaluate and update standard drawings for repair and rehabilitation of canals used to convey water for hydropower systems throughout California. Specific responsibilities included developing standard drawings and specifications for concrete/shotcrete canal linings. The lining design was performed in accordance with the water-tight structure provisions of ACI 350-06, and included benchmarking research into the state of the practice. The goal was to develop system-wide standards that address a wide range of canal capacity and topographic conditions. The standard drawings incorporate alternative materials, such as synthetic fiber-reinforced shotcrete, to improve constructability in remote locations. Specific responsibilities have included revision of standard details and specifications to address lessons learned during construction and technical and quality control review of construction documents.

Union Valley Bike Trail Extension

Sacramento Metropolitan Utility District (SMUD) | El Dorado County, CA

Project Manager and Engineer of Record responsible for preparation of construction documents, and support during construction for three new prefabricated steel bridge structures and multiple miles of retaining walls along an extension of bike trail around Union Valley Reservoir. Worked with stakeholders to evaluate the location of trail over the existing SMUD penstock, to best meet their needs and meet design requirements. Services included construction drawings, specifications, and calculations to support the design.

EID – Digester Construction Documents

El Dorado Irrigation District | El Dorado County, CA

Client Manager for the structural inspection and assessment, design, and construction support for the structural and coating repairs to be completed on the primary reinforced concrete digester located at the El Dorado Hills Wastewater Treatment Plant. Specific responsibilities included engineering oversight and QC services for the design and specifications of repair specifications required at the facility. Additional services included on-site construction support and technical RFI reviews.

Prior Experience to Joining SAGE

Flume 41 and Spillway 23

El Dorado Irrigation District | Pollock Pines, CA

Project Engineer responsible for preparation of the design alternatives memorandum, structural construction documents, opinion of probable construction cost, and technical specifications associated with the flume and spillway replacement project for El Dorado Irrigation District. Provided structural design of new cast in place concrete spillway structure that includes a new pre-fabricated metal building. The project included pre-cast concrete flume as well as shotcrete lined canal. Also, provided structural design of a new Mechanically Stabilized Earth retaining wall that supports the new flume bench. The project also included the stabilization of an

existing stacked rock bench with the use of shotcrete lined facing, grouting of voids behind the facing, and rock anchors into the stable hillside behind the bench to provide stable support for the new flume above.

Hidden Falls Regional Park Bridges
Hidden Falls Regional Park, Auburn, CA

Project Manager and Engineer of Record responsible for preparation of the civil and structural construction documents, for three new prefabricated steel truss bridges constructed at Hidden Falls Regional Park over Coon Creek in Auburn California. Responsible for coordination of geotechnical engineers, civil engineers, environmental engineering sub-consultants, and structural engineers. During construction provided review of construction submittals, and RFI's and performed structural observation at the site.

14 Mile Tunnel and Spillway 46
El Dorado Irrigation District Pollock Pines, CA

Project Engineer responsible for preparation of the design alternatives memorandum, structural construction documents, opinion of probable construction cost, and technical specifications associated with the spillway replacement and upgrade project for El Dorado Irrigation District. Provided structural design of new cast-in-place concrete spillway structure that is part of the District's canal system. Also prepared structural design for a new portion of 14 Mile Tunnel designed for equipment traffic loads and includes the design of a metal trash rack, removable for winter or summer cases. During construction provided review of construction submittals, and RFI's and performed structural observation at the site.

Rock Crusher Road Bridge
El Dorado Irrigation District | Pollock Pines, CA

Project Engineer responsible for preparation of the structural construction documents for the District's Rock Crusher Road Bridge over the El Dorado Canal. Provided structural design for the new steel beams and concrete bridge abutments. The project also included new mechanically stabilized earth retaining walls necessary to realign Rock Crusher road as well as widen the canal berm where vehicle traffic was required. During construction provided review of construction submittals and RFI's.

Esmeralda Creek Restoration
El Dorado Irrigation District | Pollock Pines, CA

Project Engineer responsible for preparation of the structural construction documents, for the realignment and replacement of existing Lennon flume supported by timber substructure. Provided structural design of Lennon flume, timber supporting bents, foundations and structural steel long span support for Lennon flume over the El Dorado Canal. The project also included repairs, and increased height, to a concrete diversion dam, installation of a stream gage, outfall channel rip rap armoring, and continuity of aquatic habitat upstream and downstream of the project. During construction provided review of construction submittals, and RFI's.

Typical Wood Flume Updates
El Dorado Irrigation District (EID), Pollock Pines, CA

Staff Engineer responsible for preparation of the structural construction documents, for typical wood flumes along the District's El Dorado Canal. Provided design suitable for various construction constraints along the length of canal that included; remote sites that required materials be hiked in to lengths of up to three miles. Provided design of foundations for various conditions of soil and rock support.

Flume 51
El Dorado Irrigation District (EID), Pollock Pines, CA

Staff Engineer responsible for preparation of the design alternatives memorandum, structural construction documents, opinion of probable construction cost, and technical specifications associated with the flume replacement project for El Dorado Irrigation District. Provided structural design of new pre-cast concrete flume, flume foundations and new shotcrete lined canal. Designed new Mechanically Stabilized Earth retaining wall supporting the flume and bench.

DARREN MACK, PE, GE

Vice President/Principal Engineer

Role: QA/QC, Constructability Review, Principal-in-Charge

REGISTRATIONS

Geotechnical Engineer
CA | No. 2634

Professional Engineer
CA | No. 59084

EDUCATION

MS | Geotechnical Engineering | 1997
University of California, Berkeley

BS | Civil Engineering | 1996
University of California, Davis

EXPERIENCE

Professional Start Date: 06/1997

SAGE Start Date: 12/2004

ASSOCIATIONS

American Institute of Steel Construction (AISC)

American Public Works Association (APWA)

American Society of Civil Engineers (ASCE)

Association of State Dam Safety Officials (ASDSO)

El Dorado Surveyors, Architects, Geologists & Engineers (EDSAGE)

Society of American Military Engineers (SAME)

United States Society on Dams (USSD)

PROFESSIONAL SUMMARY

Mr. Mack has 20 years of professional experience in the geotechnical engineering field. He has provided geotechnical investigation, construction review and oversight, and project management for hundreds of private and public projects in Northern California and Nevada. He has performed geotechnical investigations for infrastructure expansion and utility installation projects, mid- and high-rise buildings, single- and multi-family residential buildings, bridge installation and renovation, and trail restoration. In addition, he has provided geotechnical input during the preparation of Environmental Impact Reports (EIRs) in accordance with CEQA requirements. This work required him to evaluate existing surface and subsurface information and determine project impacts in accordance with state and local building codes, General Plan requirements, and engineering standards-of-practice. Mr. Mack's technical areas of expertise include soil classification and identification using small diameter soil borings and cone penetration testing; evaluation of liquefaction and other seismic hazards; capacity and estimated total and differential settlement for shallow and deep foundation systems; and the potential for soil movement due expansive or compressible soil conditions.

REPRESENTATIVE PROJECT EXPERIENCE

South Yuba Landslide Mitigation

Confidential Utility Client | Nevada County

Principal-in-Charge for preparation of construction documents for emergency storm damage repairs at the 8/2 Flume on the South Yuba Canal. The South Yuba Canal is a water conveyance canal that carries water from Lake Spaulding to Deer Creek Forebay in Nevada County, California. SAGE performed an abbreviated alternatives analysis to determine the preferred method for stabilizing the slope and returning the canal to service. The selected alternative consisted of reshaping the existing slope to construct a new, wider bench and constructing a timber flume based on client standard designs. Additionally, shotcrete transition structures were constructed at the upstream and downstream ends of the timber flume to tie into the existing gunite-lined canal. The new timber flume was approximately 240-feet in length and constructed on a bench that was cut into the slope with a minimum width of 22 feet. A mid-slope shotcrete drainage ditch was constructed to direct surface water from the upper slope to outlet into the gunite-lined canal downstream of the timber flume. The area above the slope was graded to drain away from the new slope so that the slope is only exposed to surface water resulting from direct precipitation.

Lower Drum – South Canal Monitoring – Emergency Risk Management and Hydro Remote Terminal Units

Confidential Utility Client | Placer County, CA

Principal-in-Charge for the design services related to the civil improvements at two sites along the South Canal designated for the installation of flow monitors, Hydro Remote Terminal Units (HRTU), and Supervisory Control and Data Acquisition (SCADA) communication equipment. The design included analysis and design of steel stilling wells, control buildings, concrete foundation slabs, and solar panel support structures. Additional tasks included coordination with electrical design and equipment arrangements within the control structure.

Pit 5 Dam Downstream Erosion Protection

Confidential Utility Client | Shasta County, CA

Supervising Engineer for conducting alternatives analyses and providing engineering consulting services to the client related to ongoing erosion of the river banks immediately downstream of

the concrete wing walls at the Pit 5 Diversion Dam. SAGE evaluated alternatives to address both mid-term and long-term objectives as requested by FERC. The feasibility studies included means to establish access to the north and south banks downstream of Pit 5 Dam for closer observation of the ongoing erosion and to place appropriate retaining/scour resistant materials, as necessary. Specific responsibilities included providing technical oversight of the engineering team, including preparation of engineering analyses, determination of constructability of alternatives, risk assessment of "do nothing" alternative, selection of preferred alternatives, and preparation of a report and recommendations to address the concerns raised by FERC.

Lake Valley Canal Drainage Improvements
Confidential Utility Client | Placer County, CA

Principal-in-Charge for the replacement of a segment of the Lake Valley Canal with a buried pipeline. Two large drainage swales that intersect the canal caused damage to the bank side liner and were a source of significant uncontrolled runoff into the canal. SAGE performed an alternatives analysis to evaluate alternatives for repairing the canal and installing drainage improvements, or replacing the canal with a pipe. The preferred alternative was to replace the canal with a 36-inch-diameter HDPE pipe installed along approximately 1700 feet of the existing canal alignment. Additional improvements included raising the elevation of an access road downslope of the canal and installing several culverts to allow surface drainage to pass under the road. Specific responsibilities included oversight, quality control review, and consultation during development of alternatives, selection criteria, and opinions of probable cost; evaluation of the preferred alternative; and preparation of construction drawings, specifications, and calculations.

Chicago Park Flume Repair
Nevada Irrigation District | Nevada County, CA

Principal-in-Charge responsible for preparation of construction documents, and support during construction for the repair for an elevated concrete flume located in Chicago Park along one of Nevada Irrigation Districts canal systems. The elevated flume along two sections of canal was seeing locations of settlement of the supporting soil below causing local distress. The flume required an underpinning and installation of new foundation support features used to support the flume edges.

Bear River Canal Repair
Confidential Utility Client | Placer County, CA

Supervising Engineer for a repair and rehabilitation program for restoring deteriorating berm-side access trails used for routine maintenance inspections of water conveyance canals. The canals are located in easements in generally heavily vegetated terrain with limited construction equipment access. Therefore, emphasis was placed on retaining structures and other improvements to enhance trail access and safety while minimizing the size of equipment required for construction – hand-carried equipment was preferred. Performed an alternatives analysis to develop and select a preferred trail retaining structure. The selected alternative consists of a dark green fiber-reinforced plastic (FRP) lagging supported by galvanized steel posts that are driving into place with a pneumatic post driver. All system components and tools can be hand-carried to the repair sites or moved with lightweight, limited access tracked equipment. Specific responsibilities included developing and evaluating retaining wall alternatives; working with the Client to develop and select the preferred alternative; and overseeing and providing technical input to the development of plans and specifications for the implementation of the access trail walls.

Pit 3, 4 & 5 Relicensing Implementation Project
Confidential Utility Client | Burney, Shasta County, CA

Geotechnical Engineer for design-build implementation of FERC relicensing requirements for Pit 3, 4, and 5 hydropower facilities along the Pit River in Shasta County, including rockfills, MSE retaining walls, bridge replacements, armored embankments, roadways, pavements, and drainage structures. Specific design responsibilities included performing a geotechnical investigation to support various civil improvements, including rockfills, MSE retaining walls, bridge replacements, and drainage structures for project roadways, which also serve as public recreation access. Coordinated with the Owner, U.S. Forest Service, and other project consultants to comply with permitting requirements in sensitive habitat and cultural resource areas. At request of the Owner, served as Construction/Task Manager for valve house, access road, and associated civil improvements along right abutment of Pit 3 Dam. Responsible for design of rock dowel/bolt slope support system for 50-foot-tall excavation adjacent to right dam abutment; foundation stability analysis and foundation support design for a new valve house founded on weathered rock; on-site evaluation of field conditions encountered during excavation

of steep, talus-covered slopes and near-vertical rock cuts; design of talus slope stabilization and drainage improvement measures; management of multiple design change notices to address changed subsurface conditions, with rapid turnaround to reduce delay to construction activities; managed multiple field staff in conformance with FERC-compliant QCIP; and coordinated with the Owner, other project consultants, and FERC and DSOD inspection staff regarding construction observations and activities. Consulted with other project consultants regarding slope instrumentation, site stratigraphy, soil and rock mass strengths, dam stability and safety, and excavation and dam monitoring.

Pittman Flume Structural Engineering Assessment

Confidential Utility Client | Placer County, CA

Principal-in-Charge for the visual condition assessment and structural evaluation of the Pittman Flume. SAGE was retained by the Client's Asset Management group to evaluate the elevated, reinforced concrete flume, which conveys water across Pittman Creek between two concrete-lined canal segments. The purpose of the study was to evaluate the severity of observed distress and determine measures necessary to continue operation. Specific responsibilities included performing a geotechnical and structural observations of the structure and foundation materials; performing technical review of structural analyses of the flume structure and resulting report, including recommendations for continued operation; and coordinating with the Asset Management group to assign risk parameters to the flume and evaluate relative risk within the framework of the overall water conveyance portfolio.

Hydro Waterways Fencing

Confidential Utility Client | Various Counties, CA

Principal-in-Charge for a multi-year program engineering design effort to develop and implement standards for the client's Waterways Safety Improvements project. These improvements include fencing along the water conveyance canals, gates to limit access, safety gates at canal access ramps, adjustable grab cables and escape ladders, and new pedestrian bridges over the canal. Specific responsibilities included identifying client goals during initial project development; overseeing development of design criteria, standard drawings, and testing standards; and constructability and value engineering evaluations.

JERRY PASCOE, PE, GE

Senior Associate Engineer

Role: Geotechnical Engineer

REGISTRATIONS

Geotechnical Engineer
CA | No. 2613

Professional Engineer
CA | No. 58156

EDUCATION

BS | Civil Engineering | 1994
California State University, Sacramento

EXPERIENCE

Professional Start Date: 02/1995

SAGE Start Date: 05/2011

ASSOCIATIONS

American Institute of Steel Construction (AISC)

American Society of Civil Engineers (ASCE)

Association of State Dam Safety Officials (ASDSO)

United States Society on Dams (USSD)

PROFESSIONAL SUMMARY

Jerry Pascoe's professional experience, in the geotechnical and civil engineering fields, includes performing geotechnical investigations, consultation, and design for various projects including roadways, pipelines, canals, water tanks, bridges, parks, schools, military facilities, commercial/industrial/retail complexes, and residential. Mr. Pascoe has managed projects from design through construction including scope/cost development, preparation of plans and specifications, construction observation services, installation and monitoring of geotechnical instrumentation, materials testing and special inspection. He has managed engineering staff, field technicians, special inspectors and subcontractors. He specializes in foundation and retaining wall design, settlement analysis and monitoring; mitigation of expansive soils; slope stability analysis; landslide evaluations/mitigation, geotechnical instrumentation and monitoring; forensic investigations including crack and settlement monitoring; pavement evaluations and design; and liquefaction studies.

REPRESENTATIVE PROJECT EXPERIENCE

Pit River Canyon Road MP2.5 Repair

Confidential Client | Shasta County, CA

Geotechnical Engineer, Design Engineer and Project Manager for the evaluation and mitigation of a failing section of roadway that provides access to a critical energy facility. The evaluation included geologic mapping, review of maps and aerial photos, and a geotechnical/seismic refraction investigation to identify the extent of a landslide and depth to competent bedrock. Specific responsibilities included preparing a geotechnical/geologic investigation with design parameters for repair of the road, designing a retaining wall on the outboard edge of the road to reconstruct the roadway, preparing plans and specifications for bidding of the project, and providing engineering support during construction. The design consisted of a Tensar SierraScape MSE wall system to meet US Forest Service requirements and matching the appearance of existing walls, as well as improved site drainage to minimize the potential of erosion and slope stability issues.

Biggs West Gridley – Gray Lodge Water Supply Project

Biggs-West Gridley Water District | Butte County, CA

Geotechnical Engineer for investigation and consultation services for a water supply project west of the Cities of Gridley and Biggs. The project objective is to enhance the efficiency and durability of the existing canal system, owned by the Biggs West-Gridley Water District (BWGWD), by replacing existing hydraulic control structures and improving portions of canal levees throughout a 16-mile network of canals, to ultimately improve deliveries to the Grey Lodge Wildlife Area. Portions of the canals run beneath railroads, streets, utilities and other canals using siphon structures. Specific responsibilities included conducting a subsurface geotechnical investigation along the canal system to determine the soil and groundwater conditions in the vicinity of the proposed structures and canal improvements; reviewing raw soil samples and laboratory test results to determine geotechnical characteristics; performing geotechnical analyses and reporting recommendations for structure foundation type, bearing capacity, lateral design criteria, temporary shoring, dewatering, utility installation, seismic design, pavement sections, and fill quality and compaction in a project Geologic and Geotechnical Investigation Report. Additional responsibilities consist of coordinating with internal staff, subcontractors, the multidisciplinary design team, and canal owner/operator during the investigation and design phases. Subsequent to the design phase, responsibilities include consultation during construction to assist with evaluation of borrow sources, requests for information by the contractor, and design modifications for difficult site conditions.

Tahoe Pines Campground Rehabilitation Project

California Tahoe Conservancy | Meyers, El Dorado County, CA

Geotechnical Engineer for investigation and consulting services for the rehabilitation project. The project objective was to restore habitat and implement onsite recreational and public access improvements within the former campground site along the Upper Truckee River, owned by the California Tahoe Conservancy. The project included removal of a structurally deficient vehicular bridge and replacing it with a new pedestrian bridge. Specific responsibilities included conducting a subsurface geotechnical investigation along the river and creek to determine the soil and groundwater conditions in the vicinity of the proposed bridge and habitat restoration areas; reviewing soil samples and laboratory test results to determine geotechnical characteristics; performing geotechnical analyses and reporting recommendations for bridge foundation type, bearing capacity, lateral design criteria, temporary excavations, seismic design, and fill quality and compaction in a project Geotechnical Investigation Report. Additional responsibilities consisted of coordinating with internal staff, subcontractors, the multi-disciplinary design team, and owner during the investigation phase.

Union Valley Reservoir Bike Path

Sacramento Municipal Utility District | El Dorado County, CA

Geotechnical Engineer for a 1.3-mile-long public access trail extension project that included two bridges over inlet creeks to Union Valley Reservoir. Specific responsibilities included an evaluation of the surface and subsurface soil and bedrock conditions, and preparation of a report that provided geotechnical/geologic design parameters for site grading, cut/fill slopes, trail construction, and bridge foundations. Responsibilities also included providing consultation during the design phase of the project.

Caribou Road Repairs

Confidential Client | Plumas County, CA

Geotechnical Engineer, Project Manager and Design Engineer for improvements to address roadway distress at mileposts 6 and 8 that could interrupt access to critical energy facilities. The project included conducting an evaluation, performing an alternatives analysis, and designing the improvements for the preferred alternatives. The evaluation included geologic mapping, review of maps and aerial photos, and a geotechnical/seismic refraction investigation at both sites where rockfall or storm flows could significantly damage the road and where settlement and undermining of the road shoulder is occurring. Specific responsibilities consisted of preparing a report of findings with recommendations to mitigate or reduce the hazards, including scaling of slopes, installing rockfall drapery, constructing new soldier pile and MSE walls, installing new culverts, and replacing pavement. Additional responsibilities included managing the project, coordinating staffing needs and design efforts, preparing the geotechnical and alternatives analysis reports, supervising the design calculations for the various project components, and preparing project plans and specifications for construction.

Nelson Elevation Control Structure

Western Canal Water District | Butte County, CA

Geotechnical Engineer for engineering design and construction support services for an approximately 10-foot-high gated elevation control structure spanning a 100-foot-wide canal in Butte County, California. The new structure allows Western Canal Water District (WCWD) to reduce leakage and improve operations and efficiency of their Main Canal system by replacing an old wooden structure with a concrete weir and two 18-foot-wide automated Langeman gates. Specific responsibilities included reviewing existing data from a previous project completed on the canal by SAGE and preparing geotechnical recommendations for the design and construction of the new structure. Additional responsibilities included providing geotechnical support and review during preparation of the construction documents and field support to confirm the site conditions matched our assumptions.

Prior Experience to Joining SAGE

Putah South Canal, Weyand Canal Headworks

Solano County Water Agency | Solano County, CA

Geotechnical Engineer for the new headworks liftgate structure to be constructed in the existing canal. Specific responsibilities included conducting a geotechnical investigation comprising borings to evaluate subsurface conditions, laboratory testing to determine the geotechnical engineering properties of the supporting soils, and recommendations for design of the new structure. Also, consulted with the client and contractor during design and construction to ensure successful completion of the project.

ZACK WASHBURN, PG, CEG

Senior Project Geologist

Role: Geologist

REGISTRATIONS

Certified Engineering Geologist
CA | No. 2624

Professional Geologist
CA | No. 8254

EDUCATION

MS | Geology | 2001
Arizona State University

BS | Geology | 1997
Oregon State University

EXPERIENCE

Professional Start Date: 09/2000

SAGE Start Date: 10/2013

ASSOCIATIONS

Association of Environmental & Engineering Geologists (AEG)

Engineer's Association of Nevada County (EANC)

PROFESSIONAL SUMMARY

Zack Washburn's professional experience, in engineering geology, specializes in geotechnical/geologic investigation, slope stability evaluation, fault evaluation, and installation/monitoring of geotechnical instrumentation. With project experience throughout California, Mr. Washburn has evaluated geologic conditions for hydropower and infrastructure projects throughout California, using geological reconnaissance, subsurface exploration, and geotechnical instrumentation to answer key questions. He has wide-ranging construction experience, from installing equipment and building structures, to providing engineering support for large infrastructure projects. His geotechnical instrumentation experience includes design, installation, and implementation of monitoring systems ranging from simple tell-tale crack monitors to complex automated data acquisition systems. He has extensive experience performing work in steep mountainous terrain.

REPRESENTATIVE PROJECT EXPERIENCE

Water Conveyance Tunnel Inspections

Confidential Utility Client, Northern California

Geologist for the inspection of 50+ pressurized/non-pressurized water conveyance tunnels ranging up to six miles in length. Member of Condition Assessment team, which documents the current tunnel conditions, identifies conditions that may represent an operational concern, prepares inspection summary reports, and develops recommendations for maintenance/repair.

South Yuba Landslide Mitigation

Confidential Utility Client | Nevada County, CA

Geologist for preparation of construction documents for emergency storm damage repairs at the 8/2 Flume on the South Yuba Canal. The South Yuba Canal is a water conveyance canal that carries water from Lake Spaulding to Deer Creek Forebay in Nevada County, California. SAGE performed an abbreviated alternatives analysis to determine the preferred method for stabilizing the slope and returning the canal to service. The selected alternative consisted of reshaping the existing slope to construct a new, wider bench and constructing a timber flume based on client standard designs. Additionally, shotcrete transition structures were constructed at the upstream and downstream ends of the timber flume to tie into the existing gunite-lined canal. The new timber flume was approximately 240-feet in length and constructed on a bench that was cut into the slope with a minimum width of 22 feet. A mid-slope shotcrete drainage ditch was constructed to direct surface water from the upper slope to outlet into the gunite-lined canal downstream of the timber flume. The area above the slope was graded to drain away from the new slope so that the slope is only exposed to surface water resulting from direct precipitation.

Union Valley Bike Trail Extension

Sacramento Municipal Utility District | El Dorado County, CA

Lead geologist for a 1.3-mile-long public access trail extension project that included two bridges over inlet creeks to Union Valley Reservoir. Performed a geologic/geotechnical reconnaissance of the project area to visually assess the geologic conditions and identify the potential for adverse geologic/geotechnical conditions. Developed conclusions regarding geologic and geotechnical feasibility of the project relative to the bike path bridges and provided recommendations to mitigate unfavorable conditions at one of the bridge abutments.

Also provided grading recommendations with a specific focus on how to design the site improvements to minimize excavation into shallow resistant rock prevalent at the site.

Middle Fork Penstock Instrumentation and Monitoring Program

Placer County Water Agency, Placer County, CA

Geologist on a multi-disciplinary team that developed and implemented an instrumentation and monitoring program for a penstock exhibiting evidence of foundation movement. Responsible for design and fabrication of custom waterproof housing for system components, materials acquisition, installation of hard components and instruments, wiring of an Automated Data Acquisition System (ADAS), and management of subcontractor during ADAS installation. Also coordinated meetings and site work with client and subcontractor. On-going responsibilities includes performing as-necessary maintenance, troubleshooting, and repair of ADAS with the assistance of a subconsultant, and reviewing the monitoring data and distributing bimonthly updates to the project team.

Main Street Landslide Investigation and Repair

Sierra County Department of Public Works, Alleghany, CA

Lead geologist for a geotechnical investigation of a landslide that restricted vehicular access to the town of Alleghany. The investigation included logging borings with continuous sample collection, and field mapping the landslide and surrounding area. Installed inclinometers/piezometers and conducted routine monitoring/analysis to evaluate likelihood of slope instability adjacent to existing landslide. Prepared geologic cross sections and geotechnical engineering report that provided design of landslide repair and stabilization of adjacent slopes.

Various Landslide Investigations

Nevada County Department of Public Works, Nevada County, CA

Lead geologist for investigations of landslides that threatened key infrastructure such as wastewater treatment plants and major arterial roads in Nevada County. Investigations typically included geologic mapping, subsurface exploration, and inclinometer/piezometer installation. Responsible for conducting routine monitoring of the inclinometers/piezometers, analyzing the data, and coordinating with project geotechnical engineers and the client to design appropriate mitigation measures.

Penstock Geohazards Assessment

Confidential Utility Client, Northern California

Geologist on a geohazards assessment team for the Tiger Creek penstock. The assessment included a review of past inspection reports, performing a penstock walkdown to document current conditions and identify geologic hazards that may impact the penstock, and preparing a summary report and geohazards information sheet. Participated in the walkdown and co-authored the inspection report.

Test Wells for Municipal Water Supply

KSL Capital Partners, Squaw Valley, CA

Lead Geologist/project manager for a series of test wells to evaluate if there is sufficient ground water for a large commercial and residential expansion project in Squaw Valley. The project included coordinating the drilling program with contractors and the client, logging the subsurface geologic conditions during drilling designing test wells, oversight of development of the test wells, and oversight of aquifer testing. Also responsible for providing daily progress updates to the project team.

Geologic Investigation for Slope Stability of Large Cut Slopes

Vulcan Materials Company, Irwindale, CA

Geologist for an investigation to evaluate the stability of numerous 100 to 250-foot-tall, near vertical cut slopes in gravel mines. Responsible for interpreting the depositional history of Quaternary sedimentary deposits comprising the San Gabriel River Fan and identifying possible sources of strength of the deposits. Reviewed published geologic literature and historic aerial photographs, and spent approximately 3 months mapping deposits exposed in cut slopes. Used 14C methods to date organic material found in paleosols and X-ray diffraction to identify the mineralogy of possible cementing agents in the deposits. Identified two distinct lithologic units and correlated these units across the alluvial fan.

BRYAN PERRIN, PE

Senior Project Engineer

Role: Civil Engineer

REGISTRATIONS

Professional Engineer
CA | No. 84274

EDUCATION

BS | Civil Engineering | 2012
California State University, Chico

EXPERIENCE

Professional Start Date: 05/2012

SAGE Start Date: 04/2016

ASSOCIATIONS

American Institute of Steel Construction (AISC)

American Society of Civil Engineers (ASCE)

Floodplain Management Associations (FMA)

Society of American Military Engineers (SAME)

HONORS

ASCE Sacramento Section Outstanding YMF Officer | 2014

PROFESSIONAL SUMMARY

Bryan Perrin's experience has focused in the civil engineering field. Mr. Perrin has performed civil design and construction observation for public projects associated with both civil works projects and military construction. His design experience includes hydrologic analysis, site grading, and the design of earth dams, spillways, levees, roads, parking lots, gravity drain systems, culverts, erosion protection, water service lines, and concrete retaining walls. His technical experience also includes construction observation of mass concrete structures, levee jet-grouting, and asphalt and concrete paving. He has also supported operations and maintenance programs by performing periodic inspections of levees, performing inspections of roadway and airfield pavements, and updating operations and maintenance manuals for levee systems. USACE Training: Civil Works Cost Engineering; 2014, Risk Analysis for Water Resources Planners & Managers; 2014, Earthwork Construction; 2013, Specs for Construction Contracts; 2013.

REPRESENTATIVE PROJECT EXPERIENCE

North Battle Creek Dam Upstream Face – Design and Post Design Support

Confidential Utility Client | Shasta County, CA

Design Engineer, Project Manager for the removal and repair of delaminated and distressed facing material on the dam and selection of patching materials to promote continued protection of the underlying original mortared-rock dam face. Specific responsibilities included structural design, drafting and submittals for the 90% and 100% design plans, specification and construction estimates, as well as product recommendations. Other work included onsite engineering support of construction to address design questions and responses to RFI's, as well as reviewing vendor submittals.

South Yuba Landslide Mitigation

Confidential Utility Client | Nevada County, CA

Senior Project Engineer for preparation of construction documents for emergency storm damage repairs at the 8/2 Flume on the South Yuba Canal. The South Yuba Canal is a water conveyance canal that carries water from Lake Spaulding to Deer Creek Forebay in Nevada County, California. SAGE performed an abbreviated alternatives analysis to determine the preferred method for stabilizing the slope and returning the canal to service. The selected alternative consisted of reshaping the existing slope to construct a new, wider bench and constructing a timber flume based on client standard designs. Additionally, shotcrete transition structures were constructed at the upstream and downstream ends of the timber flume to tie into the existing gunite-lined canal. The new timber flume was approximately 240-feet in length and constructed on a bench that was cut into the slope with a minimum width of 22 feet. A mid-slope shotcrete drainage ditch was constructed to direct surface water from the upper slope to outlet into the gunite-lined canal downstream of the timber flume. The area above the slope was graded to drain away from the new slope so that the slope is only exposed to surface water resulting from direct precipitation.

2017 Piezometer Monitoring

Confidential Utility Client | Northern California

Senior Project Engineer for the program development, installation, and monitoring of various vibrating wire piezometers (VWPs) installed at various locations along the Bear River and Lower Wise canals, which are part of the Lower Drum Canal System. The purpose of the piezometer program is to monitor groundwater levels beneath new and existing shotcrete canal liners to

better understand the process of hydrostatic pressure build-up and address concerns regarding long-term liner performance, in particular, liner uplift following large storm events. The VWPs are connected to automatic data loggers from which data is downloaded and reviewed at 1 to 2-month intervals, depending on weather conditions. The program has monitored up to 38 VWPs at 13 sites within the watershed.

Lake Nora Penstock Encasement – Design
Confidential Utility Client | Shasta County, CA

Design Engineer for the inspection, design and analysis for deteriorated penstock encasement foundation conditions and impact projection along the portion of the Lake Nora Penstock at the Millseat Creek crossing. The design considered rock weight limits and small equipment for foundation preparation and channel armoring features. The new encasement was designed as a "shotcrete" application to allow for "free-form" finishing of the encasement for smooth hydraulic characteristics. Additionally, due to the desire for shotcrete toughness, synthetic fibers were specified to improve durability. The encasement was designed to be generally non-structural in nature, with impact and thermal considerations controlling fiber and rebar reinforcement designs. Specific responsibilities for the effort included design and layout of an encasement for the existing penstock within the creek. Additionally, as the design engineer, prepared construction drawings and technical specifications.

Lower Wise Canal Site W2 – Post Design Support
Confidential Utility Client | Placer County, CA

Senior Project Engineer for civil design services for the McClintock Lane Impermeable Liner site located on the Lower Wise Canal near the intersection of Live Oak Lane and Highway 49 in Auburn, CA. The site is located below a draw that has had historic issues with underseepage and canal uplift. The project objectives included installing a geomembrane liner over the existing shotcrete lined canal as a way to deal with the hydrostatic uplift pressures that have damaged the liner in this area.

Fordyce Lake Dam As-Needed Consultation
Confidential Utility Client | Nevada County, CA

Senior Project Engineer for the development of alternatives to cost-effectively control seepage into the upstream toe of the dam and cut off seepage from entering the abandoned low-level outlet beneath the dam, with the overall goal of reducing the seepage at the downstream toe of the dam significantly. SAGE is the project lead the project for all technical tasks and have primary responsibility for developing the conceptual plans and performing the alternatives evaluation, and retained subconsultants to provide construction cost/schedule estimates, constructability review, and environmental consultation.

Pit 3 Road Repair
Confidential Utility Client | Shasta County, CA

Senior Project Engineer for the mitigation of an erosional feature along the bank of the Pit River which has encroached on Pit 3 Road, a critical access road to a powerhouse, and a pipeline outfall structure. The design included a rock fill slope and gravity retaining wall to rebuild the shoulder of the road and to protect the outfall structure from undermining.

General On-Call Engineering
Bradford Reclamation District 2059 | Contra Costa County, CA

Senior Project Engineer for the project, located in the Sacramento-San Joaquin delta, near the confluence of the Sacramento and San Joaquin Rivers. Our work consisted of a geotechnical investigation and installation of inclinometers and piezometers along approximately 2,500 feet of levee along the West False River. The goal of the investigation was to assess the overall condition of the levee and evaluate the impact of the salinity barrier on through seepage and levee stability.

DONALD KUROSAKA, PE, SE
Senior Consultant

REGISTRATIONS

Structural Engineer
CA | No. S2964

Professional Engineer
CA | No. C29366

EDUCATION

MS | Structural Engineering | 1983
California State University, Sacramento

BS | Civil Engineering | 1973
University of California, Davis

EXPERIENCE

Professional Start Date: 9/1973

SAGE Start Date: 9/2013

ASSOCIATIONS

American Society of Civil Engineers (ASCE)

PROFESSIONAL SUMMARY

Don Kurosaka has more than 40 years of experience civil and structural engineering in the design and construction of projects in California. Mr. Kurosaka has specific expertise in developing projects from the planning phase including reconnaissance, technical and economic feasibility, environmental assessment, and financial funding; through implementation phase from final design, right-of-way acquisition, permitting, and construction; to the operations phase with the preparation of operations and maintenance manuals and standard operating procedures.

REPRESENTATIVE PROJECT EXPERIENCE

Pittman Flume Structural Engineering Assessment
Confidential Utility Client | Placer County, CA

Project Manager for the visual condition assessment and structural evaluation of the Pittman Flume. SAGE was retained by the Client's Asset Management group to evaluate the elevated, reinforced concrete flume, which conveys water across Pittman Creek between two concrete–lined canal segments. The purpose of the study was to evaluate the severity of observed distress and determine measures necessary to continue operation.

EID – Digester Construction Documents
El Dorado Irrigation District | El Dorado County, CA

Senior Structural Engineer for the structural inspection and assessment, design, and construction support for the structural and coating repairs to be completed on the primary reinforced concrete digester located at the El Dorado Hills Wastewater Treatment Plant.

South Yuba Pipe Hazard Rock Mitigation
Confidential Utility Client | Nevada County, CA

Senior Structural Engineer for the preparation of an emergency bench/pipe repair design appropriate for the area below a large dilated block of granitic rock identified as being a potential hazard to the South Yuba Pipe. The purpose of the bench/pipe design was to have a pre–engineered ("off-the-shelf") design ready for implementation if a rockfall damages the pipe and supporting rockfill bench at the identified site, or at other sites along the South Yuba Pipe alignment. Additionally, the results of initial observations and kinematic analyses suggested cabling will be an effective method to restrain the subject hazard rock in place. The cable restraint system design included additional stability analysis for development of appropriate design loads, and the design of drilled cable/bar anchors and restraining cables.

Bear River Canal Flow Monitoring – Emergency Risk Management and Hydro Remote Terminal Units
Confidential Utility Client | Placer County, CA

QC Review for the design services related to the civil improvements at five sites along the Bear River Canal (BRC) designated for the installation of flow monitors, Hydro Remote Terminal Units (HRTU), and Supervisory Control and Data Acquisition (SCADA) communication equipment. The design included analysis and design of steel stilling wells, control buildings, pedestrian bridges, concrete foundation slabs, and solar panel support structures. Additional tasks included coordination with electrical design and equipment arrangements within the control structure.

Canal Flow Monitoring – South Canal – Construction Support
Confidential Utility Client | Placer County, CA

QC Review for the design services related to the civil improvements at two sites along the South Canal designated for the installation of flow monitors, Hydro Remote Terminal Units (HRTU), and Supervisory Control and Data Acquisition (SCADA) communication equipment. The design included analysis and design of steel stilling wells, control buildings, concrete foundation slabs, and solar panel support structures. Additional tasks included coordination with electrical design and equipment arrangements within the control structure.

Lake Valley Canal – Emergency Risk Management and Hydro Remote Terminal Unit
Confidential Utility Client | Nevada County, CA

QC Review for the design services related to the civil improvements at a site along the Lake Valley Canal, near the inlet for the Lake Valley Siphon. This site was designated for the installation of flow monitors, Hydro Remote Terminal Units (HRTU), and Supervisory Control and Data Acquisition (SCADA) communication equipment. The design included analysis and design of steel stilling wells, control buildings, pedestrian bridges, concrete foundation slabs, and solar panel support structures. Additional tasks included coordination with electrical design and equipment arrangements within the control structure.

Drum Canal Monitoring – Emergency Risk Management and Hydro Remote Terminal Units
Confidential Utility Client | Nevada County, CA

QC Review for the design services related to the civil improvements at two sites along the Drum Canal designated for the installation of flow monitors, Hydro Remote Terminal Units (HRTU), and Supervisory Control and Data Acquisition (SCADA) communication equipment. The design included analysis and design of steel stilling wells, control buildings, pedestrian bridges, concrete foundation slabs, and solar panel support structures. Additional tasks included coordination with electrical design and equipment arrangements within the control structure.

Two Rivers Road Bridge Condition Assessment
Two Rivers Soccer Camp | Plumas County, CA

Conducted a structural engineering condition assessment of a 140-foot steel truss bridge which spans across the Middle Fork of the Feather River. The assessment involved conducting field observations of the bridge structural members, reinforced concrete abutments and connections; analyzing the bridge for a proposed equipment load; and providing findings and recommendations for continued service load use in a report.

Crenshaw/LAX Independent Review
Los Angeles County, CA

Senior Structural Engineer for the design of temporary excavation support systems up to 38 feet deep and 7,000-feet-long for the cut-and-cover construction of Underground Guideways for subterranean rail stations being installed as part of Metro's transit corridor expansion. In order to minimize disruption to public traffic, the SOE system has been designed with integral traffic decking spanning the top of select portions of Crenshaw Boulevard, conveying public traffic over the top of the excavation and supporting existing operational utilities in place.

Skyhawk #9 & #10
Skyhawk Development, LLC | Sonoma County, CA

Engineer of Record for engineering design of foundations for 18-foot-high by 42-foot-wide precast arch culvert and 22-foot-high precast wingwalls for Yerba Buena Road providing vehicle access to a residential development. Additional improvements included a 25-foot span prefabricated steel pedestrian bridge providing access over creek channel for a pedestrian trail through the development.

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Christopher Curtis, PLS

President, Geomatics Engineer

Education BS, Geomatics Engineering, California State University, Fresno, CA, 1999
AA, Forest Engineering Technology, College of the Redwoods, Eureka, CA, 1979

Registration Professional Land Surveyor No. 7579, CA

Professional Background Mr. Curtis has more than 25 years of experience in surveying and geomatics engineering working as a Principal, Project Manager, Project Surveyor, and Party Chief on a wide array of projects which include GPS control surveys for aerial photogrammetric mapping projects, title and easement review, legal descriptions and plat preparation, engineering design and as-built surveys, topographic surveys, dam deformation and precise-leveling vertical control surveys, boundary, cadastral, ALTA, oil and gas well lease sites, hydrographic surveys, mineral claims, right-of-way, underground and open-pit mining control, as well as construction staking surveys for oil and gas pipelines, site development, and transportation projects.

Bear River Canal Tunnel No. 3, Pacific, Gas, & Electric (Hydro), Christian Valley, CA – Principal in Charge and Project Manager responsible for conducting High Definition (HDS) 3D laser scanning survey in the Bear River Canal Tunnel No. 3. Purpose of survey was to investigate current state of cavitation occurring in tunnel, and to set up repeatable network for future monitoring.

On-Call Survey Services, El Dorado County, Department of Transportation, Placerville, CA - Survey Manager responsible for supervision of survey personnel and client liaison for **five consecutive on-call survey services contracts** with the El Dorado Department of Transportation. Project work to date has included right of way delineation, slope staking, finish-grade staking, drainage and utility layout, and topographic design surveys. All fieldwork performed to CALTRANS Survey Manual standards.

Wise Canal Tunnel No. 9, Pacific Gas, & Electric (Hydro), Auburn, CA - Principal in Charge and Project Manager responsible for conducting High Definition **(HDS)** 3D laser scanning survey for approximately 1,500 linear feet of the Wise Canal Tunnel No. 9. Tunnel currently has ling in various sections. Purpose of the survey was to provide "as-built" mapping for design from which accurate steel sets will be fabricated for future lining. Tunnel profile and cross sections on 25ft stationing, grade breaks, and visible irregularities were delivered.

Nacimiento Water Project Pipeline Accident, Paso Robles, CA - Mr. Curtis was retained to conduct terrestrial LiDAR surveys of a half-mile long pipeline corridor at the intersection of Niblick and South River roads in Paso Robles. During construction an excavator ruptured an underground water line which resulted in the drowning of two men in a 30-inch diameter pipe in the bottom of the flooded trench.

Jellys Ferry Bridge (On-going), Tehama County, CA – To date CBC Geospatial Consulting has conducted GPS control surveys, photo control surveys, hydraulic cross sections, photogrammetrically and terrestrially-derived topographic mapping , land net preparation, land net field ties, boundary resolution. Future tasks will include the preparation of final right of way engineering documents for use in the preparation of Plans, Specifications, and Estimate for replacement of the Jellys Ferry Bridge over the Sacramento River in Tehama County.

Sacramento Street Bridge, Vallejo, CA (On-going) - Survey Manager responsible for conducting control surveys, 3D laser scanning LiDAR surveys for completing topographic basemapping, bridge as-builts, and final right of way engineering for the Sacramento Street Bridge Replacement Project.

APPENDIX

Budget Backup

SAGE Engineers, Inc. Project Budget Backup

Task No.	Task Name	Principal Hour	Principal Cost	Senior Associate Hour	Senior Associate Cost	Senior Hour	Senior Cost	Senior Project Hour	Senior Project Cost	Project Hour	Project Cost	Senior Staff Hour	Senior Staff Cost	Staff Hour	Staff Cost	Senior CADD/GIS Technician Hour	Senior CADD/GIS Technician Cost	Support/Cont. Admin Hour	Support/Cont. Admin Cost	Labor Total Hour	Labor Total Cost	Expenses Markup 0%	Subs. Markup 5%	Total Cost
	Billing Rates:		$ 276		$ 231.00		$ 194		$ 173		$ 157		$ 144		$ 135		$ 150		$ 105					
Task 1	**Meetings and Site Visits**	**3**	**$ 828**	**0**	**$ -**	**28**	**$ 5,432**	**0**	**$ -**	**20**	**$ 3,140**	**20**	**$ 2,880**	**0**	**$ -**	**0**	**$ -**	**0**	**$ -**	**71**	**$ 12,280**	**$ -**	**$ -**	**$ 12,280**
	Kick Off Meeting	3	$ 828	0	$ -	3	$ 582		$ -	0	$ -	0	$ -	0	$ -	0	$ -	0	$ -	6	$ 1,410	$ -	$ -	$ 1,410
	Des. Rev. Mtg (30-90%)		$ -	0	$ -	16	$ 3,104		$ -	0	$ -	0	$ -	0	$ -	0	$ -	0	$ -	16	$ 3,104	$ -	$ -	$ 3,104
	Des. Rev. Mtgs (99 & 100%)		$ -	0	$ -	4	$ 776		$ -	0	$ -	0	$ -	0	$ -	0	$ -	0	$ -	4	$ 776	$ -	$ -	$ 776
	Team Site Visits		$ -	0	$ -	5	$ 970		$ -	20	$ 3,140	20	$ 2,880		$ -	0	$ -	0	$ -	45	$ 6,990	$ -	$ -	$ 6,990
Task 2	**Progress Reports and Schedule**	**0**	**$ -**	**0**	**$ -**	**32**	**$ 6,208**	**0**	**$ -**	**0**	**$ -**	**0**	**$ -**	**0**	**$ -**	**0**	**$ -**	**0**	**$ -**	**32**	**$ 6,208**	**$ -**	**$ -**	**$ 6,208**
	Progress Reports and Updates	0	$ -	0	$ -	32	$ 6,208		$ -	0	$ -	0	$ -	0	$ -	0	$ -	0	$ -	32	$ 6,208	$ -	$ -	$ 6,208
Task 3	**Field Topo and LiDAR Surveys**	**0**	**$ -**	**0**	**$ -**	**0**	**$ -**	**0**	**$ -**	**0**	**$ -**	**0**	**$ -**	**0**	**$ -**	**0**	**$ -**	**0**	**$ -**	**0**	**$ -**	**$ -**	**$ 23,840**	**$ 25,032**
3.1a	Flume 47C Topographic Survey		$ -	0	$ -	0	$ -		$ -	0	$ -	0	$ -	0	$ -	0	$ -	0	$ -		$ -	$ -	$ 11,000	$ 11,550
3.2b	Records/Easements/ROW		$ -	0	$ -	0	$ -		$ -	0	$ -	0	$ -	0	$ -	0	$ -	0	$ -		$ -	$ -	$ 4,280	$ 4,494
3.2c	Post Processing/LiDAR incorporation		$ -	0	$ -	0	$ -		$ -	0	$ -	0	$ -	0	$ -	0	$ -	0	$ -		$ -	$ -	$ 8,560	$ 8,988
Task 4	**Geotechnical Investigation**	**5**	**$ 1,380**	**12**	**$ 2,772.00**	**0**	**$ -**	**59**	**$ 10,207**	**0**	**$ -**	**15.5**	**$ 2,232**	**0**	**$ -**	**0**	**$ -**	**0**	**$ -**	**91.5**	**$ 16,591**	**$ -**	**$ 15,492**	**$ 32,857**
4.1	Field Investigation	1	$ 276	3	$ 693.00		$ -	25	$ 4,325		$ -	7	$ 1,008	0	$ -	0	$ -	0	$ -	36	$ 6,302	$ -	$ 6,584	$ 13,215
4.2	Field and Lab Testing	1	$ 276	1	$ 231.00		$ -	2	$ 346		$ -		$ -	0	$ -	0	$ -	0	$ -	4	$ 853	$ -	$ 3,461	$ 4,487
4.3	Seismic Refraction Lines	0	$ -	0	$ -		$ -	0	$ -		$ -	0	$ -	0	$ -	0	$ -	0	$ -	0	$ -	$ -	$ 5,447	$ 5,719
4.4, 4.5, 4.6, 4.7, 4.8	Geotechnical Report	3	$ 828	8	$ 1,848.00		$ -	32	$ 5,536		$ -	8.5	$ 1,224	0	$ -	0	$ -	0	$ -	51.5	$ 9,436	$ -	$ -	$ 9,436
Task 5	**30% DAM**	**4**	**$ 1,104**	**10**	**$ 2,310.00**	**8**	**$ 1,552**	**20**	**$ 3,460**	**20**	**$ 3,140**	**32**	**$ 4,608**	**0**	**$ -**	**10**	**$ 1,500**	**0**	**$ -**	**104**	**$ 17,674**	**$ -**	**$ -**	**$ 17,674**
	30% DAM	4	$ 1,104	10	$ 2,310.00	8	$ 1,552	20	$ 3,460	20	$ 3,140	32	$ 4,608		$ -	10	$ 1,500	0	$ -	104	$ 17,674	$ -		$ 17,674
Task 6	**Project Design and Design**	**22**	**$ 6,072**	**0**	**$ -**	**22**	**$ 4,268**	**64**	**$ 11,072**	**82**	**$ 12,874**	**128**	**$ 18,432**	**0**	**$ -**	**128**	**$ 19,200**	**8**	**$ 840**	**454**	**$ 72,758**	**$ -**	**$ -**	**$ 104,984**
	30% Submitttal	10	$ 2,760		$ -	8	$ 1,552	24	$ 4,152	50	$ 7,850	48	$ 6,912		$ -	60	$ 9,000			200	$ 32,226			$ 32,226
	50% Submitttal	8	$ 2,208	0	$ -	6	$ 1,164	24	$ 4,152	24	$ 3,768	48	$ 6,912		$ -	48	$ 7,200		$ -	158	$ 25,404	$ -		$ 25,404
	75% Submitttal	4	$ 1,104	0	$ -	6	$ 1,164	16	$ 2,768	30	$ 4,710	48	$ 6,912		$ -	40	$ 6,000		$ -	144	$ 22,658	$ -		$ 22,658
	90% Submittal	4	$ 1,104	0	$ -	4	$ 776	12	$ 2,076	16	$ 2,512	20	$ 2,880		$ -	24	$ 3,600		$ -	80	$ 12,948	$ -		$ 12,948
	99% Submittal	4	$ 1,104	0	$ -	4	$ 776	8	$ 1,384	8	$ 1,256	8	$ 1,152		$ -	8	$ 1,200		$ -	40	$ 6,872	$ -		$ 6,872
	100% Submittal	2	$ 552	0	$ -	2	$ 388	4	$ 692	4	$ 628	4	$ 576		$ -	8	$ 1,200	8	$ 840	32	$ 4,876	$ -		$ 4,876
Task 7	**Regulatory Document Support**	**4**	**$ 1,104**	**0**	**$ -**	**8**	**$ 1,552**	**32**	**$ 5,536**	**0**	**$ -**	**12**	**$ 1,728**	**0**	**$ -**	**0**	**$ -**	**0**	**$ -**	**56**	**$ 9,920**	**$ -**	**$ -**	**$ 9,920**
	Regulatory Document Support	4	$ 1,104	0	$ -	8	$ 1,552	32	$ 5,536	0	$ -	12	$ 1,728	0	$ -	0	$ -	0	$ -	56	$ 9,920	$ -	$ -	$ 9,920
	Project Totals	**38**	**$ 10,488**	**22**	**$ 5,082**	**98**	**$ 19,012**	**175**	**$ 30,275**	**122**	**$ 19,154**	**208**	**$ 29,880**	**0**	**$ -**	**138**	**$ 20,700**	**8**	**$ 840**	**809**	**$ 135,431**	**$ -**	**$ 39,332**	**$ 208,955**

2018 CAPITAL IMPROVEMENT PLAN **Program:** **Hydroelectric**

Project Number: 17026

Project Name: Flume 47C Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 11/13/17

Project Description:

Flume 47C is an elevated flume, approximately 150 feet in length, and constructed by PG&E in the mid 1950's. In 2016, District construction crews made interim repairs to ensure the continued safe operation until a complete replacement of the flume can occur. The geotechnical assessment and design for the project have not been started so the construction costs shown in this CIP is an estimate based on the average of prior construction bids received for prior flume replacement projects. Construction cost estimates will be refined upon completion of the geotechnical assessment and design. Construction of this project is scheduled to be done by District crews.

Basis for Priority:

The flume will continue to deteriorate potentially causing flume failures that would result in significant impacts to environmentally sensitive areas. Additionally, one third of the District's water supply would be out of service for an extended period to make emergency repairs resulting in interruption of the reliable delivery of water for consumptive use and hydroelectric power generation.

Project Financial Summary:			
Funded to Date:	**$ 50,000**	**Expenditures through end of year:**	**$ 275**
Spent to Date:	**$ 275**	**2018 - 2022 Planned Expenditures:**	**$ 1,569,500**
Cash flow through end of year:	**$ -**	**Total Project Estimate:**	**$ 1,569,775**
Project Balance	**$ 49,725**	**Additional Funding Required**	**$ 1,519,775**

Description of Work	**Estimated Annual Expenditures**					
	2018	**2019**	**2020**	**2021**	**2022**	**Total**
Study/Planning		**$ 40,000**				**$ 40,000**
Design		**$ 67,500**				**$ 67,500**
Construction		**$ 1,387,000**				**$ 1,387,000**
Warranty/FERC QCIP			**$ 75,000**			**$ 75,000**
TOTAL	**$ -**	**$ 1,494,500**	**$ 75,000**	**$ -**	**$ -**	**$ 1,569,500**

Funding Sources	**Percentage**	**2018 Amount**
Water Rates	47%	$0
Water FCCs	53%	$0
		$0
Total	**100%**	**$0**

Funding Comments:

Consideration to Award a Professional Services Contract to Sage Engineering for the Flume 47C Replacement Project

March 12, 2018

By: Cary Mutschler
Senior Civil Engineer

El Dorado Irrigation District

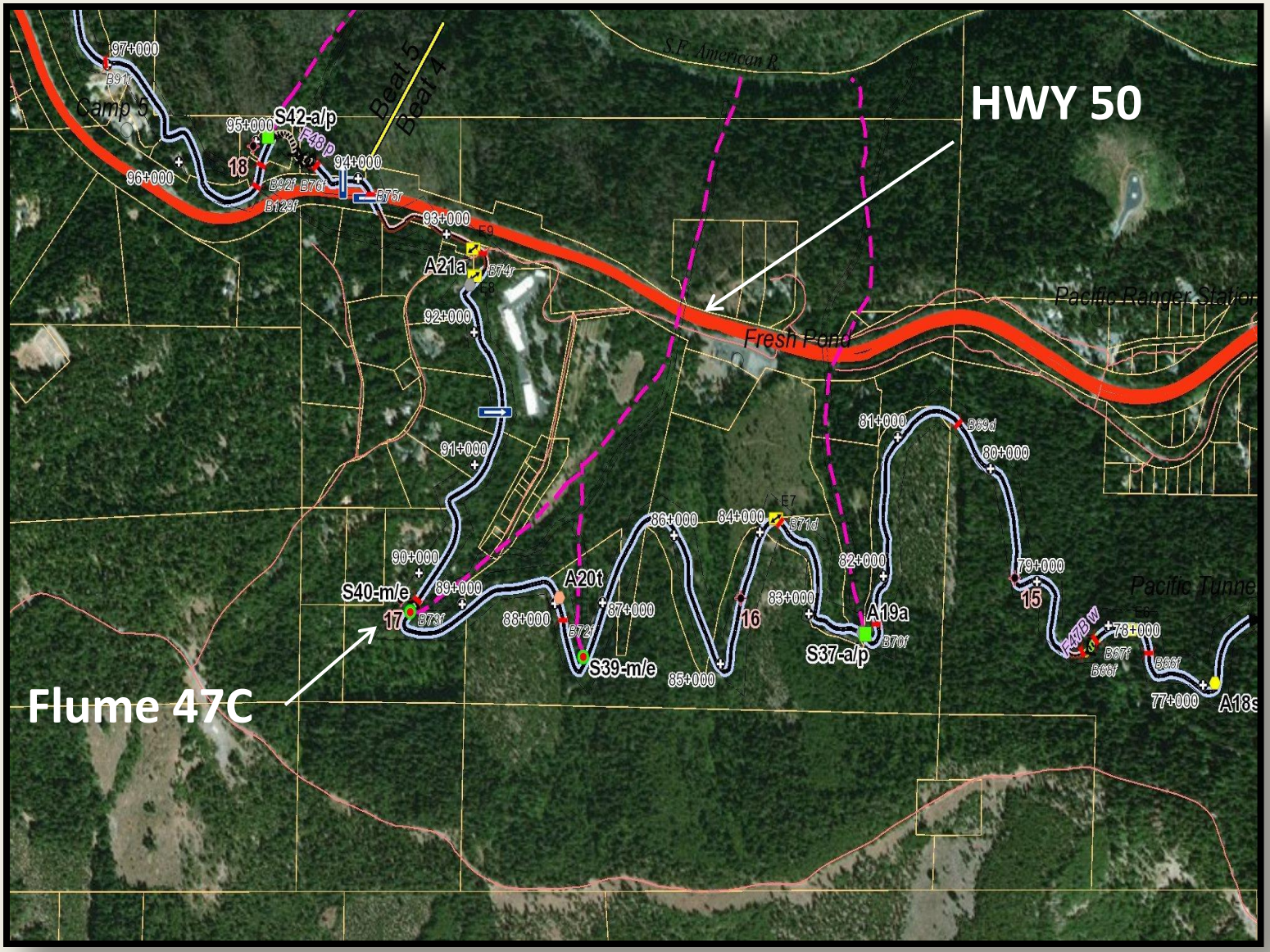
Previous Board Actions

- November 13, 2017 – The Board adopted the 2018-2022 CIP, which included this project subject to funding availability

Summary of Issues

- Flume 47C is an elevated wood flume, approximately 150 feet in length and constructed by PG&E in the 1950's
- Repaired in 1990
- Interim repairs in 2016
  - 2016 Repairs used lag bolts to the posts to attached liner boards
- Scheduled to be constructed in the 2019 October outage

Project Site



47C Looking Downstream

47C Looking Upstream

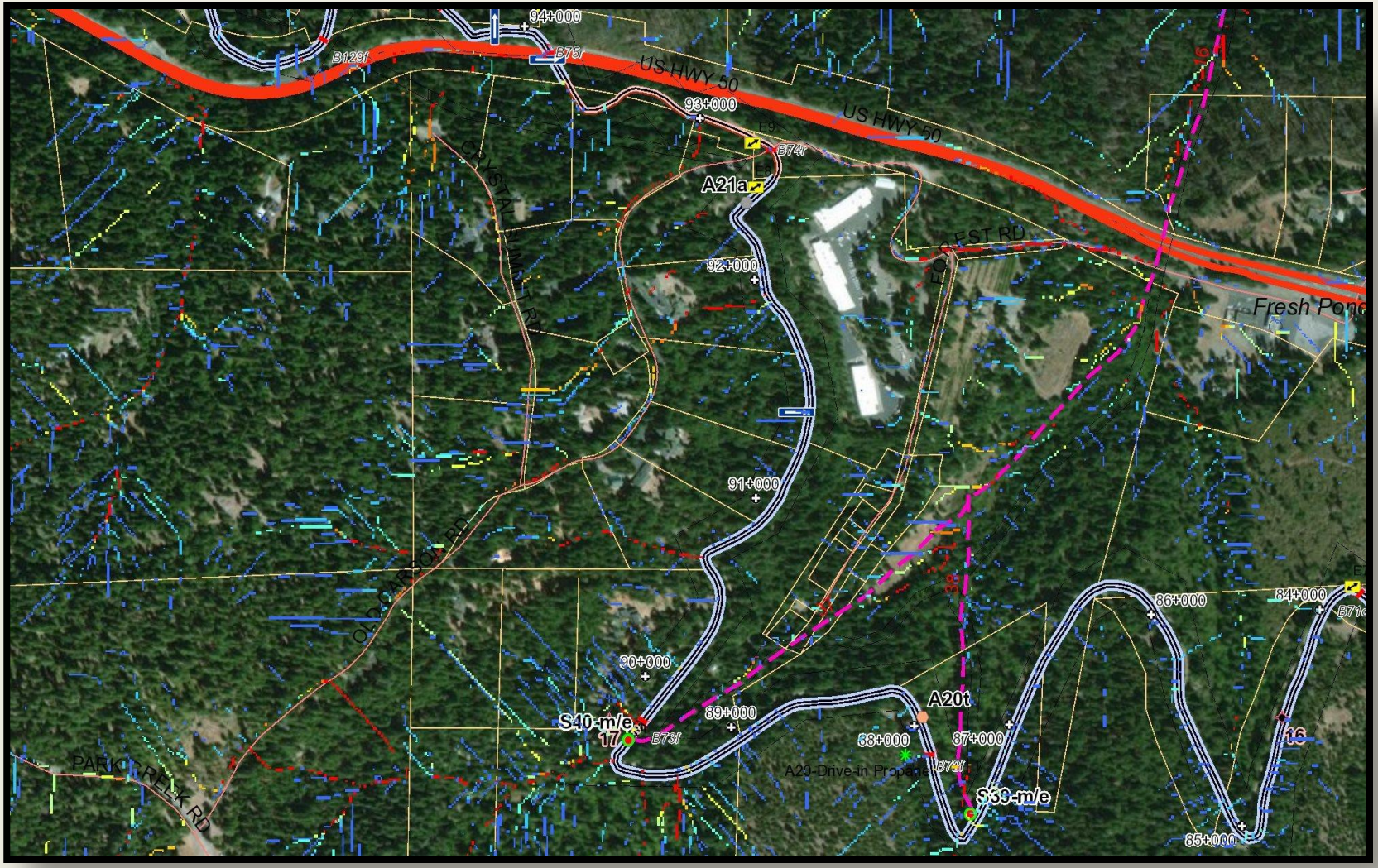
47C Substructure

47C Substructure

Challenges for Design

- Access
  - Helicopter not a preferred option due to cost and the homes in the area
  - Water way on upstream side
  - EID above ground water line on downstream
- Removing of old spillway
- Method of replacement
  - Concrete flume (Pre-cast or Cast in Place)
  - MSE with shotcrete canal

Challenges for Design



Challenges for Design

Proposals

Proposer	Amount
GHD	$294,951
Sage Engineering	$208,955

Proposal Evaluation and Ranking

- Responsiveness to RFP
- Experience and expertise on similar projects
- Project team makeup and capabilities
- Rates and charges, affordability and reasonableness of cost for expertise required to meet project needs
- Client references

Cost Breakdown

Flume 47C Funding Requirements

	Amount
Sage – Design, surveying, geotechnical, regulatory support	$208,955
Capitalized Labor – Engineering, environmental staff support	155,000
Environmental review / permitting professional services	30,000
TOTAL	**$393,955**

Board Decision/Options

- **Option 1**: Award contract to Sage Engineering in the not-to-exceed amount of $208,955 and approve project funding of $393,955 for Project No. 17026.
- **Option 2**: Take other action as directed by the Board.
- **Option 3**: Take no action.

Staff and General Manager Recommendation

- **Option 1**

Questions?