



REGULAR BOARD MEETING AGENDA

5:30 p.m., Tuesday, July 28, 2026
Utica Headquarters | 1168 Booster Way, Angels Camp, CA 95222

View the meeting agenda packet: www.uticawater.com/board-meetings

UTICA BOARD OF DIRECTORS

Caroline Schirato – Chair
Eric Bottomley – Vice Chair
Bruce Tallakson – Secretary
Alvin Broglio – Director
Gary Conrado – Director

ORDER OF BUSINESS

1. **Call to Order & Pledge of Allegiance**

2. **Roll Call**

3. **Approval of the Agenda**

4. **Public Comment**

Members of the public may address the Board on items not listed on the agenda. Comments are limited to three minutes. No action will be taken on items not on the agenda. The public is encouraged to work with staff to put items on the agenda for Board consideration.

5. **Consent Calendar**

These items are expected to be routine and non-controversial. Unless a Board member pulls an item, all items will be approved together at one time without discussion.

A. Approve minutes from the June 2026 Regular Board Meeting (Walker)

B. Accept Financial reports for June 2026 (Sparks)

- C. Accept Generation reports for June 2026 (Walker)
- D. Accept Operations Report (Fields)
- E. Accept Water Conveyance Report (Rasmussen)
- F. Accept FERC Exemption Billing Report (Sparks)
- G. Quarterly Training Report (Sparks)
- H. Quarterly Grant Report (Walker)

6. Regular Agenda

- A. Discussion/Action Regarding Grant Writing Consultant Proposal
(Erik Holt, General Manager)
- B. Discussion/Action to Adopt the Updated Illness and Injury Prevention Plan (IIPP)
(Erik Holt, General Manager) **Resolution 2026-09**
- C. Discussion/Action to adopt the Utica Water and Power Authority Capital Improvement Plan
(Erik Holt, General Manager) **Resolution 2026-10**
- D. Discussion/Action to adopt a new Reserves Policy for the Utica Water and Power Authority
(Erik Holt, General Manager) **Resolution 2026-11**
- E. Discussion/Action to award a Consultant Contract to Complete the FERC Part 12D Periodic Inspection and Authorizing the General Manager to Execute the Contract
(Erik Holt, General Manager)

7. Correspondence, Board / General Manager Reports, Future Agenda Items

- A. Correspondence
 - Outgoing to FERC: Cultural Resources Evaluations and Finding of Effect Analysis report (Public Letter)
- B. General Manager Report
- C. Board Reports
- D. Future agenda items

8. Closed Session

- A. Pursuant to Government Code § Section 54957(b)(1): Public Employee Performance Evaluation – Title: General Manager

B. Pursuant to Government Code § 54957.6: Conference with Labor Negotiators
Agency Designated Negotiator: Board President Schirato
Unrepresented Employee: General Manager

9. Report Out of Closed Session

10. Upcoming Board Meetings and Calendar Events

- Regular Board Meeting, Tuesday, August 25, 2026, at 5:30 p.m.
- Regular Board Meeting, Tuesday, September 22, 2026, at 5:30 p.m.
- Regular Board Meeting, Tuesday, October 27, 2026, at 5:30 p.m.

11. Adjournment

Utica Mission Statement

We are committed to preserving local control of our water resources through sound fiscal and operational management, rigorous dam safety practices, and regulatory compliance, ensuring a safe and reliable water supply for municipal and agricultural stakeholders now and for future generations.

Americans With Disabilities Act

In compliance with Title II of the Americans with Disabilities Act, 28 CFR Part 36, if you need special assistance to participate in this meeting, please contact the Utica office at (209) 736-9419 or email your request to admin@uticawater.com. Notification in advance of the meeting will enable Utica to make reasonable accommodations to ensure accessibility to this meeting. Any materials distributed to the Board that relate to an item on the agenda are available at the Utica office 72 hours prior to the scheduled meeting.

Questions?

Contact Utica at admin@uticawater.com or (209) 736-9419.



Item 5A

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REGULAR BOARD MEETING MINUTES

5:30 p.m., Tuesday, June 23, 2026

Utica Headquarters | 1168 Booster Way, Angels Camp, CA 95222

View the meeting agenda packet: www.uticawater.com/board-meetings

UTICA BOARD OF DIRECTORS

Caroline Schirato – Chair
Eric Bottomley – Vice Chair
Bruce Tallakson – Secretary
Alvin Broglio – Director
Gary Conrado – Director

ORDER OF BUSINESS

1. Call to Order & Pledge of Allegiance

- The meeting was called to order at 5:30 p.m.

2. Roll Call

- Directors Present
 - Director Schirato
 - Director Broglio
 - Director Bottomley
 - Director Tallakson
 - Director Conrado
- Utica Staff Present
 - Erik Holt, General Manager
 - Stacie Walker, Clerk of the Board
 - Frank Fields, O&M Superintendent
 - Kyle Rasmussen, Conveyance Supervisor
- Others Present
 - Mike Hodson, City of Angels, City Administrator

- Tom Quincy, Union Public Utility District, Board Secretary
- Mike Perrano
- Oracle Guillemín
- Heavenly Guillemín

3. Approval of the Agenda

Motion: Director Bottomley made a motion to approve the agenda

Second: Director Broglio

Board Discussion: None

Public Comment: None

Vote: 5-0-0

Ayes: Director Schriato, Director Tallakson, Director Bottomley, Director Broglio, Director Conrado

Noes: None

Abstain: None

Absent: None

4. Public Comment

- Mike Perano made a public comment asking why the time for the public to speak was changed from 3 mins to 5 mins between the last meeting and this one, and also requested that the Utica Board come to UPUD Board Meetings.
 - The Chair explained that the public comment period is set by the Chair and meeting dependent.

5. Consent Calendar

- A. Approve minutes from the April 2026 Regular Board Meeting (Walker) - **Approved**
- B. Approve minutes from the May 8, 2026, Special Board Meeting (Walker) - **Approved**
- C. Approve minutes from the May 20, 2026, Special Board Meeting (Walker) - **Approved**
- D. Accept Financial reports for April 2026 (Walker) – **Accepted**
- E. Accept Generation report for April 2026 (Walker) – **Accepted**
- F. Accept Financial reports for May 2026 (Walker) – **Accepted**
- G. Accept Generation reports for May 2026 (Walker) – **Accepted**
- H. Accept Operations Report April – May 2026 (Fields) – **Accepted**
- I. Accept Operations Report May – June 2026 (Fields) – **Accepted**
- J. Accept Water Conveyance Report (Rasmussen) – **Accepted**
- K. Accept April FERC Exemption Billing Report (Sparks) – **Accepted**
- L. Accept May FERC Exemption Billing Report (Sparks) – **Accepted**
- M. Approval of Water Contractor Transfer of Service (Walker) – **Approved**

Board Discussion: Director Schirato's absence from the April Regular Meeting was not properly noted. The minutes will be amended to reflect Director Schirato's absence in the vote record.

Motion: Director Tallakson made a motion to approve the agenda with Item 5A amended as described by Director Schirato

Second: Director Broglio

Public Comment: None

Vote: 5-0-0

Ayes: Director Schirato, Director Tallakson, Director Bottomley, Director Broglio, Director Conrado

Noes: None

Abstain: None

Absent: None

6. Regular Agenda

- A. Presentation, Discussion, and Action Regarding Utica's Dam Safety Program, Updates to the Owner's Dam Safety Plan (ODSP), and Adoption of Resolution 2026-06, Approving Updates to the ODSP and Reaffirming Commitment to Dam Safety (John Kessler, CDSE, Kessler and Associates)(Erik Holt, General Manager)

Resolution 2026-06

- Mr. Holt introduced Mr. John Kessler, Utica's Chief Dam Safety Engineer, and explained that the presentation was related to the previously accepted independent Dam Safety Program audit report. Mr. Kessler and Utica staff have been working together to address the recommendations and updates.
- Mr. Kessler presented an overview of the Utica System, Dam Safety Program, Emergency Action Plan, and updates to the Owner's Dam Safety Program. He discussed staff training, FERC inspection follow-up items, and DSOD observations, noting Utica's continued commitment to dam safety and operations and maintenance practices. Mr. Kessler discussed the FERC Part 12D Inspection process and explained that, following Mr. Holt's discussions with FERC, a Periodic Inspection was accepted in place of the Comprehensive Assessment at this time. He noted that this approach postpones the Comprehensive Assessment, reduces near-term costs, and maintains ongoing regulatory compliance and dam safety oversight.

Board Discussion:

The Board discussed dam break studies, storm operations, and how reservoir management practices are considered in dam safety evaluations. Mr. Kessler explained that FERC evaluations consider both normal and extreme storm scenarios and that Utica's Emergency Action Plan (EAP) addresses various flow conditions. Mr. Kessler confirmed that FERC reviewed the updated EAP and had no comments or concerns. They discussed EAP tabletop and functional exercises. Mr. Kessler explained that tabletop exercises are conducted every five years to review emergency response scenarios and identify opportunities for improvement.

Functional exercises simulate real-time emergency response activities. The Board discussed updated inundation maps and modeling considerations for Ross Reservoir. Mr. Kessler explained that Ross Reservoir presents unique engineering considerations due to its dam structure and that the analysis incorporates site-specific conditions and assumptions.

Public Comment: None

Motion: Director Broglio made a motion to adopt Resolution 2026-06, Adopting the Owner's Dam Safety Program and Reaffirming the Authority's Commitment to Dam Safety

Second: Director Bottomley

Poll the Board:

Director Schirato – Aye

Director Broglio – Aye

Director Bottomley – Aye

Director Tallakson – Aye

Director Conrado – Aye

Vote: 5-0-0

- B. Discussion/Action regarding the Adoption of Resolution 2026-07, Approving an Updated Utica Water and Power Authority Strategic Plan
(Erik Holt, General Manager) **Resolution 2026-07**

- Mr. Holt presented the updated Strategic Plan and explained that it incorporates Utica's mission, vision, values, the Owner's Dam Safety Plan, and long-term planning priorities. He explained that the Strategic Plan provides a 3-5 year framework, while the Capital Improvement Plan (CIP) provides a longer-term 8-10 year outlook. Mr. Holt noted that the Strategic Plan is intended to be a living document reviewed annually in conjunction with the budget process

Board Discussion:

Director Broglio stated that he would like to add a few words to Section 3.1 of the plan to include "...and had exceeded its life expectancy" in the description of the infrastructure, and he noted that the plan has a lot of good guidance.

The Board discussed the Strategic Plan as a living document that may be updated as conditions change, including regulatory considerations. Directors noted that the plan will serve as a reference document to guide future planning and decision-making. Director Schirato commented that each goal has steps and guidance

Public Comment: None

Motion: Director Broglio made a motion to adopt Resolution 2026-07, adopting the 2026-2030 Strategic Plan with the amendment to section 3.1

Second: Director Schirato

Board Discussion: None

Poll the Board:

Director Schirato – Aye

Director Broglio – Aye

Director Bottomley – Aye

Director Tallakson – Aye

Director Conrado – Aye

Vote: 5-0-0

C. Discussion/Action regarding Transfer of Funds for Emergency TSV Repair at
Murphys Powerhouse
(Erik Holt, General Manager)

- Mr. Holt presented an update regarding the Turbine Sphere Valve (TSV) repair. He explained that during an inspection with the Division of Safety of Dams (DSOD), the valve did not operate as expected, resulting in a shutdown to assess the issue and complete repairs. Mr. Holt noted that he is confident in the repair and expects it to provide a long-term solution. He reviewed the repair costs, associated penalties, and lost revenue impacts. The Board discussed the financial impacts and potential recovery of costs, including any year-end carryover funds.

Board Discussion:

The Board discussed the status of the insurance claim related to the TSV valve repair. Mr. Holt explained that the claim is still under evaluation and that there may be potential recovery related to lost revenue. He noted that the original valve installation materials may have contributed to the failure, although they may have been appropriate at the time of installation. Mr. Holt stated that any recovered funds would be requested to be returned to the reserve account.

Public Comment:

Mr. Mike Hodson asked who Utica paid penalties to.

- Ms. Walker explained the Resource Adequacy Availability Incentive Mechanism (RAAIM) built into the Murphys Power Purchase Agreement.
- Mr. Fields gave additional context regarding the Guaranteed Energy Production (GEP), which could inflict penalties based on a two-year production average.

Motion: Director Tallakson made a motion to approve and authorize a transfer of \$465,920.41 from the Budget Balancing Reserve Fund into the General Fund to cover the costs of emergency repairs to the Murphys Powerhouse Turbine Sphere Valve, and to balance the FY 2025-2026 budget for unanticipated revenue loss.

Second: Director Broglio

Vote: 5-0-0

Ayes: Director Schirato, Director Tallakson, Director Bottomley, Director Broglio, Director Conrado

Noes: None

Abstain: None

Absent: None

D. Discussion/Action regarding the adoption of Resolution 2026-08 Authorizing Applications for Grant Funding for the Darby Apple Fuels Reduction Project (Erik Holt, General Manager) **Resolution 2026-08**

- Mr. Holt explained that he had been challenged to identify additional revenue sources. Based on his experience with fuels reduction grants, he proposed that the Authority consider serving as fiscal agent to host the Darby Apple Fuels Reduction Project.

Board Discussion:

The Board discussed project management and oversight concerns, including issues experienced during a prior project. They also discussed the risks associated with serving as fiscal agent and the Authority's potential revenue from the 12% administrative fee. Mr. Rasmussen noted that the second phase of the prior project went smoothly and the new forester was on site every day of operations. Mr. Holt explained that, if the grant application is successful, the award, scope, rates, and grant acceptance would return to the Board for consideration and approval. The Board would have an opportunity at that time to further discuss the project and project management.

Motion: Director Broglio made a motion to adopt Resolution 2026-08, authorizing the General Manager to submit the Darby Apple Fuels Reduction Grant to CAL FIRE and the Sierra Nevada Conservancy

Second: Director Bottomley

Board Discussion: None

Poll the Board:

Director Schirato – Aye

Director Broglio – Aye

Director Bottomley – Aye

Director Tallakson – Aye

Director Conrado – Aye

Vote: 5-0-0

7. Correspondence, Board / General Manager Reports, Future Agenda Items

A. Correspondence

- INCOMING: DSOD – No Comment regarding Utica submittal of DSSMR
 - Great first compliance project for Ms. Brandi Sparks
- INCOMING: FERC – Approval of Schedule Change for Part 12D Comprehensive Assessment and Periodic Inspection
- INCOMING: FERC – Informing Thirteenth Part 12D Independent Consultant Report Due Date and Scope of Work
- INCOMING: FERC – Response to Twelfth Part 12D Inspection re: Hunter Dam Supporting Technical Information Document

Director Conrado asked which reserve had funds available to cover the cost of the Part 12D Study. The Board discussed the purpose and availability of the various FERC reserves and noted that, although the Relicensing Reserve was not intended for this purpose, it was the only reserve with available funds. Mr. Holt stated that, once proposals are received in response to the RFP, staff will develop a plan to fund the study.

B. General Manager Report

- **Capital Improvement Plan (CIP):** Mr. Holt provided an update on CIP projects, including the Hunters Dam concrete, powerhouse relays, generator rewind assessment, and Darby Knob tunnel. Mr. Holt stated that he had submitted appropriations requests for each project
- **Staffing:** Mr. Holt reported that Jeremiah had accepted a position with PG&E. Although the move was a positive opportunity for Mr. Hyde, the Authority will need to recruit for the vacant position. Mr. Holt stated that the Authority is recruiting for the Hydro Operator position, with the Relief Operator providing interim coverage. Interviews were scheduled for the following Monday.
- **Part 12D Study:** Mr. Holt reported that the RFP had been issued.
- **Financing:** Mr. Holt reported that he had contacted Bank of Stockton regarding potential financing options. The bank expressed interest in working with the Authority, including the possibility of a loan at an interest rate of approximately 6-7% based on the prime rate and potential USDA financing. Representatives from the bank were expected to meet with Mr. Holt the following week, with additional information anticipated at the next Board meeting. Mr. Holt noted that any financing would require demonstrating that member agency rates were sufficient to support repayment.
 - Director Conrado requested additional information regarding the structure and operation of long-term financing before feeling comfortable with such an arrangement. Mr. Holt discussed potential options, including lines of credit and other financing structures. Director Bottomley noted the importance of having a plan for the use of any long-term financing before incurring the debt and emphasized the long-term value of completing as-built plans, noting that using state funding to complete those plans would be beneficial.

C. Board reports

- **Union Public Utility District (UPUD)**
 - The Board received a presentation from the economic consulting engineer to adopt capacity and connection fees for new builds and implement fees, which were not in place before. Director Bottomley noted the costs for new service are appropriate.
 - The General Manager reorganized the organizational chart to create a Construction Supervisor position intended to support the District's goal of completing more projects in-house using existing staff, including repairs to sections of aging infrastructure

- City of Angels Camp (COA)
 - FY 2026-2027 Budget was passed
 - Altaville-Melones Fire Department contracted to annex 77 miles for fire calls to benefit the community
 - Water rate increases for the year went into effect
 - Caltrans sidewalk project well underway
 - Director Conrado asked whether COA would be responsible for maintaining the landscaping associated with the sidewalk project. Director Schirato clarified that Caltrans would install the irrigation and lighting and maintain them for three years.

D. Future agenda items

8. Closed Session

A. Pursuant to Government Code § Section 54957(b)(1): Public Employee Performance Evaluation – Title: General Manager

- The Board took a short break at 7:15 p.m., followed by adjourning to closed session at 7:25 p.m.

9. Report Out of Closed Session

- The meeting returned to open session at 7:26 p.m. with nothing to report.

10. Upcoming Board Meetings and Calendar Events

- Regular Board Meeting, Tuesday, July 28, 2026, at 5:30 p.m.
- Regular Board Meeting, Tuesday, August 25, 2026, at 5:30 p.m.
- Regular Board Meeting, Tuesday, September 22, 2026, at 5:30 p.m.

11. Adjournment

Motion: Director Broglio made a motion to adjourn the meeting at 7:26 p.m.

Second: Director Tallakson

Board Discussion: None

Vote: 5-0-0

Ayes: Director Schirato, Director Broglio, Director Tallakson, Director Bottomley, Director Conrado

Noes: None

Abstain: None

Absent: None

- The meeting was adjourned at 7:26 p.m.

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Questions?

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Item 5B

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UTICA WATER AND POWER AUTHORITY

Date: July 28, 2026
To: Erik Holt, General Manager
From: Brandi Sparks, Administrative Compliance Specialist
Re: Financial Report for June 2026

Power Generation and Revenue:

In June 2026, Angels Powerhouse (APH) generated \$42,826.66 in revenue. Murphys Powerhouse (MPH) generated \$104,917.05 in revenue. The preliminary net revenue is \$147,743.71 for both powerhouses. However, MPH is subject to the Resource Adequacy Availability Incentive Mechanism (RAAIM) adjustments, which can result in additional revenue or reduced payment. Currently, there are outstanding RAAIM charges that will be deducted from June's revenue due to the absence of an energy payment for MPH for the duration of it being offline; they total \$21,798.82, changing the net revenue to \$125,944.89.

Water Sales and Irrigation:

Contractors for the 2025-2026 Regular Irrigation Season have been paid in full. Off-season 2025-2026 invoices were generated for a total of \$594.74. As of June, \$252.23 in payments have been received and \$342.51 remains outstanding.

Contract addendums for the 2026-2027 Irrigation Season were executed; invoices will be generated in July.

JPA Member Contributions:

Joint Powers Authority member contributions are determined by the Utica Board of Directors, in coordination with the full JPA membership, during the annual budget development cycle. Each JPA member agency will pay \$407,000 in FY 2025-2026, per the June 24, 2025, Board Adopted Budget – invoiced each quarter to each entity for \$101,750. Due to accounting differences, Union Public Utility District (UPUD) is invoiced at the end of each quarter, while City of Angels (COA) is invoiced at the beginning. UPUD's third-quarter invoice was issued in June and is outstanding. COA paid in full for FY 2025-2026.

Interest Income:

The Authority's funds are held in the Bank of Stockton's interest-bearing checking and money market accounts. These accounts earned \$5,265.80 in interest income in June 2026.

Utica Water and Power Authority

Budget vs. Actuals: FY 2025-2026 - FY26 P&L

July 2025 - June 2026

	TOTAL			
	ACTUAL	BUDGET	OVER BUDGET	% OF BUDGET
Income				
1200 Operating Income				
1200-01 NCPA Water Sales	320,730.00	0.00	320,730.00	
1200-02 COA Water Agreement	407,000.00	407,000.00	0.00	100.00 %
1200-03 UPUD Water Agreement	305,250.00	407,000.00	-101,750.00	75.00 %
1200-04 Irrigation Water Contractors	46,740.75	54,000.00	-7,259.25	86.56 %
1200-05 1200-05 Slurry Line / CCWD Wheeling Fees		1,000.00	-1,000.00	
Total 1200 Operating Income	1,079,720.75	869,000.00	210,720.75	124.25 %
1210 Power Sales				
1210-01 Angels Powerhouse - Power Sales	495,545.77	576,681.00	-81,135.23	85.93 %
1210-02 Murphys Powerhouse - Power Sales	808,378.78	1,124,321.00	-315,942.22	71.90 %
Total 1210 Power Sales	1,303,924.55	1,701,002.00	-397,077.45	76.66 %
1220 Other Income	3,727.50	0.00	3,727.50	
1220-01 Other Income	47.50		47.50	
1220-02 Reserve Transfers In	463,372.35		463,372.35	
Total 1220 Other Income	467,147.35	0.00	467,147.35	
1300 Interest Income	2,232.76		2,232.76	
1300-01 Interest Income	61,378.41	81,270.00	-19,891.59	75.52 %
Total 1300 Interest Income	63,611.17	81,270.00	-17,658.83	78.27 %
1310 Rent Income				
1310-01 Sierra HOPE Lease Agreement	5,328.00	21,312.00	-15,984.00	25.00 %
1310-02 Crown Castle MFB Tower Lease Agreement	25,921.47	27,847.00	-1,925.53	93.09 %
1310-03 Hunter Reservoir Rental House	14,169.36	14,169.00	0.36	100.00 %
1310-04 Cal.Net MFB Tower Lease Agreement	3,144.00	3,436.00	-292.00	91.50 %
Total 1310 Rent Income	48,562.83	66,764.00	-18,201.17	72.74 %
1340 Other Non-Operating Income				
1340-01 COA Sierra Hydrographics Pass Through	4,800.00	5,070.00	-270.00	94.67 %
1340-02 Other Income	10,190.00		10,190.00	
Total 1340 Other Non-Operating Income	14,990.00	5,070.00	9,920.00	295.66 %
1350 Reserve Income				
1350-01 FERC Relicensing / Exemption Reserve (transfer in)	400,500.00	400,500.00	0.00	100.00 %
1350-03 FERC Five Year Plan Reserve	40,000.00	40,000.00	0.00	100.00 %
1350-04 FERC 10 Year Plan Reserve	10,000.00	10,000.00	0.00	100.00 %
Total 1350 Reserve Income	450,500.00	450,500.00	0.00	100.00 %
1400 Grant Funding				
1400-01 Hunter Reservoir Fuels Reduction Project	500,210.33	557,941.00	-57,730.67	89.65 %
1400-02 Lower Utica Canal Wastegates and Gaging Stations Project	24,711.32	25,458.00	-746.68	97.07 %
1400-06 Utica and Angels Canal Lining (USBR WaterSMART)	29,881.90	28,000.00	1,881.90	106.72 %
1400-10 Utica Grants Administration (% of grant award)	40,274.25		40,274.25	
Total 1400 Grant Funding	595,077.80	611,399.00	-16,321.20	97.33 %
1500 Disaster Relief Reimbursements				

	TOTAL			
	ACTUAL	BUDGET	OVER BUDGET	% OF BUDGET
1500-01 FEMA 75% (New Year's Storm)		0.00	0.00	
1500-02 Cal OES 75% of 25% Remainder (New Year's Storm)		0.00	0.00	
Total 1500 Disaster Relief Reimbursements		0.00	0.00	
Total Income	\$4,023,534.45	\$3,785,005.00	\$238,529.45	106.30 %
GROSS PROFIT	\$4,023,534.45	\$3,785,005.00	\$238,529.45	106.30 %
Expenses				
3000 Wages, Benefits & Burden				
3100 Power				
3101 Power Wages				
3101-01 Operations & Maintenance Superintendent	103,019.04	120,897.00	-17,877.96	85.21 %
3101-02 Hydroelectric Operator II	68,753.57	78,853.00	-10,099.43	87.19 %
3101-03 Hydroelectric Operator I	93,416.19	84,906.00	8,510.19	110.02 %
3101-04 On-Call	17,815.00	18,450.00	-635.00	96.56 %
3101-05 Hydro Management Leave	4,614.00	4,614.00	0.00	100.00 %
3101-10 Overtime	8,598.70	12,000.00	-3,401.30	71.66 %
Total 3101 Power Wages	296,216.50	319,720.00	-23,503.50	92.65 %
3102 Power Burden				
3102-01 Social Security, Medicare, State Unemployment Ins.	28,517.61	26,025.00	2,492.61	109.58 %
3102-03 Workers Comp	11,032.24	15,823.00	-4,790.76	69.72 %
Total 3102 Power Burden	39,549.85	41,848.00	-2,298.15	94.51 %
3103 Power Benefits				
3103-01 Health Insurance - SDRMA	75,111.62	69,574.00	5,537.62	107.96 %
3103-02 Health Reimbursement Account - EDIS	19,368.06	10,000.00	9,368.06	193.68 %
3103-03 Dental/Vision/Chiro/Life Insurance - Choice Builder	5,265.80	3,895.00	1,370.80	135.19 %
3103-04 CalPERS Pension	23,638.73	22,659.00	979.73	104.32 %
3103-06 CalPERS Pension Unfunded Liability	8,270.80	8,548.00	-277.20	96.76 %
Total 3103 Power Benefits	131,655.01	114,676.00	16,979.01	114.81 %
Total 3100 Power	467,421.36	476,244.00	-8,822.64	98.15 %
3200 Water				
3201 Water Wages				
3201-01 Water Conveyance Supervisor	86,647.66	103,459.00	-16,811.34	83.75 %
3201-02 Senior Water Conveyance Operator	76,371.97	82,846.00	-6,474.03	92.19 %
3201-03 General Manager	131,878.10	153,192.00	-21,313.90	86.09 %
3201-04 Administrative Compliance Specialist	62,194.94	61,589.00	605.94	100.98 %
3201-05 Administrative Specialist, Clerk of the Board	65,708.47	67,995.00	-2,286.53	96.64 %
3201-06 Hydroelectric Relief Operator and Conveyance Operator	68,193.21	75,046.00	-6,852.79	90.87 %
3201-09 IT Administrator	26,432.80	28,117.00	-1,684.20	94.01 %
3201-10 Overtime	4,990.76	10,000.00	-5,009.24	49.91 %
3201-11 Conveyance Management Leave		3,979.00	-3,979.00	
3201-12 Administration Management Leave	5,892.00	5,892.00	0.00	100.00 %
Total 3201 Water Wages	528,309.91	592,115.00	-63,805.09	89.22 %
3202 Water Burden				
3202-01 Social Security, Medicare, State Unemployment Ins.	49,556.18	48,017.00	1,539.18	103.21 %
3202-03 Workers Comp - Ops, GM, and Office Staff	16,548.36	24,292.00	-7,743.64	68.12 %
Total 3202 Water Burden	66,104.54	72,309.00	-6,204.46	91.42 %
3203 Water Benefits				
3203-01 Health Insurance - SDRMA	125,726.02	150,384.00	-24,657.98	83.60 %

	TOTAL			
	ACTUAL	BUDGET	OVER BUDGET	% OF BUDGET
3203-02 Health Reimbursement Account - EDIS	15,749.40	15,000.00	749.40	105.00 %
3203-03 Dental/Vision/Chiro/Life Insurance - ChoiceBuilder	7,079.66	6,520.00	559.66	108.58 %
3203-04 CalPERS Pension	41,339.60	45,551.00	-4,211.40	90.75 %
3203-06 CalPERS Pension Unfunded Liability	12,606.20	12,821.00	-214.80	98.32 %
Total 3203 Water Benefits	202,500.88	230,276.00	-27,775.12	87.94 %
Total 3200 Water	796,915.33	894,700.00	-97,784.67	89.07 %
Total 3000 Wages, Benefits & Burden	1,264,336.69	1,370,944.00	-106,607.31	92.22 %
4000 Conveyance Maintenance and Supplies				
4000-26 Angels Canal Maintenance and Supplies	145.58		145.58	
Total 4000 Conveyance Maintenance and Supplies	145.58		145.58	
4100 Maintenance & Repair				
4100-01 Road Maintenance	5,120.00	5,408.00	-288.00	94.67 %
4100-02 Flume Maintenance and Supplies	117,873.86	103,000.00	14,873.86	114.44 %
4100-05 Property Maintenance	11,133.38	5,408.00	5,725.38	205.87 %
4100-06 Fuel for Vehicles and Equipment	18,082.72	18,000.00	82.72	100.46 %
4100-07 Maintenance for Vehicles and Equipment	9,488.13	7,718.00	1,770.13	122.94 %
4100-08 Temporary Labor	17,794.78	35,000.00	-17,205.22	50.84 %
4100-09 Powerhouses Maintenance and Supplies	12,925.56	13,230.00	-304.44	97.70 %
4100-10 Gaging Station Maintenance	1,658.41	6,000.00	-4,341.59	27.64 %
4100-11 Misc Supplies and Repairs	13,860.44	11,576.00	2,284.44	119.73 %
4100-14 Dam and Spillway Maintenance	10,272.48	15,000.00	-4,727.52	68.48 %
4100-15 Owners Dam Safety Plan Audit - Mandated Actions	154.89		154.89	
4100-16 Irrigation Maintenance (Not Meter Replacement)	1,153.80	2,100.00	-946.20	54.94 %
4100-17 Cal Fire	10,176.97		10,176.97	
Total 4100 Maintenance & Repair	229,695.42	222,440.00	7,255.42	103.26 %
4110 Misc. Supplies & Services				
4110-01 Office Services, Supplies, Equipment, Misc.	11,805.85	11,576.00	229.85	101.99 %
4110-02 Employee Uniforms, Boots, PPE	2,307.43	5,150.00	-2,842.57	44.80 %
4110-04 Headquarters Cleaning	1,790.00	1,950.00	-160.00	91.79 %
Total 4110 Misc. Supplies & Services	15,903.28	18,676.00	-2,772.72	85.15 %
4120 Leases & Subscriptions				
4120-02 Sierra Pacific Industries Lease	250.00	250.00	0.00	100.00 %
4120-03 Office Toshiba Copier Lease	3,639.26	2,336.00	1,303.26	155.79 %
4120-04 Software Subscriptions	8,065.68	8,755.00	-689.32	92.13 %
4120-06 Wylderidge Tower Lease NCPA	2,800.00	2,800.00	0.00	100.00 %
Total 4120 Leases & Subscriptions	14,754.94	14,141.00	613.94	104.34 %
4200 Property & Liability Insurance				
4200-01 ACWA/JPIA Auto & General Liability	37,275.20	37,180.00	95.20	100.26 %
4200-02 ACWA/JPIA Property Insurance	74,457.62	73,332.00	1,125.62	101.53 %
Total 4200 Property & Liability Insurance	111,732.82	110,512.00	1,220.82	101.10 %
4200-03 ACWA / JPIA Cyber Liability	1,137.00	1,087.00	50.00	104.60 %
4300 Memberships				
4300-01 Association California Water Agencies	14,600.00	14,663.00	-63.00	99.57 %
4300-02 Tuolumne-Stanislaus Integrated Regional Water Management WAC	200.00	220.00	-20.00	90.91 %
4300-03 Mountain Counties Water Resources Association	2,931.00	1,497.00	1,434.00	195.79 %
4300-04 Calaveras Historical Society	50.00	50.00	0.00	100.00 %

	TOTAL			
	ACTUAL	BUDGET	OVER BUDGET	% OF BUDGET
4300-05 California Special District Association	1,872.00	1,936.00	-64.00	96.69 %
4300-06 Amazon Prime	140.29	200.00	-59.71	70.15 %
4300-07 Farm Bureau - Calaveras Chapter	200.00	150.00	50.00	133.33 %
4300-08 Murphys Community Park Association		75.00	-75.00	
Total 4300 Memberships	19,993.29	18,791.00	1,202.29	106.40 %
4400 Professional/Special. Services	1,450.00		1,450.00	
4400-03 Chief Dam Safety Engineer	17,840.00	15,000.00	2,840.00	118.93 %
4400-05 Murphys/Angels Powerhouse Inspection Reports	3,405.00	10,400.00	-6,995.00	32.74 %
4400-07 SCADA and PLC Programming	4,430.00	8,320.00	-3,890.00	53.25 %
4400-08 Certified Public Accountant	1,031.25	2,808.00	-1,776.75	36.73 %
4400-09 Annual Audit	14,000.00	14,000.00	0.00	100.00 %
4400-10 General Legal Counsel	24,881.41	22,204.00	2,677.41	112.06 %
4400-11 FERC Exemption Legal Counsel	11,090.00	20,000.00	-8,910.00	55.45 %
4400-12 FERC Exemption General Services	36,158.35	50,000.00	-13,841.65	72.32 %
4400-14 FERC Regulatory Compliance	1,570.65	50,000.00	-48,429.35	3.14 %
4400-16 FERC Exemption Consultants	319,929.57	330,500.00	-10,570.43	96.80 %
4400-20 Hydrology Analysis Services	22,825.00	25,380.00	-2,555.00	89.93 %
4400-21 Community Education/Outreach	2,938.69	5,200.00	-2,261.31	56.51 %
4400-24 Grant Writing/Eng./Finance/Mgmt		5,000.00	-5,000.00	
4400-28 Website Maintenance and Support	7,096.00	6,000.00	1,096.00	118.27 %
4400-29 GIS Mapping	843.75	5,200.00	-4,356.25	16.23 %
4400-31 Recruitment	5,349.32	1,000.00	4,349.32	534.93 %
4400-32 Water Rights Protection & Reporting	5,239.52	10,000.00	-4,760.48	52.40 %
4400-33 Human Resources Consulting Support	1,200.00	1,500.00	-300.00	80.00 %
4400-34 Revenue Meter Maintenance - CAISO	5,990.00	6,300.00	-310.00	95.08 %
4400-36 Water Rights Legal Counsel	14,556.85		14,556.85	
Total 4400 Professional/Special. Services	501,825.36	588,812.00	-86,986.64	85.23 %
4500 Governmental & Other Fees				
4500-02 FERC Annual Admin & Land Charge		11,000.00	-11,000.00	
4500-03 Dept Water Resources Dam Fees	70,244.00	75,920.00	-5,676.00	92.52 %
4500-04 WREGIS Annual Fee	75.00		75.00	
4500-05 Powersoft Billing Software (MPH & APH)	500.00		500.00	
4500-06 County Taxes (Booster, Hunters)	1,631.60	400.00	1,231.60	407.90 %
4500-07 USA North 811 Annual Fee	300.00	300.00	0.00	100.00 %
4500-08 County Environmental Health Hazardous Waste	644.00	674.00	-30.00	95.55 %
4500-09 CA Dept of Tax & Fee Admin - State Water Rights	2,282.70	2,500.00	-217.30	91.31 %
4500-11 United States Geological Service Fees	9,890.00	9,548.00	342.00	103.58 %
4500-12 Bank Charges	154.18	100.00	54.18	154.18 %
4500-13 Miscellaneous Fees and Expenses		1,000.00	-1,000.00	
4500-16 Wylderidge Road Fee	940.00		940.00	
Total 4500 Governmental & Other Fees	86,661.48	101,442.00	-14,780.52	85.43 %
4600 Communications				
4600-01 Comcast	14,559.76	8,500.00	6,059.76	171.29 %
4600-04 Verizon	13,287.80	11,000.00	2,287.80	120.80 %
4600-05 Columbia Communications	925.68	975.00	-49.32	94.94 %
4600-06 Cal.Net	2,660.52	2,912.00	-251.48	91.36 %
4600-12 Starlink	4,320.00	4,320.00	0.00	100.00 %
4600-13 ADT Security	11,725.58		11,725.58	

	TOTAL			
	ACTUAL	BUDGET	OVER BUDGET	% OF BUDGET
Total 4600 Communications	47,479.34	27,707.00	19,772.34	171.36 %
4700 Utilities				
4700-01 Calaveras Public Power Agency	6,696.80	5,750.00	946.80	116.47 %
4700-02 PG&E	18,270.71	15,000.00	3,270.71	121.80 %
4700-04 UPUD Water Service	1,006.37	1,000.00	6.37	100.64 %
4700-05 City of Angels Water Service	5,638.12	5,100.00	538.12	110.55 %
4700-07 Cal Waste Garbage & Recycling	2,807.42	2,700.00	107.42	103.98 %
4700-08 Mountain Oasis Bottled Water	822.10	1,000.00	-177.90	82.21 %
4700-09 Ebbetts Pass Gas Propane	803.40	2,500.00	-1,696.60	32.14 %
Total 4700 Utilities	36,044.92	33,050.00	2,994.92	109.06 %
4800 Travel & Training				
4800-01 Travel and Training	5,062.95	20,000.00	-14,937.05	25.31 %
4800-03 Mileage Reimbursement		1,500.00	-1,500.00	
Total 4800 Travel & Training	5,062.95	21,500.00	-16,437.05	23.55 %
4900 Information Technology				
4900-02 Computers, Software, Hardware, and Equipment	1,480.37	10,609.00	-9,128.63	13.95 %
Total 4900 Information Technology	1,480.37	10,609.00	-9,128.63	13.95 %
5000 Powerhouses				
5000-01 MPH Relay Protection Upgrade	35,478.50	17,500.00	17,978.50	202.73 %
5000-04 Feasibility & Facility Assessments	9,975.00		9,975.00	
5000-08 APH Deflector Valve and Hydraulic Control Replacement	327.73		327.73	
5000-11 Backup MPH Transformer	19,508.88	123,111.00	-103,602.12	15.85 %
5000-12 MPH Static Exciter	100,166.44	100,000.00	166.44	100.17 %
5000-16 MPH Emergency Sphere Valve Repair	216,864.35		216,864.35	
Total 5000 Powerhouses	382,320.90	240,611.00	141,709.90	158.90 %
5100 Conveyance				
5100-06 Murphys Forebay Trash Rake Replacements		70,000.00	-70,000.00	
5100-08 Angels Penstock Repairs/Replacement	620.77		620.77	
Total 5100 Conveyance	620.77	70,000.00	-69,379.23	0.89 %
5200 General Projects				
5200-03 General Facilities	10,882.85	10,000.00	882.85	108.83 %
5200-04 Feasibility Assessments		25,000.00	-25,000.00	
Total 5200 General Projects	10,882.85	35,000.00	-24,117.15	31.09 %
5300 Regulatory Compliance		15,750.00	-15,750.00	
5300-02 ODSP	22,891.71		22,891.71	
5300-03 Slope Stability Condition Assessment	5,200.00		5,200.00	
5300-04 Innundation Mapping	24,431.00		24,431.00	
5300-05 Emergency Action Plan (EAP)	118.60		118.60	
5300-06 Noxious Weed Survey	47.25		47.25	
5300-10 FERC	6,409.68		6,409.68	
Total 5300 Regulatory Compliance	59,098.24	15,750.00	43,348.24	375.23 %
5400 IT Outside Services	4,335.37		4,335.37	
6100 Equipment & Material Purchases				
6100-02 Heavy Equipment & Attachments	23,587.37	29,000.00	-5,412.63	81.34 %
6100-03 Irrigation Meter Purch./Install	6,609.44	0.00	6,609.44	
6100-04 Tools and Equipment	3,712.75	6,000.00	-2,287.25	61.88 %
Total 6100 Equipment & Material Purchases	33,909.56	35,000.00	-1,090.44	96.88 %

	TOTAL			
	ACTUAL	BUDGET	OVER BUDGET	% OF BUDGET
7000 FERC Relicensing/Exemption Reserve				
7000-01 FERC Relicensing/Exemption	300,000.00	300,000.00	0.00	100.00 %
Total 7000 FERC Relicensing/Exemption Reserve	300,000.00	300,000.00	0.00	100.00 %
7200 Operating Reserve Fund				
7200-01 Operating Reserve	30,000.00	30,000.00	0.00	100.00 %
Total 7200 Operating Reserve Fund	30,000.00	30,000.00	0.00	100.00 %
7400 FERC 5 Year Plan Reserve Fund				
7400-01 Five Year/Emergency Action Plan Re-Write	1,200.00	1,200.00	0.00	100.00 %
7400-02 Five Year/Tabletop Functional	1,800.00	1,800.00	0.00	100.00 %
7400-03 Part 12 Inspection and Potential Failure Mode Analysis	30,000.00	30,000.00	0.00	100.00 %
7400-04 Supporting Technical Information Documents	16,300.00	16,300.00	0.00	100.00 %
7400-05 Security Plan Rewrite	900.00	900.00	0.00	100.00 %
7400-06 Environmental & Public Use Inspections	4,800.00	4,800.00	0.00	100.00 %
7400-07 Dam Safety/Surveillance Monitoring Plans	1,800.00	1,800.00	0.00	100.00 %
7400-08 Owners Dam Safety Plan/Ext Audt	5,000.00	5,000.00	0.00	100.00 %
Total 7400 FERC 5 Year Plan Reserve Fund	61,800.00	61,800.00	0.00	100.00 %
7500 FERC 10 Year Plan Reserve Fund				
7500-01 Murphys Afterbay Low Level Outlet ROV Inspec	3,000.00	3,000.00	0.00	100.00 %
7500-02 Murphys Afterbay Radial Gate Inspection	3,000.00	3,000.00	0.00	100.00 %
7500-03 Murphys Powerhouse Penstock ROV Inspection	6,000.00	6,000.00	0.00	100.00 %
Total 7500 FERC 10 Year Plan Reserve Fund	12,000.00	12,000.00	0.00	100.00 %
8000 Grants Expenditures				
8000-03 Hunter Reservoir Fuel Reduction Project	436,049.31	557,941.00	-121,891.69	78.15 %
8000-08 Automated Wastegates and Crossgates	40,916.09	50,000.00	-9,083.91	81.83 %
8000-10 Utica Canal Lining Project (USBR)	59,763.79	56,000.00	3,763.79	106.72 %
Total 8000 Grants Expenditures	536,729.19	663,941.00	-127,211.81	80.84 %
QuickBooks Payments Fees	16.36		16.36	
Total Expenses	\$3,767,966.68	\$4,003,813.00	\$ - 235,846.32	94.11 %
NET OPERATING INCOME	\$255,567.77	\$ -218,808.00	\$474,375.77	-116.80 %
Other Expenses				
9200 Operating Reserve Contra Expense	510,072.35		510,072.35	
Total Other Expenses	\$510,072.35	\$0.00	\$510,072.35	0.00%
NET OTHER INCOME	\$ -510,072.35	\$0.00	\$ - 510,072.35	0.00%
NET INCOME	\$ -254,504.58	\$ -218,808.00	\$ -35,696.58	116.31 %

Utica Water and Power Authority

Expenses by Vendor Summary

June 1-30, 2026

	TOTAL
ACWA/Joint Powers Insurance Agency	81,572.61
Adobe	36.98
ADT	368.71
Apparel Graphics	265.71
Arnold Auto Supply (NAPA)	93.05
Atkinson, Andelson, Loya, Rudd & Romo Professional Corporation	4,420.00
Bermad	4,705.26
Burson Machine, Inc.	2,526.08
CAL FIRE	2,222.58
Cal-Waste	234.88
Cal.Net	221.71
Calaveras County Historical Society	50.00
Calaveras Lumber Co, Inc.	353.99
Calaveras Power Agency	1,225.60
CalPERS	798.00
CDK Supply	39.37
Choice Builder	1,004.14
City of Angels	434.26
CivicPlus	524.00
Columbia Communications, Inc.	77.14
Comcast Business	910.19
Crawford Bookkeeping	625.75
E.D.I.S	313.00
Erik Ohlson and Associates	6,409.68
Federal Energy Regulatory Commission	30.00
Fleet E-Payments	1,822.90
GE Vernova	9,975.00
General Plumbing Supply	715.65
General Supply Co.	1,221.32
GFT Infrastructure, Inc	14,486.02
Google LLC	252.00
Grainger	431.27
Griffith, Masuda, & Hobbs	1,125.00
John Kessler	8,700.00
Luz Ortigoza	225.00
Mbi Setl Med	4,072.02
MechMaxx	2,663.29
Mountain Counties Water Resources Association	1,488.00
Pacific Gas & Electric Co	1,107.67
Power Business Technology	226.71
Rock Creek Energy Group, LLP	1,540.00
Rolleri Excavation Inc.	2,500.00
Sierra Hydrographics	4,150.00
Stantec	2,952.69
Starlink	360.00
State Compensation Insurance Fund	2,296.50
Streamline	524.00

Utica Water and Power Authority

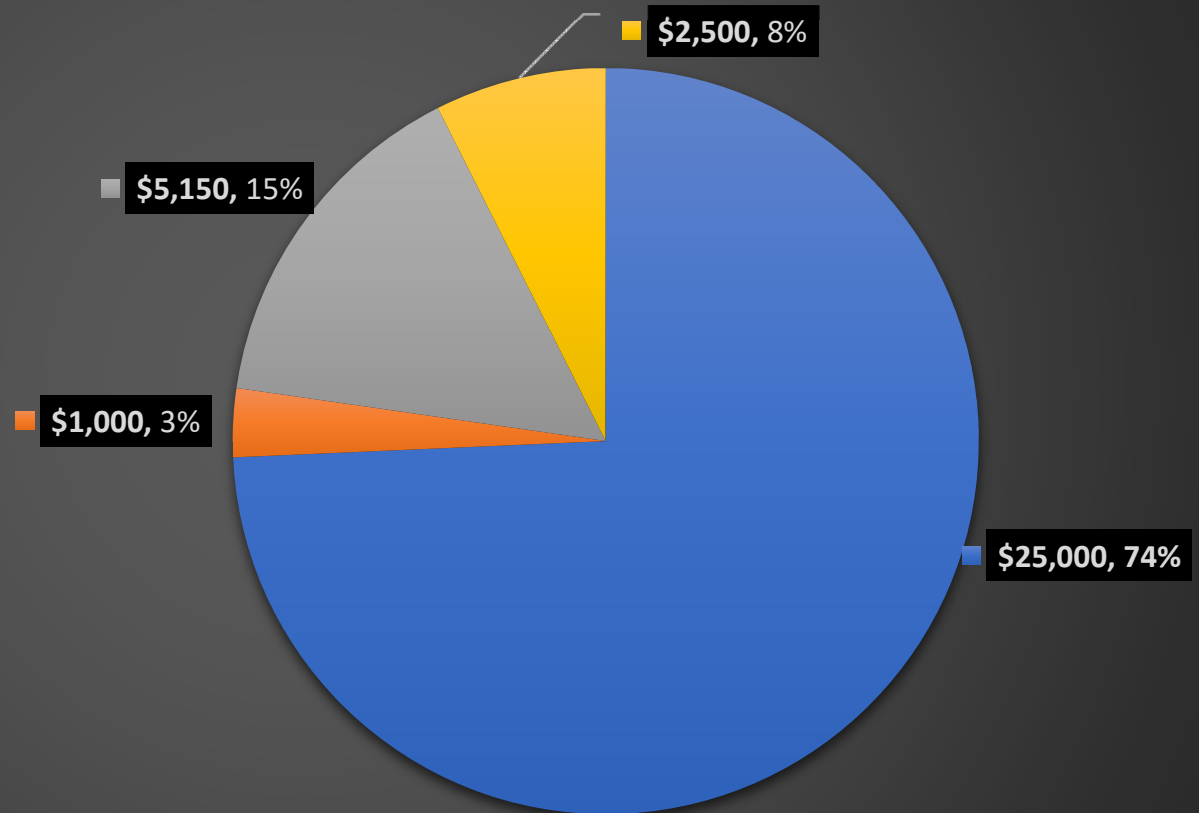
Expenses by Vendor Summary

June 1-30, 2026

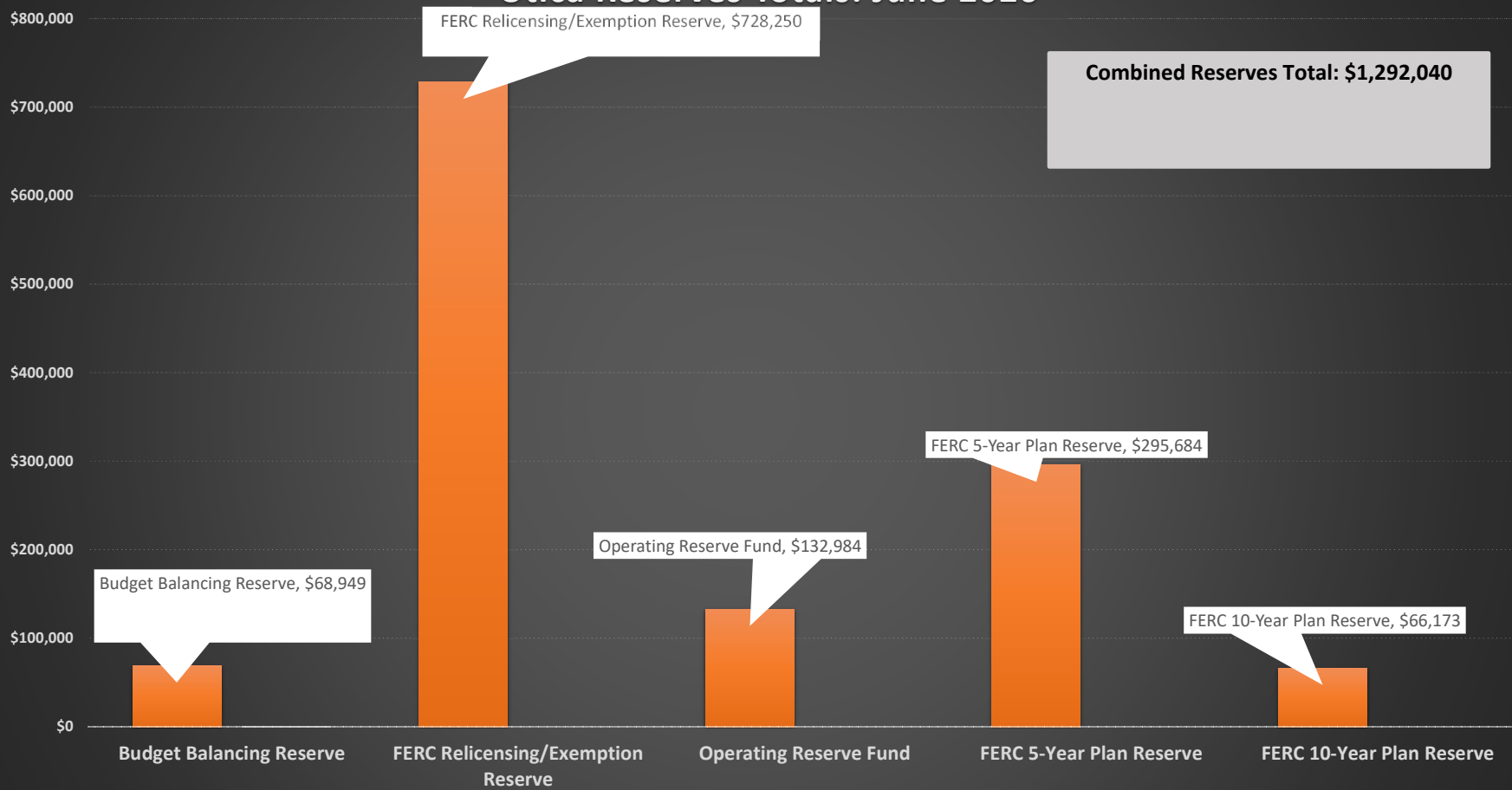
	TOTAL
SWCA Environmental Consultants	9,343.52
The Red Store	24.25
Toshiba Financial Services	208.34
United States Geological Survey	9,890.00
United States Treasury	25.76
Verizon Wireless	952.15
TOTAL	\$192,741.75

June 2026 Reserve Contributions

- FERC Relicensing/Exemption Reserve
- FERC 10 Year Plan Reserve
- FERC 5 Year Plan Reserve
- Operating Reserve Fund



Utica Reserves Totals: June 2026





Item 5C

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June

2026

Water Year 3 as of May 1, 2026

RAINFALL

		APH	MPH
Rainfall	June	0.00	0.00
WYTD rainfall	10/1/25- 9/30/26	35.45	34.35
	WYTD this time last year	26.35	29.60

GENERATION

ANGELS (sold to PG&E)	
FROGTN_1_UTICAA	
PG&E has concurred	548

MURPHYS (sold to PG&E)	
FROGTN_1_UTICAM	
PG&E has concurred	1,427

TOTAL GENERATION:	1,975 MWhr
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REVENUES

June 2026 projected scheduled generation:

\$26,246	APH (.468) @ \$78.00 (1)
\$76,562	MPH (1.4) @ \$73.50
\$102,808	Projected Total

June 2026 actual received generation:

\$42,827	APH (0.8) @ \$78.17
\$104,917	MPH (0) @ \$73.50 (2)
\$147,744	Actual Total

(1) Note that even though the APH ReMAT PPA is at \$89/MWh the TOD for APH varies during the year

(2) Represents MPH gross revenue. Penalties will be applied when generation does not meet CAISO's RAAIM policy

Power Revenue:	\$147,744
RAAIM Fee:	-\$21,799
Negative LMP Charge	\$0
Water Revenue:	\$0
Water and Power:	\$125,945

Note: RAAIM Fee increased due to MPH TSV failure causing an extended unplanned outage

OUTAGES

P=planned

IF = internal forced outage

EF = external forced outage

Date	Time Off	Duration	Cause	Plant
6/3/2026	0:00	86 days 50 mins	IF - Turbine Sphere Valve	MPH
6/8/2026	14:42	45 mins	P - Training New Operator	APH
6/28/2026	17:44	1 hour 8 mins	IF - Unknown Cause	APH

WATER

June '26 - Att A 2,315 + 763 carryover from May '26

S-66 + S-127

LESS water sale to NCPA

Carry over to July

3,078	AF
3,062	AF
0	AF
16	



Item 5D

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UTICA WATER AND POWER AUTHORITY

Date: July 22, 2026

To: Erk Holt, GM

From: Frank Fields, O&M Superintendent

Re: Operations Report: June 2026 – July 2026

Hunter Dam

- Waste Gate 9 spill gate has been programmed into Hunters SCADA allowing operators to remotely operate the gate. This gate can release up to 60 CFS and is located just below Tonopah gauging station.

Murphys Powerhouse

- Generator Assessment testing with GE Vernova is scheduled for the first week of November
- Working to identify replacement PRV for cooling water system. Existing units are again modulating against one another and causing blowoff valve to open sending 450 Gallons per minute into the afterbay.
- Clay valve over modulation has opened a leak in South Air Cooler. Plug kits have been ordered. Leak currently minimal and temperatures are being looked at daily.
- Once materials are sourced for the PRV repairs we will perform both jobs in a single outage likely with the help of Martech due to sections of pipe needing to be fitted.
- Continuing to provide information to JPIA insurance claims in hopes they will approve the TSV
- Communications failed on 12th of July due to CalNet tower generator not starting on loss of Utility Power. CalNet has been contacted to correct their generator issues. This prevented remote operation of the Murphys Forebay gates from Remote, but one of our new operators got an over the phone crash course in onsite bypassing.

Murphys Afterbay

- S78 actuator Nut was received and then machined correctly for the ACME thread. The bearing set and new nut have been installed and the unit is operating smoothly. The bearing sets were sourced outside the Auma Vendors at a \$600 savings per set. Thanks to Brandi.

Cadamartori

- flowmeter stopped working correctly so a staff Gauge was mounted and a rating curve created for square notch weir was installed to facilitate adjustments. We are working on getting a new flowmeter installed.

Operations

- Cody Cable is currently performing the operator duties and collecting monthly water logger data. Cody has responded to his first MPH outage only limited phone support was provided to successfully restart the plant.
- Chance Herndon started training on July 13th to work towards becoming an operator.
- Employee reviews were completed.



Item 5E

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UTICA WATER AND POWER AUTHORITY

Date: July 28, 2026
To: Erik Holt, General Manager
From: Sebastian Martz, Conveyance Operator
Re: Conveyance Report

Conveyance work

- Stream flow measurements at USGS sites and our s47 gauging station
- Cleared out the breezeway at the Angels powerhouse
- Replaced public safety signs on flume 1 lower Utica
- Built new hand railing on flume 1 lower Utica
- Rebuilt a set of stairs leading down to the saw shop from the Hunters office
- Replaced a set of stairs leading down to the s47 gauging station
- Replaced worn parts in the s78 valve gear box
- Cleared vegetation around the Angels yard and fence near the creek and tailrace
- Cleared vegetation below flume 1 to Candy rock road lower Utica canal
- Cleared vegetation on the Angels canal below Ross reservoir
- Replaced broken bent on $\frac{3}{4}$ mile flume
- Replaced broken meter at Cadematori

Irrigation

Fixed a few broken meters





Bent replacement at $\frac{3}{4}$ mile flume





Stairs to saw shop at Hunters



Flume 1 railing



Stairs to s47 gaging station





Item 5F

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UTICA WATER AND POWER AUTHORITY

Date: July 28, 2026
To: Erik Holt, General Manager
From: Brandi Sparks, Administrative Compliance Specialist
Re: FERC Exemption Invoicing June 2026

Informational Item.

Staff reports the following regarding recent FERC Exemption invoices:

- **Stantec** – No invoices were received in June.
- **SWCA Environmental Consultants** – One invoice was received in June for services through June 6, 2026.
 - - Invoice 248724, for Project Management, Cultural Resources Reporting, and Resource Evaluation, Finding of Effect totaling \$3,763.26.
- **Rock Creek** – One invoice was received in June for services through May 31, 2026.
 - - Invoice 24611, for review of P-2409 for relicensing deadlines, and Part 12D inspection requirements and exemptions.

Staff will continue to monitor incoming invoices and provide updates as outstanding billings are received.

Attachments: SWCA invoice 248724 and Rock Creek invoice 24611.

Routing # 071922777 | Account # 7811583501 | Payable to: SWCA, Incorporated | Business Checking Account: First American Bank
Notification: payment@swca.com | Physical Remittance: P.O. Box 7217, Carol Stream, IL 60197- 7217 | EIN: #86-0483317

Erik Holt
Utica Water and Power Authority
1168 Booster Way
PO Box 358
Angels Camp, California 95222

June 30, 2026

Invoice No: 248724
Project Manager: Indya Messier
Project No: 00096602-000-SLC

Invoice Total	\$3,763.26
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UWPA FERC Cultural Resources

Professional Services through June 6, 2026

Phase	01	Project Management
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Task	01	Project Management and Conference Calls
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Professional Services

	Hours	Rate	Amount	
Planning-Specialist III				
Ellis, Jessica	2.50	95.68	239.20	
Planning-Specialist XI				
Messier, Indya	1.00	190.44	190.44	
Totals	3.50		429.64	
Total Professional Services				429.64
		Total this Task		\$429.64
		Total this Phase		\$429.64

Phase	02	Cultural Resources Study
-------	----	--------------------------

Task	03	Resource Evaluation, Finding of Effect and Treatment Plan
------	----	---

Professional Services

	Hours	Rate	Amount	
Cultural Resources-Specialist X				
Demarais, LC	1.50	173.88	260.82	
Planning-Specialist III				
Ellis, Jessica	1.25	95.68	119.60	
Planning-Specialist XI				
Messier, Indya	5.25	190.44	999.81	
Cultural Resources-SME II				
Peabody, Joshua	2.50	222.64	556.60	
Totals	10.50		1,936.83	
Total Professional Services				1,936.83
		Total this Task		\$1,936.83

Task	04	Tribal Engagement
------	----	-------------------

Project	00096602-000-SLC	UWPA FERC Cultural Resources	Invoice	248724
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Professional Services

	Hours	Rate	Amount	
Cultural Resources-SME II				
Peabody, Joshua	.50	222.64	111.32	
Totals	.50		111.32	
Total Professional Services				111.32
		Total this Task		\$111.32

Task 06 Cultural Resources Reporting

Professional Services

	Hours	Rate	Amount	
Planning-Specialist XI				
Messier, Indya	6.75	190.44	1,285.47	
Totals	6.75		1,285.47	
Total Professional Services				1,285.47
		Total this Task		\$1,285.47
		Total this Phase		\$3,333.62

Contract Limits	Current	Prior	To-Date
Total Billings	3,763.26	158,837.51	162,600.77
Limit			189,863.00
Remaining			27,262.23

PLEASE PAY THIS AMOUNT =====> \$3,763.26

For any questions regarding this invoice please contact Saul Martinez
Phone: 602.274.3831 Email: saul.martinez@swca.com

UWPA FERC Cultural Resources (Invoice)

Phase #	Task #	Name	Invoice through June 6, 2026	JTD Spent through June 6, 2026	Contract Amount	Budget Remaining	% Spent
1	1	Project Management and Project Controls	\$ 429.64	\$ 13,011.10	\$ 14,782.00	\$ 1,770.90	88%
2	1	Study Plan Development	\$ -	\$ 7,128.85	\$ 7,568.00	\$ 439.15	94%
	2	Fieldwork	\$ -	\$ 27,945.20	\$ 19,211.00	\$ (8,734.20)	145%
	3	Resource Evaluation, Finding of Effect	\$ 1,936.83	\$ 90,151.95	\$ 79,802.00	\$ (10,349.95)	113%
	4	Tribal Engagement	\$ 111.32	\$ 2,900.30	\$ 3,500.00	\$ 599.70	83%
	5	Application Updates	\$ -	\$ 8,396.38	\$ 17,000.00	\$ 8,603.62	49%
	6	Cultural Resources Reporting	\$ 1,285.47	\$ 13,066.99	\$ 37,000.00	\$ 23,933.01	35%
	7	On-Call Support	\$ -	\$ -	\$ 11,000.00	\$ 11,000.00	0%
			\$ 3,763.26	\$ 162,600.77	\$ 189,863.00	\$ 27,262.23	86%

Rock Creek Energy Group LLP

1 Thomas Circle NW, Suite 700

Washington, DC 20005

Phone: (202)998-2770

INVOICE

Utica Water and Power Authority

1168 Booster Way

P.O. Box 358

Angels Camp, CA 95222

Invoice 24611

Date	May 31, 2026
Terms	
Service Thru	May 31, 2026

In Reference To: Utica and Angels Projects (Labor)

Date	By	Services	Hours	Rates	Amount
05/04/2026	SLW	Review P-2409 docket for relicensing deadlines, call with E. Holt and R. Masuda to discuss exemption, Part 12D inspections and flows from P-2409 project (1.3), follow-up emails with E. Holt re Part 12D inspection requirements and exemptions (0.9)	2.20	\$ 700.00/hr	\$ 1,540.00

Total Hours 2.20 hrs**Total Labor** \$ 1,540.00**Total Invoice Amount** \$ 1,540.00**Notes:**

For remittance by ACH, please send payment to:

Rock Creek Energy Group LLP

Chase Bank, N.A.

ABA number: 044000037 (ACH-only) / 021000021 (WIRE-ONLY)

Account number: 670955662

For remittance by mail, please send payment to:

Rock Creek Energy Group, LLP

P.O. Box 96503

PMB 47433

Washington, DC 20090-6503

Please include invoice number(s) with all payments.

For all billing inquiries, please email accounting@rockcreekenergygroup.com.

Rock Creek Energy Group LLP

1 Thomas Circle NW, Suite 700

Washington, DC 20005

Phone: (202)998-2770

INVOICE

Utica Water and Power Authority

1168 Booster Way

P.O. Box 358

Angels Camp, CA 95222

Invoice 24611

Date	May 31, 2026
Terms	
Service Thru	May 31, 2026

User Hours Summary**Billing Period: 05/04/2026 - 05/31/2026****User Hour Totals**

User	Hours Billed	Rate/Hour	Amount Billed
Sharon L White	2.20	\$ 700.00	\$ 1,540.00



Item 5G

[Return to Agenda](#)



UWPA Quarterly Training Report - FY 2025-26 | Quarter 4

Distribution account	Transaction type	Num	Name	Line description	Amount
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NO PAID TRAINING OCCURRED IN THE FY 25-26 4th Quarter



Item 5H

[Return to Agenda](#)

UTICA WATER AND POWER AUTHORITY

Date: July 28, 2026
To: Erik Holt, General Manager
From: Stacie Walker, Administrative Specialist
Re: Quarterly Grant Report FY 2025-26 Q4

Hunter Reservoir Fuel Reduction Grant:

- Award Amount: \$1,211,913
- 100% Grant Funded
- Funding Source: CAL FIRE
- Performance Period: 09/20/2022 – 05/21/2026
- Project Status: **COMPLETE**
- Project Description: This project reduced hazardous fuels on 248.85 acres around and downstream from Hunter Reservoir, more than 40 acres more than the projected 207 acres of treatment expected.
- Amount Spent to Date: \$1,199,853.25
- Quarterly Reports/Milestones:
 - April 2026: Award successfully closed.

Automated Wastegates and Gaging Stations Grant (Lower Utica Canal Lining and Gaging Stations):

- Award Amount: \$83,030
- 50% Grant Funded
- Funding Source: United States Bureau of Reclamation (USBR): Water SMART Program
- Performance Period: 09/11/2023 – 12/31/2026
- Project Status: **Work Complete – Reporting in process**
- Project Description: Utica will install automated wastegates/cross gates and gaging stations at three locations to improve water use efficiency, flood control, emergency water storage, and avoid unnecessary spillage.
- Amount of Grant Spent to Date: \$83,030
- Amount of Utica Funds Spent to Date: \$108,808.55 (including payroll costs associated with gate installation and administering the grant)
- Quarterly Report/Milestones:
 - April 2026: Nothing to Report
 - May 2026: Nothing to Report
 - June 2026: Worked with Grantor on reports – all financial reports have been accepted
- Action Items:
 - Closeout grant reporting

The Utica Canal Lining Grant:

- Award Amount: \$77,640.00
- 50% Grant Funded
- Funding Source: United States Bureau of Reclamation (USBR): Water SMART Program
- Performance Period: 09/20/24 – 06/30/2027
- Project Status: **Phase One Complete – Phase Two ongoing**
- Project Description: Utica will line 1,200 linear feet of earthen canal with a reinforced shotcrete liner to increase system efficiency and decrease water loss due to leaks.
- Amount Spent to Date: \$74,976.35
- Amount Reimbursed by Grant: \$25,000
 - UWPA Funds Spent: \$49,976.35
- Quarterly Report/Milestones:
 - April 2026: Nothing to report
 - May 2026: Nothing to report
 - June 2026: Request for a no-cost budget amendment sent to Grantor; amendment to reallocate funds to cover increased cost of trash pump.
- Action Items:
 - Complete required reporting
 - Plan for Phases Two and Three, slated for November 2026 and March 2027.



Item 6A

[Return to Agenda](#)

UTICA WATER AND POWER AUTHORITY

Date: July 28, 2026
To: Board of Directors
From: Erik Holt, General Manager
Re: Proposal for Grant Writing Services

RECOMMENDED ACTION:

Authorize the General Manager to negotiate and execute an agreement with KG Consulting for grant-writing services related to a Proposition 4 grant funding request, in an amount not to exceed \$5,000.

SUMMARY:

KG Consulting has submitted a proposal to provide grant-writing services to Utica. The proposed work would support the Authority's efforts to pursue funding for critical infrastructure resilience, hydroelectric optimization, emergency protection, and related water and infrastructure projects.

The scope of work includes grant-readiness support and preparation and submission of a Proposition 4 grant funding request. The proposal anticipates approximately 50 hours of grant-writing services at a rate of \$100 per hour, for a total cost of \$5,000. The Authority would provide KG Consulting with project information, cost estimates, supporting documentation, and other information necessary to prepare the grant application.

The grant is expected to open in late summer 2026. The proposal does not include grant administration services after submission and does not guarantee that UWPA will receive a grant award.

FINANCIAL IMPACTS:

The proposed cost for grant-writing services is \$5,000. The FY 2026-2027 budget has adequate funding in the grant writing GL to cover costs.

Attachments

- 1. KG Consulting – Grant Writing Proposal*

Utica Water and Power Authority Grant Services Proposal

KG Consulting

www.KGConsultingbiz.com

(209) 607-7948



This is not a legally binding document.

July 13, 2026

Client Name: Erik Holt, General Manager

Utica Water and Power Authority

Email: gm@uticawater.com

1168 Booster Way

Angels Camp, CA 95222

(209) 736-9419

Proposal of Work

This document serves as a proposal between Utica Water and Power Authority (UWPA) and KG Consulting for activities covered in the project. The project will begin once this scope has been signed. KG Consulting proposes a comprehensive grant writing partnership with UWPA to secure funding for critical infrastructure resilience, hydroelectric optimization, and emergency protection. The strategy includes grant readiness assessments, tailored proposal development, and compliance support designed to maintain a historic 27-mile water conveyance system while supporting local communities.

The 2024 Proposition 4 initiative allocates over \$10 billion for California water resilience, wildfire prevention, and infrastructure protection, with key funding administered by the Department of Water Resources (DWR) and the State Water Resources Control Board (SWRCB). Major opportunities include Integrated Regional Water Management (IRWM) implementation grants for regional water security, the Expedited Drinking Water Grant Program, and watershed-based wildfire risk mitigation projects.

DWR's recent Proposition 4 workshop outlines funding opportunities for watershed resilience and sustainable groundwater management, prioritizing shovel-ready projects with quantifiable water savings and leveraged match funding. KG Consulting can align UWPA's infrastructure repairs and reservoir projects with these criteria, specifically utilizing the \$3 million Planning and \$5 million Early Action grant tracks.

Project Deliverables	Timeframe	Cost
Grant writing services Prepare and submit Prop 4 Grant Funding Request. Proposal does not include grant administration or guarantee grant award.	Grant application opening expected late summer 2026 50 hours	\$5,000

Comments

Estimates are based on 50 hours of grant writing support at \$100/hour, with detailed project information provided to KG Consulting by UWPA such as, but not limited to, cost estimates, project scope description, supporting data/documentation of grant need and readiness, grant filing identification, and eligibility items through grant submittal process. KG Consulting retains the right to feature the project work in our portfolio.

Other funding and grant opportunities UWPA may choose to explore consist of:

- Emerging Contaminants (EC) and Per- and Polyfluoroalkyl Substances (PFAS) Funding
- County-wide and Regional Funding Programs
- General Drought Funding
- Prop 68 Groundwater Treatment and Remediation Grant Program
- Clean Water State Revolving Fund (CWSRF)
 - Small Community Funding Program
- Drinking Water State Revolving Fund (DWSRF)
- Drinking Water For Schools Program
- Expedited Drinking Water Grant Funding Program
- Ground Water Quality Funding Program (Prop 1 and Prop 68 Groundwater Grant Funding & SB445-SCAP)
- Nonpoint Source Grant Program - Clean Water Act section 319(h) and Timber Regulation and Forest Restoration Fund
- Lead Service Line Funding Program
- Public Water Systems Funding Opportunities
- Safe and Affordable Funding for Equity and Resilience (SAFER)
- Backup Generator Funding Program
- USDA Rural Development Water Grants & Community Facilities Programs
- Community Development Block Grants (CDBG)
- US EPA and BLM WaterSMART

Payment Terms

50% of payment will be invoiced at the start of the engagement, and the remaining 50% will be invoiced on grant submittal date.

Signatures

Client

Date:

Company Name

Date:



Item 6B

[Return to Agenda](#)

UTICA WATER AND POWER AUTHORITY

Date: July 28, 2026

To: Erik Holt, General Manager

From: Brandi Sparks, Administrative Compliance Specialist

Re: Adopting the Revised Injury and Illness Prevention Program (IIPP)

Recommendation

Adopt the attached Resolution No. 2026-09 approving the revised Injury and Illness Prevention Program (IIPP) and authorize the General Manager to implement the revised program and make future administrative updates necessary to maintain compliance with applicable laws and regulations, provided such updates do not materially change Board-adopted policy.

Background

California employers are required to maintain a written Injury and Illness Prevention Program (IIPP) that complies with California Code of Regulations, Title 8, Section 3203. The IIPP establishes the Authority's policies and procedures for identifying workplace hazards, preventing injuries and illnesses, providing employee training, investigating workplace incidents, and maintaining a safe and healthy work environment.

The Authority's existing IIPP has been reviewed and revised to reflect current Cal/OSHA requirements, organizational structure, operational practices, and employee responsibilities. The revisions improve clarity, update personnel assignments, strengthen safety procedures, and ensure the program remains consistent with current regulatory requirements and industry best practices.

The revised IIPP continues to emphasize the Authority's commitment to maintaining a safe workplace through hazard identification, employee participation, regular inspections, safety training, accident investigation, and corrective action procedures.

Discussion

The revised IIPP includes updates to:

- Organizational responsibilities and accountability for workplace safety.
- Procedures for identifying and correcting workplace hazards.
- Employee communication and reporting procedures.
- Safety training requirements for employees and supervisors.
- Workplace inspection and accident investigation procedures.

- Recordkeeping requirements and documentation practices.
- References to current Cal/OSHA regulations and applicable safety standards.

These revisions provide a comprehensive framework for maintaining compliance with state occupational safety requirements while supporting a proactive safety culture throughout the Authority.

Fiscal Impact

There is no direct fiscal impact associated with adoption of the revised IIPP. The program will continue to be implemented using existing staff and operating resources. Compliance with the IIPP helps reduce workplace injuries, potential liability, and regulatory exposure.

Attachments

1. *Resolution No. 2026-09 Adopting the Revised Injury and Illness Prevention Program.*
2. *Revised Injury and Illness Prevention Program (IIPP).*



Resolution No. 2026-09

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE UTICA WATER AND POWER AUTHORITY ADOPTING THE REVISED INJURY AND ILLNESS PREVENTION PROGRAM (IIPP) AND AUTHORIZING THE GENERAL MANAGER TO BE PROGRAM ADMINISTRATOR

WHEREAS, the Utica Water and Power Authority is committed to maintaining a safe and healthful workplace for operations in the water conveyance and hydroelectric system, and in the administration office, to comply with all state and federal regulations; and

WHEREAS, the Utica Water and Power Authority's Injury and Illness Prevention Program ("IIPP") is the employer's overall safety program, creating an organized approach to employee accident prevention that meets the requirements of Title 8 California Code of Regulations, Section 3203, as shown on the attached Addendum A; and

WHEREAS, the Utica Water and Power Authority's Board of Directors has the ultimate authority and responsibility for the program, and the Board is delegating the implementation and maintenance of the program to the General Manager who is the Program Administrator; and

NOW, THEREFORE, BE IT RESOLVED, that the Utica Board of Directors authorizes the General Manager to implement and maintain an effectively written IIPP. By adoption of this resolution, the Board of Directors hereby repeals and renders null and void Resolution 19-09, and any other section of any other resolution that establishes IIPP Policy.

ON A MOTION by Director _____, and seconded by Director _____, the foregoing resolution was duly passed and adopted by the Board of Directors of the Utica Water and Power Authority, on the 28th day of July 2026, by the following vote:

AYES:

NOES:

ABSTAIN:

ABSENT:

Caroline Schirato, Board Chair

Attest:

Stacie Walker, Clerk to the Board

DRAFT



Utica Water and Power Authority

Injury and Illness Prevention Plan

Revised July 2026

Introduction

Utica Water and Power Authority has established this Injury and Illness Program (IIPP) to communicate with employees our procedures for creating a safe and healthy work environment for all employees. We are committed to ensuring that all employees have the tools, knowledge, and resources to perform their jobs safely.

Responsibility

The Utica Water and Power Authority Board of Directors has the ultimate authority and responsibility for the program. The Board delegates implementation and maintenance of the program to the General Manager who is the Program Administrator.

The General Manager will designate an alternate responsible person during periods of his/her absence such as during personal leave.

Copies of the IIPP are available at the following location(s):

1168 Booster Way, Angels Camp, CA 95222

Management Responsibilities:

- Implement and Maintain an effectively written IIPP; and
- Provide the necessary leadership and resources to administer an effective program

Supervisor Responsibilities:

- Ensuring that the elements of the IIPP are met, including performing periodic inspections/hazard assessments
- Ensuring employee compliance with safety policies and rules, investigation of accidents and injuries
- Ensuring employees are trained on the hazards and safe work practices relevant to their jobs

Employee Responsibilities:

- Assist in hazard identification
- Report accidents or injuries to supervisors as soon as they occur
- Follow safe work practices for tasks they perform
- Only perform tasks that they are authorized and trained to perform

Compliance with Safe Work Practices

Management is responsible for ensuring that all safety and health policies and procedures are clearly communicated and understood by all workers. Managers and supervisors are expected to enforce the rules fairly and uniformly. All workers are responsible for using safe work practices, for following all directives, policies, and procedures, and for assisting in maintaining a safe work environment.

The following is our system of ensuring that all workers comply with the rules and maintain a safe work environment:

- Informing workers of the provisions of our IIPP;
- Evaluating the safety performance of all workers;
- Recognizing workers who perform safe and healthful work practices. This recognition is accomplished by:
 - Informal recognition of safety practice
 - Nominating employee safety ideas for an ACWA JPIA H.R. Labounty Safety Award;
 - Providing training to workers whose safety performance is deficient;
 - Disciplining workers for failure to comply with safe and healthful work practices. The disciplinary process is outlined in the UWPA's employee handbook

Employee Communication

We recognize that open, two-way communication between management and staff on health and safety issues is essential to an injury-free, productive workplace. The flow of information between management and staff will be in a form that is readily understandable and encourages employees to inform management of workplace hazards without fear of reprisal. Our organization has less than ten employees and complies with the requirements of subsection (a)(3) of T8CCR 3203 by communicating and instructing employees orally in: general safe work practices with specifics with respect to hazards unique to the employees' job assignment.

- We hold safety meetings: every 10 working days
- We encourage all employees to report any unsafe conditions or safety concerns immediately to their supervisor or Safety Manager, or bring up the issue during department meetings provided the hazard isn't serious.

Hazard Assessment

We conduct safety inspections monthly and when:

- When we initially established our IIP Program;
- When new substances, processes, procedures or equipment which present potential new hazards are introduced into our workplace;
- When new, previously unidentified hazards are recognized;
- When occupational injuries and illnesses occur;
- When we hire and/or reassign permanent or intermittent workers to processes, operations, or tasks for which a hazard evaluation has not been previously conducted; and
- Whenever workplace conditions warrant an inspection.

Periodic inspections consist of identification and evaluation of workplace hazards utilizing applicable sections of the attached Hazard Assessment Checklist and any other effective methods to identify and evaluate workplace hazards.

The following individuals are responsible for conducting workplace inspections and evaluating potential hazards :

- General Manager - Erik Holt
- Operations and Maintenance Superintendent - Frank Fields
- Conveyance Supervisor - Kyle Rasmussen

Accident/Exposure Investigation

Utica Water and Power Authority takes the following steps when investigating accidents and near misses:

- Visit the accident scene as soon as possible
- Interview injured workers and witnesses
- Examine the workplace for factors associated with the accident/exposure
- Determine the root cause of the accident/exposure
- Take corrective action to prevent the accident/exposure from happening again
- Keep a record of the findings and corrective actions taken

The person(s) responsible for conducting accident investigations are:

- General Manager - Erik Holt
- Operations and Maintenance Superintendent - Frank Fields
- Conveyance Supervisor - Kyle Rasmussen

Hazard Correction

Hazards must be corrected in a timely manner as soon as employees or supervisors become aware of the

hazard. We correct workplace hazards:

- When first noticed whenever possible, and
- When there is an imminent hazard. In the case of an imminent hazard, we will remove all employees from the area except those needed to correct the condition. We will protect employees working to correct the hazardous condition.
- All such actions taken and dates they are completed shall be documented on the appropriate forms

Individual responsible for making sure hazards are corrected is:

- General Manager - Erik Holt

Employee Training and Instructions

All workers, including managers and supervisors, shall have training and instruction on general and job-specific safety and health practices. Training and instruction shall be provided as follows:

- When the IIP Program is first established;
- To all new workers, except for construction workers who are provided training through a Cal/OSHA approved construction industry occupational safety and health training program;
- To all workers given new job assignments for which training has not previously provided;
- Whenever new substances, processes, procedures or equipment are introduced to the workplace and represent a new hazard;
- Whenever the employer is made aware of a new or previously unrecognized hazard;
- To supervisors to familiarize them with the safety and health hazards to which workers under their immediate direction and control may be exposed; and
- To all workers with respect to hazards specific to each employee's job assignment.

Workplace safety and health practices for all industries include, but are not limited to, the following:

- Explanation of the employer's IIP Program, emergency action plan and fire prevention plan, and measures for reporting any unsafe conditions, work practices, injuries and when additional instruction is needed.
- Use of appropriate clothing, including gloves, footwear, and personal protective equipment.
- Information about chemical hazards to which employees could be exposed and other hazard communication program information.
- Availability of toilet, hand-washing and drinking water facilities.
- Provisions for medical services and first aid including emergency procedures.

In addition, we provide specific instructions to all workers regarding hazards unique to their job assignment, to the extent that such information was not already covered in other training.

Employee Access

Utica Water and Power Authority provides employees with access to the written IIPP through: Upon request, our business will provide employees with access to the IIPP by:

- Providing a printed copy of the IIPP
- Providing an electronic copy of the IIPP

Our employees can request access to a copy of the written IIPP by:

- Requesting a copy from their supervisor
- Requesting a copy from Human Resources

A copy of the IIPP will be provided within five (5) business days after receiving the request.

Recordkeeping

We are a Special District and we are not required to keep written records of the steps taken to implement and maintain our IIP Program.

IIPP Attachments

- Safety Meeting Report
- Hazard Correction Log
- Supervisor's Accident Investigation Form
- List of Training
- Employee Training Record
- Guidelines and Forms for Conducting Safety Inspections
- Hazard Assessment Checklists:
 - Sample Inspection Form
 - Operation Weekly Inspection
 - Operation Monthly Inspection
 - Conveyance Dam and Reservoir Inspection

SAFETY MEETING REPORT

DISTRICT: _____

DATE: _____ TIME: _____

DEPARTMENT / SHIFT: _____

SUBJECTS / TRAINING COVERED: *(Summarize the subject(s) discussed/taught)* _____

_____**ACCIDENTS REVIEWED:** *(Discuss any district accidents, or others that have "lessons learned" for your operations)* _____

_____**EMPLOYEE INPUT:** *(Hazards noted; or suggestions)* _____

_____**PERSONNEL ATTENDING:**

- | | |
|--|---|
| 1. Print name _____
Signature _____ | 6. Print name _____
Signature _____ |
| 2. Print name _____
Signature _____ | 7. Print name _____
Signature _____ |
| 3. Print name _____
Signature _____ | 8. Print name _____
Signature _____ |
| 4. Print name _____
Signature _____ | 9. Print name _____
Signature _____ |
| 5. Print name _____
Signature _____ | 10. Print name _____
Signature _____ |

MEETING CONDUCTED BY:

REPORT REVIEWED BY:

(Supervisor's Review)

DRAFT

HAZARD CORRECTION LOG

Date	Hazard Noted	Corrective Action Needed	Responsible Party	Target Date	Corrective Action Taken	Completed Date

Supervisor's Accident Investigation Form

When

Date of accident:

Date reported to supervisor:

Time of accident:

Who

Injured employee name:

Job Title:

Department:

Length of Employment:

Loss

Nature and extent of injuries or property damage:

What

Describe specifically what the individual was doing at the time of accident:

Where

Exact location of occurrence:

**Cause
(check
all that
apply)**

ENVIRONMENTAL

- ☐ **Inadequate safeguards**
Lack of safety devices; unsafe design; unguarded machinery; lack of safe work.
- ☐ **Improper or defective equipment**
Poorly maintained, broken, cracked, rough, slippery, worn; inappropriate equipment.
- ☐ **Location hazards**
Poor layout; congestion; insufficient space; improper storage; poor lighting, slip-trip-fall hazards, etc.
- ☐ **Poor ergonomics**
Heavy lifting, poor workstation design; excessive vibration, bending, twisting or reaching; inadequate tools, poor controls/displays, repetitive motions; awkward postures, pressure points.
- ☐ **Poor housekeeping**
Improper placement; clutter, spillage, or breakage.
- ☐ **Not otherwise classified (Describe):**

PERSONAL

- ☐ **Bodily conditions**
Physical impairment; illness; fatigue; emotional upset; intoxication
- ☐ **Lack of skill or knowledge**
Improperly trained; inexperienced; unaware, etc.
- ☐ **Adequate skill or knowledge but failure in execution**
Chance-taking; cutting corners; unauthorized or unnecessary use of equipment or tools; failure to use or deliberately making safety or control devices ineffective; failure to do what should have been done in the particular situation.
- ☐ **Improper apparel**
Failure to use personal protective equipment (eye, face, foot, hand, head, hearing, respiratory, etc.); loose clothing, jewelry, etc.
- ☐ **Not otherwise classified (Describe):**

Why

Comment fully:

Supervisor's Accident Investigation Form (Cont.)

Prevention

What should be done and by whom to prevent recurrence of this type of accident? (Include target dates.)

What immediate actions have been taken? By whom?

What long-term actions will be needed? (Include target dates.)

Name of Supervisor: _____

Date: _____

Signature: _____

**Comments
by Dept.
Head or
Manager**

Based on the supervisor's report, write a concise statement commenting on why the injury occurred, and whether the corrective actions (taken and planned) are complete enough to prevent recurrence.

Name of Manager: _____

Date: _____

Signature: _____

LIST OF TRAINING SUBJECTS

Training Subject	Frequency	Administration	Conveyance	Operations
Batteries: Changing and Charging Storage	I / R			✓
Compressed Gas	I / R			✓
Driver Safety: Defensive Driver	I / Every 4 yrs		✓	✓
Driver Safety: Towing Trailers	I / R			
Electrical Safety Industrial	I / R			✓
Emergency Action Plan	I / R	✓	✓	✓
Ergonomics: Office & Field	I / Every 4 yrs	✓	✓	✓
Hand Tools	I / R		✓	✓
Heat Illness	I / R		✓	✓
Hot Work Welding	I / R			✓
Industrial Lifts (lift trucks/forklifts)	I / A / Operator eval. every 3 yrs.			✓
Injury & Illness Prevention Program	I / R	✓	✓	✓
Ladder Safety	I / R		✓	✓
Lock-out/Tag-out procedures	I / R			✓
Materials Handling	I / R	✓	✓	✓
Medical Services and First Aid (CPR)	I / Every 2 yrs	✓	✓	✓
Office Safety – General Safety	I / R	✓		
Outdoor Hazards Insects, Plants, and Animals	I / R		✓	✓
Personal Protective Equipment	I / R		✓	✓
Portable Fire Extinguishers	I / A		✓	✓
Power Tools	I / R		✓	✓
- Bench Mounted Grinder	I / R			✓
- Chain Saw			✓	
- Drill Press	I / R			✓
- Handheld Drills	I / R		✓	✓
- Pneumatic Tools	I / R			✓
- Portable Grinder	I / R		✓	✓
- Saws	I / R		✓	✓
Rigging and Hoisting Operations	I / A		✓	
Tree Shrub Trimming: Ground Level	I / R		✓	
Workplace Violence Prevention	I / R		✓	✓

Training Frequency: I = Initial, A = Annual, R = Refresher or when changes occurs

Guidelines for Conducting Safety Inspections

The following are the specific requirements for completion of node safety inspections. Each item listed in these guidelines corresponds with a similar item on the inspection form. Areas, which are not applicable to your work-site inspection area, should be documented by writing N/A in the comment space on the checklist. Areas identified, as needing attention must be further documented in the comment area, and tracked on the backside of the inspection form.

I. Fire Protection

1. Fire Extinguishers

- Check seals and hoses for cracks and nozzle for obstructions.
- Check service date, annual service required.
- Remove extinguisher from rack and rotate to prevent powder from packing.
- Check gauge to determine charge status, replace extinguishers requiring recharging with useable extinguisher.
- Check that extinguishers are identified by class of fire and are suitable to site.
- Check that extinguisher locations are plainly marked and access un-obstructed.

2. Sprinkler System

- Main control valve is secured in the open position.
- Fire department connections are capped.
- Spare sprinkler heads are available.
- Sprinkler heads have at least 18" clearance.

3. Flammable Storage

- All flammable / combustible materials are used in well-ventilated areas.
- All flammable / combustible materials are stored in flammable storage cabinets or properly designed storage areas when not in use.
- Check that all flammable / combustible materials are stored in proper containers and that chemical containers are properly labeled.
- Hazard warning signs ("flammable materials", "no smoking") are prominently posted.
- Check that adequate spill control is available.

II. General Work Environment

1. Housekeeping

- Are work surfaces kept dry or appropriate means taken to assure the surfaces are slip-resistant?
- Are all spilled materials or liquids cleaned up immediately?
- Is combustible scrap, debris and waste stored safely and removed from the worksite promptly?

2. Workshops and Storage Lockers

- Is adequate workspace provided?
- Work area is free of unnecessary storage?

3. Wash Rooms and Locker Rooms

- Are wash areas clean and orderly and have adequate supplies?
- Check that washroom fixtures and plumbing are in proper working order.
- Is hot and cold running water available in washrooms?
- Check that personal storage areas and/or locker rooms are clean and orderly.
- Are lunchrooms, break-rooms and restrooms sanitary?

Employee Training Record

Employee Name:	Employee Start Date:
----------------	----------------------

[illegible]



III. Buildings/Grounds and Security

1. Areas around Buildings

- Are areas adjacent to building and fence unobstructed and free of debris?
- Check that access to doors, steps, dock ladders and walkways are clear
- Are loading dock areas free of debris?
- Is outside building illumination adequate and maintained?
- Check that exterior electrical switches and outlets are protected from moisture contact or water accumulation.

2. Security

- Are there any openings or physical damage to perimeter fencing that may indicate that someone has entered property?
- Are gate latches locked and secure?
- Are yard lights providing illumination to all areas of yard?
- Is the fence perimeter free of storage that could hide an entry point?

IV. Workplace Life Safety Conditions

1. Walkways

- Are aisles and passageways kept clear?
- Are normally wet surfaces covered with non-slip materials?
- Are holes in the floor, sidewalk, or other walking surface repaired properly, covered or otherwise made safe?
- Is there safe clearance for walking in aisles where material-handling equipment is operating?
- Are materials or equipment stored in such a way that sharp projectiles will not interfere with the walkway?
- Are changes of direction or elevations readily identifiable?

2. Stairs and Stairways

- Are stair rails or handrails on all stairways having four or more risers?
- Are all stairways at least 22 inches wide?
- Do stairs have at least a 6'6" overhead clearance?
- Are step risers on stairs uniform from top to bottom, with no riser spacing greater than 7½ inches?
- Where stairs or stairways exit directly into any area where vehicles may be operated, are adequate barriers and warnings provided to prevent employees stepping into the path of traffic?
- check that areas under stairs are free of combustible/flammable materials

3. Elevated Surfaces

- Are signs posted, when appropriate, showing the elevated surface load capacity?
- Are surfaces elevated more than 30 inches above the floor or ground provided with standard guardrails?
- Is a permanent means of access and egress provided to elevated storage areas?
- Is material stored on elevated surfaces piled, stacked or racked in a manner to prevent it from tipping, falling, collapsing, rolling or spreading?

4. Ladders

- Are portable ladders in good condition (ladder rungs, rails, foot rests)?
- Are dock ladders and handles in good condition?
- Do movable access platforms have spring-loaded wheels?

5. Exiting or Egress from Building

- Are all exits marked with an exit sign and illuminated by a reliable light source?
- Are the directions to exits, when not immediately apparent, marked with visible signs?
- Are doors, passageways or stairways, that are neither exits or access to exits and which could not be mistaken for exits, appropriately marked "NOT AN EXIT", "TO BASEMENT", "STOREROOM", etc.?
- Are exit signs provided with the word "EXIT" in lettering at least 5 inches high and the stroke of the lettering at least ½ inch wide?
- Are all exits kept free of obstructions?
- Are doors on cold storage rooms provided with an inside release mechanism, which will release the latch and open the door even if it's padlocked or otherwise locked on the outside?

6. Bulletin Boards

- Are OSHA safety and health on the job posters on the bulletin board and up-to-date?
- Are emergency evacuation routes identified and posted?
- Are emergency telephone numbers posted?
- Is the OSHA Form 200 posted during the month of February?

5. Material Safety Data Sheets

- Is the MSDS master inventory book accessible to all employees?
- Do all chemicals, solvents, paints, hazardous materials, etc., kept in facility have a MSDS?
- Does the MSDS book has table of contents and kept up-to-date?
- Has MSDS training been provided to all employees?
- Are chemical containers identified and labeled appropriately?
- Do employees understand how to read an MSDS sheet?

8. Office Safety

- Are office computer workstations ergonomically designed and comfortable?
- Are chairs, equipment, and furniture in safe condition?
- Are records and paper storage easily accessible and not stored on high shelves?

V. Loading Docks

1. Loading and Unloading Vehicles

- Are vehicles shut off and brakes set prior to loading or unloading?
- Are dock boards (bridge plates) secured when loading or unloading operations are taking place between vehicles and docks?
- Are tractor-trailers secured (chock blocks) from movement during loading and unloading operations?
- Are dock plates and loading ramps constructed and maintained with sufficient strength to support imposed loading?

2. Hand Trucks and Pallet Jacks

- Are hand trucks maintained in safe operating condition?
- Are pallet jacks maintained in safe operating condition?
- Are pallets inspected and removed from service if broken or unusable?
- Are hand trucks stored properly on vehicles?

VI. Industrial Trucks - Forklifts

1. Training

- Are only authorized and trained personnel allowed to operate industrial trucks-forklifts?
- Are lift truck operating rules posted and enforced?

- Has training been provided for personnel who fuel equipment?
- 2. Forklift Equipment**
- Does each industrial truck have a warning horn or other device which can be clearly heard above the normal noise in the areas where operated?
 - Is the forklift capacity posted on the mast or other area in clear view of the operator?
 - Are the brakes on each industrial truck capable of bringing the vehicle to a complete and safe stop when fully loaded?
 - Will the industrial trucks' parking brake effectively prevent the vehicle from moving when unattended?
 - Are motorized and/or hand/rider trucks so designed that the brakes are applied, and power to the drive motor shuts off when the operator releases his or her grip on the device that controls the travel?
 - Are industrial trucks with internal combustion engine, operated in buildings or enclosed areas, carefully checked to ensure such operations do not cause harmful concentration of dangerous gases or fumes (adequate ventilation)?
 - Do elevated workbaskets have safety chain for attaching to forklift and is a body harness and tie off used?

VII. Electrical Safety

1. Electrical Panel

- Check that suitable access and working space is maintained around all electrical equipment, controls, and switches.
- Are all disconnecting switches and circuit breakers labeled to indicate their use or equipment served?
- When electrical equipment or lines are to be serviced, maintained or adjusted, are necessary switches opened, locked-out and tagged?

2. Electric Tools and Power Cords

- Are portable electrical tools/equipment grounded or double insulated?
- Are electrical appliances such as vacuum cleaners, polishers, vending machines, etc., grounded?
- Do extension cords have a grounding conductor?
- Are multiple plug adapters prohibited?
- Is exposed wiring and cords with frayed or deteriorated insulation repaired or replace promptly?

3. Electrical Outlets

- Are electrical enclosures such as switches, outlets, receptacles, junction boxes, etc., provided with tight-fitting covers or plates?
- Are electrical outlet located within 5 feet of water sources (sinks, basins) provided with ground fault circuit interruption (GFCI) systems?

VIII. General Safety Awareness and Observation

- Do employees have a means of providing safety feed back and is there a record of feedback and response?
- Do employees use personal protective equipment as necessary?

Sample Inspection From

III. Building Grounds/ Security	SatisfactoryYes / No	Action Needed Department Responsible	Date Completed
Parking lot			
Outdoor lighting - Operating - Need Repair			
Fence integrity			
Notes:			

IV. Workplace Safety	SatisfactoryYes / No	Action Needed Department Responsible	Date Completed
Exit ways marked and clear			
Walkways marked			
Floors clean/no spills			
Stairs and stairways clear			
Elevated surfaces/fall protection			
Ladders			
Are unnecessary chemicals disposed of properly?			
Are all incompatible chemicals stored separately?			
Are all chemicals properly labeled and stored?			
Are MSDS's readily accessible?			
Does the eyewash station work properly?			
Are building heating & A/C ducts in need of cleaning?			
Is shelving secured for earthquake resistance?			
Bulletin boards			
Office safety practices			
Evacuation plan posted			
First Aid Kits - Stocked?			
Lockout/Tagout Station & Procedures			
Is Safety training conducted regularly for all employees?			
Training Needed? Why? Who?			
Permits posted & up to date			
Notes:			

V. Warehouse/docks		Satisfactory Yes / No	Action Needed Department Responsible	Date Completed
Is the warehouse floor surface free of depressions?				
Notes:				

VI. Forklifts/Material Handling	SatisfactoryYes / No	Action Needed/ Department Responsible	Date Completed
Forklift operating rules posted			
Forklift operators certified			

Lift capacity posted			
Seat belts provided			
Forklift work platforms			
Fire extinguishers on units			
Notes:			

VII. Electrical Safety/Power Tools	Satisfactory Yes / No	Action Needed Department Responsible	Date Completed
3' working space at panel			
Are all cord-connected, electrically operated tools & equipment effectively grounded or of the approved double insulated type?			
Extension cords			
Electrical outlets			
Safety guards (grinders, saws & similar equipment)			
Are portable fans provided with full guards or screens?			
Are pneumatic & hydraulic hoses on power-operated tools checked regularly for deterioration or damage?			
Notes:			

VIII. Welding Shop	Satisfactory Yes / No	Action Needed Department Responsible	Date Completed
Are cylinders kept away from heat sources?			
Are cylinders stabilized while not in use?			
Are empty cylinders appropriately marked w/valves off & protective covers in place?			
Are signs reading: DANGER- NO SMOKING, MATCHES, OR OPEN FLAME, or the equivalent posted?			
Are signs reading: DANGER-DO NOT WATCH THE ARC, or the equivalent posted?			
Is the welding equipment kept clear of dirt, grease & oil?			
Is a proper fire extinguisher in its proper location & up to date?			
Are hoses & cables free from abrasions & cuts?			
Do cylinder carts have the necessary safety chains?			
Are flash protectors & anti-reverse flow valves installed on gas welding equipment?			
Are regulators marked: USE NO OIL?			
Are O-rings in torch in good condition?			
Is the area kept free of flammable materials?			
Is proper eye protection w/the proper lenses readily accessible?			
Is a leather jacket & leather gloves available for arc welding?			
Notes:			

<i>XII. Laboratory - Water Treatment Plant</i>	<i>Satisfactory Yes / No</i>	<i>Action Needed Department Responsible</i>	<i>Date Completed</i>
Are flammables, acids & oxidizers kept in the appropriate cabinets?			
Are MSDS's and the Chemical Hygiene Plan readily accessibly?			
Does the eyewash station work properly?			
Does the fume hood provide an average face velocity of at least 100 linear ft/min?			
Are all reagent chemicals labeled properly?			
Are reagent chemicals stored at eye level or below?			
Are spill cleanup supplies available?			
Notes:			

<i>XIII. - Water Treatment Plant (General)</i>	<i>Satisfactory Yes / No</i>	<i>Action Needed Department Responsible</i>	<i>Date Completed</i>
Are chemical feed rooms clean and clutter-free?			
Are incompatible chemicals stored separately?			
Do all enclosed areas have a clear path of egress?			
Do all eyewash and safety showers function properly?			
Notes:			

<i>XIV. - Water Treatment Plant (Chlorine Storage Room)</i>	<i>Satisfactory - Yes / No</i>	<i>Action Needed Department Responsible</i>	<i>Date Completed</i>
Is the atmosphere free from chlorine odor?			
Is there a chlorine leak repair kit available?			
Do employees have access to SCBA's for tank change-outs?			
Notes:			

<i>XV. Abrasive Wheel Equipment Grinders</i>	<i>Satisfactory Yes / No</i>	<i>Action Needed Department Responsible</i>	<i>Date Completed</i>
Is the work rest used & kept adjusted to within 1/8" of the wheel?			
Do side guards cover the spindle, nut, & flange & 75% of the wheel diameter?			
Are goggles or face shields always worn when grinding?			
Notes:			

<i>XVI. Hand Tools & Equipment</i>	<i>Satisfactory Yes / No</i>	<i>Action Needed Department Responsible</i>	<i>Date Completed</i>
Do employees in their work areas, in good condition use all tools & equipment?			
Are hand tools such as chisels, punches, etc., which develop mushroomed heads during use, reconditioned or replaced as necessary?			

Are broken or fractured handles on hammers, axes & similar equipment replaced promptly?			
Are appropriate handles used on files & similar tools?			
Are appropriate safety glasses, face shields, etc. used while using hand tools or equipment which might produce flying materials or be subject to breakage?			
Are tool handles wedged tightly in the head of all tools?			
Are tool cutting edges kept sharp so the tool will move smoothly without binding or skipping?			
Notes:			

<i>XVII. Machine Guarding</i>	<i>Satisfactory Yes / No</i>	<i>Action Needed Department Responsible</i>	<i>Date Completed</i>
Is all machinery & equipment kept clean & properly maintained?			
Is sufficient clearance provided around & between machines to allow for safe operations, set up & servicing, material handling & waste removal?			
Is equipment & machinery securely placed & anchored, when necessary to prevent tipping or other movement that could result in personal injury?			
Notes:			

<i>XVIII. Personal Protective Equipment & Clothing</i>	<i>Satisfactory Yes / No</i>	<i>Action Needed Department Responsible</i>	<i>Date Completed</i>
Are approved Safety glasses required to be worn at all times in areas where there is a risk of eye injuries such as punctures, abrasions, contusions or burns?			
Are protective gloves, aprons, shields, or other means provided against cuts, corrosive liquids & chemicals?			
Are hard hats provided & worn where danger of falling objects exists?			
Are hard hats inspected periodically for damage to the shell & suspension system?			
Is appropriate foot protection required where there is a risk of foot injuries from hot, corrosive, poisonous substances, falling objects, and crushing or penetrating actions?			
Are approved respirators provided for regular or emergency use where needed?			
Is all protective equipment maintained in a sanitary condition & ready for use?			
Are eye wash facilities & a quick Drench Shower within the work area where employees are exposed to injurious corrosive materials?			
Notes:			

<i>XIX. General Observation*</i>	<i>Satisfactory Yes / No</i>	<i>Action Needed Department Responsible</i>	<i>Date Completed</i>
Lifting practices*			

Unsafe actions*			
Unsafe conditions*			
Unsafe equipment*			
Congested areas*			
Notes:			

Note: All items with an - * - should be watched for a short period of time (2 to 3 minutes) to observe procedure.

Comments/Action Plan Details:	



Item 6C

[Return to Agenda](#)

UTICA WATER AND POWER AUTHORITY

Date: July 23, 2026
To: Board of Directors
From: Erik Holt, General Manager
Re: Discussion/Adoption of the Capital Improvement Plan

RECOMMENDED ACTION:

Motion to adopt Resolution No. 2026-10 adopting the 2026–2033 Capital Improvement Plan (CIP), which supersedes the Capital Improvement Plan previously adopted by Resolution No. 22-12; authorize FY 2026–27 projects only to the extent funded through the adopted annual budget and subject to any required separate Board approvals; approve the remaining years in concept as a planning framework; and direct annual review and update of the CIP with the budget and Strategic Plan.

Alternatively, the Board may receive the draft CIP, provide direction to the General Manager, and return the Plan for adoption at a subsequent meeting.

SUMMARY:

The draft 2026-2033 Capital Improvement Plan (the "CIP") is presented for the Board's review and action. The CIP is a multi-year planning and financial management document that identifies, prioritizes, and schedules capital investments needed to sustain UWPA's water conveyance and hydroelectric infrastructure. It is designed to connect the Authority's Strategic Plan, annual budget, asset management practices, and long-term funding decisions.

UWPA is responsible for a 27-mile water conveyance system, reservoirs, hydroelectric facilities, and related operational assets, many of which have been in service for decades and some for more than a century. The CIP responds to aging infrastructure, deferred reinvestment, wildfire and emergency water supply vulnerability, hydroelectric reliability needs, and significant regulatory obligations associated with continued Federal Energy Regulatory Commission (FERC) authorization.

The CIP distinguishes among capital projects, capital outlay, and routine Operations and Maintenance (O&M), and organizes proposed investments by Water Conveyance, Hydroelectric Power Generation, General Facilities/Vehicles and Equipment, Compliance, and Information Technology. Projects may be bundled or phased to reduce soft costs, match staffing capacity, accommodate permitting and outage constraints, and smooth annual funding demands.

- Projects are prioritized through a three-tier framework. Tier 1 addresses regulatory compliance, safety, committed outside funding, revenue protection, or a high likelihood of failure.
- Tier 2 improves efficiency, reduces lifecycle costs, replaces end-of-life assets, or improves revenue performance.
- Tier 3 increases capacity or reliability, corrects deficiencies, or extends asset life. Rankings will be reevaluated annually as conditions and project readiness change.

The CIP also establishes an asset management framework that includes annual condition reviews, tier-based prioritization, performance measurement, a Tier 1 Risk Register, a five-year implementation timeline, and a Grant Readiness Plan. Detailed project sheets are intended to document the scope, cost, timing, funding sources, constraints, and expected outcomes for each project in ranked order.

FINANCIAL IMPACTS:

Adoption of the CIP establishes the Authority's multi-year capital planning framework but does not independently appropriate funds beyond amounts approved in the annual budget. Expenditures will be limited to budgeted amounts and remain subject to applicable procurement, contracting, financing, and separate Board approval requirements. Projects identified in later years are planning-level commitments only and will be reevaluated annually. Actual financial impacts will depend on the funding option selected, updated project cost estimates, grant and loan availability, member agency contributions, reserve policy, and the final FERC authorization pathway. Deferring capital investment may reduce near-term funding needs but can increase future costs, emergency repair exposure, service disruption risk, and pressure on reserves.

Attachments

1. *2026-2033 Capital Improvement Plan (Draft)*
2. *Resolution 2026-10 adopting UWPA's Capital Improvement Plan*



CAPITAL IMPROVEMENT PLAN

2026–2033

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Executive Summary

The Utica Water and Power Authority (UWPA) Capital Improvement Plan (CIP) for Fiscal Years 2026–2033 is a seven-year planning and financial management document that identifies, prioritizes, and schedules capital investments needed to sustain UWPA’s essential water conveyance and hydroelectric infrastructure. UWPA’s system is comprised of aging and highly vulnerable assets—many of which have been in service for decades, and some for more than a century—which require reinvestment to maintain safe and reliable operation, protect critical water rights, and reduce the likelihood of service disruptions.

This CIP is designed to support the Board’s annual budget adoption process by establishing a structured and transparent approach for evaluating and selecting projects based on urgency, risk, and long-term value. Projects are categorized by UWPA’s two primary functions—Water Conveyance and Hydroelectric Power Generation—with cost-sharing applied where projects benefit both functions. In addition, the CIP includes specialty project categories that address regulatory compliance (including FERC exemption/relicensing readiness) and information technology upgrades that improve operational visibility, communications, and system management.

To ensure investments are aligned with UWPA’s highest operational and regulatory risks, projects are prioritized using a three-tier framework. Tier 1 projects are mandatory actions driven by compliance requirements, safety obligations, outside funding commitments, or a high likelihood of failure within the next five to ten years. Tier 2 projects are necessary investments that improve operational efficiency, reduce lifecycle costs, replace assets at end-of-useful-life, or strengthen revenue performance. Tier 3 projects are beneficial investments that increase system capacity, improve reliability, correct deficiencies, or extend useful life through rehabilitation. This ranking system allows the Board and member agencies to understand which projects are essential in the near term versus those that may be phased as funding capacity allows.

The CIP also recognizes that capital planning cannot be evaluated in isolation from UWPA’s broader financial position. UWPA must fund capital improvements while sustaining operations, maintaining appropriate reserves, and preparing for significant long-term regulatory and compliance obligations associated with the hydroelectric facilities. For that reason, this document presents an Integrated Funding Plan and three fiscal options for implementation: Full Funding, Medium Funding, and Minimum Funding/Deferral Strategy. Each option reflects a different balance between near-term affordability and long-term risk reduction, including differing reserve impacts and the degree to which projects are funded as scheduled or deferred.

Ultimately, this CIP provides the Board with a practical, risk-informed roadmap for reinvesting in UWPA's critical infrastructure. It is intended to function as a "living document" that is updated annually based on project readiness, evolving regulations, inspection findings, grant opportunities, and system performance. Through adoption and annual refinement of this plan, UWPA will improve reliability, reduce avoidable downtime, strengthen compliance readiness, and better position the Authority to serve its customers and member agencies safely and effectively over the long term.

Section 1: Organizational Overview and Summary of Capital Improvement Plan

1.1 Organizational Formation and History

Utica Water and Power Authority (Utica) traces its origins to the California Gold Rush. The Union Water Company (UWC) was formed in 1852 to formalize early efforts to deliver water from Mill Creek (in Avery) and Angels Creek to support large mining operations in Murphys and Angels Camp. By 1854, UWC expanded to tap the North Fork of the Stanislaus River. To provide high-country storage, Union Reservoir was constructed in 1858, and that same year UWC acquired the Calaveras County Water Company, which had also developed an extensive network of canals and flumes serving the mines.

In the 1880s, the Utica Gold Mining Company (UGMC) assumed control of the Union Water Company's system. In 1889, UGMC completed Lake Alpine to expand high-elevation storage capacity. One year later, Utica began using the pressure created by water dropping from the Angels Forebay to power equipment such as air compressors, hoists, and stamp mills that supported ore processing in Angels Camp. Hydroelectric generation soon followed: UGMC built a small powerhouse in Angels Camp in 1895, and in 1899 constructed the Utica Powerhouse in Murphys. Additional storage improvements continued into the early 1900s with the construction of Utica Reservoir in 1906, downstream of Union Reservoir. The final major up-country reservoir was completed in 1929 with the original Spicer Meadow Reservoir.

As large-scale mining declined in the early 1900s, increasing volumes of water were used for agricultural irrigation and residential and commercial consumption. In 1939, UGMC indicated it intended to limit consumptive service to Angels Camp, which led to a legal dispute with Murphys residents. That dispute resulted in a settlement agreement allowing the Calaveras Water Users Association (now the Union Public Utility District) to purchase water from the Utica system to meet local consumptive needs.

By the mid-1900s, most major mines in Calaveras County had closed. In 1946, the Utica water conveyance system and hydroelectric facilities were transferred to new ownership and continued to operate and evolve over the following decades. In 1996, the Utica Power Authority (UPA) was formed as a Joint Powers Authority (JPA) to own and operate the system for the benefit of local communities. The JPA assumed responsibility for a 27-mile water

conveyance system, five reservoirs, and two powerhouses, and was established by three member agencies: the Calaveras County Water District (CCWD), the Union Public Utility District (UPUD), and the City of Angels Camp (COA).

In 2001, the Darby Fire destroyed the $\frac{3}{4}$ Mile Flume near Forest Meadows and several other wooden flumes, disrupting public water supply service. UWPA rebuilt the damaged infrastructure over a ten-month period with state and federal disaster recovery support. In 2003, CCWD withdrew from the JPA, leaving UPUD and the City of Angels Camp as the remaining member agencies. In 2013, the agency was renamed the Utica Water and Power Authority (UWPA) to reflect its primary mandate of providing a safe and reliable water supply to the communities served by the Utica system. An overview of UWPA facilities is provided in *Figure 1* and *Figure 2* below.

1.2 Agency Governance and Operations

UWPA is governed by a five-member Board of Directors (Board). The Board is comprised of two City of Angels Camp Council Members, two Union Public Utility District Directors, and one Public Member appointed by the other four members. Each entity has an alternate to fill-in if an appointed member is scheduled to be absent, as well as an appointed alternate Public Member.

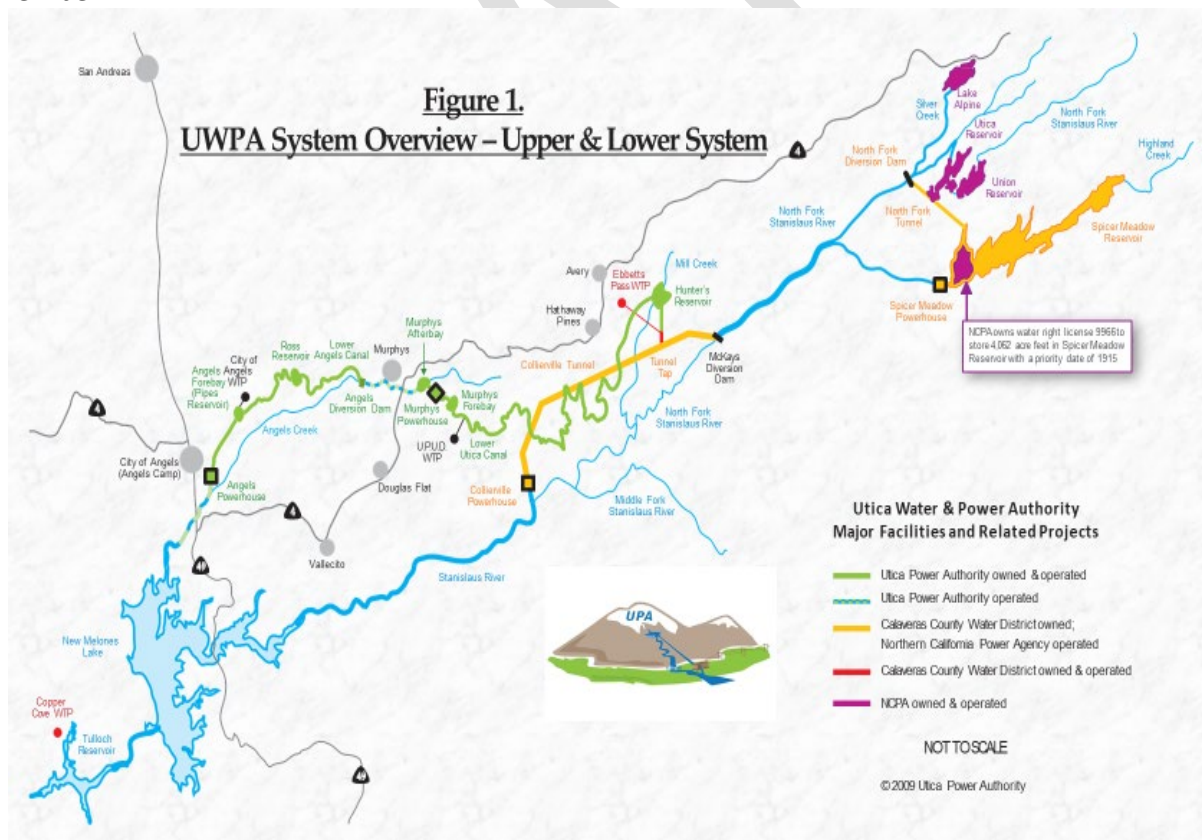


Figure 1 – Utica System Overview Map

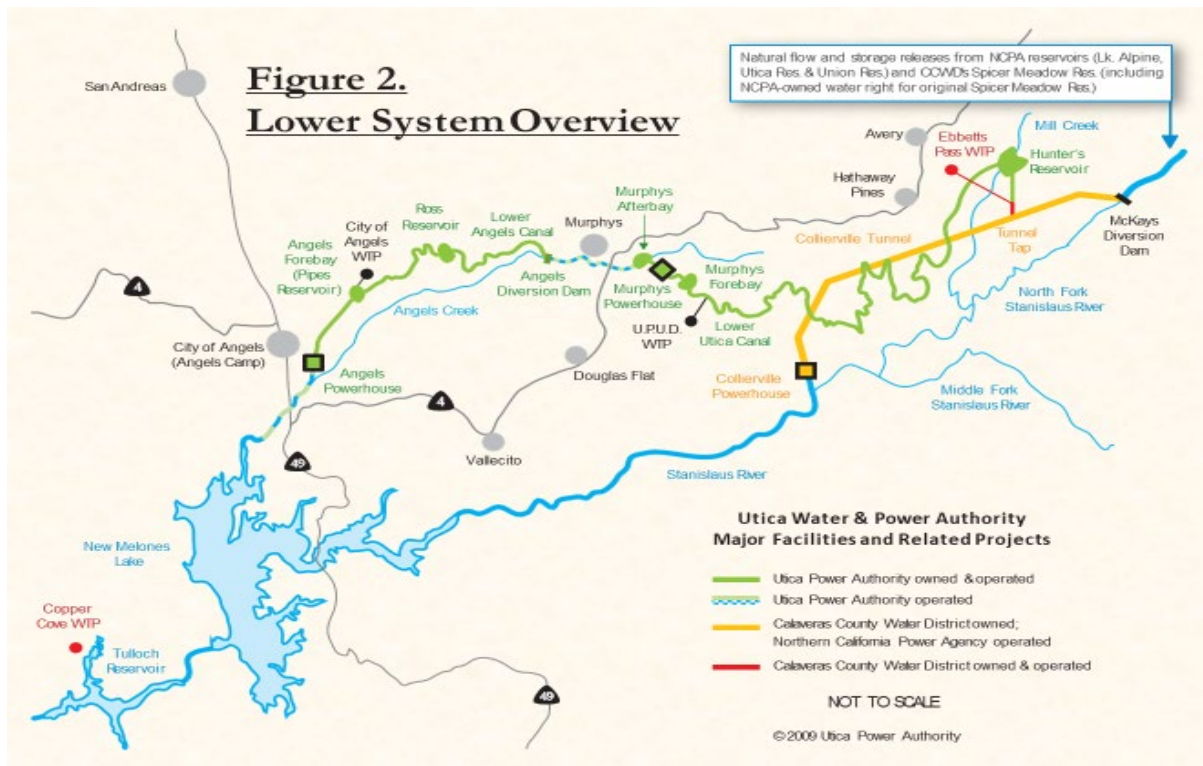


Figure 2 – Utica Lower System Overview Map

The 2025-26 Fiscal Year (FY) Budget for UWPA was approved in the amount of \$4,016,313.00. The Budget covers the FY beginning July 1, 2025 and ending June 30, 2026.

Historically UWPA has been operating under a policy that to the extent “surplus” revenues were available in any given year as a result of hydroelectric energy sales, the overall costs, or liabilities to the member agencies in terms of contributions would be reduced. Due to market price reductions in the sale of energy UWPA has generated less income relative to expenses. In addition, UWPA has deferred maintenance on facilities and equipment in order to reduce costs and needs additional capital investment in order to assure that all facilities remain fully functional for the long-term. UWPA has ran at a deficit to revenue for many years. Due to aging infrastructure and regulatory compliance this forecast is expected to continue for the duration of the CIP. After the FERC exemption process and update/repair/replace of infrastructure is completed the costs associated with an ongoing operational deficit should begin to ease.

1.3 Purpose of CIP

A Capital Improvement Plan, or “CIP”, is a short to medium-range planning document that covers a minimum of a five-year period to a maximum of a ten-year period. The CIP identifies capital projects, equipment purchases, permanent structural changes to facilities, and/or the restoration of facilities to enhance the asset’s value or to prolong its’ useful life. The CIP also provides a planning schedule for the acquisition and construction of projects and identifies options for financing the plan. The UWPA’s CIP is a multi-year financial plan that identifies new, on-going, and additional projects beginning in the 2026-27 Fiscal Year Budget. The UWPA’s

Board of Directors adopts the first year of the CIP and approves the entire plan in concept. The CIP is a “living document” with older projects dropping out of the plan when completed and new projects being added each year. The Board should approve the CIP annually with the adoption of its budget.

The CIP is a key document that guides UWPA’s capital investments. A capital improvement plan is a dynamic planning and fiscal management tool used to coordinate the location, schedule, and financing of capital improvements over a multi-year period. The plan identifies, substantiates, and prioritizes projects, establishes an implementation schedule, and identifies funding mechanisms. It also serves as a tool to communicate to the public and member agencies the financial needs of the Authority and is an integral component in determining the level of funding needed by the Authority. The plan provides a working blueprint for sustaining and improving infrastructure. It coordinates strategic planning, financial capacity, and physical development.

A complete, properly developed CIP provides the following benefits:

- Identifies and prioritizes capital projects; and
- Links capital spending with the demands of operating and maintenance budget; and
- Evaluates competing demands for financial and staff resources based on priorities.

1.4 Project Ranking and Selection Process

UWPA Tier Priority Ranking

Use this graphic to classify and communicate project priority levels in the CIP.

TIER 1 — MANDATORY	TIER 2 — NECESSARY	TIER 3 — BENEFICIAL
Priority triggers: • Regulatory Compliance Requirement • Safety Issue • Outside Funding Already Secured • Failure Likely Typical focus: • Compliance / Safety / Imminent Risk	Priority triggers: • Improves Operational Efficiency / Reduces Costs • Replacement at End of Useful Life • Generates Additional Revenue Typical focus: • Cost savings / Lifecycle replacement / Revenue	Priority triggers: • Increases Capacity or Improves Reliability • Corrects a Deficiency • Increases Asset Useful Life Typical focus: • Resilience / Optimization / Preventative rehab

How to use: Assign the highest applicable tier. If a project meets any Tier 1 trigger, it is Tier 1.

Figure 3 – Tier Priority Ranking

- **Tier 1 Priority:** Regulatory Compliance Requirement, Safety Issue, Outside Funding Already Secured or to Generate Additional Revenue, or Failure Likely.
- **Tier 2 Priority:** Improves Operational Efficiency or Reduces Costs, Replacement Due to End of Useful Life of Facility/Equipment.
- **Tier 3 Priority:** Increases Capacity or improves Reliability, Corrects a Deficiency, or Increases an Asset's Useful Life.

The ranking and project priority also include other factors based on staff's experience in implementing construction projects. These additional factors include such issues as: project costs, the ability to bundle a project with one or more other projects, phasing, complexity, affordability, likelihood of receiving a grant, and ability to reduce long-term costs.

1.5 Outline of Capital Improvement Plan

For purposes of developing Projects for the 2026 – 2033 CIP potential projects were broken down into three categories: 1.) Water Conveyance Facilities, 2.) Hydroelectric Facilities and 3.) General Facilities, Vehicles and Equipment. The reason for this is to distinguish between those projects that would be required to provide water to the member agencies regardless of whether the power facilities were operational. Likewise, the hydroelectric projects should utilize power generation revenues first, to the extent they are available in any given year, to fund both operational costs and CIP improvements associated with the hydroelectric facilities. Only after hydroelectric costs are met should excess revenues be used to support water conveyance operations, maintenance, and capital improvements. A listing of the projects is provided in Table 1 below.

Goals & Performance Measures

- Define measurable goals: reliability, reduced downtime, regulatory compliance readiness, reduced safety risk
- Suggested metrics: number of Tier 1 risks mitigated, outage hours avoided, conveyance losses reduced, reserve targets met, grant dollars secured



Goals & Performance Measures

Measurable goals and suggested metrics for the UWPA Capital Improvement Plan

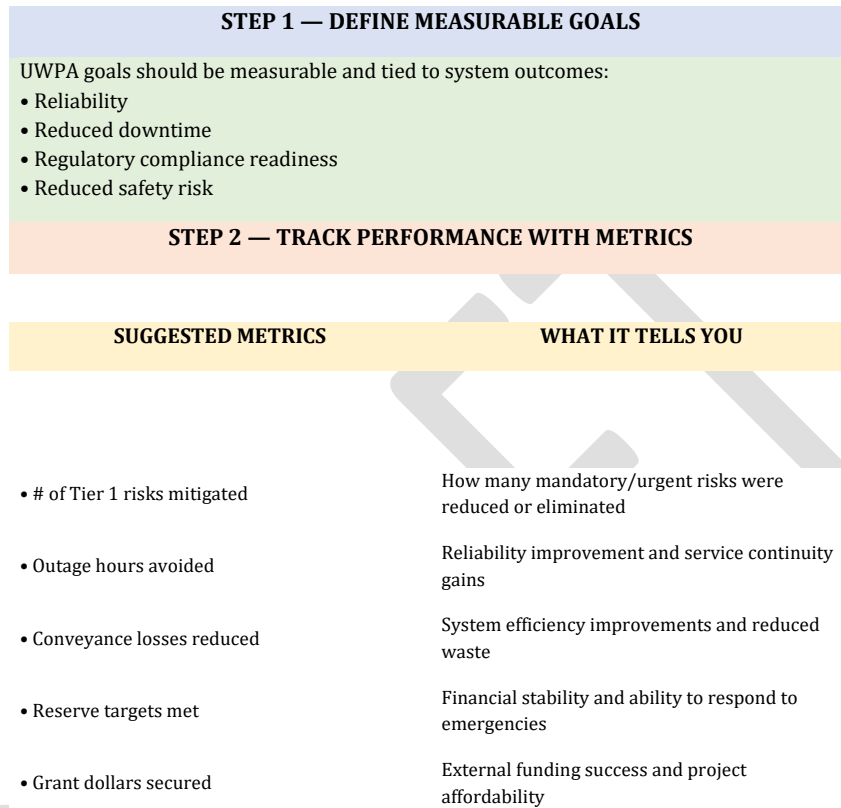


Figure 4 – Goals and Performance Measures

Section 2: Project Development Overview

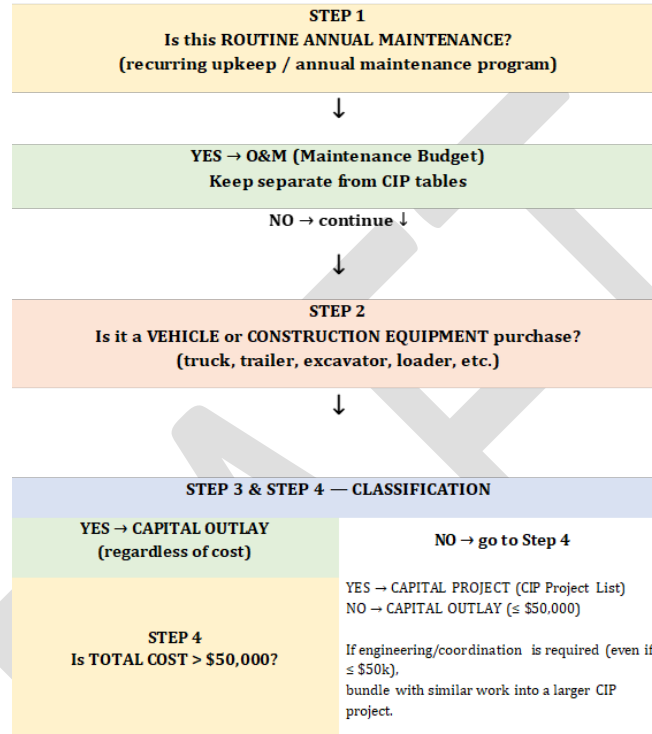
2.1 Types of Projects

This CIP distinguishes between two types of projects: 1) Capital, and 2) Capital Outlay. A “capital” project is usually a construction project, or a study, or an equipment investment that has a value greater than \$50,000. A “capital outlay” is an investment, typically in equipment or parts, that is less than or equal to \$50,000, with an exception for vehicle and construction equipment purchases. Vehicle and construction equipment purchases that are greater than \$50,000 are still considered a capital outlay expense. UWPA maintains a baseline annual maintenance program of approximately \$125,000 budgeted in Operations & Maintenance

(O&M) for the flume system. CIP projects represent additional, non-routine capital investments intended to rehabilitate, replace, or improve system assets and are planned separately from routine annual maintenance.

CIP Classification Flowchart

Projects vs. Equipment Upgrades/Replacements vs. O&M Maintenance



Key CIP Rule: Capital Projects are typically > \$50,000. Capital Outlay is ≤ \$50,000, with an exception that vehicles and construction equipment remain Capital Outlay even when > \$50,000.

Figure 5 - CIP Classification Flowchart

Capital vs. Capital Outlay vs. Operations & Maintenance

How UWPA classifies investments for budgeting and CIP planning

CAPITAL PROJECT (CIP)	CAPITAL OUTLAY (Equipment/Parts)	O&M MAINTENANCE (Annual Program)
Definition: Construction project, study, or major equipment investment.	Definition: Equipment or parts purchase.	Definition: Routine recurring maintenance required to keep assets operational.
Typical threshold: > \$50,000	Typical threshold: ≤ \$50,000	UWPA baseline: ~ \$125,000 annually for flume maintenance.
Included in: CIP Project List (multi-year planning)	Key exception: Vehicles & construction equipment remain Capital Outlay even if > \$50,000.	Budget category: Operations & Maintenance (O&M)
Purpose: Rehabilitate, replace, or improve system assets beyond routine upkeep.	Purpose: Support operations with tools, vehicles, and components that do not require full CIP project management.	Purpose: Maintain system condition and prevent deterioration; separate from CIP project funding.

Quick rule: CIP = non-routine capital improvements; Capital Outlay = smaller equipment/parts (and vehicles); O&M = annual recurring maintenance.

Figure 6 – Capital vs. Capital Outlay vs. Operations & Maintenance

2.2 Project Categories

Projects are categorized by the functions in which they are associated. There are two distinct functions performed by UWPA, *Water Conveyance* and *Hydroelectric Power Generation*. Projects that benefit both categories result in cost-sharing. Typical of these types of projects include such items as shared use of the headquarters facility, remote facilities, and shared use of certain types of equipment. These are considered *General Facilities, Vehicles & Equipment*. Lastly, there are two other categories of CIP projects that involve compliance (such as FERC relicensing) and information technology (IT) upgrades.

UWPA CIP Project Categories

How UWPA categorizes projects by function, cost-sharing, and specialty programs

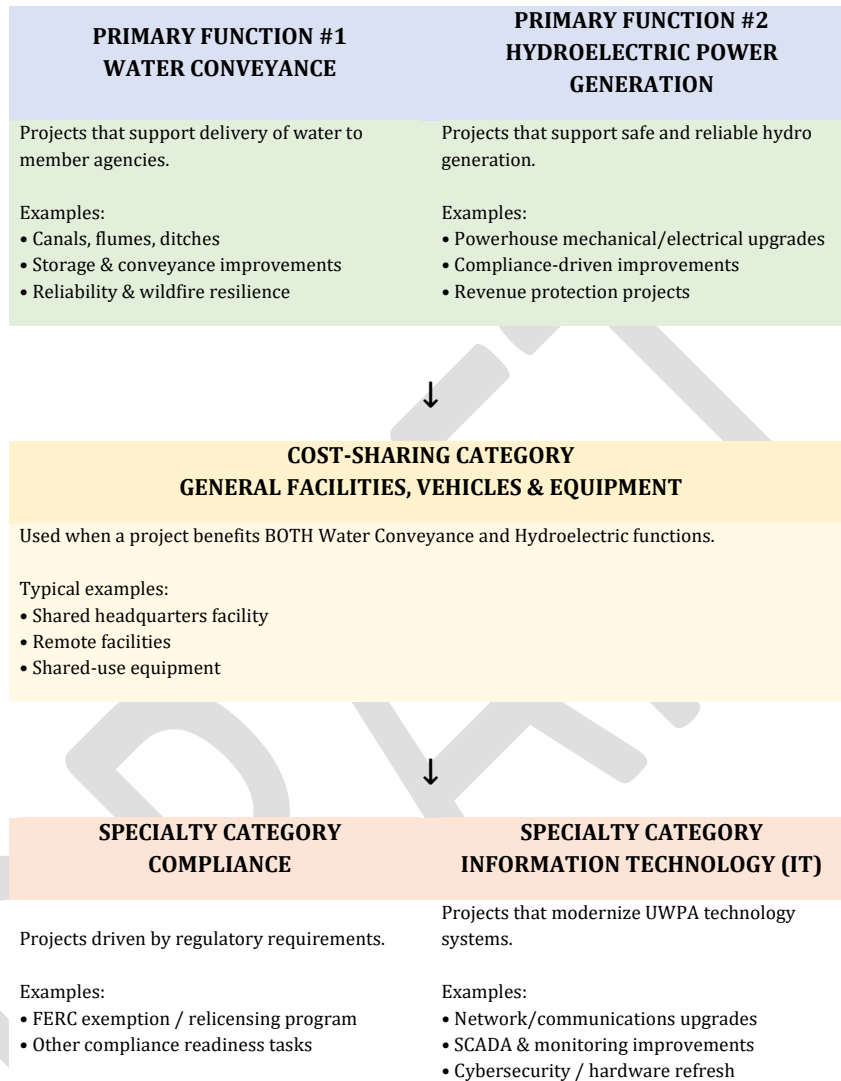


Figure 7 – CIP Project Categories

2.3 Project Development Considerations

This section describes how UWPA staff developed and refined projects for implementation. Projects were bundled where appropriate, phased to match staffing and funding constraints, ranked by objective criteria, and then selected annually through the budgeting process. Together, these steps ensure the CIP remains realistic, affordable, and responsive to changing system conditions.

2.3.1 Bundling

When appropriate, smaller projects have been combined to create larger multi-phased projects when they share associated objectives and benefits and may be in the same geographical area or the work performed is similar. The purpose of “bundling” projects to create larger projects is to simplify the CIP and the corresponding budget, to not have a multitude of small projects. Another benefit is that bundled projects can reduce “soft costs” such as design and engineering expenses.

2.3.2 Phasing

Projects are phased to spread out resources over several fiscal years. Phasing is also a natural result of carrying out complex projects that have specific sequencing needs. Some projects may require specific studies to determine the scope of work required before designing the project. By phasing projects, it allows for a smoothing of funding demands. It also gives UWPA staff time to acquire land, easements, or agreements, achieve environmental and permitting compliance, obtain parts or other equipment components, schedule outages, search for funding, and allocate labor in order to complete the project within a reasonable timeframe. Projects in this CIP that have been divided into phases in such a manner that phases provide “stand alone” benefits and Board commitment to fund one phase does not inherently commit the Board to approve subsequent phases.

2.3.3 Ranking

UWPA staff have identified significant financial costs associated with the capital improvement plan. Staff recognize that the agency cannot fund this level of investment, nor could staff administer and carryout this number of projects. Consequently, a ranking-criteria was established and applied to prioritize projects. The ranking process was also essential in defining the problem and vetting the proposed solution. A more thorough description of the ranking process is included in Section 3 of this document.

2.3.4 Selection

The ranking process discussed above was intended to be as objective as possible, but the reality is that there will not be enough funds to complete all of these projects. Some highly ranked projects demonstrate great need but can be expensive. The CIP is a “living” document and should be updated each year as part of the budgeting process. The ranking of individual projects will be reevaluated and may change each year as a result of shifts in regulations, shifts in project competitiveness for grants, shifts in Board priorities, or to respond to anticipated infrastructure failure.

2.3.5 Allocation of Cost by Fiscal Year

The cost to implement the CIP will strongly influence the revenue demands of the UWPA and subsequent calculation of revenues needed to fund the improvements and the corresponding operations and maintenance. Staff not only has to consider project costs but also lost power generation revenue losses due to down time. The timing and distribution of costs reflects a conscious effort on the part of the staff to smooth out revenue demands, identify potential grant or loan funding sources, provide adequate time to seek financing or to achieve environmental compliance and secure necessary permits, and lastly to address those infrastructure needs that are most urgent and have a potential for failure in the near term. However, the member agencies will need to provide substantially more funding than what has been provided in previous years.

2.3.6 Project Delivery Models

The UWPA can use several models for project delivery. The UWPA has its own staff that can deliver some of the construction work identified in the CIP. This may include an entire project or just certain portions of a project. However, there will be the need to use outside consultants and contractors for many projects because they require specialized engineering disciplines, specialized tools, or equipment, or otherwise involve expertise or equipment that may be lacking at UWPA. Similarly, some construction tasks are better suited to outside contractors particularly those requiring extended periods of time to complete and involving staffing levels beyond that which is currently available at UWPA. Staff time costs need to be calculating in determining the scoping and cost of CIP projects where staff would ultimately be performing normal duties. Our goal is always to approach projects and costs in a responsible cost-effective analysis; however, our staff time and costs are associated costs that cannot be tabulated as savings overall. Simply, they are part of the overall costs, not a reduction in the costs.



Project Development Considerations

A step-by-step framework used by UWPA to simplify, prioritize, and deliver projects

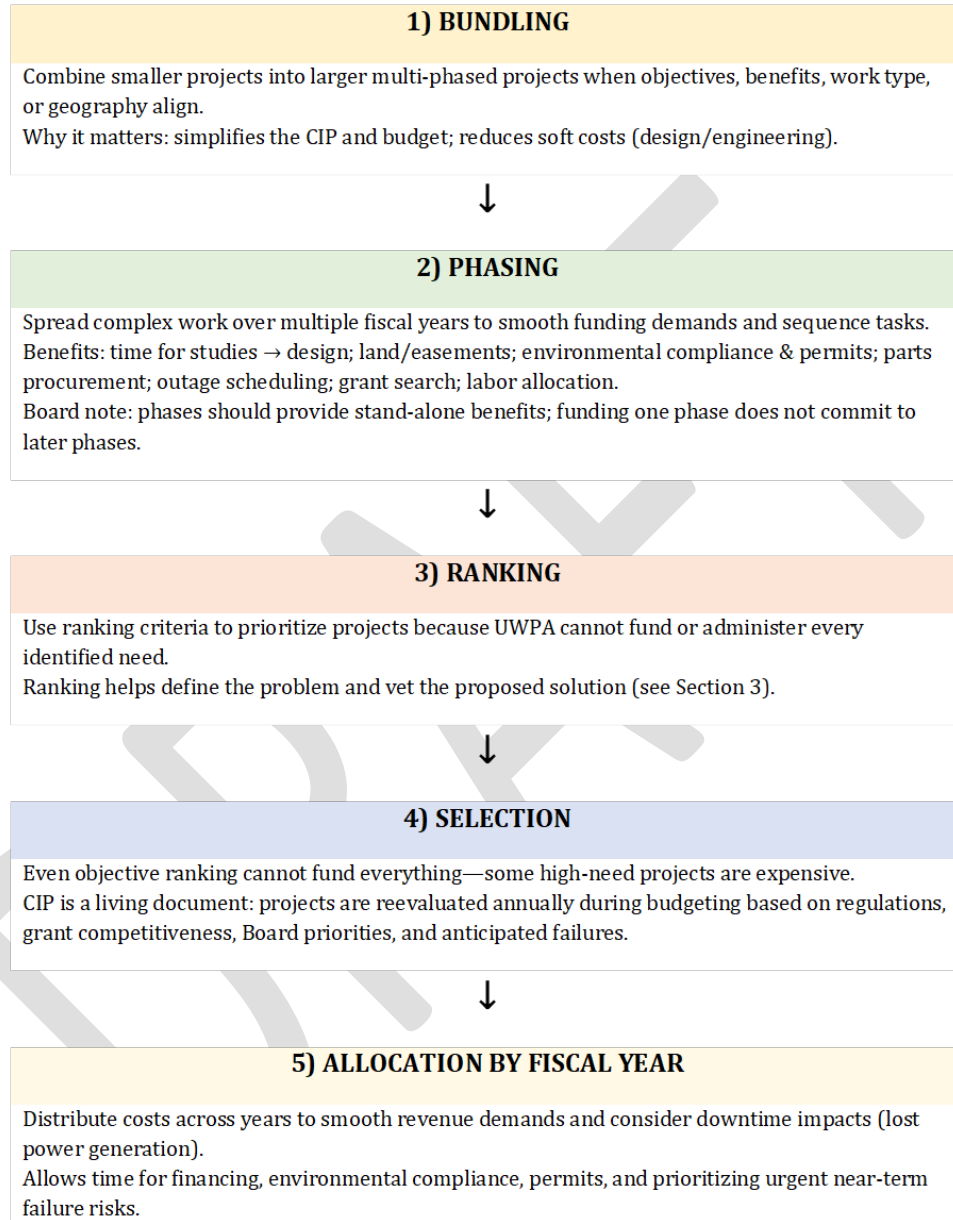


Figure 8 – Project Development Considerations

2.4 Project Cost Estimates

Preliminary cost estimates have been prepared for every project in the CIP. These are “pre-design” or “planning” level estimates that will be refined once design is complete or more

information is available in respect to the project. Since there is a limited amount of information available to craft the cost estimate, contingencies of up to 25% have been added to the project cost based on the potential for the project scope to change or for the unit costs to be greater than originally anticipated. Since this is a five-year CIP, the cost for projects undertaken in years 2-5 will be impacted by inflation. Rather than apply inflation to each project separately, the contingencies have been increased to account for inflation. The cost estimates consider who will design and/or construct the improvement. If the project will be designed by a consultant, a design fee has been added. If “on-site inspection” is required, an additional 10% is added to the estimated project costs. If the project is constructed by a contractor 30% is added to account primarily for prevailing wages and the potential for change orders.

Section 3: Project Ranking Criteria

3.1 Discussion of Scoring and Ranking Process

Projects were developed by staff and ranked by committee. The rank and project priority category were based on the following criteria:

- Tier 1 Priority:** Regulatory Compliance Requirement (FERC, DSOD, OSHA, etc.), Safety Issue, Outside Funding Already Secured, Generate Additional Revenue or Failure Likely.
- **Tier 2 Priority:** Improves Operational Efficiency or Reduces Costs, Replacement Due to End of Useful Life of Facility/Equipment.
- **Tier 3 Priority:** Increases Capacity, Improves Reliability, Corrects a Deficiency or Increases an Asset’s Useful Life.

Projects are a high priority if they fall into Tier 1 (Mandatory) or Tier 2 (Necessary) type projects.

3.1.1 Tier 1 Criteria

Regulatory Requirement: Projects that are required to be completed in order to maintain compliance with current or pending regulations or to respond to a documented violation are considered Tier 1. Projects that meet these criteria must be able to demonstrate that they are essential to maintain compliance and that the project addresses a past violation or a deficiency created by a new regulation. Supporting documentation may include newly issued permits,

inspection reports from regulatory agencies, Cease and Desist Orders, Notices of Violations, etc. Also included in this category are conditions of any legal settlements.

Safety Obligation: Projects that would be required to maintain compliance with OSHA or that put UWPA staff or the public at physical risk are considered Tier 1. Potential risk of property damage does not qualify as a safety obligation. The project must address a very real hazard. Documentation supporting these types of projects may include inspection reports from Cal-OSHA, DSOD inspection reports, notices received from FERC, or documented violations of the Health and Safety Code.

Failure Likely: Projects that address a real concern that specific infrastructure would likely fail within the next five to ten years are considered a Tier 1. This designation is supported by maintenance history logs, photographs, staff testimonial, or by 3rd party inspection reports. Projects must eliminate or at least minimize the probability of failure or mitigate the impacts when a failure occurs.

Tier 1 Criteria

Tier 1 projects are mandatory actions required for compliance, safety, committed funding, or high likelihood of failure.

TIER 1 — REGULATORY REQUIREMENT	TIER 1 — SAFETY OBLIGATION
Definition: Projects required to maintain compliance with current or pending regulations, or to respond to a documented violation. Must demonstrate: • Essential for compliance • Addresses past violation or deficiency from new regulation Typical documentation: • Permits • Inspection reports • Cease & Desist orders • Notices of Violation • Settlement conditions	Definition: Projects required to comply with OSHA or that put UWPA staff or the public at physical risk. Important: Property damage risk alone does NOT qualify. The hazard must be real and physical. Typical documentation: • Cal-OSHA inspections • DSOD inspection reports • FERC notices • Health & Safety Code violations
TIER 1 — OUTSIDE FUNDING SECURED	TIER 1 — FAILURE LIKELY (5-10 YEARS)
Definition: Projects where funding is already committed through an executed agreement, secured financing, or Board resolution. Notes: Currently uncommon, but may apply when UWPA is awarded grant funding. Example: Capital Outlay grant funding for a flatbed truck (FY 2019-20).	Definition: Projects addressing infrastructure likely to fail within the next 5-10 years. Support may include: • Maintenance logs • Photos • Staff observations • Third-party inspection reports Project must: Eliminate or reduce failure probability OR reduce impacts if failure occurs.

Rule of thumb: If any Tier 1 criterion applies, the project is classified as Tier 1 (Mandatory).

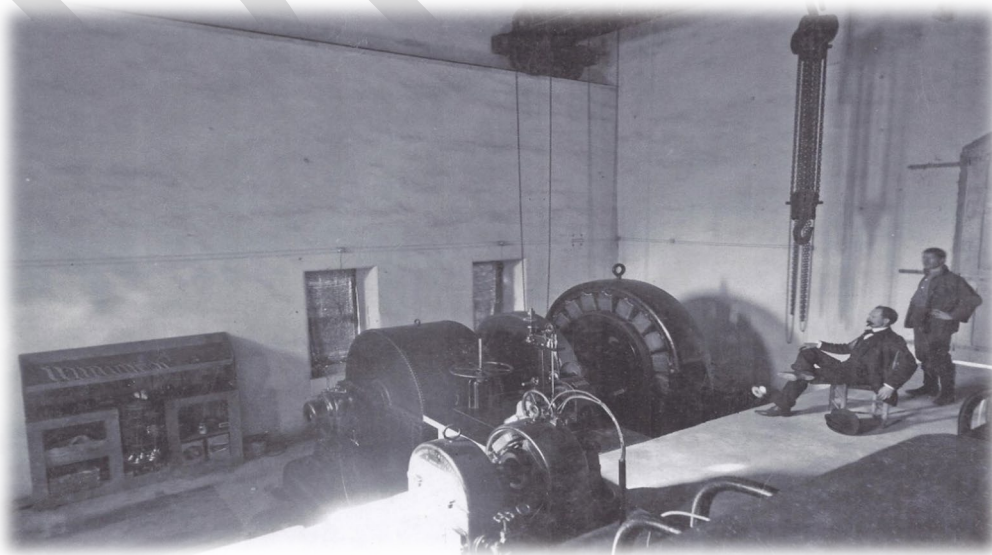
Figure 9 – Tier 1 Criteria

3.1.2 Tier 2 Criteria

Improves Operational Efficiency or Reduces Costs: Projects that directly reduce labor, materials, equipment, or utilities while allowing the UWPA to maintain or improve upon its level of service, or in some cases, may increase revenues are considered Tier 2. Although, not mandatory; these projects are desirable because they translate to cost savings for the authority and/or they allow the UWPA to invest more in other areas of the budget with the same amount of revenue. An example of a project that increase operational efficiency is the installation of Supervisory Control and Data Acquisition (SCADA) hardware and software. This project will allow for the remote reading of water levels and avoid the need for personnel to physically travel to sites to determine water flow. Other projects may involve enhancements to existing facilities that will improve their operation and maintenance, safety, flexibility, and cost-effectiveness

Replacement Due to End of Useful Life: Projects that replace infrastructure that is beyond rehabilitation or salvaging are considered Tier 2. These projects involve replacing aging infrastructure, ideally before it reaches a level of degradation where “imminent failure” would be likely. In addition to age, other factors that go into determining when an item has reached the end of its useful life include failure to meet current codes or industry standards, or when an item no longer can perform the way in which it was designed.

Generates Additional Revenue: Projects that can increase revenues are considered Tier 1. These types of projects may involve increasing hydrogeneration capacity, improving hydrogeneration efficiency, allowing for additional water sales or are a requirement to participate in state funding programs. These types of projects need to be evaluated for their cost-effectiveness. That is the capital cost of the project needs to achieve a reasonable rate of return in terms of increased operating revenue to justify the expenditure.



Tier 2 Criteria

Tier 2 projects are desirable investments that improve efficiency, replace aging assets, or improve revenue potential.

TIER 2 CRITERION #1 EFFICIENCY / COST REDUCTION	TIER 2 CRITERION #2 END OF USEFUL LIFE REPLACEMENT	TIER 2 CRITERION #3 GENERATES ADDITIONAL REVENUE
Definition: Projects that directly reduce labor, materials, equipment, or utilities while maintaining or improving service. Why it matters: Cost savings can be reinvested in other priorities. Example: SCADA hardware/software enables remote readings of water levels and reduces travel time. Other benefits: Improves O&M, safety, flexibility, and cost-effectiveness.	Definition: Projects that replace infrastructure beyond rehabilitation or salvaging. Why it matters: Replaces aging assets before deterioration becomes an imminent failure risk. Indicators: • Age and wear • Fails to meet current codes/standards • Cannot perform as originally designed	Definition: Projects that can increase operating revenue. Typical outcomes: • Increased hydrogeneration capacity • Improved generation efficiency • Supports additional water sales • Enables participation in state funding programs Important: Must be evaluated for cost-effectiveness and reasonable return on investment.

Tier 2 projects are not mandatory like Tier 1, but they reduce long-term costs, improve performance, and strengthen UWPA's ability to fund future improvements.

Figure 10 – Tier 2 Criteria

3.1.3 Tier 3 Criteria

Increases Capacity: Projects that increase system capacity or the components of capacity are considered Tier 3. The principal components include water supply, storage, and conveyance. Projects that increase capacity allow for the UWPA to better serve its existing customer base while also allowing for system repairs without a reduction or curtailment in deliveries.

Improves Reliability: Water supply and conveyance is considered an essential UWPA service and is important for health and human safety. Infrastructure is vulnerable to the impacts of natural disaster and the consequences of system failure can be tremendous (i.e. lack of water during a wildfire). Projects that have the benefit of reducing the risk of failure and mitigating impacts to the UWPA's customers and trustee agencies are considered Tier 3. These types of projects could involve establishing redundant systems or they may remove some of the hazards that could result in a catastrophe. Examples of these types of projects could be improving water conveyance facilities or removing hazard trees beside a flume.

Corrects a Deficiency: Projects that correct a current operational problem are considered Tier 3. These types of projects address equipment component issues, compatibility problems, facility inadequacies and other issues that limit full use and easy operation. Correcting these “bottle necks” allow staff to focus on other more critical operations associated with their jobs.

Increases an Asset’s Useful Life: Some infrastructure is not at risk of imminent failure and it also is not at the end of its useful life; however, with proper preventative maintenance the UWPA can extend an asset’s useful life and delay future capital costs associated with full-fledged replacement. Projects of this type are typically rehabilitation projects and are considered Tier 3. These projects may include pipe or ditch lining, asphalt sealing, headquarters maintenance and repair or hydroelectric facility repairs and upgrades.

Tier 3 Criteria

Tier 3 projects are beneficial investments that improve capacity, reliability, operations, and asset life.

TIER 3 — INCREASES CAPACITY	TIER 3 — IMPROVES RELIABILITY
Definition: Projects that increase system capacity or key capacity components.	Definition: Projects that reduce failure risk and mitigate impacts to customers and trustee agencies.
Capacity components: • Water supply • Storage • Conveyance	Why it matters: Water supply & conveyance are essential for health and safety (e.g., during wildfire).
Benefit: Supports existing customers and allows repairs without delivery curtailment.	Examples: • Redundant systems • Conveyance improvements • Hazard tree removal near flumes
TIER 3 — CORRECTS A DEFICIENCY	TIER 3 — INCREASES USEFUL LIFE
Definition: Projects that correct operational problems limiting full use and easy operation.	Definition: Rehabilitation projects that extend asset life and delay full replacement costs.
Examples: • Component issues • Compatibility problems • Facility inadequacies	Common examples: • Pipe or ditch lining • Asphalt sealing • Headquarters maintenance/repairs • Hydroelectric repairs & upgrades
Benefit: Removes bottlenecks so staff can focus on critical operations.	Benefit: Delays future capital costs through preventative investment.

Tier 3 projects are generally lower urgency than Tier 1 and Tier 2, but they strengthen long-term system performance and reduce future costs.

Figure 11 – Tier 3 Criteria

Section 4: Capital Improvement Plan Costs and Funding Plan

4.1 CIP Revenue Issues

The Capital Improvement Plan outlines the District’s plan for achieving organizational goals and objectives. Doing business for much of its past, the District focused on paying off acquisition debt, reducing operating costs by performing maintenance on an “as needed “ basis, deferring capital costs and minimizing member agency costs. For many years hydroelectric generation revenues subsidized the costs to operate the water conveyance system. This has resulted in a significant reduction in potential JPA revenues.

4.2 Asset Management

UWPA’s ability to provide reliable water conveyance service and operate its hydroelectric facilities safely depends on the condition, performance, and compliance readiness of its physical infrastructure. Many UWPA assets have been in service for decades, and some for over a century, and do not meet modern design and safety standards. As UWPA approaches key regulatory and operational milestones—including long-term hydroelectric compliance readiness—the Authority must adopt a disciplined and measurable approach to managing its asset base.

This Capital Improvement Plan (CIP) supports UWPA’s asset management mission by establishing a structured, multi-year approach for planning, prioritizing, and funding reinvestment. UWPA’s asset management strategy is guided by the core principles of lifecycle extension, ongoing evaluation, risk reduction, and phased financing.

Asset Management Commitments

1) Annual Asset Condition Review and Documentation

UWPA will perform an annual condition review of critical system components, with emphasis placed on high-consequence assets within water conveyance and hydroelectric facilities. Reviews will be informed by inspection findings, operations and maintenance history, staff observations, documented deficiencies, and third-party engineering or regulatory reports when available. The results of these annual reviews will be used to update project scopes, refine cost estimates, and adjust implementation sequencing as needed.

2) Risk-Based Prioritization Using the Tier Framework

UWPA will prioritize capital projects based on the Tier ranking system established in Section 3 of this CIP. Tier classification will be used as a risk-management tool to align funding with urgency and consequence. Specifically:

- Tier 1 projects will be treated as mandatory risk-reduction actions driven by regulatory compliance, safety obligation, committed outside funding, or likely failure within five to ten years.
- Tier 2 projects will be prioritized to reduce long-term costs, replace end-of-life assets before they become emergency failures, and improve operational efficiency.
- Tier 3 projects will be used to improve resilience, capacity, and lifecycle performance when funding capacity allows, while recognizing that deferral may increase future cost and vulnerability.

3) Integration with Annual Budgeting and CIP Updates

UWPA will maintain this CIP as a living document and update it annually during the budget process. Each annual update will include review of completed projects, shifting project readiness, revised regulatory requirements, updated cost estimates, grant competitiveness, and emergent system risks. Board approval of the first CIP year will function as formal authorization for implementation, while Years 2–5 will remain planning-level and subject to annual reevaluation.

4) Performance Measurement and KPI Tracking

UWPA will track project and system outcomes using measurable performance indicators tied to CIP goals. CIP progress will be evaluated using a simplified KPI scorecard that focuses on reliability, reduced downtime, compliance readiness, reserve stability, and external funding success. Suggested measures include:

- number of Tier 1 risks mitigated
- outage hours avoided
- conveyance losses reduced
- reserve targets met
- grant dollars secured

These performance measures will be used to improve transparency, strengthen accountability, and support future funding decisions.

5) Lifecycle Cost Management and Funding Strategy

UWPA will manage financial impacts by bundling and phasing projects where appropriate to smooth annual funding demands, reduce soft costs, and align workload with staffing capacity. UWPA will also pursue grants and external funding sources when available and competitive to reduce member agency burden and improve long-term affordability.

UWPA Asset Management Policy Framework

Measurable commitments that guide planning, prioritization, and funding in the CIP

1) ANNUAL CONDITION REVIEW	2) TIER-BASED PRIORITIZATION	3) ANNUAL CIP UPDATE PROCESS	4) KPI SCORECARD	5) LIFECYCLE FUNDING STRATEGY
Inspect critical assets annually Use logs, photos, and reports Update scopes & costs	Tier 1 = mandatory risk Tier 2 = lifecycle + efficiency Tier 3 = resilience + rehab	CIP is a living document Re-sequence projects yearly Adjust for grants & conditions	Track outcomes and progress Reliability • downtime Reserves • grants • risk	Bundle and phase projects Reduce soft costs Align with staffing & cash flow
Continuous Improvement Loop: Condition Findings → Tier Updates → Budget Adoption → KPI Review → Next-Year CIP Refinement				

Outcome: A disciplined, transparent, and financially sustainable approach to reducing risk and extending asset life over time.

Figure 12 – Asset Management Policy Framework

Summary

Through these commitments, UWPA will balance cost, quality, reliability, and safety while maintaining a transparent and defensible rationale for funding decisions. The asset management approach described in this section ensures that CIP investments reduce risk, improve performance, and support UWPA’s mission of long-term stewardship over essential water and hydropower infrastructure.

4.3 System Components Evaluations

Most of the assets managed by UWPA have been in service for decades and some for over a century. These components generally do not meet current design, engineering, and safety standards. The nature and location of these facilities’ present vulnerabilities for both the asset and the employees attempting to maintain and repair them. Emphasis is being placed on improving the reliability and safety of these assets. The major system components addressed in the CIP are as follows:

- Canals, Flumes and Ditches
- Reservoir Storage
- Mechanical, Electrical and Communication Equipment

- Operational Equipment and Vehicles
- Feasibility and Facility Assessments

4.4 Overall CIP Project Cost Summaries

4.5 Integrated Funding Plan for CIP, Operations & Reserves

Funding for the capital improvement projects identified in this document are not only contingent on having adequate revenues to support those individual projects in the Fiscal Year identified, but also adequate revenue sources to maintain normal operations and reserve funds to support the entire organization. This is particularly important in respect to three areas of future costs not currently recognized in this 5-year CIP. The first area includes uncertain future costs associated with the hydroelectric facilities that will be under study during this CIP in order to ensure the extended life of the power plants. With the purpose to enter into long-term power agreements, the UWPA must have up to date facilities that comply with both FERC regulations and PG&E service requirements. Some of these costs will not be known until these studies are completed. Thus, if the UWPA does not have facilities that can operate over the long-term, it will not be able to benefit from long-term power contracts.

The second component of the Integrated Funding Plan is the funding of the engineering, management, environmental, legal, and administrative work necessary to pursue continued regulatory authorization for UWPA's hydroelectric facilities. UWPA anticipates these compliance-related costs will be approximately \$3 million to \$4 million over a six- to eight-year period, beginning in FY 2025–26. If UWPA successfully obtains a FERC exemption by 2028, the schedule and total cost may be reduced, and the work may shift toward final documentation, agency coordination, and close-out requirements. If an exemption is not obtained, UWPA must continue forward through the full FERC relicensing pathway, with costs extending through the anticipated relicensing period in 2033 and potentially beyond. In either scenario, adequate revenues must be planned and collected beginning in FY 2025–26 to maintain progress, preserve regulatory options, and avoid delays that could jeopardize UWPA's ability to continue hydroelectric operations under an approved authorization framework.

4.6 Fiscal Options to Implement the Integrated Funding Plan

The UWPA Capital Improvement Plan (CIP) must be implemented in a way that is financially sustainable while maintaining adequate funding for operations and prudent reserve levels. The Integrated Funding Plan recognizes that the UWPA cannot evaluate CIP project costs in isolation. The Authority must also maintain normal operations, address deferred maintenance, and plan for significant future regulatory and compliance obligations associated with the hydroelectric facilities, including the costs of the exemption / relicensing process and other operational requirements.

To support informed decision-making, UWPA has identified three fiscal options to implement the Integrated Funding Plan. These options provide the Board with a structured range of approaches that balance service reliability, risk reduction, compliance readiness, and affordability. Each option reflects tradeoffs among project delivery pace, reserve stability, long-term system risk, and required member agency funding levels.

Option 1: Full Funding

The Full Funding option represents the highest level of commitment to system reinvestment and long-term risk reduction. Under this option, UWPA would fund the CIP as scheduled while also maintaining funding for normal operations and contributing to reserves at levels needed to support long-term infrastructure reliability and regulatory compliance.

This option prioritizes timely completion of Tier 1 and Tier 2 projects and minimizes deferrals that could lead to emergency failures, higher long-term costs, or service disruptions. Full Funding also improves UWPA's readiness to pursue grants and external financing opportunities because it allows the Authority to advance design, environmental compliance, and permitting work on schedule.

Full Funding generally results in:

- Highest reliability improvement and lowest long-term failure risk
- Strongest regulatory readiness posture for hydroelectric compliance
- Lowest long-term "catch-up" cost growth due to inflation and emergency work
- Higher near-term revenue demands and member agency contributions

Option 2: Medium Funding

The Medium Funding option represents a balanced approach that focuses on completing the most urgent and high-value projects while limiting the near-term revenue burden. Under this option, UWPA would fund Tier 1 priorities and select Tier 2 projects, while deferring lower urgency improvements or phasing some projects more slowly.

This option is intended to maintain system viability while reducing the rate of spending growth compared to Full Funding. It is likely to require adjustments to the CIP schedule each year, including shifting projects between fiscal years, bundling similar work for cost efficiency, and pursuing grants more aggressively to maintain project momentum.

Medium Funding generally results in:

- Completion of Tier 1 projects and partial completion of Tier 2 projects
- Moderate improvements to reliability with some ongoing exposure to risk
- Greater reliance on phasing and schedule adjustments year-to-year
- Reduced near-term revenue demands, with some risk of cost escalation over time

Option 3: Minimum Funding / Deferral Strategy

The Minimum Funding option reflects a constrained funding scenario where UWPA focuses primarily on essential operations and only the most critical capital needs. Under this option, the CIP would be implemented at a minimal level, prioritizing only the highest urgency Tier 1 projects, while most Tier 2 and Tier 3 projects would be deferred.

This option may be necessary under conditions of limited revenue availability; however, deferral carries significant risk. Postponing reinvestment can increase the likelihood of emergency failures, result in higher future replacement costs, and reduce the Authority's flexibility to respond to infrastructure vulnerabilities. It may also reduce UWPA's ability to pursue long-term power agreements and maintain a stable compliance posture if critical hydroelectric reliability or regulatory readiness actions are delayed.

Minimum Funding generally results in:

- Focus on reactive needs and mandatory Tier 1 items only
- Higher long-term risk of failure and greater service disruption exposure
- Higher likelihood of emergency repair costs and revenue instability
- Lower near-term revenue demands but larger future funding gaps

Fiscal Options — Integrated Funding Plan

Three funding approaches to implement the CIP while supporting Operations & Reserves

OPTION 1 FULL FUNDING	OPTION 2 MEDIUM FUNDING	OPTION 3 MINIMUM FUNDING / DEFERRAL STRATEGY
What it means: • Fund CIP as scheduled • Maintain O&M and reserves What it delivers: • Fastest Tier 1 & 2 completion • Lowest long-term failure risk • Strongest compliance readiness Tradeoff: • Highest near-term revenue demand	What it means: • Fund Tier 1 and select Tier 2 • Slow/phase other work What it delivers: • Core risk reduction • Some reliability gains • Flexible annual updates Tradeoff: • More deferrals and cost escalation risk	What it means: • Fund only critical Tier 1 • Defer most Tier 2 & 3 What it delivers: • Lowest near-term revenue need • Focus on mandatory items Tradeoff: • Highest long-term risk • Greater emergency repair exposure • Larger future funding gap

Decision guide: Full Funding maximizes reliability and readiness; Medium Funding balances progress and affordability; Minimum Funding defers improvements and increases long-term risk.

Figure 13 – Fiscal Options – Integrated Funding Plan

Composite Risk-Management in Funding

Composite risk management is used to guide funding decisions by evaluating multiple risk drivers together—regulatory compliance, safety, probability of failure, operational cost exposure, and long-term system reliability—rather than viewing projects as isolated needs. Under this approach, UWPA considers both the likelihood and consequence of risk events (e.g., compliance violations, injury hazards, water delivery disruption, or lost power revenue), and then aligns funding levels to the Authority’s risk tolerance. Projects that address Tier 1 risks (compliance, safety, or failure likely) receive priority because deferral increases exposure to high-impact outcomes and emergency costs. Tier 2 risks are managed through sequencing and phased investment to capture efficiency gains and prevent end-of-life failures, while Tier 3 projects are used to strengthen long-term resilience and extend asset life when funding capacity allows. By applying composite risk management annually during budget development, UWPA can transparently justify why certain investments must proceed immediately, why others can be phased, and how the chosen funding option balances affordability with responsible stewardship of essential water and hydropower infrastructure.

UWPA Composite Risk Management → Funding Approach

RISK SOURCE (Tier Drivers)	RISK RESPONSE (Strategy)	FUNDING CHOICE (Integrated Plan)
Tier 1 (Mandatory) • Compliance • Safety • Failure Likely	ELIMINATE RISK (Act Now) • Tier 1 dominates	Option 1 — Full Funding • Tier 1 + Tier 2 on schedule • Advance high-value Tier 3
Tier 2 (Necessary) • Efficiency / Cost Reduction • End of Useful Life • Revenue Improvements	CONTROL RISK (Phase / Sequence) • Tier 1 + select Tier 2	Option 2 — Medium Funding • Tier 1 fully funded • Select Tier 2 • Phase most Tier 3
Tier 3 (Beneficial) • Capacity • Reliability • Correct Deficiency • Extend Useful Life	ACCEPT / DEFER RISK (Minimum Action) • Critical Tier 1 only	Option 3 — Minimum/Deferral • Only critical Tier 1 • Defer most Tier 2 & 3

RISK LEVEL → RECOMMENDED FUNDING OPTION

Likelihood ↓ Impact →	LOW	MEDIUM	HIGH
HIGH	Option 2 Medium	Option 1 Full	Option 1 Full
MEDIUM	Option 3 Minimum	Option 2 Medium	Option 1 Full
LOW	Option 3 Minimum	Option 3 Minimum	Option 2 Medium

Annual update rule: Reassess tiers, inspections, failures, regulations, and grant readiness. Adjust funding option accordingly.

Figure 14 – Composite Risk Management – Funding Approach

4.7 Reserve Impacts and Budget Comparison

The fiscal option selected by the UWPA Board will directly influence the Authority's reserve stability, annual budget requirements, and the pace at which capital improvements can be delivered. Because the CIP includes projects that are necessary to maintain reliability and compliance readiness—while also addressing cost efficiency, end-of-life replacement, and long-term resiliency—the funding level selected must be evaluated not only against project costs, but also against its effect on reserves and the long-term financial sustainability of the agency.

This section compares each funding option by (1) the expected impact to reserves and (2) total planned expenditures relative to available revenues. This comparison allows the Board to understand how each option affects UWPA's ability to respond to emergencies, maintain stable rates/member contributions over time, and avoid long-term risk created by deferring essential reinvestment.

Reserve Impacts by Option

Reserves serve as a financial safeguard to ensure UWPA can respond to unforeseen events such as infrastructure failures, emergency repairs, regulatory compliance obligations, environmental requirements, or unexpected operational disruptions. Each funding option presents a different reserve impact profile:

Option 1: Full Funding

Under Full Funding, the CIP is funded at the planned pace, with continued reserve contributions aligned with long-term reserve targets. This option typically results in the strongest reserve position over time because the Authority reduces the likelihood of emergency repairs, avoids the cost escalation associated with deferred projects, and improves overall system reliability. Although revenue demands are highest in the near term, the long-term effect is generally improved financial stability.

Option 2: Medium Funding

Under Medium Funding, Tier 1 priorities are funded and selected Tier 2 projects are implemented, while other work is phased or delayed. This option may require periodic use of reserves to manage short-term cash flow pressures or unexpected failures in deferred areas, particularly if the Authority experiences unplanned outages or urgent repairs. Reserve impacts are moderate and depend heavily on the success of project sequencing, grant funding, and the timing of regulatory obligations.

Option 3: Minimum Funding / Deferral Strategy

Under Minimum Funding, the Authority limits CIP spending to only the most critical needs, with significant deferral of Tier 2 and Tier 3 projects. While this option reduces near-term revenue demands, it can place increased pressure on reserves over time due to a higher likelihood of emergency repair costs, unplanned failures, and unbudgeted replacement needs. In this scenario, reserves may become the primary financial tool used to respond to failures rather than supporting planned investment, which can erode reserve stability and increase long-term funding gaps.

Budget Comparison and Identification of Shortfalls/Deferrals

In addition to reserve impacts, each funding option produces a different overall budget outcome when compared against expected revenues and available financing. The analysis below identifies how total expenditures compare across options and where shortfalls or deferrals may occur.

Option 1: Full Funding

Option 1 includes the full cost of planned CIP projects within the fiscal planning period, along with continued operations and reserve contributions. This option minimizes deferrals and provides the highest probability that Tier 1 and Tier 2 needs are addressed on schedule. Any funding gap under this option is typically known and can be planned for through member agency contributions, grant pursuit, or financing strategies.

Option 2: Medium Funding

Option 2 includes funding for Tier 1 projects and selected Tier 2 projects, with remaining projects deferred, bundled, or phased into later fiscal years. Under this option, shortfalls are managed through re-scheduling rather than fully abandoning projects. As a result, the CIP becomes more dependent on annual updates, grant competitiveness, and the Board's willingness to adjust funding levels year-by-year as conditions change.

Option 3: Minimum Funding / Deferral Strategy

Option 3 reflects a constrained budget approach in which only the most urgent Tier 1 projects are funded and most other projects are deferred. This option will create the largest gap between identified system needs and funded work, and it increases the probability that deferred projects will return later as higher-cost emergency repairs. While short-term expenditures are reduced, the total long-term cost of ownership is likely higher due to inflation, accelerated deterioration, and service disruption risk.

Risk Register

UWPA will maintain a Tier 1 Risk Register to ensure that the highest-risk infrastructure issues are clearly documented, tracked, and prioritized during annual budget and CIP updates. The purpose of the register is to connect critical assets to their most likely failure modes, define the consequences of failure, estimate the likelihood within the planning horizon, and identify the mitigation project(s) and implementation timing necessary to reduce risk. This tool supports transparent decision-making by linking Tier 1 prioritization directly to compliance, safety, and failure-prevention needs. The Tier 1 Risk Register will be reviewed and updated annually based on inspection findings, maintenance history, staff observations, regulatory correspondence, and project readiness.

Asset	Failure Mode	Consequences of Failure	Likelihood (1-5)	Mitigation Project	Timing / FY
<i>Example: ¾ Mile Flume (Forest Meadows)</i>	<i>Structural failure / fire vulnerability</i>	<i>Loss of water deliveries, emergency repair, public safety impacts</i>	<i>3</i>	<i>Flume rehabilitation / replacement segment upgrades</i>	<i>FY 26–27</i>

Implementation Timeline Graphic

To support transparent planning and realistic execution, UWPA will maintain a five-year implementation timeline that summarizes major project milestones across the CIP planning horizon. The timeline is intended to show how projects progress through the core delivery phases—studies, design, permitting/environmental compliance, and construction—and to ensure that workloads and funding needs are appropriately sequenced year to year. This approach allows UWPA to coordinate staffing, consultant support, grant timing, procurement lead times, and construction schedules while minimizing service disruptions and cost escalation.

The timeline will also identify outage-sensitive windows and seasonal constraints that influence project timing. Hydroelectric projects must be scheduled to reduce impacts from forced outages and lost generation revenue, including aligning construction activities with planned unit downtime and operational windows that minimize revenue loss. Similarly, many conveyance projects are constrained by weather, access conditions, flow conditions, and emergency preparedness needs. Conveyance construction and rehabilitation work will generally be timed to take advantage of favorable seasonal conditions and to avoid periods when water delivery reliability is most critical.

This implementation timeline will be updated annually during the CIP and budget adoption cycle to reflect project readiness, shifting Tier priorities, regulatory milestones, permitting status, grant opportunities, and evolving system conditions.



Implementation Timeline Graphic (Five-Year Framework)

Major Milestones: Studies → Design → Permitting → Construction | Highlights hydro outage-sensitive windows and conveyance seasonal constraints

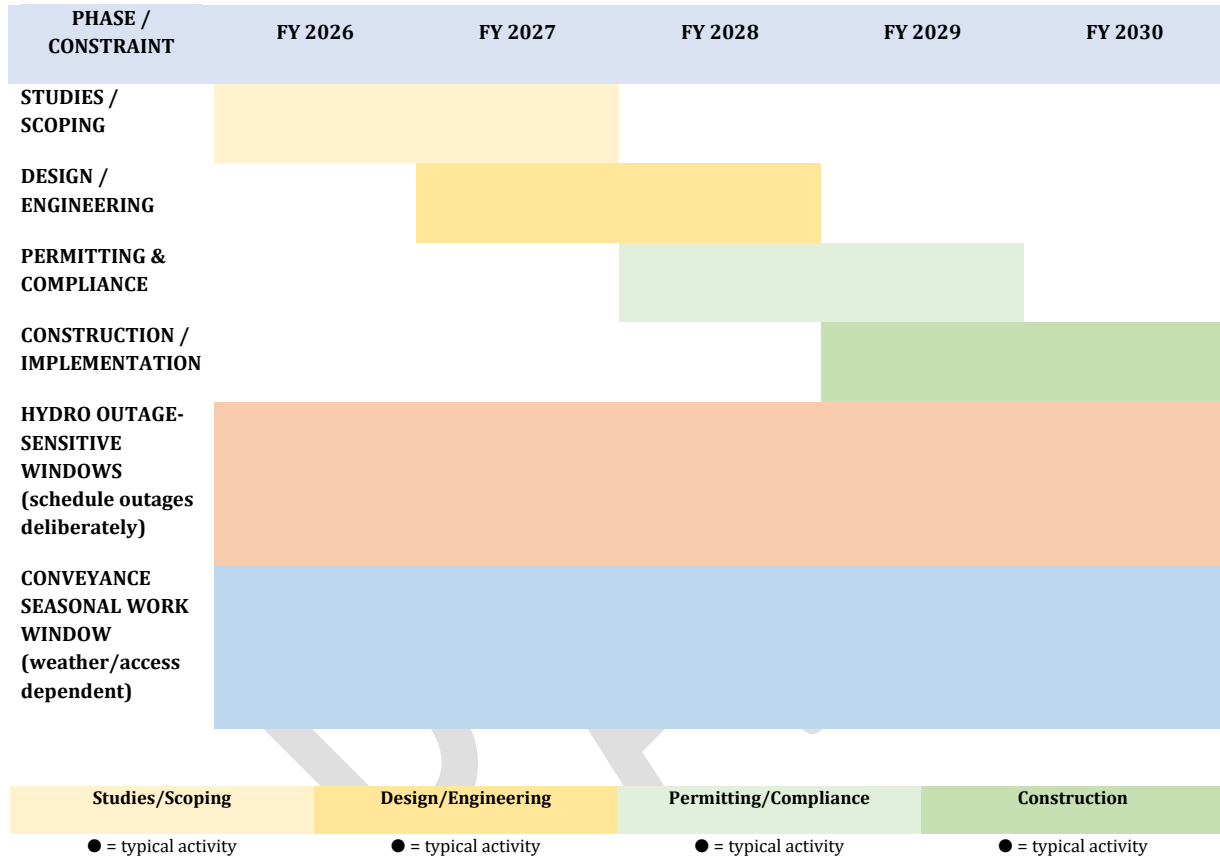


Figure: Five-year implementation framework for sequencing projects from studies to construction. Timing should be refined annually based on project readiness, permitting progress, hydro outage windows, and conveyance seasonal constraints.

Figure 15 – Implementation Timeline Graphic (Five-Year Framework)

Grant Readiness Plan

UWPA will pursue grant and outside funding opportunities where competitive and feasible to reduce member agency funding impacts and accelerate delivery of high-priority capital improvements. A structured Grant Readiness Plan improves UWPA’s ability to compete by identifying projects that align with typical funding priorities such as public safety, wildfire resilience, critical infrastructure protection, regulatory compliance readiness, energy reliability, and operational efficiency. Grant readiness also supports better sequencing within the CIP by ensuring that projects expected to pursue outside funding are advanced to the appropriate level of scope definition, environmental documentation, and cost refinement before solicitation deadlines.

Grant readiness does not replace the need for core capital funding; rather, it is intended to supplement UWPA's Integrated Funding Plan by targeting projects that can demonstrate strong public benefits, clear risk reduction outcomes, and measurable performance results.

Grant-Competitive Projects (Priority Categories)

UWPA will maintain a rolling list of projects that are likely to be competitive for grant funding based on program priorities and measurable public benefits. Projects may include the following types:

1) Wildfire Resilience and Emergency Water Supply Reliability

Projects that reduce vulnerability of the water conveyance system to wildfire, treefall, and emergency disruption are often competitive because they support community resilience and public safety.

Why they qualify: protects critical water supply, improves emergency readiness, reduces outage risk, supports wildfire response.

2) Major Conveyance Rehabilitation and Failure Prevention (Tier 1)

High-consequence conveyance improvements—particularly those that address likely failure within 5–10 years—may qualify due to reliability and risk reduction benefits.

Why they qualify: avoids catastrophic outages, protects essential service continuity, reduces emergency repair costs and service disruption risk.

3) Dam Safety and Regulatory Corrective Actions

Projects required to address dam safety deficiencies or inspection findings may be competitive depending on the funding source and eligibility constraints.

Why they qualify: protects public safety, addresses compliance obligations, reduces downstream hazard exposure.

4) Hydroelectric Reliability and Efficiency Improvements

Hydro-related upgrades may be competitive when tied to grid resilience, renewable energy reliability, operational efficiency, or safety improvements.

Why they qualify: maintains renewable generation benefits, reduces forced outages, improves efficiency and long-term reliability.

5) Operational Technology / SCADA and Critical Monitoring Improvements

SCADA and monitoring improvements are often competitive when positioned as critical infrastructure modernization, operational efficiency, or emergency response enhancement.

Why they qualify: improves situational awareness, reduces response time, reduces labor and travel needs, strengthens system monitoring.

6) Environmental Compliance and Permitting Readiness Activities (when eligible)

Certain programs allow pre-construction activities such as planning, design, environmental documentation, and permitting.

Why they qualify: accelerates delivery, improves construction readiness, strengthens compliance outcomes.

UWPA will prioritize grant pursuit for projects that are already classified as Tier 1 or Tier 2, since these provide the strongest and most defensible connection to measurable risk reduction, service continuity, and cost effectiveness.

Grant Readiness Next Steps (Standard Process)

To improve competitiveness and reduce missed opportunities, UWPA will apply the following steps to candidate projects:

1) Eligibility and Program Fit Check

Before investing significant staff time, UWPA will confirm program requirements including applicant eligibility, project type eligibility, timeline constraints, and reporting obligations.

2) Benefit Narrative Development (Quantified Where Possible)

Each grant-competitive project will include a short benefit narrative describing:

- risk reduction (Tier 1 risks mitigated)
- outage hours avoided (water and/or hydro)
- improved emergency preparedness and resilience
- lifecycle cost savings or efficiency gains
- public safety improvements

Where feasible, benefits will be quantified using UWPA's KPI scorecard measures.

3) Environmental and Permitting Readiness Review

UWPA will confirm the level of environmental documentation required and identify permitting risks early. Projects will be classified as:

- Ready now (minimal permitting)
- Near ready (permits or studies needed)
- Not ready (significant environmental pathway or unresolved constraints)

4) Cost and Scope Refinement (Grant-Quality Level)

To support credible applications, UWPA will refine project scope and cost estimates to an appropriate level for funding submission and audit readiness (including contingencies and soft costs).

5) Matching Funds Strategy

UWPA will develop a consistent approach to match requirements by identifying potential match sources such as:

- annual CIP contributions
- reserves (as permitted by policy)

- phased funding commitments
- in-kind staff time (only when allowable and properly documented)
- partner contributions (if eligible)

6) Application Calendar and Responsibility Assignment

UWPA will maintain a grant calendar and assign internal ownership for key steps including application preparation, engineering support, documentation, and compliance reporting.

Annual Update and Board Reporting

UWPA will update the Grant Readiness Plan annually as part of the CIP and budget adoption process. Updates will include:

- grant applications submitted and outcomes
- projects moved into “grant-ready” status
- funding awards and match commitments
- schedule impacts to CIP delivery

This process ensures grant pursuit remains targeted, realistic, and aligned with UWPA’s highest-priority infrastructure needs. The purpose of combining the CIP and Grants Readiness Plan is to ensure that UWPA develops shovel-ready projects based on a targeting, ranked, and comprehensive manner that aligns the greatest needs to available grants that in tandem create the most cost-effective plan to improvement and resiliency of infrastructure.

Section 5 — CIP Project Summaries (Project Sheets)

5.1 CIP Individual Project Descriptions

Appendix A for sample project sheet

Project sheets are presented in ranked order.

INSERT PROJECT SHEETS AND RANKED PROJECT ORDER

Section 1 — Project Identification (ID, name, total cost, tier, years, type)

- Section 2 — Project Description (existing issue, proposed solution, value/risk reduction)
- Section 3 — Funding by Fiscal Year (tasks by year: studies/design/permitting/construction)
- Section 4 — Potential Funding Sources (cash, grants, loans, other)
- Section 5 — Other Issues and Comments (constraints, dependencies, risk notes, photos/maps)

Appendices

- A. Sample Project Template Sheet
- B. Asset inventory summary



Appendix A – Project Sheet Template

SAMPLE

Project Title:

Project ID:

Category: ☐ Water Conveyance ☐ Hydroelectric ☐ General Facilities

Tier: ☐ 1 ☐ 2 ☐ 3

Project tiers:

Tier 1: Regulatory compliance requirement, safety issue, outside funding secured, increases revenue, or failure is likely/impending.

Tier 2: Improves operational efficiency or reduces costs, or replacement due to end of useful life of facility/equipment.

Tier 3: Increases capacity or improves reliability, corrects a deficiency, or increases an asset's useful life.

Project Type: ☐ Repair ☐ Replacement ☐ Rehabilitation ☐ New / Expansion

Location / Site:

Estimated Total Cost: \$

Asset / System Component:

Estimated Start / Finish (FYs):

Key Partners (if any):

SECTION 1 — PROJECT IDENTIFICATION (Summary)

Project Purpose (1–2 sentences):

Problem / Need Statement:

Priority Justification (Why this tier?):

☐ **Regulatory / Compliance requirement (explain):**

☐ **Safety obligation (explain):**

☐ **Outside funding secured or likely (explain):**

☐ High likelihood of failure (explain evidence):

☐ Operational improvement / cost savings (explain):

☐ Revenue generation (explain):

☐ Capacity / reliability improvement (explain):

SECTION 2 — PROJECT DESCRIPTION

Existing Conditions:

Proposed Improvement / Scope of Work:

Benefits / Outcomes

☐ Reduce risk of failure

☐ Improve safety

☐ Maintain compliance

☐ Improve reliability / redundancy

☐ Reduce O&M costs

☐ Increase efficiency

☐ Improve revenue performance

☐ Increase capacity / delivery capability

Expected results (specific):

Key Assumptions / Constraints

Outage windows required (dates/season):

Access / easements / property considerations:

Environmental/permitting constraints:

Coordination with members/contractors:

Seasonal limitations (weather/flows):

SECTION 3 — IMPLEMENTATION PLAN & FUNDING BY FISCAL YEAR

Major Tasks by Phase

Planning / Study: ☐ Yes ☐ No — *Notes:*

Design / Engineering: ☐ Yes ☐ No — *Notes:*

Permitting / Environmental: ☐ Yes ☐ No — *Notes:*

Procurement / Bidding: ☐ Yes ☐ No — *Notes:*

Construction / Implementation: ☐ Yes ☐ No — *Notes:*

Testing / Commissioning: ☐ Yes ☐ No — *Notes:*

Funding Schedule (By Year)

Fiscal Year	Planned Work (Scope Summary)	Estimated Cost
FY_____	_____	\$_____
FY_____	_____	\$_____
FY_____	_____	\$_____
FY_____	_____	\$_____
FY_____	_____	\$_____

Total Project Cost: \$_____

SECTION 4 — FUNDING SOURCES

Primary Funding Source(s)

☐ UWPA Cash / Reserve

☐ Loan / Debt Financing (identify):

☐ Member Contributions

☐ Other:

☐ Grant (*identify*):

SECTION 5 — OTHER ISSUES, RISKS, AND COMMENTS

Dependencies:

☐ Must occur before:

☐ Requires coordination with:

☐ Linked projects:

Operations & Maintenance Impacts

☐ O&M cost decreases ☐ O&M cost increases ☐ No change

Notes:

Notes / Attachments (*select all that apply*):

☐ Photos

☐ Inspection reports

☐ Maps / exhibits

☐ Engineering memo

☐ Vendor quotes

☐ Permits

☐ Reference(s):

OPTIONAL ADD-ON BLOCKS

A) Asset Data Snapshot

Asset Name/ID:

Install Year:

Expected Life:

Condition: ☐ Good ☐ Fair ☐ Poor

Last Inspection Date:

Failure Consequence: ☐ Low ☐ Medium

☐ High

B) Performance Measures (Before / After)

Metric	Current	Target After Project
Downtime (hrs/yr)	_____	_____
O&M cost (\$/yr)	_____	_____
Reliability (%)	_____	_____
Safety incidents	_____	_____

C) Deliverables Checklist

- ☐ Updated drawings/as-builts
- ☐ Final inspection sign-off
- ☐ Commissioning/testing results
- ☐ Updated maintenance plan

Appendix B - Asset Inventory List

Source: Member Property Report (02/28/2025)

This appendix provides a consolidated inventory of UWPA assets organized into three categories: basic property by site, licensed vehicles, and mobile equipment. This inventory supports capital planning, asset management, and lifecycle investment decisions.

A.1 Basic Property by Site

Asset Number	Risk Type	Site Number	Building Name	Description	Address	City	State
U002-001-001	Building	001-1168 BOOSTER WAY, ANGELS CAMP	OFFICE BUILDING (PARTIALLY LEASED)	Coverage includes: 1,270 linear feet of 6ft chain link fencing with three strands of barbed wire. Two remote activated security gates	1168 BOOSTER WAY	ANGELS CAMP	CA
U002-001-002	Building	001-1168 BOOSTER WAY, ANGELS CAMP	STORAGE (RECORDS) BUILDING (PARTIALLY LEASED)		1168 BOOSTER WAY	ANGELS CAMP	CA
U002-001-003	Building	001-1168 BOOSTER WAY, ANGELS CAMP	BACK CAVE BUILDING		1168 BOOSTER WAY	ANGELS CAMP	CA
U002-001-004	Building	001-1168 BOOSTER WAY, ANGELS CAMP	ANGEL'S CAMP HYDROELECTRIC PLANT		1168 BOOSTER WAY	ANGELS CAMP	CA
U002-001-005	Building	001-1168 BOOSTER WAY, ANGELS CAMP	COMMUNICATION TOWER		1168 BOOSTER WAY	ANGELS CAMP	CA
U002-001-FE001	Fixed Equipment	001-1168 BOOSTER WAY, ANGELS CAMP		HYDROELECTRIC PLANT, INCLUDING BUT NOT LIMITED TO (1) GENERATOR, GENERAL ELECTRIC, AC, TYPE ATB, (2) JET PELTON TURBINES,	1168 BOOSTER WAY	ANGELS CAMP	CA

				404 FT HEAD, 450 RPM, 1880 HP, CONTROLS, VALVES, SWITCHGEAR, SUBSTATION EQUIPMENT AND STRUCTURES, ANCILLARY DEVICES, 2 Vacuum Breakers, 1 generator breaker			
U002-001-FE002	Fixed Equipment	001-1168 BOOSTER WAY, ANGELS CAMP		GENERAC GENERATOR, MODEL RG04845JNAC, SERIAL # 3009292307	1168 BOOSTER WAY	ANGELS CAMP	CA
U002-001-PP001	Personal Property	001-1168 BOOSTER WAY, ANGELS CAMP	STORAGE (RECORDS) BUILDING (PARTIALLY LEASED)	INVENTORY- SPARE PARTS FOR HYDRO PLANT	1168 BOOSTER WAY	ANGELS CAMP	CA
U002-001-PP002	Personal Property	001-1168 BOOSTER WAY, ANGELS CAMP	OFFICE BUILDING (PARTIALLY LEASED)	OFFICE EQUIPMENT/FURNITURE	1168 BOOSTER WAY	ANGELS CAMP	CA
U002-001-PP003	Personal Property	001-1168 BOOSTER WAY, ANGELS CAMP	ANGEL'S CAMP HYDROELECTRIC PLANT	SMALL TOOLS AND SUPPLIES	1168 BOOSTER WAY	ANGELS CAMP	CA
		001-1168 BOOSTER WAY, ANGELS CAMP			1168 BOOSTER WAY	ANGELS CAMP	CA
U002-002-001	Building	002-335 HUNTERS DAM RD	RESIDENCE		335 HUNTERS DAM RD	ARNOLD	CA
U002-002-FE001	Fixed Equipment	002-335 HUNTERS DAM RD		GENERAC GENERATOR, MODEL RG02515JNAX, SERIAL # 3010213064	335 HUNTERS DAM RD	ARNOLD	CA
		002-335 HUNTERS DAM RD		900 ft no climb fencing (+\$10,800)	335 HUNTERS DAM RD	ARNOLD	CA
U002-003-001	Building	003-350 HUNTERS DAM RD	METAL STORAGE BUILDING		350 HUNTERS DAM RD	ARNOLD	CA
U002-003-002	Building	003-350 HUNTERS DAM RD	STORAGE GARAGE		350 HUNTERS DAM RD	ARNOLD	CA

U002-003-003	Building	003-350 HUNTERS DAM RD	STORAGE BUILDING		350 HUNTERS DAM RD	ARNOLD	CA
U002-003-004	Building	003-350 HUNTERS DAM RD	SAW SHED		350 HUNTERS DAM RD	ARNOLD	CA
U002-003-005	Building	003-350 HUNTERS DAM RD	OFFICE		350 HUNTERS DAM RD	ARNOLD	CA
U002-003-006	Building	003-350 HUNTERS DAM RD	EMERGENCY GENERATOR BUILDING		350 HUNTERS DAM RD	ARNOLD	CA
U002-003-FE001	Fixed Equipment	003-350 HUNTERS DAM RD		PLC CABINET AND INSTRUMENTATION, DATALOGGER, COMPUTER W/INTERFACE AND ALARM SOFTWARE	350 HUNTERS DAM RD	ARNOLD	CA
U002-003-FE002	Fixed Equipment	003-350 HUNTERS DAM RD		VALVES, GATE, ACTUATOR, ELECTRICAL, MISC EQUIPMENT	350 HUNTERS DAM RD	ARNOLD	CA
U002-003-PP001	Personal Property	003-350 HUNTERS DAM RD	STORAGE BUILDING	\$200,000 Duperon Trash Rack in storage	350 HUNTERS DAM RD	ARNOLD	CA
				LUMBER INVENTORY, SUPPLIES AND SMALL TOOLS			
U002-003-PP002	Personal Property	003-350 HUNTERS DAM RD		INVENTORY, WOOD	350 HUNTERS DAM RD	ARNOLD	CA
		003-350 HUNTERS DAM RD			350 HUNTERS DAM RD	ARNOLD	CA
U002-004-001	Building	004-CANALS DISTRICT WIDE	LOWER UTICA CANAL		ANGELS CAMP	ANGELS CAMP	CA
U002-004-002	Building	004-CANALS DISTRICT WIDE	ANGELS CANAL		ANGELS CAMP	ANGELS CAMP	CA
U002-004-003	Building	004-CANALS DISTRICT WIDE	UPPER UTICA CANAL		ANGELS CAMP	ANGELS CAMP	CA
		004-CANALS DISTRICT WIDE			ANGELS CAMP	ANGELS CAMP	CA

U002-005-001	Building	005-ANGELS FOREBAY	GAUGING STATION	1,600 ft chain-link fence (+\$9,600)	ANGELS FOREBAY	ANGELS CAMP	CA
U002-005-FE001	Fixed Equipment	005-ANGELS FOREBAY		GRIZZLY, MANUAL	ANGELS FOREBAY	ANGELS CAMP	CA
U002-005-FE002	Fixed Equipment	005-ANGELS FOREBAY		PENSTOCK, WELDED STEEL, 3' DIAMETER, ABOVE GROUND	ANGELS FOREBAY	ANGELS CAMP	CA
		005-ANGELS FOREBAY			ANGELS FOREBAY	ANGELS CAMP	CA
U002-006-FE001	Fixed Equipment	006-CANDY ROCK ROAD		GENERAC GENERATOR, MODEL G0072259, SERIAL # 3008791135	CANDY ROCK ROAD	AVERY	CA
		006-CANDY ROCK ROAD			CANDY ROCK ROAD	AVERY	CA
U002-007-PP001	Personal Property	007-DISTRICT-WIDE		PERSONAL PROPERTY ON LICENSED VEHICLES AND MOBILE EQUIPMENT	DISTRICT-WIDE	ANGELS CAMP	CA
		007-DISTRICT-WIDE		10 @ \$2,000 ea 2" Mag Irrigation meters, 4 @ \$3,500 ea 6" Mag Meters, 2 @ 2" \$ 2,500 insertion meter, 1 @ 3" \$3,500 insertion meter, 2 @ 1" \$250 mag meter.	DISTRICT-WIDE	ANGELS CAMP	CA
U002-008-001	Building	008-FLUMES DISTRICT WIDE	FLUMES		FLUMES DISTRICT WIDE	ANGELS CAMP	CA
		008-FLUMES DISTRICT WIDE			FLUMES DISTRICT WIDE	ANGELS CAMP	CA
U002-009-001	Building	009-MILL CREEK TAP	MILL CREEK TUNNEL TAP OUTLET STRUCTURE		MILL CREEK TAP	ANGELS CAMP	CA
U002-009-FE001	Fixed Equipment	009-MILL CREEK TAP		PIPING, STEEL(35'), W/AIR & VAC VALVE	MILL CREEK TAP	ANGELS CAMP	CA
U002-009-FE002	Fixed Equipment	009-MILL CREEK TAP		WATER LEVEL INSTRUMENTATION, TELEMETRY, PROPANE TANK, PLC, CONTR	MILL CREEK TAP	ANGELS CAMP	CA

U002-009-FE003	Fixed Equipment	009-MILL CREEK TAP		VALVE, HOWELL BUNGER	MILL CREEK TAP	ANGELS CAMP	CA
U002-009-FE004	Fixed Equipment	009-MILL CREEK TAP		STRUCTURE EQUIPMENT, HYDRAULIC GOVERNOR UNIT, 15 KW GENERATOR, SCADA EQUIPMENT, ELECTRICAL PANEL	MILL CREEK TAP	ANGELS CAMP	CA
		009-MILL CREEK TAP			MILL CREEK TAP	ANGELS CAMP	CA
U002-010-FE001	Fixed Equipment	010-MURPHYS AFTERBAY		GENERAC GENERATOR, MODEL RG02515JNAX, SERIAL # 3010212533	MURPHYS AFTERBAY	MURPHYS	CA
		010-MURPHYS AFTERBAY		705 ft chain link fencing (+\$4,230)	MURPHYS AFTERBAY	MURPHYS	CA
U002-011-001	Building	011-MURPHYS FOREBAY	GAUGING HOUSE	225 ft chain link fence (+\$1,350)	MURPHYS FOREBAY	ANGELS CAMP	CA
U002-011-FE001	Fixed Equipment	011-MURPHYS FOREBAY		PENSTOCK, WELDED STEEL, 3' - 4' DIAMETER, UNDERGROUND, ROTAX VALVE	MURPHYS FOREBAY	ANGELS CAMP	CA
U002-011-FE002	Fixed Equipment	011-MURPHYS FOREBAY		GENERAC GENERATOR, MODEL 0062500, SERIAL # 8797017 - 166.7AMP	MURPHYS FOREBAY	ANGELS CAMP	CA
U002-011-FE003	Fixed Equipment	011-MURPHYS FOREBAY		TRASHRACK, SELF-CLEANING	MURPHYS FOREBAY	ANGELS CAMP	CA
		011-MURPHYS FOREBAY			MURPHYS FOREBAY	ANGELS CAMP	CA
U002-012-001	Building	012-MURPHY'S HYDROELECTRIC PLANT	POWERHOUSE	450 ft chain link fence around powerhouse (+\$2,700)	MURPHYS HYDROELECTRIC PLANT	ANGELS CAMP	CA
U002-012-002	Building	012-MURPHY'S HYDROELECTRIC PLANT	STORAGE BUILDING, BASE OF AFTERBAY DAM		MURPHYS HYDROELECTRIC PLANT	ANGELS CAMP	CA
U002-012-FE001	Fixed Equipment	012-MURPHY'S		HYDROELECTRIC PLANT, INCLUDING BUT NOT LIMITED TO	MURPHYS HYDROELECTRIC PLANT	ANGELS CAMP	CA

		HYDROELECTRIC PLANT	(1) 4500 KW GENERATOR, GENERAL ELECTRIC, AC, TYPE ATI, 3 PHASE (1) 5375 HP MULTI-JET PELTON TURBINE, HYDRAULIC SYSTEMS, ROTARY VALVE, PLANT CONTROLS, TELEMETRY, ANCILLARY SYSTEMS			
U002-012-FE002	Fixed Equipment	012-MURPHY'S HYDROELECTRIC PLANT	TRANSFORMER, OIL FILLED, PAD MOUNTED, 18,050V - 2400 V, TYPE SI, 3 PHASES, WESTINGHOUSE	MURPHYS HYDROELECTRIC PLANT	ANGELS CAMP	CA
U002-012-FE003	Fixed Equipment	012-MURPHY'S HYDROELECTRIC PLANT	SUBSTATION STEEL AND EQUIPMENT, INCLUDING SWITCHES, CIRCUIT BREAKERS, ANCILLARY DEVICES. 2 Vacuum Circuit Breakers, 2 Field Pot. Transformers (+\$200,000)	MURPHYS HYDROELECTRIC PLANT	ANGELS CAMP	CA
		012-MURPHY'S HYDROELECTRIC PLANT		MURPHYS HYDROELECTRIC PLANT	ANGELS CAMP	CA

A.2 Licensed Vehicles

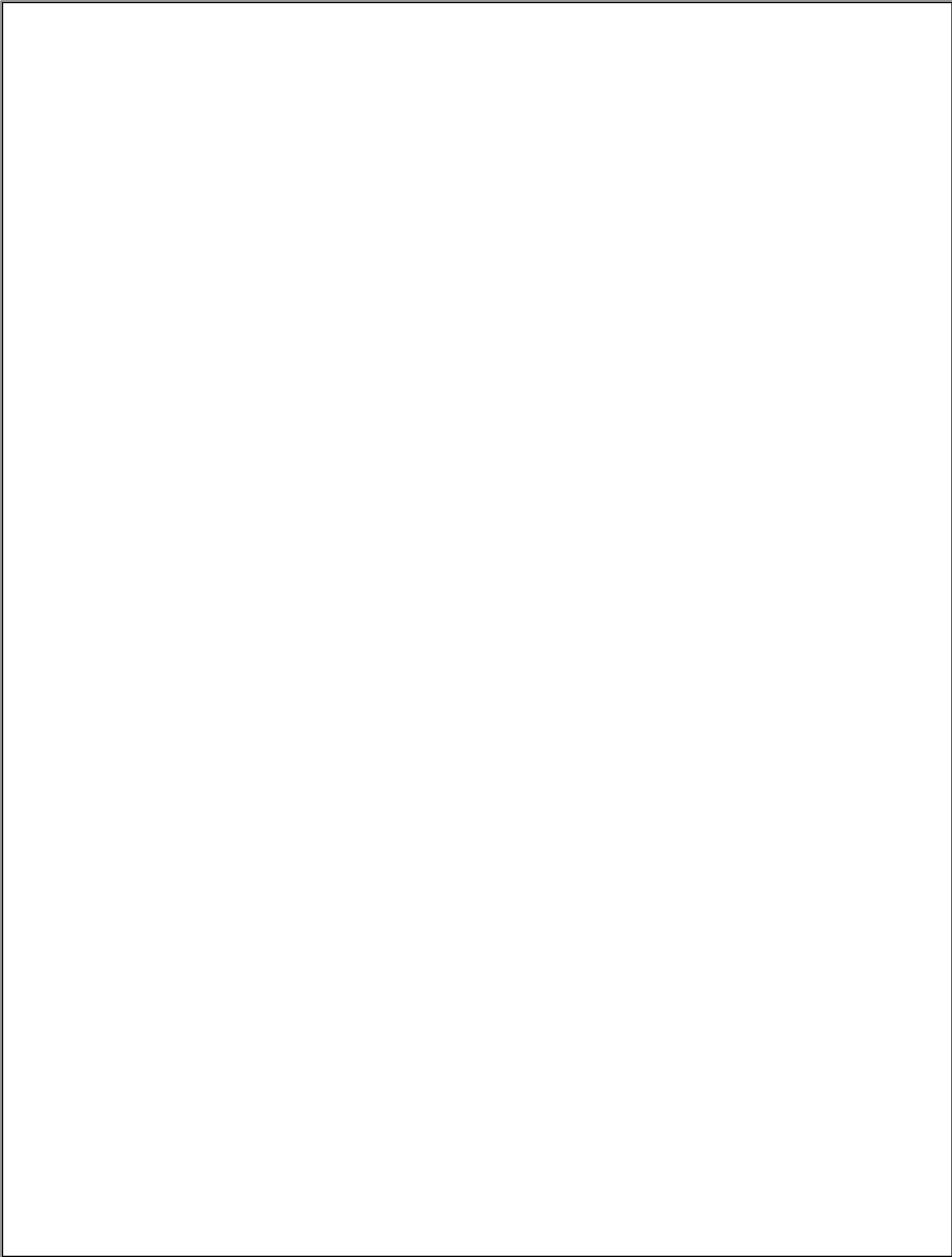
Asset Number	Unit Number	Model Year	Make	Model	VIN / Serial Number	Description	Class
U002-AUTO-001		2007	MISCELLANEOUS	2500	1GBHK24667E574630	CHEVEROLET, SILVERADO 2500	6001 - LIGHT TRUCK
U002-AUTO-002		2022	DODGE	RAM 1500	1C6SRFJTXNN307803	DODGE, RAM 1500	6001 - LIGHT

							TRUCK
U002-AUTO-003		2015	TOWMASTER	EB TRAILER	4KNTT1628FL161052	TRAILER, TOWMASTER, EB TRAILER	6000 - ALL OTHER
U002-AUTO-004		2021	GENERAC	0002438586	3008789622	TRAILER W/GENERAC GENERATOR	6000 - ALL OTHER
U002-AUTO-005		2020	RAM	3500	3C7WRTBL2LG106364	RAM, 3500, REGULAR CAB 4X4	6001 - LIGHT TRUCK
U002-AUTO-006		2021	CHEVROLET	COLORADO	1GCHTCEN7M1256202	CHEVROLET, COLORADO	6001 - LIGHT TRUCK
U002-AUTO-007		2020	CHEVROLET	SILVERADO	1GC3YLE76LF201917	CHEVROLET, SILVERADO	6001 - LIGHT TRUCK
U002-AUTO-008		2017	TOYOTA	TACOMA	5TFSX5EN0HX052351	TOYOTA, TACOMA	6001 - LIGHT TRUCK
U002-AUTO-009		2017			5SHFP2021HB000466	TRAILER, KAUFMAN P-STANDARD	6000 - ALL OTHER
U002-AUTO-010		2020	PJ TRAILERS	DMA1472	4P5DM1420L1316140	TRAILER, PJ DUMP, DMA1472	6000 - ALL OTHER
U002-AUTO-011		2005	MISCELLANEOUS	MISCELLANEOUS	2SWUW11A05S021034	TRAILER, SNOWBEAR	6000 - ALL OTHER
U002-AUTO-012		2006	FORD	RANGER	1FTYR15E16PA24195	FORD, RANGER	6001 - LIGHT TRUCK
U002-AUTO-013	UPA3 CM	1999	FORD	F250	1FTNF21LXXEB07501	FORD, F250	6001 - LIGHT TRUCK

U002-AUTO-014	2004	BIG TEX	VAN	16VVX101731A77213	TRAILER, BIG TEX, VANGUARD, 5X10, 30SV-10	6000 - ALL OTHERR
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A.3 Mobile Equipment

Asset Number	Unit Number	Model Year	Serial Number	Description	Valuation Type	Scheduled Value
U002-ME-001		2017	AT6313174	BOBCAT, T770 T4 COMPACT TRACK LOADER	ACTUAL CASH VALUE	111130.0
U002-ME-002		2023	KBCDZ47CKN3L11263	EXCAVATOR, KUBOTA W/RUB TKS/SC CAB/ANGLE BLADE; U48-5R3A - Masticating Head for Excavator	ACTUAL CASH VALUE	68897.53
U002-ME-003			C-10HL	RIDLEY, GUNITE MACHINE, ROTARY	ACTUAL CASH VALUE	22044.0
U002-ME-004		2023	Y655-722-4845-383	FORKLIFT, CLARK C500-YS80 W/SIDE SHIFTER SERIAL #830364	ACTUAL CASH VALUE	12500.0
U002-ME-005			CC752161	CEMENT MIXER	ACTUAL CASH VALUE	2783.0





Resolution No. 2026-10

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE UTICA WATER AND POWER AUTHORITY ADOPTING THE 2026-2033 CAPITAL IMPROVEMENT PLAN

WHEREAS, the Utica Water and Power Authority is committed to protecting public safety and maintaining the reliability, integrity, and long-term sustainability of its water conveyance and hydroelectric systems; and

WHEREAS, a Capital Improvement Plan (CIP) provides a framework for identifying, prioritizing, and planning for significant capital projects and improvements necessary to maintain, repair, replace, and improve the Authority's infrastructure and facilities; and

WHEREAS, the CIP assists the Authority in planning for future capital needs, establishing priorities, coordinating project schedules, and identifying potential funding sources, including grants and other external funding opportunities; and

WHEREAS, the CIP is intended to serve as a living planning document, and the projects, priorities, estimated costs, and anticipated schedules identified therein are intended to be reviewed and updated annually to reflect changing conditions, available funding, operational needs, regulatory requirements, and other factors affecting the Authority; and

WHEREAS, the Board of Directors has reviewed the CIP and finds that its adoption will support the Authority's long-term planning and stewardship of its infrastructure and resources; and

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Utica Water and Power Authority hereby adopts the Capital Improvement Plan, which supersedes the CIP previously adopted by Resolution No. 22-12.

BE IT FURTHER RESOLVED that the CIP shall be reviewed and updated as appropriate, with the intent that the Plan and anticipated project schedules be revisited annually to reflect changing conditions, available funding, operational needs, regulatory requirements, and other factors affecting the Authority.

ON A MOTION by Director _____, and seconded by Director _____, the foregoing resolution was duly passed and adopted by the Board of Directors of the Utica Water and Power Authority, on the 28th day of July, 2026, by the following vote:

AYES:

NOES:

ABSTAIN:

ABSENT:

Caroline Schirato, Board Chair

Attest:

Stacie Walker, Clerk of the Board



Item 6D

[Return to Agenda](#)

UTICA WATER AND POWER AUTHORITY

Date: September 22, 2026
To: Erik Holt, General Manager
From: Stacie Walker, Administrative Specialist
Re: Revised Reserve Policy

RECOMMENDED ACTION:

Motion to adopt Resolution No. 2026-11, adopting the revised Reserve Policy and repealing prior Board actions related to UWPA reserve policies and funding requirements.

SUMMARY:

The Authority utilizes reserve funds to provide financial stability, protect against economic uncertainty and fluctuations in hydroelectric revenues, maintain cash flow for operations and capital improvements, fund anticipated regulatory obligations, and provide resources for emergencies and unanticipated costs. The Board retains authority over the appropriation and expenditure of reserve funds.

UWPA's existing reserve structure has developed through multiple Board actions and currently consists of five reserve accounts, including separate FERC 5-Year, FERC 10-Year, and FERC Exemption/Relicensing reserves.

The revised Reserve Policy reorganizes the reserve structure into four accounts: Operating Reserve, FERC Relicensing/Exemption Reserve, Regulatory Compliance Reserve, and Budget Balancing Reserve. The revised structure is intended to more clearly distinguish the purposes of each reserve and establish consistent funding targets, authorized uses, replenishment requirements, and reporting responsibilities.

The revised policy establishes long-term funding targets of \$500,000 for the Operating Reserve, \$5,000,000 for the FERC Relicensing/Exemption Reserve, \$1,250,000 for the Regulatory Compliance Reserve, and \$600,000 for the Budget Balancing Reserve, for a combined target of \$7,350,000. Annual contribution targets total \$735,000 and are subject to available fiscal resources and the Board's authority over the adopted annual budget.

Upon adoption of the revised policy, the existing five reserve accounts will be consolidated and reclassified into the four revised reserve categories. This reclassification does not change UWPA's total reserve balance. The current total reserve balance of approximately \$1,292,040 will be reallocated among the four revised reserve accounts in accordance with the revised policy.

Resolution No. 2026-11 formally adopts the revised Reserve Policy and repeals prior Board actions related to the establishment, modification, or approval of UWPA's reserve policy and reserve funding requirements, specifically including Resolutions 20-05 and 22-11.

FINANCIAL IMPACTS:

Adoption of the revised Reserve Policy does not, by itself, result in an immediate increase or decrease to UWPA's total reserve balance. Existing reserve accounts will be consolidated and reclassified into the four reserve categories established by the policy, with the current total reserve balance of approximately \$1,292,040 remaining unchanged.

Attachments

1. *Utica Water and Power Reserve Policy*
2. *Resolution 2026-11 Adopting a Revised Reserve Policy and Establishing Reserve Funding Targets and Authorized Uses*



Utica Water and Power Authority

Reserve Policy

1. PURPOSE

The purpose of this policy is to establish a clear and fiscally responsible framework for the creation, funding, use, replenishment, and oversight of Utica Water and Power Authority (UWPA) reserve funds. The reserves established by this policy are intended to:

- Protect UWPA against financial emergencies, economic uncertainty, and fluctuations in hydroelectric revenues;
- Maintain sufficient cash flow for personnel, operations, capital improvements, regulatory obligations, and professional services;
- Provide resources for emergency response, unanticipated capital costs, and required regulatory work;
- Support predictable contributions from UWPA member agencies; and
- Preserve the long-term financial solvency of UWPA.

2. POLICY

UWPA shall maintain four separate reserve fund accounts:

- Operating Reserve;
- FERC Relicensing/Exemption Reserve;
- Budget Balancing Reserve; and
- Regulatory Compliance Reserve.

The Board of Directors retains authority over the appropriation and expenditure of reserve funds. Reserve allocations and expenditures shall be made only in accordance with this policy and through formal Board action.

3. RESERVE FUNDS AND AUTHORIZED USES

3.1 Operating Reserve

This combined reserve supports three distinct purposes. Allocations to or from the reserve may be made through formal Board action during the annual budget process or at other times during the fiscal year in accordance with this policy.

- a. Operating Purpose.** An unrestricted reserve used to stabilize UWPA finances by providing a cushion against unexpected events, losses of income, large unbudgeted expenses, and

temporary cash-flow needs while awaiting revenues, reimbursements, or grant funding. The reserve shall not be used to cover a long-term or permanent income shortfall and may be used only for temporary, non-structural financial issues.

- b. Emergency Purpose.** Funds reserved for a major facility or equipment failure; emergency expenditures arising from flood, fire, drought, or another natural disaster; or the sudden loss of a major revenue source. Use for an emergency purpose during the fiscal year requires a Board-declared emergency at a regular or special meeting.
- c. Capital Purpose.** Funds reserved for unanticipated costs or cost overruns associated with the study, construction, reconstruction, repair, replacement, or upgrade of capital facilities costing \$50,000 or more, and for the purchase of equipment or vehicles costing \$5,000 or more in a fiscal year not already approved in the annual budget.

The annual commitment to this reserve account will be \$50,000. Only by a quorum vote of the Board will this be reduced in the annual budget.

3.2 FERC Relicensing/Exemption Reserve

A restricted reserve used to pay anticipated costs for studies, environmental analysis, consulting services, legal services, and other expenses associated with seeking an exemption from current Federal Energy Regulatory Commission (FERC) power-generation licensing requirements, renewing existing licenses, or otherwise supporting the continued use or conversion of UWPA hydroelectric power facilities. The annual commitment to this reserve account will be \$500,000. Only by a quorum vote of the Board will this be reduced in the annual budget.

3.3 Regulatory Compliance Reserve

A restricted reserve used to pay anticipated costs for reports, plans, assessments, and other documents required periodically to maintain compliance with FERC, the California Department of Dam Safety, or other regulatory agencies. The reserve may also be used for capital improvements required to comply with regulatory requirements. The annual commitment to this reserve account will be \$125,000. Only by a quorum vote of the Board will this be reduced in the annual budget.

3.4 Budget Balancing Reserve

An unrestricted reserve used to address fiscal issues identified during the annual budget process, including revenues needed to maintain or improve service levels, construct capital improvement projects, or address other UWPA costs. The reserve is intended to smooth revenue fluctuations associated with water year types one (1) through six (6) and corresponding changes in hydroelectric revenue. The annual commitment to this reserve account will be \$60,000. Only by a quorum vote of the Board will this be reduced in the annual budget.

Year-end carryover shall be deposited into this reserve and may include member-agency payments made during the prior fiscal year.

4. FUNDING TARGETS

4.1 Operating Reserve

UWPA shall target new contributions of \$50,000 per fiscal year, subject to available fiscal resources, until the reserve reaches \$500,000 or twenty percent (20%) of Operating Budget Expenses, exclusive of depreciation.

4.2 FERC Relicensing/Exemption Reserve

UWPA shall target the following contributions of \$500,000 annually to reach a total goal of \$5,000,000.

4.3 Regulatory Compliance Reserve

UWPA shall target the following contributions of \$125,000 annually to reach a total goal of \$1,250,000.

4.4 Budget Balancing Reserve

UWPA shall maintain a funding goal of \$600,000 or twenty-five percent (25%) of Operating Budget Expenses. Contributions should be made during wet years to offset reduced hydroelectric revenues during drier years. UWPA shall contribute \$60,000 annually to reach a total goal of \$600,000.

5. APPROPRIATION AND EXPENDITURE AUTHORITY

Account	Target Amount
Operating	\$500,000.00
FERC Relicensing/Exemption	\$5,000,000.00
Regulatory Compliance	\$1,250,000.00
Budget Balancing	\$600,000.00
Total	\$7,350,000.00

- a. Reserve allocations made through adoption of the annual budget require formal action by the Board of Directors.
- b. Appropriations or expenditures made outside the annual budget process require formal Board approval at a regular or special meeting.
- c. Use of the Combined Operating/Capital/Emergency Reserve for an emergency purpose requires a Board-declared emergency at a regular or special meeting.
- d. Except for allocations made through adoption of the annual budget, use of the Combined Operating/Capital/Emergency Reserve, FERC Relicensing/Exemption Reserve, or FERC/Dam Safety 5-year and 10-year Regulatory Reserve for a purpose other than the intended purpose of the applicable reserve requires a three-fifths (3/5) vote of the Board of

Directors. This will require the line item 1300 (interest income) to be removed from annual budget revenues until reserve accounts are fully funded.

6. RESERVE REPLENISHMENT

If the balance of any reserve falls below the applicable target established by this policy, the General Manager shall prepare a plan for Board consideration to rebuild the reserve balance within a reasonable period.

7. INTEREST AND INVESTMENT RETURNS

Interest and investment returns earned by each reserve shall remain in the corresponding reserve until that reserve is fully funded under Section 4. Once a reserve is fully funded, interest and investment returns may support the UWPA operating budget. Interest and investment returns earned by the FERC Relicensing/Exemption Reserve shall continue to accumulate in that reserve for its intended purposes, regardless of funding level.

8. REPORTING AND ANNUAL REVIEW

- a. The General Manager shall provide the Board with an update on the status of each reserve account during the annual budget process and at other times during the fiscal year as necessary.
- b. The Board shall review reserve balances, projected needs, and targeted contributions annually.
- c. Following the annual review, the Board may modify the targeted amount of any reserve category by quorum vote.

9. ACCOUNT TRANSITION AND RECLASSIFICATION

Upon adoption of this policy, existing reserve accounts shall be renamed, consolidated, and reclassified as shown below. Amounts may be rounded to whole dollars. No change is made to the total reserve balance.

Current Account(s)	Revised Account	Amount
Budget Balancing Reserve	Budget Balancing Reserve	\$68,949
FERC 5-Year Reserve (\$295,684) and FERC 10-Year Reserve (\$66,173)	Regulatory Compliance Reserve	\$361,857
Operating Reserve	Operating Reserve	\$132,984
FERC Exemption/Relicensing Reserve	FERC Relicensing/Exemption Reserve	\$728,250
Total Reserve Balance		\$1,292,040

This results in the consolidation of five (5) reserve accounts: Budget Balancing, FERC 5-year Reserve, FERC 10-year Reserve, Operating Reserve, and FERC Exemption/Relicensing Reserve into four (4) reserve accounts: Operating Reserve, FERC Exemption/Relicensing, Regulatory Compliance Reserve, and Budget Balancing Reserve.

10. ADMINISTRATION

The General Manager is responsible for administering this policy, maintaining reserve-account records, incorporating reserve recommendations into the annual budget process, and presenting required reports and replenishment plans to the Board of Directors. The Board retains final authority over reserve funding targets, appropriations, expenditures, and amendments to this policy. The General Manager will include the policy amounts in the preliminary annual budget to present to the Board for adoption. Only the Board will have the authority to change the contribution amounts in the adopted annual budget.



Resolution No. 2026-11

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE UTICA WATER AND POWER AUTHORITY ADOPTING A REVISED RESERVE POLICY AND ESTABLISHING RESERVE FUNDING TARGETS AND AUTHORIZED USES

WHEREAS, Utica Water and Power Authority (UWPA) is dedicated to prudent management of public funds; and

WHEREAS, Utica is committed to ensuring fiscal responsibility and accountability in the expenditure of Agency funds; and

WHEREAS, prudent fiscal management requires the UWPA to establish reserve fund accounts which can be used in the event of financial emergencies, provide for protection against economic uncertainty and fluctuating revenues, maintain sufficient cash flow to pay for short and long-term personnel, operational, and capital improvement costs, pay for professional services required by regulatory agencies, sustain predictable contributions for its member agencies, and to maintain the financial solvency of the agency; and

WHEREAS, by the adoption of this resolution the Board of Directors shall establish four separate Reserve Fund Accounts consisting of an Operating Reserve, a FERC Relicensing/Exemption Reserve, a Budget Balancing Reserve, and a Regulatory Compliance Reserve; and

WHEREAS, the Board of Directors shall retain control over the circumstances under which the Operating Reserve, FERC Relicensing/Exemption Reserve, Budget Balancing Reserve, and Regulatory Compliance Reserve can be used.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors does hereby determine and establish the revised reserve policy. By adoption of this resolution, the Board of Directors hereby repeals and renders null and void any previous actions related to the establishment, modification, or approval of reserve funding and/or reserve policy, including any administrative actions. Specifically, the adoption of this resolution repeals and renders null and void Resolution 20-05, Resolution 22-11, and any other section of any other resolution that establishes reserve policy.

ON A MOTION by Director _____, and seconded by Director _____, the foregoing resolution was duly passed and adopted by the Board of Directors of the Utica Water and Power Authority, on the 28th day of July 2026, by the following vote:

AYES:

NOES:

ABSTAIN:

ABSENT:

Caroline Schirato, Board Chair

Attest:

Stacie Walker, Clerk of the Board



Item 6E

[Return to Agenda](#)

UTICA WATER AND POWER AUTHORITY

Date: July 28, 2026

To: Erik Holt, General Manager

From: Stacie Walker, Administrative Specialist

Re: Award of Consultant Contract for 13th Part 12D Period Inspections – FERC Project 2019

RECOMMENDED ACTION:

Motion to award the contract for the 13th Part 12D Independent Consultant Safety Inspections for the Utica Project, FERC No. 2019, to KGS in an amount not to exceed \$219,216 and authorize the General Manager to execute the contract.

SUMMARY:

The Federal Energy Regulatory Commission (FERC) requires the Authority to complete periodic independent consultant safety inspections of the Utica Project pursuant to Part 12D of the Commission's regulations. These inspections are conducted on a 10-year cycle and are intended to evaluate the safety and condition of project dams and appurtenant structures.

The Authority was originally scheduled to complete the more extensive Part 12D Comprehensive Assessment in 2026. However, FERC approved an updated inspection schedule that effectively exchanged the timing of the two required inspections. As a result, the Authority will complete the 13th Part 12D Independent Consultant Safety Inspections in 2027, with the more extensive Comprehensive Assessment to occur later in the revised inspection schedule.

The Authority issued a Request for Proposals (RFP) on June 15, 2026, for the 13th Part 12D Independent Consultant Safety Inspections, Utica Project – FERC No. 2019 for 2027. Proposals were due July 22, 2026. The Authority received proposals from two qualified consulting firms: KGS and GFT.

The Authority has previously worked with consultants affiliated with both firms on other projects. Staff recommends awarding the contract to KGS as the lowest-cost qualified proposer.

FINANCIAL IMPACTS:

The cost of the Part 12D Independent Consultant Safety Inspections will be paid from the Authority's Regulatory Compliance Reserve. The recommended contract amount with KGS is not to exceed \$219,216

Attachments

1. *GFT - 13th Part 12D Independent Consultant Safety Inspection Proposal*
2. *KGS - 13th Part 12D Independent Consultant Safety Inspection Proposal*

PROPOSAL

**UTICA WATER AND
POWER AUTHORITY
13TH PART 12D
INDEPENDENT CONSULTANT
SAFETY INSPECTIONS**

—

**UTICA PROJECT - FERC NO. 2019
FOR 2027**

GFT

JULY 2026

July 21, 2026

Utica Water and Power Authority

Attn: Mr. Erik Holt, General Manager
1168 Booster Way
Angels Camp, CA 95222



RE: PROPOSAL FOR 13TH FERC PART 12D INDEPENDENT CONSULTANT PERIODIC INSPECTION SERVICES – UTICA HYDROELECTRIC PROJECT (FERC NO. 2019)

Dear Mr. Holt:

Utica Water and Power Authority (Utica) is seeking an experienced Independent Consultant (IC) Team to lead the 13th Federal Energy Regulatory Commission (FERC) Part 12D Periodic Inspection (PI) of its Utica Hydroelectric Project while efficiently guiding the project through each phase of the FERC review process. Success will require an objective technical evaluation of the dams and associated hydroelectric facilities, proactive coordination with Utica and FERC, and preparation of high-quality inspection reports and updated supporting technical information documents (STIDs) that satisfy regulatory requirements while minimizing demands on Authority staff.

GFT Infrastructure, Inc. (GFT) brings a deep understanding of Utica's hydroelectric assets, operational goals, and financial realities, enabling us to deliver solutions that minimize risk while maximizing value. Our commitment to serving as a trusted advisor is demonstrated by our **proactive approach** to identifying opportunities that benefit Utica. For example, after Utica issued an RFP for a Comprehensive Assessment (CA) in March 2026, GFT recommended petitioning FERC to pursue a PI instead and provided supporting example documentation. This guidance helped Utica achieve **significant cost savings** while continuing to meet regulatory requirements.

For more than three decades, GFT has provided dam safety engineering services for FERC-regulated hydropower facilities, completing more than 205 IC inspections, more than 200 potential failure modes analyses (PFMAs) and risk analyses, and over 20 CAs under both previous and current FERC *Engineering Guidelines*. Our staff is actively performing Part 12D inspections, preparing STIDs, supporting FERC risk-informed decision making (RIDM), and guiding licensees throughout California and across the western United States. Recent experience includes Part 12D inspections for Calaveras Public Utility District's (CPUD) Middle Fork Dam, Tri-Dam's Beardsley and Donnell's Dams, Nevada Irrigation District (NID) facilities, Placer County Water Agency (PCWA), and numerous other California hydroelectric projects.

Our proposed IC Team combines extensive Part 12D inspection experience with detailed familiarity of the Utica Hydroelectric Project. David Lord, PE, a former FERC Senior Civil Engineer and FERC-Approved IC, brings decades of experience with Part 12D inspections and developing the risk-informed programs that guide today's FERC dam safety reviews. I, Randy Bowersox, PE, am also a FERC-Approved IC and contribute more than 20 years of dam safety leadership together with long-standing knowledge of the Utica Hydroelectric Project gained through Utica's FERC relicensing efforts, engineering support for Projects 2019 and 2699, and recent strategic advisory services related to licensing, water rights, and dam safety. Together with David, we provide the independent technical judgment required by FERC while allowing the team to quickly focus on safety-significant issues unique to the Utica Development.

Supporting the Co-ICs are structural and engineering geology subject matter experts (SMEs) with experience evaluating spillways, outlet works, penstocks, reservoirs, seepage, foundation conditions, slope stability, and

reservoir rim conditions. Project Manager (PM) Alexander Walsh, PE will provide day-to-day project management, schedule control, and coordination with Utica throughout the assignment. This streamlined organization provides the disciplines needed to evaluate the full development while maintaining efficient communication, schedule discipline, and quality control.

We recognize the importance of delivering an objective, technically sound evaluation that satisfies FERC requirements while minimizing impacts to Utica staff. Our team is committed to maintaining proactive communication, coordinating closely with Utica throughout each project milestone, and delivering reports that are complete, practical, and responsive to both Utica's operational needs and FERC's expectations.

We appreciate the opportunity to continue supporting Utica and look forward to partnering with you to successfully complete the 13th Part 12D PI for the Utica Hydroelectric Project. Should you have any questions regarding our proposal, please do not hesitate to contact me at rbowersox@gftinc.com or 916.755.3722.

Sincerely,

GFT Infrastructure, Inc.

A handwritten signature in blue ink that reads "R. Bowersox". The signature is fluid and cursive, with the first name "Randy" and last name "Bowersox" clearly legible.

Randy Bowersox, PE
Senior Vice President

A. CONTENT

SECTION 1 – SCOPE OF WORK AND SCHEDULE

1.1. Scope of Work

Following the framework prescribed in Chapter 16 of the FERC *Engineering Guidelines* for a PI, GFT's IC Team will be comprised of Co-ICs and the list of SME disciplines shown in Section 3. The IC Team will perform thorough document reviews, a field inspection, prepare the PI Pre-Inspection Preparation Report (PI-PIPR) and PI Report (PIR), and update the STID.

Following notice-to-proceed (NTP), our Team will hold a kickoff call with Utica to review the scope and schedule of the Utica Project PI and STID update. We will review available project documentation and coordinate means to transfer project material for incorporation in the STID and PI process. Updating the STID will require support from project-level dam engineers, with review by the IC Team. Coordination meetings with Utica, the PM, and project engineers are anticipated to occur monthly to track the progress of the STID updates. We anticipate one round of review and comments by Utica on the STID. The draft and final STID will be provided electronically to Utica.

The PI Inspection Plan will be developed in conjunction with the STID to gain efficiency in developing both documents. The Inspection Plan must be submitted to FERC at least 180 days prior to the first in-person activity (which will be the field inspection for this project). GFT will provide both the draft and final Inspection Plan electronically to Utica. Once we have received FERC's approval of the Inspection Plan, our Team will prepare for and review the topics to be covered in the Second Coordination Call. Our PM and Co-ICs will participate in the Second Coordination Call with FERC and Utica.

Following the Second Coordination Call, the IC Team will prepare the draft PI-PIPR for Utica's review and comment; we have included two weeks for Utica's review of the draft PI-PIPR. Development of the PI-PIPR will include the IC Team's review of the Utica Project, including evaluation of dam safety programs and instrumentation data, as required by the FERC *Engineering Guidelines*. The final PI-PIPR is due to FERC at least 30 days prior to the field inspection, and GFT will provide the final PI-PIPR to Utica electronically for submittal to FERC.

We anticipate the field inspection will include the Co-ICs, Geology SME, and Structural SME. The field inspection is anticipated to be completed in one day, with travel to and from the Utica Project completed the day before and day after the field inspection. In preparation for the field inspection, we will work with Utica to make sure the IC Team complies with Utica's onsite safety requirements, including personal protection equipment (PPE).

Following the field inspection, the IC Team will prepare the draft PIR for review by Utica; we have included two weeks for Utica's review of the PIR. The final PIR will incorporate comments from Utica and will be provided in sufficient time to submit to FERC by December 1, 2027. Files will be provided to Utica electronically in PDF format and bookmarked appropriately.

1.2. Schedule

The following preliminary project milestone schedule was developed based on a final PIR due to FERC on December 1, 2027. Internal QA/QC reviews are incorporated into each major deliverable milestone prior to submission to Utica and FERC. Once authorization is received, we will coordinate with Utica to adjust the schedule as appropriate.

Table 1-1. PI Schedule. GFT has developed the following milestone schedule based on our experience performing similar Part 12D inspections for FERC-regulated, high-hazard dams.

Description	Estimated Milestone Date
NTP	August 31, 2026
Project Kickoff Call	September 14, 2026
Utica provides project records	September 28, 2026
Inspection Plan	
Draft Inspection Plan submitted to Utica	October 30, 2026
Utica reviews Inspection Plan	November 2-13, 2026
Final Inspection Plan submitted to Utica	November 20, 2026
Utica submits Inspection Plan to FERC	November 30, 2026
FERC Response to Inspection Plan	December 30, 2026
Second Coordination Call	January 11, 2027
PI-PIPR	
Draft PI-PIPR submitted to Utica	April 30, 2027
Utica reviews PI-PIPR	May 3-14, 2027
Final PI-PIPR submitted to Utica	May 28, 2027
Utica submits PI-PIPR to FERC	June 4, 2027
Field Inspection	Mid-July 2027
PIR	
Draft PIR submitted to Utica	October 15, 2027
Utica reviews PIR	October 18-November 5, 2027
Final PIR submitted to Utica	November 22, 2027
Utica submits PIR to FERC	November 29, 2027
PIR Due to FERC	December 1, 2027

SECTION 2 – RELEVANT FIRM EXPERIENCE

GFT's involvement with dams began in 1915, when the firm was founded. Since that time, we have designed more than 150 new dams, modified more than 750 existing dams and completed safety evaluations of more than 1,500 dams. We perform dam investigations and inspections, design for new dams and dam rehabilitation projects, permitting, emergency response planning, and hydrology and hydraulics (H&H) modeling for hydroelectric facilities. Although we have grown to include services for many types of clients and facilities, from environmental investigations to highway design, we have remained focused on assisting dam owners with maintaining the safety of their facilities.

GFT's long history of dam engineering includes extensive experience with both concrete and embankment dams. Our engineers and geologists routinely perform structural evaluations, seepage and internal erosion assessments, slope stability analyses, foundation investigations, H&H studies, and rehabilitation design for high-hazard dams. These capabilities provide the multidisciplinary technical foundation required to independently evaluate the diverse dam safety features, conveyance systems, and appurtenant structures associated with FERC-regulated hydroelectric projects such as the Utica Hydroelectric Project.

GFT's dam safety practice encompasses the principal technical disciplines required by FERC Part 12D inspections, including geotechnical engineering, engineering geology, structural engineering, H&H, mechanical and electrical engineering, and dam safety risk assessment. ***This depth of expertise allows us to assemble IC Teams with the specialized knowledge necessary to evaluate complex hydroelectric facilities while providing additional technical resources when project-specific issues arise.***

GFT has provided FERC-related dam safety services for more than three decades and continues to perform Part 12D services under FERC's current Engineering Guidelines for hydroelectric owners throughout California and the western United States. Our teams are actively performing PIs and CAs, developing Inspection Plans, PIPRs, STIDs, conducting field inspections, facilitating risk evaluations where required, and preparing FERC-compliant inspection reports for agencies and utilities with facilities similar in scale and complexity to Utica's system. GFT's recent experience also includes FERC Part 12D inspections for hydroelectric facilities within the Mokelumne and Stanislaus River watersheds, including the Middle Fork Dam Project and the Tri-Dam Project's Beardsley and Donnell's Dams.

Through long-term support of the Utica Hydroelectric Program by senior members of our team, GFT has developed an in-depth understanding of Utica's facilities, operational objectives, and regulatory obligations. That institutional knowledge complements the dam design, construction, and evaluation experience and expertise we bring to perform PIs in accordance with current FERC requirements.

An overview of GFT's FERC Part 12D PI experience is included on the following page with brief project descriptions for select relevant experience at the end of this section.

GFT FERC PART 12D EXPERIENCE



205+ IC
Inspections



**203+ PFMA/
RISK ANALYSES**



20+ CAs
Submitted to FERC or
in Progress (Under Updated
Engineering Guidelines)

Table 2-1. Representative Projects. Our Team will leverage extensive dam safety experience with FERC-regulated dams to support Utica with its Part 12D inspection needs.

PROJECT NAME, LOCATION, CLIENT	SCOPE OF SERVICES				DAM COMPOSITION					
	INSPECTION PLAN	PI-PIPR	PIR	STID	EARTH/ROCKFILL	CONCRETE	SPILLWAY	OUTLET WORKS	TUNNEL / PENSTOCK	POWERHOUSE
Middle Fork Dam Project Ninth Part 12D PI, Calaveras County, CA, Calaveras Public Utility District	●	●	●		●		●	●	●	●
Beardsley and Donnell's Dams Thirteenth Part 12D PI, Various Locations, CA, Tri-Dam Project	●	●	●	●	●	●	●	●	●	●
Ralston Afterbay Dam Part 12D PI, Placer County, CA, Placer County Water Agency	●	●	●			●	●	●		
Don Pedro FERC Part 12D IC and PI, Tuolumne County, CA, Turlock Irrigation District	●	●	●	●	●		●	●		●
Thermalito Diversion Dam and Feather River Fish Barrier Dam Part 12D PI, Butte County, CA, California Department of Water Resources	●	●	●	●		●	●	●		
Oroville Dam, Bidwell Bar Canyon Saddle, and Parish Camp Saddle Dam Part 12D PI, Butte County, CA, California Department of Water Resources	●	●	●	●	●		●	●	●	●
Post Falls Dam Part 12D PI, Spokane, WA, Avista Corporation	●	●	●			●	●		●	●
McSwain Reservoir Part 12D PI, Mariposa County, CA, Merced Irrigation District	●	●	●		●		●		●	●
Flint River Hydroelectric Project Part 12D PI, Albany, GA, Georgia Power (Southern Company)	●	●	●		●	●	●		●	●
Hells Canyon Development Part 12D PIs, Adams County, ID, Idaho Power Company	●	●	●		●	●	●	●	●	●
Milner Dam Part 12D PI, Burley, ID, Idaho Power Company	●	●	●		●	●	●	●	●	

Middle Fork Dam Project Ninth Part 12D Periodic Inspection, Calaveras County, CA

Calaveras Public Utility District (CPUD)



► **COMPLETION DATE:**
October 2026 (est)

► **KEY TEAM MEMBERS INVOLVED:**
Randy Bowersox, PE
David Lord, PE

GFT is leading the Ninth Part 12D PI for the Middle Fork Dam Project, a high-hazard hydropower and water supply facility located on the Middle Fork Mokelumne River in California. Led by Co-ICs David Lord, PE, and Randy Bowersox, PE, the independent engineering review and field inspection of the project's dam safety-related features includes the 112-foot-high earthen embankment dam, earthfill dike, reinforced concrete spillway, outlet works, siphon penstock, and powerhouse facilities. Tasks included evaluation of embankment performance, seepage and drainage conditions, spillway deterioration, instrumentation observations, and review of existing hydrologic and seismic hazard information associated with the project. The inspection also includes assessment of known dam safety concerns, including spillway wall distress, seepage collar configuration of the outlet works, sinkhole repairs at the dike, and leakage along the exposed penstock alignment. Work is being completed in accordance with FERC Chapter 16 Engineering Guidelines and includes coordination with CPUD personnel during inspection planning, field activities, and report development.

Beardsley and Donnell's Dams Thirteenth Part 12D Periodic Inspections, Various Locations, CA

Tri-Dam Project



► **COMPLETION DATE:**
January 2027 (est)

► **KEY TEAM MEMBERS INVOLVED:**
Randy Bowersox, PE

GFT is providing engineering support for the FERC Thirteenth Part 12D PIs of Beardsley Dam, a 278-foot-high zoned earthfill and rockfill embankment dam, and Donnell's Dam, a 483-foot-high concrete arch dam –v both located on the Middle Fork Stanislaus River in California. The independent engineering review and field inspection of the projects' dam safety-related features include the dams, spillways, outlet works, conveyance tunnels and penstocks, powerhouses, reservoirs, and associated appurtenant structures. Tasks include comprehensive reviews of historical dam safety documentation, original construction records, instrumentation data, and previous engineering evaluations; preparation of FERC-required Inspection Plans and Pre-Inspection Preparation Reports; and evaluation of embankment and structural performance, seepage and drainage conditions, spillway condition, conveyance system observations, and other identified dam safety concerns. GFT staff is coordinating closely with Tri-Dam personnel throughout inspection planning, field activities, technical evaluations, and report development in accordance with FERC Chapter 16 Engineering Guidelines.

Ralston Afterbay Dam Part 12D Periodic Inspection, Placer County, CA

Placer County Water Agency



➤ **COMPLETION DATE:**
2025

➤ **KEY TEAM MEMBERS INVOLVED:**
Nick Contreras, PE

GFT completed the Seventh Part 12D IC safety inspection and PFMA for Ralston Afterbay Dam in 2020. Our IC Team reviewed the available project documents for the dam and its appurtenant structures, performed the site inspection, and facilitated a two-day PFMA review meeting. Existing potential failure modes (PFMs) were updated to include a clear description of the initiators and failure progressions and several new PFMs were identified and classified based on the document review, site inspection, and recent incidents that have occurred at other similar gated concrete spillway type dams. GFT completed the Eighth Part 12D IC safety inspection in early 2025, which was a PI under the new FERC Part 12D program. Both Consultant Safety Inspection Reports and the PFMA Report were completed on schedule and under budget.

Don Pedro Dam FERC Part 12D Independent Consultant Inspections, Turlock, CA

Turlock Irrigation District (TID)



➤ **COMPLETION DATE:**
10th Part 12D PI - 2020
STID Update - 2022
11th Part 12D PI -
September 2026 (est)

➤ **KEY TEAM MEMBERS INVOLVED:**
Casey Smith, PG, CEG

GFT was retained to assist the TID with the 10th Part 12D Independent Consultant Safety Inspection and evaluation of the Don Pedro Dam. As the ninth tallest dam in the United States at 585 feet tall, Don Pedro Dam is a critical component of California's water infrastructure. The high-hazard dam impounds more than 2-million-acre-feet of water and provides power, water, and recreation to residents throughout the Central Valley. TID also commissioned GFT to facilitate the Pilot RIDM project at Don Pedro Dam as a demonstration project for the many stakeholders. Risk workshops were performed using Semi-Quantitative Risk Assessment (SQRA) methodologies, considering seismically induced, flood, and normal operating conditions potential failure modes. Don Pedro Dam is part of the New Don Pedro Hydroelectric Project located in Tuolumne County along the Tuolumne River. The reservoir is formed by the main Don Pedro Dam and three smaller embankments (Dikes A, B, and C). Dikes A, B, and C are constructed in low saddles on the reservoir rim. Release of flood water from the reservoir is provided by a gated (primary) spillway and an ungated (emergency) spillway. GFT also prepared the 2021 update of the STID. GFT is currently performing the 11th Part 12 PI of the Dam.

SECTION 3 – PROJECT TEAM

The GFT IC Team is led by *two FERC-Approved Co-ICs*. **David Lord, PE** brings extensive experience with Part 12D inspections of high-hazard hydroelectric facilities, providing objective technical evaluations and practical recommendations aligned with current FERC guidance. **Randy Bowersox, PE** brings more than 20 years of dam safety leadership and an extensive understanding of the Utica Hydroelectric Project. Having supported Utica’s FERC relicensing efforts, coordinated hydroelectric operations with Utica for more than 15 years, and recently provided strategic advisory services related to licensing, water rights, and dam safety, Randy’s long-standing knowledge of the Utica Hydroelectric Project allows the IC Team to quickly focus on safety-significant issues while maintaining the independence required of the Part 12D process. **David and Randy are currently serving as Co-ICs** on the Middle Fork Dam Project Part 12D PI and will bring that same collaborative, streamlined approach to Utica, combining complementary expertise to deliver a thorough, well-coordinated inspection process. Co-IC resumes representing qualifications, certifications, accomplishments, and experience are included on the following pages.

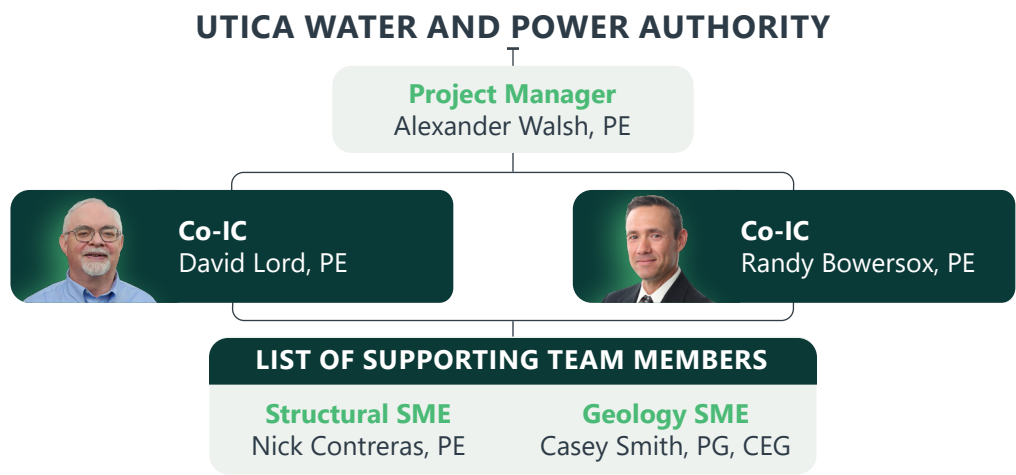
Supporting the Co-ICs are **Nick Contreras, PE** as Structural SME and **Casey Smith, PG, CEG** as Geology SME, providing the primary technical disciplines needed to evaluate the Utica Hydroelectric Project’s dams, spillways, outlet works, penstocks, powerhouse facilities, and surrounding geologic conditions. Nick brings 10 years of experience evaluating dams, spillways, outlet works, penstocks, and other appurtenant structures, while Casey brings 20 years of engineering geology experience specializing in foundation conditions, seepage, slope stability, and reservoir rim evaluations.

Each team member has clearly defined responsibilities that align with their area of technical expertise. The Co-ICs will jointly lead the inspection, document review, field activities, and report preparation, while Nick and Casey provide focused structural and geologic evaluations of safety-significant features. This collaborative approach efficiently addresses multidisciplinary issues while maintaining schedule, quality, and cost control.

Alexander Walsh, PE will serve as PM, bringing 11 years of experience supporting FERC-regulated dam safety projects to efficiently coordinate day-to-day project execution, schedule, client communications, and deliverables in a timely manner.

By combining Randy’s institutional knowledge with David’s extensive Part 12D inspection experience, the IC Team will minimize startup time, focus immediately on safety-significant issues, and deliver a thorough, independent evaluation that meets Utica’s schedule and budget objectives.

Figure 3-1. Organization Chart. The streamlined GFT Team offers dedicated Co-ICs and SMEs with the expertise and proven processes to efficiently execute inspection services for this project.





David Lord, PE

Co-IC

GFT

► YEARS OF EXPERIENCE:

50

► REGISTRATIONS:

Professional Engineer in
OR

► EDUCATION:

MS, Civil Engineering,
University of Portland,
1984

BS, Chemistry, Whitworth
University, 1976

Formerly a Senior Civil Engineer with FERC for more than 30 years, David brings unparalleled knowledge of FERC dam safety requirements and the Part 12D inspection process. As a **FERC-Approved IC**, he has led and supported independent evaluations of high-hazard hydroelectric facilities under the current *Engineering Guidelines*, providing objective technical assessments and practical recommendations focused on dam safety and regulatory compliance. David played a key role in developing FERC's RIDM Program, including the Screening Level Portfolio Risk Analysis (SLPRA) methodology and Owners' Dam Safety Program (ODSP) guidance, and has participated in and facilitated dozens of PFMA's. His unique perspective as both a former FERC regulator and current IC enables him to provide thorough, technically sound evaluations that align with FERC's expectations.

RELEVANT PROJECTS

Middle Fork Dam Part 12D Periodic Inspection, Calaveras County, CA, CPUD. Co-IC for the FERC Ninth Part 12D PI of the Middle Fork Dam Project, a high-hazard hydropower and water supply facility located on the Middle Fork Mokelumne River in California. Leading the independent engineering review and field inspection of the project's dam safety-related features, including the 112-foot-high earthen embankment dam, earthfill dike, reinforced concrete spillway, outlet works, siphon penstock, and powerhouse facilities. Tasks included evaluation of embankment performance, seepage and drainage conditions, spillway deterioration, instrumentation observations, and review of existing hydrologic and seismic hazard information associated with the project. The inspection also includes assessment of known dam safety concerns, including spillway wall distress, seepage collar configuration of the outlet works, sinkhole repairs at the dike, and leakage along the exposed penstock alignment. Work is being completed in accordance with FERC Chapter 16 Engineering Guidelines and includes coordination with CPUD personnel during inspection planning, field activities, and report development.

Risk and Emergency Management Services, Confidential Location, Confidential Client. Co-Facilitator for the Devil Canyon Power Development (DCPD) FERC 6th Part 12D CA PFMA/L2RA. This is the first CA for this facility under the revised FERC Engineering Guidelines. Efforts include planning, scheduling, and performing the PFMA and L2RA for DCPD, which includes a low-hazard potential dam. Workshop efforts include facilitation of the risk workshops and preparation of the risk process plan and PFMA/L2RA reports, in accordance with the revised FERC Engineering Guidelines. The DCPD includes an intake structure, 3.8-mile-long tunnel, two

6,800-foot-long penstocks, a four-unit powerhouse, first afterbay reservoir, second afterbay reservoir (which includes the inscribed low-hazard potential earthen dam), seven outlet pipes, a spillway, and an emergency spillway.

FERC RIDM - Level 1, 3, and Basics Workshops, Portland, WI, FERC. Developer and Presenter trained in probability. Participants developed simple event trees in teams. The workshop included an example dam with the team assigned to create semi-quantitative risk estimates and make presentations at the end of the workshop. The Level 3 workshop included training in probability, and participants developed simple event trees in teams.

Wanapum Dam and Mid-Columbia Workshops, Various Locations, WA, FERC. Worked on development of a risk-informed approach to seismic evaluation of hydropower projects, included initial evaluation of operational risk associated with seismic loading.

FERC RIDM - Level 2 Workshops, Portland, OR, FERC. Developer and Presenter for workshop included an example dam with team assigned to develop semi-quantitative risk estimates and make presentations at the end of the workshop.

FERC RIDM – Authorship, Review, and Collaboration Services, FERC. Author for Chapter R19 – Probabilistic Flood Hazard Analysis and Chapter R20 – Probabilistic Seismic Hazard Analysis. Primary Review for Chapter R10 – Internal Erosion, Chapter R21 – Dam Breach, and Chapter R22 – Estimation of Life Safety Consequences. Collaborated on the guidelines for Chapter 1 – Introduction to Risk Informed Decision Making, Chapter 2 – Risk Analysis, Chapter 3 – Risk Assessment, and Chapter 4 – Risk Management.

Screening Level Portfolio Risk Analysis, FERC National Program, FERC. Lead Developer of FERC’s SLPRAs, used to assess risk across high- and significant-hazard potential dams under FERC jurisdiction. Authored the SLPRAs manual and developed the accompanying risk software tool used to compute failure likelihoods and risk estimates consistently and repeatedly. Conducted training for five FERC regions and reviewed approximately half of all completed SLPRAs nationwide. Analysis included event tree modeling and probabilistic consequence evaluations using Excel-based methods.

Senior Seismic Hazard Analysis Committee and Probabilistic Seismic Hazard Analysis for Mid-Columbia Dams, Lake Chelan, Wells, Rocky Reach, Rock Island, Wanapum, and Priest Rapids, Various Locations, U.S., FERC. Lead Reviewer for Senior Seismic Hazard Analysis Committee (SSHAC) and Probabilistic Seismic Hazard Analysis (PSHA) of Mid-Columbia Dams, Lake Chelan, Wells, Rocky Reach, Rock Island, Wanapum, and Priest Rapids.

Baker River Probabilistic Seismic Hazard Analysis, FERC. Reviewer for a PSHA of Baker River.



Randy Bowersox, PE

Co-IC

GFT

► YEARS OF EXPERIENCE:

26

► REGISTRATIONS:

Professional Engineer in California - No. 4017

► EDUCATION:

MBA, Business Administration, University of California - Davis, 2002

MS, Civil and Environmental Engineering, University of California - Davis, 2002

BS, Electrical Engineering, University of California - Davis, 2000

Randy is a **FERC-Approved IC** with more than 20 years of experience in dam safety engineering, hydroelectric operations, and regulatory compliance for FERC-licensed projects. Prior to joining GFT, he served as Chief Dam Safety Engineer (CDSE), Hydroelectric Manager, and Assistant General Manager at the Northern California Power Agency (NCPA), where he was responsible for ODSPs, Part 12D compliance, dam safety investigations, instrumentation, and engineering oversight for multiple FERC-licensed hydroelectric projects. Randy has participated in numerous Part 12D inspections involving embankment, concrete gravity, concrete arch, and rockfill dams and their appurtenant structures. He also has previous experience with the Utica Hydroelectric Project, including support of FERC relicensing, engineering services for Projects 2019 and 2699, and recent strategic advisory services related to dam safety and regulatory compliance.

RELEVANT PROJECTS

Middle Fork Dam Part 12D Periodic Inspection, Calaveras County, CA, CPUD.

FERC-Approved Part 12D Co-IC for the PI of the Middle Fork Dam Project, including the 112-foot high by 400-foot long earth embankment dam, 500-foot long earth dike, reinforced concrete chute spillway, high-level and low-level outlets, siphon penstock, and powerhouse with three turbines and two generators.

Beardsley, Donnell, and Tulloch Dam Safety Support, Tuolumne County, CA, Tri-Dam Project.

Chief Engineer for Tri-Dam dam safety and regulatory compliance support, including interface with FERC and Division of Safety of Dams (DSOD). Participated in FERC Operations Inspections, provided oversight of 10-year radial gate inspections, planned and conducted Tulloch spillway drain inspections and evaluation, prepared Dam Safety Surveillance Monitoring Reports, developed and led the 5-year Emergency Action Plan (EAP) Functional Exercise, provided dam safety training to Tri-Dam Operations and Maintenance crew, and helped create a strategic and engineering response to implement Part 12 recommendations and perform needed dam safety investigations.

Dam Safety Program Support, 24 Dams, Nevada County, CA, NID.

Chief Engineer, Technical Lead and FERC/DSOD Strategy Lead for NID Dam Safety Engineering Support Services. Tasks include providing general dam safety program support and engineering, guidance, engineering assistance with FERC and DSOD issues, and dam safety strategic advisory services for NID's 24 dams. Specific dam safety related tasks include assessing the structural condition of Milton Diversion Dam, Scotts Flat Penstock seismic assessment, designing structural concrete repairs for Bowman

Dam, preparing a stability analysis for Bowman Dam parapet, evaluating refurbishment options for French Dam's hydraulic gate, conducting a hydrologic hazard analysis for multiple dams, updating the ODSP, assessing seepage from Jackson Lake dam and designing and directing the mitigation plan, designing concrete repairs for Rollins Dam Spillway, and assessment of damage to Chicago Park Flume water conveyance intake gates.

FERC 2409 Tailrace Repair, Calaveras County, CA, NCPA. Chief Engineer and Project Director for design and construction of geotechnical repairs and slope stabilization to 2 failed slope sections in the Collierville powerhouse tailrace.

Merced Falls Dam, Needle Beam Spillway Gate Modifications, Merced County, CA, Merced Irrigation District. Chief Civil Engineer and Project Director for design of permanent operating (jacking) mechanisms and controls for forty-four needle beam gate bays. The needle beam spillway is a unique emergency spillway device, designed to raise the upstream reservoir above a fixed concrete crest. The structure is approximately 536 feet long and 9.5 feet tall and has approximately 838 individual needle beams distributed over 44 bays.

Post-Wildfire Dam Condition Assessment and Evaluation, Placer & El Dorado Counties, CA, PCWA. Chief Engineer for inspection and post-wildfire damage condition assessment of hydropower project features, including Ralston Penstock, Oxbow intake and powerhouse, and Ralston Afterbay Dam.

EXPERIENCE PRIOR TO GFT

FERC 2019 and 2699, Calaveras County, CA, Utica Water and Power Authority. Design Engineer responsible for design of H-Flume weirs to be incorporated into dam features, and for slope stability evaluations for slopes adjacent to project dams and water conveyance structures. Lead Engineer for Slope Stability plan. Designed landslide mitigation plans. Engineer responsible for assessing the condition of the approximately 70-year-old Angels Powerhouse penstock following damage due to a motor vehicle collision. Provided recommendations for emergency and long-term restoration of the impacted pipe, thrust blocks, and support saddles.

Dam Safety Program Management, NCPA. Coordinated and participated in numerous Part 12D Safety Inspections and PFMA workshops for NCPA dams. Performed annual engineering inspections of NCPA's dams and wrote follow-up inspection reports, coordinated with operations and maintenance personnel and federal and state regulatory agencies (e.g., FERC, California Department of Water Resources Division of Safety of Dams) regarding findings and necessary follow-up actions. Provided annual dam inspection training for operations and maintenance personnel and junior engineers. Prepared and directed engineering analyses and studies (e.g. hydraulic routing, stability, geotechnical investigations) based on information gathered during inspections or recommendations offered by ICs.

Utica Dam and Lake Alpine Dam Seepage Weir Design & Construction, NCPA. Responsible Engineer, PM, and Construction Manager for design and construction of monitoring weirs immediately downstream of the high-hazard Utica and Alpine Dams to provide monitoring of all flows on the North Fork Stanislaus River and Silver Creek. Project included design and installation of temporary siphons to provide mandatory in-stream flow releases during construction, complete dewatering of the areas downstream of the dams, and helicopter placement of concrete.

Dam Safety Surveillance, NCPA. Collected, analyzed, and reported on dam safety surveillance monitoring data, preparing DSSMRs and modifying the surveillance plans (DSSMPs) as necessary for multiple high-hazard dams, including rockfill, concrete-faced rockfill, earthen, concrete arch, and concrete gravity dams. In addition to the dams, instrumented project features included penstocks, power tunnels, and dam abutments.

SECTION 4 – QUALITY ASSURANCE AND CONTROL; CONFLICTS

4.1. Approach to Quality Assurance and Control

GFT is committed to quality in all of our services through application of an effective and robust Quality Management System (QMS), maintaining a culture of consistency in work products, continual improvement of our processes, and innovation in our technical solutions. Responsibility for meeting these principles is held at the highest level within the organization to ensure that we achieve the objectives of our projects while bringing high value to our clients.

Professional services that “meet the requirements of clients...” is embedded into GFT’s Quality Policy and our QMS is how we adhere to this policy and its supporting objectives. Doing so prescribes that the organization:

- Instills the value that every employee is responsible for quality
- Promotes a continual improvement and Plan-Do-Check-Act mentality
- Subscribes to annual internal and independent, external (performed by a 3rd party ISO Registrar) auditing
- Ensures that quality is integral with our workflows, not “bolted on” afterward

At the project level, QMS provisions are incorporated into activities throughout the lifecycle of the assignment beginning with a proposal stage evaluation to confirm sufficient resources, qualifications, and understanding of scope for successful delivery. Prior to initiating work a thorough, documented project plan is developed describing how both quality and risk are to be managed based on scale and complexity of the job. During project execution, technical deliverables undergo multiple layers of formal quality control/quality assurance (QC/QA) verification. At completion, the QMS requirements extend through project closeout focusing on identifying opportunities for improvement in the processes used and best practices applied.

4.2. Conflicts of Interest

GFT has reviewed the IC requirements contained in 18 CFR Part 12, Subpart D and confirms that our proposed IC Team satisfies the applicable independence criteria. No proposed team member has served as the Chief Dam Safety Engineer (CDSE) for the Project, previously served as the FERC Part 12 IC for the Project, been employed by Utica or its affiliates, or acted as an agent on behalf of Utica or its affiliates. Based on these qualifications, GFT confirms that the proposed IC Team is independent and eligible to perform the requested Part 12D inspection services. Furthermore, GFT, and specifically proposed Co-IC Randy Bowersox, has active engineering and regulatory support projects with other local hydropower and water conveyance projects, including projects owned or operated by NCPA, CCWD, TUD, Tri-Dam, and CPUD. GFT does not perceive any conflicts that will interfere with providing Part 12D IC services to Utica, but wants to be transparent about other active projects within the watershed.

SECTION 5 – CLIENT REFERENCES

Project	Client	Client Contact Details
Beardsley and Donnell's Dams Thirteenth Part 12D Periodic Inspections	Tri-Dam Project	Summer Nicotero; 209.965.3996 x120; snicotero@tridamproject.com
Middle Fork Dam Project Ninth Part 12D Periodic Inspection	Calaveras Public Utility District	Mathew Roberts; 209.754.9442; mroberts@cpud.org
Don Pedro Dam FERC Part 12D Independent Consultant Inspections	Turlock Irrigation District	Evan Lucas, CDSE; 209.883.8608; emlucas@tid.org

SECTION 6 – CONTRACT AND INSURANCE REQUIREMENTS

GFT proposes to provide these services in accordance with the Terms and Conditions of the Master Services Agreement between Utica and GFT (formerly Gannett Fleming) executed in February 2023.

SECTION 7 – ADDENDA

GFT acknowledges receipt of the information provided following execution of the Non-Disclosure Agreement and confirms that no additional addenda were issued.

B. COST OF SERVICES

GFT considers **B. Cost of Services** confidential and exempt from public disclosure. As such, we have submitted this information with our proposal but as a separate PDF labeled Confidential Information. We have numbered these pages to align with the overall 20-page limit for our full proposal.



UTICA POWER AND WATER AUTHORITY

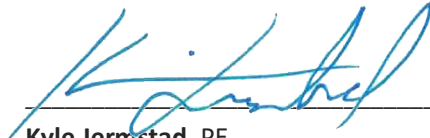
13th Part 12D Independent Consultant Safety Inspections of the Utica Project - FERC No. 2019 for 2027

Proposal for Engineering Services

KGS Group Proposal:
26-000-0580

Date:
July 21, 2026

PREPARED BY:



Kyle Jernstad, PE

Geotechnical Discipline Lead



APPROVED BY:

Amy Deakyne, PE

Regional Director

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A. CONTENT

1.0 SCOPE OF WORK AND SCHEDULE

1.1 Client and Project Understanding

Utica Power and Water Authority (UPWA), a nonprofit Joint Powers Authority formed by the City of Angels Camp and the Union Public Utility District, owns and operates the Utica and Angels Hydroelectric Projects (FERC Project Nos. 2019 and 2699). On June 15, 2026, UPWA issued a Request for Proposals (RFP) seeking engineering professional services to complete the 13th FERC Part 12D Independent Consultant safety inspections and reports, conducting a combined Periodic Inspection (PI), for the Utica Hydroelectric Project (FERC No. 2019). KGS has prepared this proposal in response to the RFP. KGS confirmed with Utica that execution of a new Non-Disclosure Agreement (NDA) is not required for this proposal. As KGS previously executed the required NDA for the April 2026 FERC Part 12D Comprehensive Assessment RFP and already possesses the confidential reference documents provided by UPWA, no additional NDA or reissuance of the reference materials was necessary for preparation of this Periodic Inspection proposal.

The Utica Hydroelectric Development includes Hunters Dam, Murphys Forebay Dam, Murphys Afterbay Dam, Mill Creek Tap, the Utica Canal, Murphys Penstock, and the Murphys Powerhouse. Water flows from Hunters Reservoir through the 13-mile Utica Canal to Murphys Forebay, then through the Murphys Penstock to the powerhouse before discharging to Murphys Afterbay and ultimately to Angels Creek.

Photographs sourced from Utica Power and Water Authority.



Hunters Dam

Hunters Dam is a concrete arch dam with gravity abutments constructed in 1925 and is classified as a high hazard dam. The concrete arch section is 57 feet tall, and the abutments have a maximum height of 27 feet. The total dam crest length is 417 feet. Hunters Dam impounds water from Mill Creek and the Upper Utica Canal and supplies the Lower Utica Canal. The spillway is in the right gravity section of the dam, discharging onto unlined bedrock. The spillway consists of eight bays with slide gates. The

dam inspection will require experts in geotechnical, geology, structural, and hydraulic engineering.



Mill Creek Tunnel Tap

The Mill Creek Tunnel Tap consists of a 36-inch-diameter, 400-foot-long vertical pressurized pipe from the 18-foot-diameter Collierville Tunnel, outflowing into a portion of the Upper Utica Canal. Energy dissipation is accomplished by flowing through a Howel Bungler valve discharging into a concrete vault. The Mill Creek Tap was constructed in 1990. The remaining portion of the Upper Utica Canal consists of gunite-lined

earthen canal conveying flows approximately 0.5 miles to Hunters Reservoir. The inspection will require experts in geotechnical, geology, structural, mechanical, and hydraulic engineering.



Utica Canal

The Utica Canal was originally constructed in the Gold Rush era with significant improvements made between 1946 and 1955. We understand Utica has begun to overlay portions of the canal with shotcrete, and plans to continue as part of the Capital Improvement Plan. The Utica Canal includes 19 wooden box flumes, the longest of which being Flume 14 (3/4-mile Flume), and two metal flumes (Flumes 3a and 12a). There are 13 waste gates along the Utica Canal. The

inspection will require experts in geotechnical, geology, structural, mechanical, and hydraulic engineering. Because of the approximately 13.4-mile conveyance length, and limited access points, the inspection will require hiking long distances to inspect the Utica Canal.



Murphys Forebay Dams

Murphys Forebay is classified as a high hazard dam and consists of a West Dam and South Dam earthen embankments constructed in 1954. The South Dam is 27 feet tall and 415-feet-long. The West Dam is 67 feet tall with a length of 316 feet. The influent flow from the Utica Canal passes through a trash rack and inlet gate. We understand Utica plans to construct a new trash rack further upstream on the Utica Canal to

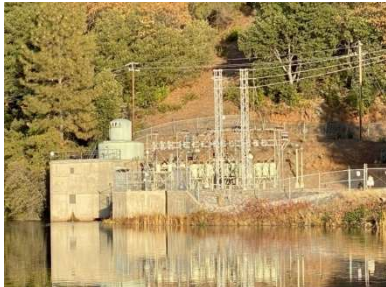
improve reliability and operations. The West Dam has received seepage mitigation consisting of grouting, gunite, and a cutoff wall. The intake structure for the Murphys Penstock is situated upstream of the West Dam and conveys flow through the embankment. The inspection will require experts in geotechnical, geology, structural, mechanical, and hydraulic engineering.



Murphys Penstock

Murphys Penstock is a 48-inch diameter, 3,945-foot-long welded steel pipe, conveying flow from the Murphys Forebay to the Murphys Powerhouse with a vertical drop of approximately 654 feet. The penstock diameter tapers to 36-inches and subsequently reduces to 24-inches at the Murphys Powerhouse. A hydraulically operated 24-inch turbine shutoff valve is at the end of penstock. The reinforced concrete intake structure is a 36.5-foot-tall and equipped with a hydraulically operated

intake gate. Most of the penstock (97 percent) is buried, with the above ground portions supported by concrete anchor blocks. The inspection team will require experts in geotechnical, geology, structural, and hydraulic engineering.



Murphys Powerhouse

Murphys Powerhouse was constructed in 1955 and is powered by a 7-foot-diameter horizontal Pelton Wheel turbine with six jets. The single unit General Electric 18 pole generator is rated at 3.6MW. The inspection team will require experts in geotechnical, geology, mechanical, structural, and hydraulic engineering.



Murphys Afterbay Dam

Murphys Afterbay Dam is a 42-foot-tall, 340-foot-long earthen embankment dam with a concrete parapet wall constructed in 1954. The dam is classified as a high hazard dam. The inspection team will require experts in geotechnical, geology, mechanical, structural, and hydraulic engineering.

KGS has extensive experience performing FERC Part 12 inspections and dam safety assessments for hydroelectric developments throughout North America. Based on our understanding of the Utica facilities, applicable FERC requirements, and our previous experiences, KGS is well positioned to successfully complete the requested services. This proposal has been prepared in response to the June 15, 2026 RFP.

1.2 Scope of Work

Per FERC regulations, Utica Power and Water Authority (Utica) is required to complete a Part 12D Periodic Inspection (PI) of the Utica Hydroelectric Development and submit the required PI report and associated deliverables to FERC by December 1, 2027. The project includes the following tasks, which will be performed in accordance with Chapter 16 – Part 12D Program of FERC’s *Engineering Guidelines for the Evaluation of Hydropower Projects*, as well as other applicable regulations and guidance documents referenced therein.

1.2.1 TASK 1 – PROJECT MANAGEMENT AND MEETINGS

Our dedicated project manager will lead, direct and monitor the project engineering/inspection team throughout the duration of the project, ensuring all work products and deliverables are reviewed in accordance with KGS's Quality Assurance/Quality Control (QA/QC) procedures prior to submittal to Utica. The project manager will be responsible for monitoring project scope, schedule and budget, maintaining regular communication with Utica throughout the project, and providing monthly progress reports with invoices.

In addition to meetings associated with the inspection program, KGS assumes attendance at four one-hour project coordination meetings with Utica. These meetings are assumed to be conducted via teleconference.

1.2.2 TASK 2 – DETAILED PART 12D INSPECTION PLAN AND SCHEDULE

KGS Group will work with Utica to develop an Inspection Plan and Proposed Schedule for Utica to send to FERC per the following:

Project Information and Scope of the inspection

- List the Project Name, FERC Project Number, and state(s)
- Identify the inspection as a Part 12D Periodic Inspection (PI).
- Provide a brief description of the project features to be inspected.

IC Team Identified

Collectively, the IC Team must have “demonstrable experience and expertise in dam design, construction, and in the evaluation and assessment of the safety of existing dams and their appurtenances, commensurate

with the scale, complexity, and relevant technical disciplines of the project and type of review, inspection, and assessment being performed...” To fulfill this requirement, the IC Team Proposal must:

- Identify the required technical disciplines for IC(s) and supporting team members;
- Identify the Independent Consultant(s);
- Demonstrate that the IC Team has the required experience; and
- Identify PFMA/risk analysis facilitators, if required by FERC.

IC Team Resumes

The resumes provided with an IC Team Proposal (or included with the PIPR) must clearly state the individual’s role in each project listed (e.g., a member of a design team, QC/QA review, engineer of record, etc., along with the duration and scope of that role).

A general list of projects, without context, is not acceptable and may result in rejection of the Part 12D Inspection Plan. The FERC will evaluate the resume and compare it to the stated technical discipline and proficiency; the resume must clearly document that the individual possesses the relevant knowledge and skills at the proficiency level identified in the submittal.

Propose Inspection Schedule

Our pre-inspection planning will include a proposed project schedule. We will work with Utica to modify the schedule as necessary to meet the project goals.

1.2.3 TASK 3 – PARTICIPATE IN FERC’S SECOND COORDINATION CALL

Our inspection team will participate in second coordination call with FERC and Utica representatives, as required, to discuss the Part 12D Periodic Inspection, inspection findings, and project schedule.

1.2.4 TASK 4 – REVIEW OF PI PERTINENT DOCUMENTS

The requirement for review of dam and public safety programs is established in 18 CFR § 12.35(d), while the review of surveillance and monitoring is required by 18 CFR § 12.35(c). In each section, the PI-PIPR and PIR must include a clear statement that the IC Team reviewed the information, along with any findings and recommendations. Additional considerations are discussed below.

The following documents and programs will be reviewed, as applicable and if available:

- Owner’s Dam Safety Program (ODSP)
- Dam Safety Surveillance and Monitoring Program (DSSMP) and associated monitoring reports
- Hazard Potential Classification documentation
- Emergency Action Plan (EAP)
- Public Safety Plan (PSP)
- Operations and Maintenance (O&M) Programs

1.2.5 TASK 5 – PREPARE PI PRE-INSPECTION PREPARATION REPORT (PI-PIPR) FOR THE UTICA DEVELOPMENT

Our team will prepare a Periodic Inspection Pre-inspection Preparation Report (PI-PIPR) in accordance with Chapter 16 (Appendix 16-C) of FERC’s Engineering Guidelines. The PI-PIPR will include the following elements:

Report Outline

Unless otherwise noted, all the following sections are required in both the PI-PIPR and the Periodic Inspection Report (PIR).

- Introduction
- Cover Page
- Table of Contents
- Identification of IC Team and Field Inspection Participants
- SECTION 1: Findings and Recommendations (PIR only; placeholder in PIPR)
 - 1.1 General Conditions and Evaluation of Performance
 - 1.2 Potential Failure Modes and Risk
 - 1.3 Review and Evaluation of Dam and Public Safety Programs
 - 1.4 Recommendations
- SECTION 2: Description of Project Features and Operations
 - 2.1 Location and Purpose
 - 2.2 Description of Project Features - e.g., Dam(s), Spillway(s), including gated spillways, Outlet Works, Water Conveyances, Powerhouses, Dam Safety Incidents, etc.)
 - 2.3 Summary of Operations
- SECTION 3: Project Status
 - 3.1 Modifications to Project Works
 - 3.2 Modifications to Project Operations
 - 3.3 Recommendations from Previous Part 12D Reports
 - 3.4 Outstanding/Ongoing Studies
 - 3.5 Completed Studies
 - 3.6 Summary of Operations and Maintenance Programs
 - 3.7 Previously Identified PFMs
- SECTION 4: Field Inspection Observations and Interpretation of Monitoring Data
 - 4.1 General
 - 4.2 Name of Project Feature – repeat entire 4.2 section for each individual feature (e.g., Dam(s), Spillway(s), including gated spillways, Outlet Works, Water Conveyances, Powerhouses, Dam Safety Incidents, etc.)
 - 4.2.1 Field Inspection Observations (PIR only; placeholder in PIPR)
 - 4.2.2 Review and Evaluation of Instrumentation Data and Surveillance
 - 4.2.3 Evaluation with Respect to Potential Failure Modes (PIR only; placeholder in PIPR)
 - 4.2.4 Conclusion (PIR only; placeholder in PIPR)
- SECTION 5: Review and Evaluation of Dam and Public Safety Programs
 - 5.1 Owner's Dam Safety Program
 - 5.2 Dam Safety Surveillance and Monitoring Program
 - 5.3 Hazard Potential Classification
 - 5.4 Emergency Action Plan
 - 5.5 Public Safety Plan
 - 5.6 Operations and Maintenance

One draft version of the PI-PIPR will be submitted to Utica for review and comment. Upon reconciliation of Utica's comments, the final PI-PIPR will be submitted to Utica.

1.2.6 TASK 6 – PART 12D PERIODIC INSPECTIONS

The IC and SME's will conduct the Part 12D field inspection following approval of the PI-PIPR by FERC. KGS Group assumes that the site visit is expected to take approximately three (3) days. Prior to the inspection, the IC shall identify all items that need to be inspected to allow time for Utica to prepare as needed (e.g., lock out / tag out, boat access, etc.). Visible and accessible portions of the dams, abutments, and appurtenant structures will be inspected for evidence of leakage, concrete deterioration, cracking, settlement, and joint offsets. Accessible portions of the power intake and powerhouse facilities will also be inspected. The scope of inspection will be limited to visible elements only and excludes covered, buried, or hidden conditions. The inspection will not include any special investigations, or geotechnical investigations, or materials testing. Inspection notes and inspection photos will be prepared at conclusion of the field inspection. It is assumed that Utica will prepare the Job Safety Analysis (JSA) for the field inspection and coordinate access at the site including confined space entry and loto, as applicable.

The SEED Manual [Bureau of Reclamation (1995)] may be used as a reference for general procedures related to the inspection of dams and project works.

Reservoir Rim

Prior to the inspection, available project documentation (including STIDs provided by the client) will be reviewed to determine whether any credible PFMs related to the reservoir rim have been identified. If so, visual inspection of the relevant portions is required. Otherwise, it may be sufficient to visually observe the reservoir rim within the immediate vicinity of the project works (e.g., from the dam crest).

Diversion Structures and Gate Operations

If possible, the relevant members of the IC Team should observe full-height spillway gate test operations. In many cases, this may require significant coordination (e.g., placement of dewatering bulkheads, a low reservoir, preexisting high flows to limit downstream effects, etc.). If circumstances do not permit the observation of full-height gate tests, the IC Team still must observe test operations of a representative number of gates such that they can evaluate the gate performance, licensee's standard operating procedures, and provide informed conclusions.

Every power source available for operation of gates should be tested and used to operate a gate during the inspection. If there are multiple backup power sources – for example, a diesel-powered generator, a portable propane-powered generator, and a battery bank – each should be used. If the licensee's standard operating procedures include other emergency methods for operating a gate – such as using a lifting beam and portable crane, or attaching a hand crank – the IC Team should confirm that the required equipment is available and that licensee staff are sufficiently familiar with the procedures.

Some projects may have restrictions such as ramping rates, water availability, circuit switching, etc. that will require advance coordination to ensure that the IC Team is able to observe and evaluate gate and backup power operations. Any circumstances that would prevent the IC Team from observing these operations must be clearly described in the Part 12D Inspection Plan for review and evaluation by the FERC. If necessary, the

licensee must propose an alternate scope that accomplishes the same goal, and the FERC reserves the option to deny the alternate scope and require that the IC Team observe the procedures as described above.

Other Special Inspection Reports

The IC Team must review all reports on special inspections that have occurred since the previous CA or within the preceding five years, whichever period is longer. Some examples of special inspection reports are:

- Underwater inspections;
- Hands-on gate inspections;
- Focused spillway assessments (discussed previously);
- Special access inspections (confined space, rope access, etc.), including of penstocks and tunnels;
- Camera scope inspections of drains, conduits, and other features;
- Aerial drone inspections; and
- Other inspections as applicable.

1.2.7 TASK 7 – INSPECTION REPORTS

We will prepare the Periodic Inspection Report (PIR) following the outline presented above in Section 2.1.5, in accordance with Chapter 16 of FERC's Engineering Guidelines for the Evaluation of Hydropower Projects, including the outline provided in Appendix 16-B. Four headings, listed below, are required for each project feature:

- Field Inspection Observations
- Review and Evaluation of Instrumentation Data and Surveillance Reports
- Evaluation with Respect to Potential Failure Modes
- Conclusion

Consistent with FERC requirements, the PIR will document field inspection observations for each individual project feature (dam, spillway, powerhouse, etc.). Each project feature subsection will include a review and discussion of the associated instrumentation and surveillance data and related potential failure modes (PFMs). The report will be structured to ensure that findings and conclusions are thoroughly documented and evaluated for each project feature.

One draft version of the PIR will be submitted to Utica for review and comment. Upon reconciliation of Utica's comments, the final PIR will be submitted to Utica.

1.2.8 TASK 8 – STIDS

KGS will update each of the three STID's in draft and final form in accordance with FERC's chapter 15 Guidelines. The STID updates will incorporate all new and revised project information, include the creation of the Digital Project Archive (DPA) for all new and revised documents, and address all FERC and California correspondence issued since 2022. Draft versions of the updated STIDs will be submitted to Utica for review and comment. Following reconciliation of Utica's comments, KGS will prepare and submit final STIDs to Utica.

1.2.9 TASK 9 – PI REVIEW MEETING

KGS will prepare for and conduct PI review meeting to be attended by IC and SMEs.

1.2.10 TASK 10 – SUPPORT UTICA IN RESPONDING TO FERC’S REVIEW COMMENTS

KGS will support Utica by responding to the FERC’s review comments on the Periodic Inspection submittals.

1.3 Schedule

The final project schedule has not yet been established and will depend on the date we receive a notice to proceed, weather conditions, and both FERC and Utica availability for the inspection. Based on our understanding of the required submittal dates for the reports to FERC, we have tentatively assumed the following preliminary milestone schedule.

TABLE 1: PROPOSED PROJECT SCHEDULE

DELIVERABLE/EVENT	DEADLINE
RFP issued to Consultants	June 15, 2026
Proposal Deadline	July 22, 2026
Consultant Selection, Contract Execution and Notice to Proceed	July 2026
IC Team Draft Inspection Plan and Schedule	August 2026
Utica reviews IC Team Plan & Schedule	September 2026
Utica submits & FERC reviews Inspection Plan, Schedule & IC Team	October 2026
2 nd Coordination Call with FERC and UWPA	April – May, 2027
Review Pertinent Documents	November – December 2026
Prepare Draft and Final PI Pre-Inspection Preparation Report (PI-PIPR) for the Utica Development & Transmit to FERC	April 2027
UWPA submits PI-PIPR to FERC and FERC responds to PI-PIPR	May 2027
Conduct Periodic Inspections of the Utica Development	May - June 2027
Submit to Utica the final PI Inspection Reports	October 1 – 15, 2027
Utica to file final PI Inspection Reports to FERC	November 15, 2027
Submit Draft STID updates to Utica	December 2027 - February 2028
Utica reviews Draft STID updates	March – April 2028
Submit Final STID Updates to Utica and Utica files STIDs with FERC	May 2028
Respond to FERC Comments on Inspection reports	Within 30 days of FERC review letters (likely in mid- to late-2028)

Notes:

- 1) Three weeks for Licensee review and comment resolution is included for all report submittals prior to report finalization. The Licensee review shall not replace the IC Team’s internal review process.
- 2) We anticipate one round of FERC comments and will respond to such comments within 20 days of receiving the FERC review letter.

2.0 RELEVANT FIRM EXPERIENCE AND EXPERTISE

2.1 Corporate Profile

We are KGS Group, an employee-owned, multidisciplinary engineering consulting firm serving clients throughout North America. Dedicated to excellence in engineering and project management, our highly experienced team of engineers, scientists and technologists provide a complete range of engineering services for nearly every market. We have the expertise to tackle almost any project, and we care enough to do it right.

We are *relationeers*. We believe that a commitment to lasting relationships is just as critical as the expertise applied to a project's design. Our relationships are built strong by making and fulfilling these commitments to every client on every project:

- | | |
|---|---|
| <ul style="list-style-type: none"> • Continuous stewardship. Every project, including yours, benefits from a single project manager from start to finish with oversight from our most senior and experienced leaders. | <ul style="list-style-type: none"> • Comprehensive communication. We listen carefully, confirm assumptions, offer options, and provide information in a clear and timely fashion. It's our way of making sure we deliver what you want. |
| <ul style="list-style-type: none"> • Outperform, overdeliver. Paying close attention to small details, being on site when it's convenient for you, not us, finding ways to go above and beyond - these are badges we wear with pride. | <ul style="list-style-type: none"> • Better outcomes. We take the time to plan well. It's an investment that always pays off. |

Our purpose is to build lasting relationships with the promise of building things to last. To us, that means putting our clients and our people first and never taking the easy way out. It means thinking in the long term, not the short term, and going above and beyond on every project, every time. When you work with us, you get the expertise of a seasoned team who understands and cares for your project as deeply as you. That's **Experience in Action**.

KGS Group has experience providing a broad range of engineering services to hydroelectric utilities and large entities managing water resource assets. This has led to maintaining several service agreements with multiple Public Works and Government Services throughout Canada over the past 20 years; and with the addition of our office in California and the multi-disciplined team, this experience now spans the border. The engineers and geologists in California have over 20 years of experience in dam safety supporting local water agencies with their hydroelectric assets.

Hydropower

You could say hydropower is in our DNA. Founded in Manitoba, Canada, where hydropower is a primary source of clean energy, KGS has developed extensive expertise in hydropower engineering since its inception in 1986. Over the past four decades, KGS has played a significant role in the development, rehabilitation, and ongoing operation of hydropower facilities across North America and internationally. KGS Group brings a unique owner's perspective to each project. Our experience encompasses embankment, concrete arch,

concrete gravity, and rockfill dams, as well as intake structures, bulkheads, turbine supports, flood control structures, and water conveyance systems. KGS has extensive experience in the design, inspection, assessment, rehabilitation, and life extension of dams and associated infrastructure.

Our expertise spans all aspects of dam engineering and dam safety, including:

- Static and dynamic stability assessments
- Seismic hazard analysis
- Liquefaction assessments
- Structural condition assessments
- Dam classification
- Engineering investigations and surveys
- Water management infrastructure and control systems
- Water management operation
- Flood protection infrastructure
- Water control structures
- Erosion protection works

We provide comprehensive services throughout the full lifecycle of hydropower facilities, from feasibility studies and detailed design to procurement, construction support, rehabilitation, and dam safety evaluations. We also assist owners with turbine-generator upgrades, protection and control system modifications, operating procedures, and modernization of aging infrastructure.

KGS's gate, gate hoist, and gate operations specialists provide independent assessments of gate system reliability and performance. With extensive experience across a wide range of gates and hoisting systems, our team supports dam safety evaluations, gate safety assessments, rehabilitation planning, and the development of practical, cost-effective recommendations to improve the reliability and performance of hydraulic structures.

Dam Safety

KGS Group offers a comprehensive range of dam safety services, including the development and review of dam safety programs, dam safety inspections, dam rehabilitation and life extension, dam safety analyses (structural, seismic, and geotechnical stability), preparation of Emergency Preparedness and Response Plans (EPRPs), review of dam safety management systems, dam surveillance and monitoring systems, and public safety and security programs.

KGS has extensive experience supporting FERC-regulated dam safety programs, including Potential Failure Mode Analyses (PFMAs), Level 2 Semi-Quantitative Risk Analyses (L2RAs), Supporting Technical Information Documents (STIDs), and Dam Safety Surveillance and Monitoring Plans and Reports (DSSMPs/DSSMRs). Our experience also includes developing inspection plans, conducting detailed field inspections, and preparing Pre-Inspection Preparation Reports (PIPRs), Periodic Inspections Reports (PIRs), Comprehensive Assessments Reports (CARs), and other FERC Part 12D deliverables in accordance with FERC's Engineering Guidelines.

KGS Group has successfully applied risk-informed decision-making methodologies to support dam safety evaluations and reliability improvement projects under a variety of regulatory environments:

- Federal Energy Regulatory Commission (FERC)
- United States Army Corps of Engineers (USACE)
- Bureau of Reclamation

- Ontario Power Generation (OPG)
- Manitoba Hydro-Electric Board (MB Hydro)
- British Columbia Hydro and Power Authority (BC Hydro)
- Centre for Energy Advancement through Technological Innovation (CEATI)

2.2 Relevant Project Experience

Table 2 provides a list of FERC licensee(s) projects conducted by KGS, along with a summary of the work and contact information for each project.

TABLE 2 – FERC LICENSEE PROJECT REFERENCES

FERC LICENSEE	FACILITY & SERVICES DESCRIPTION	REFERENCE CONTACT
El Dorado Irrigation District	FERC No. 184, 2024-2025 Comprehensive Assessment of the El Dorado Forebay Dam Services provided: • KGS, as part of the IC team, prepared the CA-PIPR within 30 days, which was accepted by FERC on the first submittal. • The IC team conducted field inspections of the visible and accessible portions of the dams, abutments, appurtenant structures, conveyance system, penstock, and powerhouse facilities to evaluate conditions including leakage, cracking, settlement, and other signs of distress. • The IC team coordinated and facilitated the Potential Failure Mode Analysis (PFMA) and Level 2 Risk Analysis (L2RA) workshops in accordance with Chapters 17 and 18 of the FERC Engineering Guidelines. The team identified and screened potential failure modes and developed estimates of failure probability and consequences using the RCEM Empirical Approach and FERC guidelines.	John Kessler, PE Chief Dam Safety Engineer P: (530) 642-4056 E: jkessler@eid.org
Eagle Creek Renewable Energy	FERC No. 9690, 2023-2024 Comprehensive Assessment of Rio Dam Services provided: • Prepared the CA-PIPR and Inspection Plan in accordance with FERC Guidelines. • Reviewed project background information, including the STID, ODSP, DSSMP, DSSMR, EAP, PSP, O&M manuals, and design and construction records. • Performed independent technical reviews of the analyses of record, including stability and liquefaction evaluations. • Conducted comprehensive field inspections of the dam and appurtenant facilities.	Ryan Schoolmeesters Chief Dam Safety Engineer P: (303) 842-1424 E: ryan.schoolmeesters@eaglecreekre.com

FERC LICENSEE	FACILITY & SERVICES DESCRIPTION	REFERENCE CONTACT
	- Coordinated and facilitated the PFMA and L2RA (SQRA) workshops in accordance with FERC Engineering Guidelines. - Prepared the CA Report and Risk Report, including the Risk Matrix and Dam Safety Risk Classification (DSRC).	
Pacific Gas and Electric Company (PG&E)	FERC No. 233-CA, 2026-ongoing Periodic Inspection of Pit 3 Dam Services provided so far: - Preparation of an inspection plan - Preparation and submittal of the PI-PIPR - Field inspection - Background Review of STID, ODSP, DSSMP, DSSMR EAP, PSP, O&M - Review of design/construction, and review and independent checks on current analysis of record	Cory Miyamoto, P.E. Senior Dam Safety Engineer Shasta Area P: (925) 501-5865 E: ccmo@pge.com

3.0 PROJECT TEAM

With extensive industry experience and specialized expertise in dam safety, hydropower, geotechnical engineering, and hydrologic and hydraulic analyses, KGS Group is well positioned to assist Utica in implementing a thorough and effective dam safety program. We have supported clients throughout the United States in achieving compliance with FERC regulations and requirements, and this experience enables our team to effectively address project-specific challenges while delivering high-quality technical services.

Our proposed project team fully meets the FERC requirements for Independent Consultants. The proposed IC is a licensed Professional Engineers in the State of California with more than 10 years of experience in dam design, construction, and dam safety evaluations. In accordance with FERC requirements, neither proposed IC has served as an Independent Consultant for, or as an employee or agent of, Utica Power and Water Authority within the past two years.

TABLE 3 – PROPOSED IC TEAM

NAME	TECHNICAL DISCIPLINE & PROJECT ROLE	EXPERTISE & CONTRIBUTIONS
Amy Deakyne	IC and Structural SME	- Concrete and Masonry design and condition assessments - Structural steel design and condition assessments - Design and assessments of water retaining structures - Concrete and wood flume design - Concrete lined embankment and slope stability analysis - Earthfill Dam Feasibility Study and Upgrades
Andi Bogdanovic	Senior Dam Safety Advisor	- Concrete Dam Sliding stability - Concrete Dam Overstress analysis

NAME	TECHNICAL DISCIPLINE & PROJECT ROLE	EXPERTISE & CONTRIBUTIONS
		• Structural assessment of gates • Spillway flashboard assessment • Corrosion assessments of penstock and tank • Penstock assessments
David Jermstad	Geotechnical/Geology SME	• Internal Erosion (Piping) • Slope Stability evaluations • Seepage Evaluations • Liquefaction • Overtopping erosion • Penstock geohazards • Rock Scour • Rock Strength
Kyle Jermstad	Project Manager / Geotechnical Support	• Internal Erosion (Piping) • Slope Stability evaluations • Seepage Evaluations • Geohazards • Rock Strength
Zahra Zahmatkesh	Consequences Modelling/ Hydrology and Hydraulics SME	• PMF and sunny-day failure assessments • Consequence estimate
Steve Meicke	Mechanical SME	• Turbines • Penstock Isolation and Bypass Valves • Penstock mechanical appurtenances • Intake Gates

3.1 Team Member Biographies

Our project team understands the requirements for ICs as described in Chapter 16 of the FERC Engineering Guidelines and is well qualified to lead the inspection team. Collectively, the proposed IC and SMEs have extensive experience in the design, construction, and safety evaluation of concrete and embankment dams, with significant experience supporting FERC-regulated dam safety programs.

3.1.1 PROJECT MANAGER

Kyle Jermstad, PE – Project Manager / Geotechnical Support

Kyle Jermstad has over 22 years of combined experience in the fields of geotechnical engineering, project management, construction inspection, and materials testing. His engineering and project management experience is largely shaped by his integral role on multidisciplinary design teams, collaborating closely with structural, civil, H&H, mechanical, and electrical engineers from project conception to completion to develop comprehensive designs. Kyle is experienced in performing and reviewing geotechnical analyses including slope stability and stabilization measures, deep and shallow foundations, retaining walls, seepage and filter design. Kyle is intimately familiar with the regulatory guidelines of the Federal Energy Regulatory Commission

(FERC). He has extensive involvement in design and QCIP inspections of infrastructure for FERC licensed projects. He has participated in FERC Part 12D inspections and supported development of a CA-PIPR, CAR, and STID updates including Digital Project Archives.

3.1.2 INDEPENDENT CONSULTANT

Amy Deakyne, PE – IC/ Structural SME

Amy Deakyne has over 20 years of experience in project management and structural engineering analysis, design, construction review, and oversight for a variety of small and large hydro structures and dam projects on the western slope of the Sierra Nevada Mountains in California. She specializes in the structural design and project management of water-retaining structures, flumes, canals, spillways, and tunnels for water and power clients. She has played an integral role in clients' condition assessment and asset management programs, including risk-based analyses of hydraulic and water-retaining structures. Amy has been involved in the asset management of hydraulic and water-retaining structures for over 10 years, including participation in FERC Part 12D inspections and PFMA sessions for concrete gravity, arch, and rockfill dams. She has managed multidisciplinary project teams, including supervision of a large earthfill dam upgrade project involving feasibility studies, geotechnical investigations, hydraulic studies, assembly of a board of subject matter experts, design, specifications, and permitting.

Amy is currently serving as the Co-IC for the PG&E Pit 3 Hydroelectric Project Part 12D Periodic Inspection.

3.1.3 SUBJECT MATTER EXPERTS

Zahra Zahmatkesh, Ph.D., P.Eng., PE – Assistant Project Manager/Hydraulics and Hydrology SME

Dr. Zahmatkesh has 14 years of research and consulting experience in a variety of water resources projects. Her experience comprises hydrologic and hydraulic modelling, flood modelling, floodplain mapping, climate change impact assessment and dam safety review analysis. Zahra demonstrates strong expertise in FERC Part 12D dam safety regulations. She served as H/H SME for the El Dorado Forebay Dam CA, where she assessed flood consequences and contributed to the PFMA and L2RA workshops. She also provided H/H SME support for the Rio Dam Development CA. She completed the “Hydrologic Hazard Analysis for Level 2 Risk Analysis” course, instructed by the FERC Division of Dam Safety and Inspections, in October 2024.

Steve Meicke, M.Sc., PE – Mechanical SME

Steve is a senior mechanical engineer specializing in mechanical design of hydroelectric facilities with 16 years of experience. His experience includes turbine replacement and overhaul projects, designing vertical and radial gate hoist systems, equipment troubleshooting, machinery inspection, pumping and piping systems, fish passage engineering, and FERC dam safety exercises (Part 12D, periodic inspections, PFMA). Steve has experience with full-time, on-site construction support and commissioning services and has seven years of experience leading QA/QC program development and implementation. Steve leads KGS Group’s U.S. practice mechanical team and serves as a technical advisor for hydromechanical projects.

David Jermstad, CEG, PG – Geotechnical / Geology SME

David Jermstad has over 45 years of experience in geotechnical engineering and geology, geotechnical investigations, and dam safety. He has extensive experience throughout the western United States in the evaluation, design, and construction of embankment dams, levees, tunnels, canals, flumes, penstocks, and other water conveyance facilities. His expertise includes rock mechanics, slope stability, seepage and piping

assessments, subsurface investigations, earthwork construction, erosion protection, and retaining wall design. David is experienced in evaluating geologic hazards, including faulting, liquefaction, and soft sediment deformation, and in assessing dam foundations and embankments under a wide range of geologic conditions.

4.0 QUALITY ASSURANCE AND CONTROL & CONFLICTS

KGS Group has established a Quality Management System (QMS) to consistently deliver high-quality engineering and project management services. The QMS is implemented throughout all KGS Group offices, with the Winnipeg, Mississauga, Thunder Bay, Saskatoon, and Regina offices certified to ISO 9001:2015. Through regular internal audits, client feedback, and performance metrics, KGS Group continually improves its processes and deliverables. This quality-focused approach provides our clients with confidence that services will be delivered in accordance with the agreed scope, schedule, and applicable standards.

KGS Group has reviewed the requirements of this assignment and is not aware of any actual or potential conflicts of interest. Should a conflict arise during the assignment, KGS Group will promptly notify the Client and work with the Client to implement appropriate mitigation measures.

5.0 CLIENT REFERENCES

In addition to the project references listed above, below are additional local staff and company references.

Local Staff References

Reference: Mr. Nathan Bowersox, PE, Sacramento Municipal Utility District

Principal Civil Engineer, Power Generation | 916.732.5552 | nathan.bowersox@smud.org

Company References

Reference: Mr. Brendon McNally, Douglas County PUD

Mechanical Engineer | 509.881.2497 | BrendonMcNally@dcputd.org

6.0 CONTRACT AND INSURANCE REQUIREMENTS

KGS Group respectfully requests the following changes to the contract in the form shown in Exhibit C of the RFP, the Professional Service Agreement Sample. These changes are consistent with the terms of our existing Mater Service Agreement dated November 19, 2024. In addition, we are able to comply with the insurance requirements of Exhibit C.

- Section 3, Duties and Responsibilities of the Consultant: Replace “perform the Consulting services in a manner commensurate with the highest professional standards” with “perform the Consulting services in a manner consistent with generally accepted professional standards for similarly situated consultants performing similar services under similar circumstances.”
- Section 15, Indemnification: Remove the defense obligation and add language to the end of Section 15 as follows: “The foregoing indemnification obligations apply only to third-party claims and will not apply to the extent a claim is caused by the negligence or willful misconduct of Utica or its officers, employees, volunteers, or agents. Notwithstanding anything to the contrary in this Agreement, Consultant’s total

aggregate liability arising out of or relating to this Agreement, including without limitation liability under this Section 15, will not exceed the greater of (i) the fees payable under this Agreement, or (ii) the applicable insurance limits maintained by Consultant for the claim.”

- Section 6, Termination: Add language to the end of the first paragraph to state: “In addition to compensation earned up to the date of termination, Utica shall pay Consultant for noncancelable commitments and reasonable closeout/wind-down costs incurred prior to the effective date of termination.”

7.0 ADDENDA

As requested in your RFP, we confirm that no addenda have been posted to Utica’s website in response to this RFP as of July 22th, 2026.

B. COST OF SERVICES

Table 4 summarizes the proposed level of effort by major task in accordance with the Scope of Work outlined in the RFP. A detailed breakdown of labor hours by team member classification, hourly rates, and costs is provided in Table 5. Disbursements in this table include travel and other allowable reimbursable expenses. All other overhead and administrative costs are included in the labor (engineering) rates.

TABLE 4 – COST OF SERVICES

TASK	FEE
Task 1 – Project Management and Meetings	\$25,350
Task 2 –Part 12D Inspection Plan and Schedule & Participate in FERC’s Second Coordination Call	\$7,720
Task 3 – Review PI Pertinent Documents	\$13,110
Task 4 – Prepare PI Pre-Inspection Preparation Report	\$27,291
Task 5 – Conduct Part 12D Periodic Inspections	\$25,448
Task 6 – Prepare Draft and Final Part 12D Inspection Report	\$46,077
Task 7 – Update Supporting Technical Information Documents (STIDs)	\$57,540
Task 8 – Prepare for and Conduct Independent Consultant Team Review Meeting	\$3,080
Task 9 – Support Utica in Responding to FERC Review Comments	\$13,600
Disbursements (lodging and meal for the inspection team)	\$2,328
Total	\$219,216

Assumptions:

- Any task not specifically identified in the above scope of work can be completed upon approval by UPWA at the agreed upon scope and fee.

- The PI inspection has been assumed to be completed in three long days due to the length of the conveyance system. The scope assumes that the inspection of the Utica Project will be performed in 3 beats with Utica facilitating a shuttle at the end of each beat.
- We assumed the field inspection will be conducted by the IC and the geotechnical/geology SME. Additional support staff will be available upon request, if needed.
- With UPWA's approval, our Project Manager, Kyle Jermstad, would participate in the inspection to further develop his experience with FERC Part 12D projects.
- For preparation of the Inspection Plan and Schedule, we assumed Utica will take the lead, with KGS providing support.
- We allocated hours for the STID update task in accordance with the RFP requirements. However, based on our experience, this effort may require additional time due to the creation of Digital Project Archives (DPAs) and restructuring of the report in accordance with the current FERC guidelines.

TABLE 5: WORK BREAKDOWN STRUCTURE

		Project Manager / Geotechnical	IC / Structural SME	Senior Advisor	Hydrology & Hydraulics SME/ PM Assistant	Mechanical SME	Geotechnical Support	Geotechnical / Geology SME	Administrative	Total Hours	Engineering Fees	Disbursements	Total Price
Level		Standard	P5	P7	P7	P4	P5	P4	P7	C2			
			\$260.00	\$340.00	\$340.00	\$235.00	\$260.00	\$235.00	\$340.00	\$121.00			
1000	Project Management and Meetings												
	1000.01	Project Management	70			10				80	\$20,550.00		\$20,550.00
	1000.02	Meetings (Teleconference)	8	8						16	\$4,800.00		\$4,800.00
		SUBTOTAL								96	\$25,350.00	\$0.00	\$25,350.00
2000	Inspection Planning and Schedule and Participate in FERC's Second Coordination Call												
	2000.01	Inspection Plan and Schedule	12	8						20	\$5,840.00		\$5,840.00
	2000.02	Second Coordination Call	2	2				2		6	\$1,880.00		\$1,880.00
		SUBTOTAL								26	\$7,720.00	\$0.00	\$7,720.00
3000	Review PI Pertinent Documents												
	3000.01	Review PI Pertinent Documents	8	16		2	2	8	8	44	\$13,110.00		\$13,110.00
		SUBTOTAL								44	\$13,110.00	\$0.00	\$13,110.00
4000	Prepare PI-PIPR												
	4000.01	Draft PI-PIPR	24	20	2	2	2	24	4	4	82	\$22,194.00	\$22,194.00
	4000.02	Final PI-PIPR	4	4	1	1	1	4	2	2	19	\$5,097.00	\$5,097.00
		SUBTOTAL								101	\$27,291.00	\$0.00	\$27,291.00
5000	Part 12D Periodic Inspections												
	5000.01	Periodic Inspections		34				34		68	\$23,120.00	\$2,328.00	\$25,448.00
		SUBTOTAL								68	\$23,120.00	\$2,328.00	\$25,448.00
6000	PI Reports												
	6000.01	Draft Part 12D PI Report	40	40	2	2	2	40	4	8	138	\$37,398.00	\$37,398.00
	6000.02	Final Part 12D PI Report	8	8	1	1	1	8	2	4	33	\$8,679.00	\$8,679.00
		SUBTOTAL								171	\$46,077.00	\$0.00	\$46,077.00
7000	STID Updates												
	7000.01	Draft STID Updates	25	30		25	25	60	30	195	\$46,805.00		\$46,805.00
	7000.02	Final STID Updates	5	10		5	5	10	10	45	\$10,735.00		\$10,735.00
		SUBTOTAL								240	\$57,540.00	\$0.00	\$57,540.00
8000	Prepare for and Conduct Independent Consultant Team Review												
	8000.01	Meeting Preparation	2	2						4	\$1,200.00		\$1,200.00
	8000.02	Review Meeting	2	2				2		6	\$1,880.00		\$1,880.00
		SUBTOTAL								10	\$3,080.00	\$0.00	\$3,080.00
9000	Responding to FERC's Review Comments												
	9000.01	Responding to FERC Comments		40						40	\$13,600.00		\$13,600.00
		SUBTOTAL								40	\$13,600.00	\$0.00	\$13,600.00
Total Project Hours			210	224	6	48	38	154	58	58	796		
Total Estimated Project Fees			\$54,600.00	\$76,160.00	\$2,040.00	\$11,280.00	\$9,880.00	\$36,190.00	\$19,720.00	\$7,018.00		\$216,888.00	\$219,216.00

TOTAL ENGINEERING FEES =
TOTAL DISBURSEMENTS =
TOTAL COST OF SERVICE =

\$216,888.00
\$2,328.00
\$219,216.00

We have scoped this work utilizing our standard 2026 rates listed in Table 6.

TABLE 6 – BILLING RATES

LEVEL	BILLING RATE
Clerical 1	\$110
Clerical 2	\$121
Clerical 3	\$133
Tech Level 1	\$133
Tech Level 2	\$148
Tech Level 3	\$161
Tech Level 4	\$176
Tech Level 5	\$204
Tech Level 6	\$217
Tech Level 7	\$232
Prof Level 1	\$150
Prof Level 2	\$173
Prof Level 3	\$204
Prof Level 4	\$235
Prof Level 5	\$260
Prof Level 6	\$304
Prof Level 7	\$340

C. NON-DISCLOSURE AND DISCLOSURE OF PROPOSALS

KGS Group has not identified any confidential or proprietary information requiring separate treatment under the California Public Records Act.

APPENDIX A

Curricula Vitae

Kyle Jermstad, PE

SENIOR PROJECT ENGINEER

PROFILE	Kyle Jermstad has over 13 years of engineering experience in the field of geotechnical engineering and project management, performing geotechnical investigations, engineering analysis and design for FERC licensed facilities such as conveyance structures, powerhouses, and spillways. Engineering analyses performed include landslide stabilization, retaining walls, soil nails, tie-back anchors, rock bolts, rock dowels, and foundations. He has participated in FERC Part 12D Periodic and Comprehensive Inspections of embankment dams. Kyle also has more than 20 years of experience in conducting QCIP inspection and testing of geotechnical and structural components of construction projects under FERC jurisdiction with Stop Work Authority. Project features inspected include soil nails, tie-back anchors, rock bolting, rock doweling, mechanically stabilized earth retaining walls, earthfills, rockfills, excavations, subdrainage, foundation verification, keyways, permeation and pressure grouting, and reinforced concrete and shotcrete.
EDUCATION	• Bachelor of Science, Civil Engineering, University of Nevada, Reno (2013)
PROFESSIONAL LICENSURE	• California Professional Engineer, Civil C 96494 • Nevada Professional Engineer, Civil 025206 • Idaho Professional Engineer, Civil P-22047 • Oregon Professional Engineer, Civil 102913PE • Washington Professional Engineer, Civil 23016581
EMPLOYMENT HISTORY	• Senior Project Engineer, KGS Group International (2023 – Present) • Principal Geotechnical Engineer / Geotechnical Manager, Nevada Department of Transportation (2017 – 2023) • Project Engineer, GHD (2014 – 2017) • Engineer-in-Training, Carlton Engineering Inc. (2013 – 2014) • Engineering Technician, Carlton Engineering Inc. (2010 – 2013) • Laboratory Technician / Inspector, Sierra Testing Laboratories (2008 – 2010) • Laboratory Technician / Engineering Technician, Carlton Engineering Inc. (2003 – 2007)

RELEVANT PROJECT EXPERIENCE

- **FERC Project No. 184 – El Dorado Irrigation District (EID), El Dorado County, CA**
 - **Part 12D Safety Inspections.** Project Engineer. Supported the development of the CA-PIPR, CAR, and STID update for the El Dorado Forebay Dam. Attended the PI for Echo Lake and Lake Aloha dams. Supported the development of STID updates including creating the Digital Project Archives for Echo, Aloha, Caples, and Silver Lake dams.
 - **Flume 48 Replacement.** Civil EOR. Responsible for performing the geotechnical engineering investigations including bedrock discontinuity mapping, seismic refraction surveys, and hand-augered borings. Performed geotechnical analyses to support the design of MSE and soil nail walls and prepared the geotechnical report. Developed design documents including specifications, and design drawings.
 - **Emergency Storm Response.** Project Engineer. Responsible for performing the geotechnical engineering investigations including landslide mapping, geotechnical borings, and seismic refraction surveys. Performing geotechnical analysis for landslide stabilization including internal, external, global, and compound MSE stability calculations. Preparing geotechnical reports for the interim and permanent repairs at 21 slope failures identified by staff across the EID system. Caused by the winter storms in 2017, the failures ranged from localized soil failures while others were massive in scale with thousands of cubic yards of soil and mud moving downhill. Damage associated with the landslides includes debris filling canals, damage to access roads, and damage to structures. Provided geotechnical services during construction as well as performing QCIP inspection and testing during emergency construction to assist the team in completing the repairs and getting the system operational by June 1, 2017.
 - **Flume 44 Replacement Project.** Project Engineer. Responsible for performing the geotechnical engineering investigation including landslide mapping, geotechnical borings and seismic refraction surveys for the flume replacement on an active landslide. Performed geotechnical analysis for the landslide stabilization including internal, external, global, and compound MSE and soil nail stability calculations. Preparing the geotechnical report for the flume replacement project including recommendations for hollow-bar soil nails, earthwork, MSE walls up to 35 feet tall, seismic design, retaining walls, and subsurface drainage. Provided geotechnical services during construction as well as performing QCIP inspection and testing including proof and performance testing of soil nails.
 - **Flumes 38 – 40 Replacement Project.** Project Engineer. Responsible for performing the geotechnical engineering investigation including geotechnical borings and seismic refraction surveys. The project improvements consisted of replacing the existing elevated wooden flume structures with cast-in-place concrete canals supported by MSE. The project also included improvements to the canal bench and the design of two replacement bridges over the canal upstream of Flume 38 and downstream of Flume 39-40. Performed geotechnical analysis for including internal, external, global, and compound MSE stability calculations. Preparing the geotechnical reports for the flume replacements including recommendations for earthwork, MSE walls up to 32-feet tall, seismic design, retaining walls, and subsurface drainage. Provided geotechnical services during construction as well as performing QCIP inspection and testing.
 - **Pacific Tunnel Rehabilitation.** Project Engineer. Responsible for performing the tunnel inspection, geotechnical investigation, and engineering analysis, and reporting for the proposed improvements which included the complete replacement of the upstream and downstream tunnel portals, reinforced air placed concrete tunnel liner and reinforced concrete tunnel invert including installation of rock anchors/mechanical couplers, and design improvements to the existing access roads to provide all weather and heavy equipment access.

- **Flume 42/43 Replacement.** Project Engineer. Responsible for performing a geotechnical investigation to support the design and replacement of this 432-foot-long water conveyance structure, part of FERC Project No. 184. Work included a review of published geologic and geotechnical material, seismic refraction, and field exploration. Performing engineering analysis for foundations, settlement, and retaining walls and developing the geotechnical report presenting the recommendations for design and construction. Provided geotechnical services during construction as well as performing QCIP inspection and testing.
- **Flume 30 Replacement.** Inspector. Performed QCIP inspection and testing for this water conveyance replacement project. A 415-foot-long structure constructed of pre-cast, as well as cast-in-place concrete was designed to replace the existing 25-year-old wooden flume. A new access road was constructed on a steeply sloping hillside within an undeveloped, heavily forested area, and adjacent hand stack rock walls were replaced or encapsulated. Work included construction inspection and testing services during the construction of a post-tensioned precast bridge, rock anchored abutment walls, MSE walls, and cast-in-place flume and canal.
- **Flume 41 Replacement Design.** Inspector. Responsible for conducting QCIP inspection and testing of pre-cast concrete flumes, permeation grouted rock bench, rock anchored walls, and MSE walls for the replacement of the 697-foot-long Flume 41 and its support structure. Performed CESSWI inspections for the Qualified Stormwater Pollution Prevention Plan, monitoring the Best Management Practices items at the project site ensuring compliance with State Water Board permit.
- **Flume 51 Replacement Design.** Inspector. Responsible for QCIP testing and inspections, which included horizontal drain installations, rock anchor installation and testing, footing observations and recommendations, soil density testing, concrete, and grout testing, and MSE retaining wall construction.
- **Esmeralda Tunnel Repair.** Project Engineer / Inspector. Responsible for performing geotechnical investigation of the tunnel including logging of “jackleg” drill holes in the tunnel back. Performed QCIP inspection and testing services during the construction of the emergency repairs including rock bolting and reinforced shotcrete lining to restore the integrity of the El Dorado Canal by reconstructing the failed Esmeralda Tunnel.
- **Flume 45A Emergency Slide Repair.** Project Engineer. Responsible for performing the geotechnical exploration, analyses and reporting for the stabilization of landslide material adjacent to the flume. Provided engineering services and performed QCIP inspection and testing during construction of the repairs.
- **Flume 6/7 Slide Repair.** Inspector / Engineering Technician. Responsible for field studies and testing during the repair and stabilization of a landslide area adjacent to the flume.
- **El Dorado Canal Mill to Bull Creek Tunnel.** Inspector / Engineering Technician. Responsible for laboratory testing and QCIP inspection services during the repair and restoration of this water conveyance.
- **Hazel Creek Tunnel Repair.** Inspector / Engineering Technician. Responsible for field and laboratory testing in accordance with QCIP, as well as special inspection services during construction.
- **Mill Creek to Bull Creek Bench Landslides.** Inspector / Engineering Technician. Responsible for soil sampling and laboratory density testing and analyses of soil samples collected for engineering analysis during the repair and stabilization of several landslide sites, including one upstream of Flume 46.

- **FERC Project No. 2101 – Sacramento Municipal Utility District (SMUD), El Dorado County, CA**
 - **Brush Creek Road Slide Repairs.** Project Engineer. Responsible for performing the geotechnical engineering investigation including landslide mapping, geotechnical borings, seismic refraction surveys, and the installation of piezometers and inclinometers. Performed geotechnical analysis for the landslide stabilization and road repairs including seepage, global stability, and MSE analyses.
 - **Forebay Road Slides 1& 2 Repairs.** Project Engineer. Responsible for performing the geotechnical engineering investigation consisting of landslide mapping, geotechnical borings, seismic refraction, sample collection, and laboratory testing. Performed geotechnical analysis for the landslide stabilization and road repair including internal, external, global, and compound MSE stability calculations. Prepared the geotechnical report and provided engineering support as well as inspection and testing during construction.
 - **Jaybird Road Slides 1, 2, 3, & 4 Repairs.** Project Engineer. Responsible for performing the geotechnical engineering investigation consisting of landslide mapping, geotechnical borings, seismic refraction surveys, and installation of piezometers and inclinometers. Performed geotechnical analysis for the landslide stabilization and road repairs including internal, external, global, and compound MSE stability analysis.
 - **Iowa Hill Pumped – Storage Development Project.** Project Engineer. Responsible for performing a subsurface exploration consisting of over 5,000 feet of deep rock coring and instrumentation of vibrating wire piezometers to obtain geotechnical information from the locations of the proposed intake / outlet structure and the powerhouse. Work included geologic mapping, inclined and vertical rock coring, core sampling, water pressure testing, and physical and chemical laboratory testing. Installed well monitoring piezometers at adjacent properties as well as stream gauging piezometers to evaluate regional groundwater influence.
 - **Lower Slab Creek Powerhouse.** Project Engineer. Responsible for performing geotechnical engineering investigation including borings and seismic refraction to support the design of a new powerhouse for the Upper American River Project. Performed geotechnical analysis including bearing of the bridge foundations, and development of a 3d bedrock profile and design parameters. Provided geotechnical services during construction as well as QCIP testing and inspection.
- **Water Conveyance Tunnel - FERC Project – Confidential Client, El Dorado County, CA**

Inspector. Responsible for QCIP inspection and testing during the construction of stabilization measures to restore the integrity of this pressurized water tunnel, a critical component of a confidential client's hydroelectric development. Structural repairs included the installation of rock bolts patterned for safety as well as reinforced shotcrete for eroded areas. Inspection activities consisted of construction observation and testing of rock bolts and shotcrete that included strength proof testing—required for 10% of the 22,000 new rock bolts anchored into the tunnel walls—as well as shotcrete sampling of 7,000 cubic yards of shotcrete lining with compressive strength breaks at three separate stages.
- **PG&E Meadow Lake Dam Downstream Repair – FERC Project No. 2310**

Engineer of Record. Responsible for performing geotechnical analyses including 2D FEM steady state seepage, LEM stability, Makdisi-Seed seismic deformation estimates, and graded filter design. Developed design drawings and specifications for the emergency repair consisting of a riprap buttress and three-layer graded filter.
- **PG&E Belden Forebay Spillway Drain and Panel Repair – FERC Project No. 2105 – Mead & Hunt, Placer County, CA**

Project Engineer. Responsible for performing QCIP inspection and testing of construction activities to replace the damaged subdrainage behind the left spillway wall. Installed tilt-meters on the left-hand

spillway wall panels. Assisted in preparing a Geotechnical Design Parameters Memorandum presenting recommendations and criteria to be used for design and construction of interim risk reduction repairs to the left spillway wall panels. Assisted in providing multiple alternatives analyses including spillway chute wall panel permanent structural repairs, treatment of the known drain blockage, continued data capturing for the installed tilt meters, and recommendations for checking tension on the interim dead-man anchor cables. Currently in design of the IRRM spillway replacement project.

- **PG&E Hamilton Branch Indian Ole Dam, Phase I – FERC Project No. 2107 – Mead & Hunt, Lassen County, CA**

Project Engineer. Responsible for performing the geotechnical investigations consisting of seismic refraction surveys, hand excavation and sampling, and installation of standpipe piezometers. Preparation of a geotechnical report summarizing findings, conclusion, and recommendations for repair work.

- **PG&E Caribou 2 Penstock - FERC Project No. 2107 – Mead & Hunt, Caribou, CA.**

Project Engineer. Responsible for performing the geotechnical explorations supporting the design of slope and drain improvements in the vicinity of PG&E's Caribou 2 Penstock. Work collecting surface and subsurface information in several locations including the slope adjacent to Anchor Blocks 4 & 6; compaction evaluation for road fill; preparation of a technical memo summarizing findings and recommendations for use in developing designs and alternatives.

- **PG&E Condition Assessments**

Project Engineer. Responsible for reviewing all existing geotechnical studies and analyses to develop an understanding of the geologic and geotechnical conditions. Performed condition assessment inspections and supported the development of the multidiscipline condition assessment reports. The assessments included five powerhouses and their associated conveyances, spanning from intake to tailrace.

Andi Bogdanovic, P.E., P.Eng.

SENIOR STRUCTURAL ENGINEER & PROJECT MANAGER

PROFILE

Mr. Bogdanovic has more than 19 years of combined experience in the project management and civil/structural engineering field for hydropower service, dams/hydraulic structures, water retaining structures, water conveying facilities, petrochemical facilities, heavy industrial and marine facilities. His experience involves civil/structural engineering evaluation, licensing support, design, planning, analysis and construction support. This includes overseeing construction and structural site inspections, and coordination of draftspersons, clients and contractors. His experience also includes condition assessments, cost analysis and feasibility studies. With a comprehensive knowledge of design standards/codes, Mr. Bogdanovic has a demonstrated ability to work on complex projects, coordinate with other engineering disciplines, and provide cost effective/constructible designs.

Mr. Bogdanovic's experience in the design and construction of hydroelectric projects includes serving as project lead civil/structural engineer on a number of projects. Design and analysis services include foundations, battery building, actuator supports, penstock modification, access platforms, powerhouse superstructures, crane upgrades and monorails, intake trash racks, retaining walls, and stability of dams and spillway structures. Also, he has experience with water retaining structures such as intakes, spillways, trash racks, bulkhead gates, fixed wheel gates, and radial gates. Project management responsibilities include development of project scope, schedules and budgets, supervision of multi-disciplinary design teams, preparation of design criteria, coordination of work between the owner, engineer, sub-consultants, contractors and subcontractors, and tracking of project progress and scope changes.

Mr. Bogdanovic is also experienced in performing Dam Safety Reviews for hydroelectric and water storage projects in Canada and the US. Also, recently received approval by FERC to serve as a Part 12D Independent Consultant.

As the Regional Director of the Bellevue office of KGS Group International Inc. the current responsibilities include the day-to-day management and performance of the business unit and business development activities in Western United States and Canada

EDUCATION

- **Master of Science, Civil / Structural Engineering**, University of Manitoba (2003)
- **Bachelor of Science, Civil Engineering**, University of Manitoba (2001)

Specialized Training

- Occupational Safety & Health Administration (OSHA) – OSHA 30-Hour Construction Safety: Certification, No. 6745_1124131

- OSHA 510 – Standards for the Construction Industry – Federal OSHA policies, procedures, and standards, as well as construction safety and health principles
- Permit Required Confined Space Training & Fall Protection Training
- Project Management Planning & Monitoring Workshop
- Structural Analysis, Design and Modelling, Design of Fall Arrest Systems, Advanced Behaviour and Design of Steel Structures, Behaviour and Design of Reinforced Concrete Structures, Design and Analysis of Composite Materials (FRP) in Civil Engineering
- USSD Structural Behavior of Dams 4 day workshop (Bruce Brand retired FERC) – Dam Engineering. theoretical and very practical and FEA seismic non-linearity and FERC requirements .
- ASCE Manual and Reports on Engineering Practice No. 79 – Steel Penstocks Training
- Pre-Stressed Concrete Cylinder Pipe Seminar – Design, Fabrication, Installation, Operation & Maintenance
- ASCE Design Building with Overhead Cranes
- Bolting and Welding for Design Engineers
- ASCE 7 Wind & Seismic Load Provisions
- Steel Framed Commercial Building Design (Wind & Seismic Loading)
- ANSYS 3 day training workshop.
- California Seismic Principles Exam – Fundamental principles, tasks and knowledge underlying those activities involved in the California practice of seismic design, seismic analysis or seismic evaluation of new and existing structures
- Engineering Surveying Exam – Activities involved in the practice and application of surveying principles for the location, design, construction and maintenance and operation of engineered projects
- Software: MicroStation, AutoCAD, Microsoft Office, Mathcad 15
- Structural Finite Element Software: RISA 3D, RISA Foundation, STAAD.Pro, Visual Analysis, SAP2000, ANSYS, ENERCALC

REGISTRATIONS

- **Professional Engineer (USA) – P.E.**
California, No. C 80759; Washington, No. 51840; South Carolina; New Mexico
- **Professional Engineer (Canada) – P.Eng.**
Manitoba, No. 23252; Alberta, No. 143440; British Columbia, No. 35400; Ontario, No. 100180335; Saskatchewan, No. 28712; Ontario,

	No. 100180335; Saskatchewan, No. 28712
PROFESSIONAL ASSOCIATIONS	- Professional Engineer - Alberta, Ontario, Manitoba, Saskatchewan, British Columbia - Board for Professional Engineers, Land Surveyors, and Geologists of California & Washington - ASCE – American Society of Civil Engineers; AISC – American Institute of Steel Construction; USSD- United States Society on Dams; CDA – Canadian Dam Association; ASDSO.
HONORS & AWARDS	University of Manitoba Graduate Studies in Structural Engineering: Douglas Grimes Fellowship Award (2002); HDR Honors - Associate (2011); Energy NextGen Class HDR, 2012 (Selected for Business Development and Leadership Internal Program)
EMPLOYMENT HISTORY	Regional Director, KGS Group (2017 – Present) Civil / Structural Engineer & Manager, HDR Inc. (2009 - 2017) Civil Structural Engineer, JVIC Industrial (2008 - 2009) Civil Structural Engineer, KGS Group (2003 – 2008)

PROJECT EXPERIENCE

Hydroelectric and Water Resources

- Lake Michie Trash Rack Design - Mekan Hydro, North Carolina (2023-ongoing)**
 As part of a team with fabricator and contractor, to design, manufacture, and deliver 3 trash rack assemblies with intermediate beam supports for the trash racks structure. Project manager and engineer of record for a design of three trashrack panel, support beams, including the anchorage connection to the existing concrete structure for 3 existing bays. This included review the engineering design, calculations, drawings, and shop drawing details.
- 2024 Part 12D Comprehensive Assessment and L2RA for Rio Development FERC No. 9690, Eagle Creek Renewable Energy, NY (2023 – ongoing).**
 Part of a team to perform a Part 12D and Level 2 risk assessment facilitation for this Rio Development. This project is in the early stage of preparing the inspection plan, and will consist of comprehensive field inspection including CA Pre-Inspection preparation report and CA report for the dam in accordance with Appendix 16-C and 16-B of FERC guidelines respectively, and coordinate/conduct a PFMA / L2RA workshop as part of this CA in accordance with FERC guidelines Chapter 17 & 18.
- Georgia Power Oliver Dam Gantry Crane Replacement Specifications, BCI Construction, Georgia, (2023-ongoing)**
 KGS Group to assist with a condition assessment and specification development of two gantry cranes at the

Oliver Dam owned and operated by Southern Company Services.

- **Radial Gate Hoist Machinery Drafting & Engineering Support, BCI Construction, Kentucky (2023-ongoing)**
As part of a team with the contractor to install new hoist machinery and structural platforms/ladder for spillway radial gate. Providing drafting, shop drawings and engineering support.
- **Timiskaming Dam Safety Review, Public Services and Procurement of Canada, (2020-ongoing)**
Part of a large team for a dam safety review of two dams (Ottawa & Quebec). Assisted in review of the inspection report for both dams and was the lead in the seismic evaluation of a dam using a linear response spectrum analysis.
- **Wells Hydroelectric, Mechanical Lifesafety Projects, Douglas County PUD (2021 – Ongoing) -**
Project Manager, Site Inspector, and Design Engineer. Provide support under the professional service agreement for life safety program at the well generating stations and associated spillway structures. Design and analysis of passive and active life safety components, handrails, platforms and support structures.
- **Barkley Dam Spillway, CFD Model to Assess Hydraulic Forces on Bulkhead and Lifting Beam, USACE (2021-ongoing)**
Project manager for a CFD model developed for Barkley Dam Spillway using the commercially available Flow3D software to assess the dynamic hydraulic forces acting on an emergency spillway closure bulkhead and supporting lifting beams as they are lowered into the spillway flow. The CFD was used to determine maximum hydraulic downpull and uplift acting on the existing bulkhead and proposed new lifting beams as they are lowered towards the spillway sill under full spillway flowing conditions to ensure that the gantry crane had sufficient capacity to safely lower the bulkhead and beams in the event of an emergency closure. Working with the crane manufacture COH to determine the loading condition of the crane.
- **Jordan River, Dynamic Seismic Evaluation of Non-Structural Components & FMECA Process & Risk Workshop - L&S Electric (2020-2022)**
Project Manager and Structural Seismic Engineer of Record performing an analysis and evaluation for non-structural component equipment's, and anchorage support of several plant control equipment components (i.e. Governor Control Cabinet, LOS2 Cabinet, HPU, Accumulators, Distribution Valves, Sump Tank, Piping, Cable Tray etc.), and qualifying the conformance of the equipment, and support or means of anchorage to withstand seismic event loading, using the IEEE 693-2018 *Recommended Practice for Seismic Design of Substations*. The qualification methods used were pseudo-static (static coefficient) analysis and or dynamic response spectrum analysis. The FEA dynamic analysis using SAP2000 Version 22 Advanced, was used in the analysis to evaluate whether the equipment can withstand seismic loading. The equipment finite element model is analyzed using modal spectrum analysis. The Seismic Qualification reports provided descriptions of the equipment, mass distribution, spectral acceleration, and structural modeling. Results included modal responses, displacements, shell stresses, and frame forces. The shell stress and frame forces were coded checked against AISC Manual of Steel Construction and CSA S16-14. In addition to seismic evaluation of the components, a Failure Mode Effect Criticality Analysis (FMECA) was performed using IEC 60812 FMEA process. This includes the phase 1 planning (decision criteria, criticality scales and methodology), phase 2 execution (Workshops), and phase 3 reporting (detailing and documenting the FMECA process & workshops, and results). KGS Group facilitated the process and workshops for the criticality of the components which included all subject matter experts for all pertinent fields from both the client and owner staff.
- **Wylie Hydro Station Spillway Gantry Crane - Duke Energy, REEL COH, South Carolina (2021)**
Structural Lead for the detailed analysis of a gantry crane design. The 5T gantry crane design will be installed on the existing rails of the runway beams on this spillway superstructure. The gantry crane is used

for maintenance purposes only. This gantry is replacing the existing travelling screw stem hoist machinery, and is not used for gate operations. A stability analysis will be performed to determine the minimum stability factor against overturning with specified loads applied in the least favorable manner using the load combinations per CMAA#70 and applied reactions will be compared to allowable superstructure limit constraints. In addition, member capacity check will be based on AISC LRFD methodology. The standards used for the structural design of the gantry crane; CMAA#70-2014, OSHA, ASCE7, AISC 15th Ed., and AWS.

- **Wylie Hydro Station Spillway Hoist Superstructure, Duke Energy, REEL COH, South Carolina (2020-2021):**
Follow up to FERC Dam safety project supporting Reel COH as engineer of record and lead structural for detailed assessment of existing 11-bay spillway gate hoist superstructure to replace the existing traveling screw stem hoist. Prepared detailed analysis under the new hoist(s) load cases, accounting for the modern design practices and load combinations. The assessment is to verify the loading and capacity of the superstructure, check of connections, and provided any recommendations to the upgrades as required, including addressing FERC comments.
- **Dam Safety Assessment and Risk Mitigation Induced Seismicity for the Brazeau Dam, Alberta Environment and Parks (2020-2021)**
Part of a large team to evaluate the safety of the Brazeau Structures with respect to seismicity. Lead structural for concrete type structures. Performed a study to identify risk mitigation and management measures including safe setbacks for the Brazeau Dam and its associated structures from potential induced seismicity due to resource development in the region. The study included the Power Canal Dikes, Main Dam, and Spillway. The scope of work included a review and to establish: Basis for making risk-based dam safety decisions; Criteria for stability and risk assessment considering both deterministic and risk informed approaches using current applicable dam safety standards and best applicable practices; Risk management /mitigation measures; Methodology for the dam safety and risk assessment using semi-quantitative risk analysis (SQRA) for the development. This also included several workshops to facilitate the PFMA and risk-based dam safety decisions making efforts. The assessment used an @Risk multi event model with numerous scenarios considered to assess failure modes and probabilities.
- **Intake Assessment for Trash Rack Clean Machine, Yukon Energy Corporation, (2020)**
Project Manager and senior structural engineer for the analysis and assessment of an intake hydraulic concrete structure to withstand new trash rack cleaning machine loads on the existing deck, and design the required modifications. The analysis used a Finite Element Analysis SAP2000 to model the structure, define the boundary conditions, different load cases, and load combinations based on NBCC. Intake analysis components included intake deck using the moving loads from the trash rack machine, including the piers, training walls, concrete beams, and foundations. Design deck retrofit to accommodate rail connections, and make any modification to reinforce the existing intake structure.
- **Miter Gate Feasibility Study, St.Lawrence Seaway Management Corporation (2022 -ongoing)**
Project Manager and lead structural on the assessment of multiple size of miter gates (i.e., 82ft, 42.5ft, and 32.5 ft) for rehabilitation and or replacement for all Locks 1 -8. The scope of work included repair options for existing gates, and new modern gate design option for replacement. The following were considered as a minimum for all options: effects on structural and coating repair based on acceptance criteria, AACE class 5 probable cost opinion for all options, work and transportation schedule, semi-quantitative risk assessment, and lifecycle cost analysis.
- **Miter Gate Assessment and Inspection, St.Lawrence Seaway Management Corporation (2021 -ongoing)**
Project Manager and lead structural on the assessment of multiple miter gates and inspection activities. In addition, supported the modification and retrofit repair required through the condition assessment of these gates. Also, a complete comprehensive inspection activities including NDT testing which included UT

and Pulse Eddy Current methods.

- **Miter Gate Limit Failure Analysis, St. Lawrence Seaway Management Corporation (2020)**
Project Manager and Lead Structural Engineer in the modeling and evaluation of the 82 ft tall miter leaf gate. Stress analysis using FEA SAP2000 on the critical structural members to determine if the vessel impact load on the gate possesses a high risk that could lead to a failure. ETL 1110-2-584 was used as a guideline.
- **Valve Seismic Support and Anchorage Analysis for Big Dalton Sluiceway Dam Facility - DeZURIK | APCO | HILTON Valve, WA (2020)**
Project Manager and Structural Engineer of Record in the evaluation of a mechanical equipment (36" Jet Flow Valve) type system analysis and a seismic calculation to confirm the anchorage and foundation can withstand the operational and seismic loading capability per industry standards (ACI, IBC, ASCE).
- **Tainter Valve Analysis & Design, St. Lawrence Seaway Management Corporation (2020-ongoing)**
Project manager and lead structural engineer in the analysis of existing 15 ft. wide x 14 ft. tall tainter valve and design of a replacement valve. This analysis and design used a finite element analysis (FEA) software in SAP2000 to model the valves. For existing valve, structural analysis was used to determine the adequacy of members, and performed hand calculations to check the adequacy of connections. The United States Army Corps of Engineers (USACE) engineering manuals were closely followed for the development of the loading criteria, analysis procedures, and capacity calculations. Also, a material feasibility study for the purpose to aid in the material and coating selection for the design of the new replacement tainter valve. A detailed design for supply and installation of these new valves with the deliverables including stamped 2D design/assembly drawings, design documentation report, and detailed design of the connections. KGS Group is currently assisting the client as owner engineer for the fabrication and installation of the one of the gates.
- **Chehalis Basin Dam and Fish Passage Bulkhead and Radial Gate Preliminary Design, Washington (2016 - 2017)**
Structural Engineer responsible for the preliminary conceptual design of high head fixed wheel gates and radial gates using the USACE manuals for concrete hydraulic structures, spillway tainter gates design, and hydraulic steel structures. Preliminary design consisted of calculating some of the loads on the bulkhead and the gates and refining the thickness and gate member sizes.
- **Merwin Dam Spillway Radial Gate Retrofit and Analysis - PacifiCorp, Washington (2016 - 2017)**
Assisted in project management and Structural Engineer of Record in retrofitting four 39-foot-wide by 35-foot-high tainter gates at Merwin Dam. Analysis of the existing radial gates in SAP2000 and checked connection capacities, and reviewed the strengthening design of the existing gate to meet current PacifiCorp criteria. The deliverables included a design documentation report, structural plans, technical specifications, and an opinion on the probable cost of construction for upgrades to the gates. The retrofit involved: upgrades to the main top strut arms that included adding 1-1/8 inch thick partial-length cover plate to the top flange of the struts; addition of horizontal members (trunnion ties) that tied together the main struts on each side of the gate; upgrade of the main top and bottom strut to trunnion connections by replacing the A307 bolts with A325 bolts and the existing angle sections that splice the strut to the trunnion casting with new splice angles of same size; and replacement of the lowest diagonal brace in the internal vertical frames of the gate.
- **Merwin Dam Gate Extension Replacement - PacifiCorp, Washington (2017)**
Structural engineer of record responsible for the design layout of the new gate extensions to increase the height of the skin plate 5 feet for the tainter gates, performing the associated design calculations to size members and connections, reviewing production drawings, and developing the technical specifications.

- **Ragsdale Spill Gate Controller Project - Pacific Gas and Electric Company, California (2012)**

This project involved the replacement of actuators on spill gates for a canal with modifications to the support structure and components and review of gate design for modification. Served as the Design and Analysis Lead for support structure beams and hold down supports and anchors including preparation of the design criteria, scope, schedule and budget.

- **Spray Hydroelectric Station Life Extension and Powerhouse 160/20 Ton Crane Upgrade- TransAlta, Alberta (2013 - 2015)**

HDR served as Owner's Engineer for TransAlta's multi-year hydro redevelopment program for the Spray (103 MW) hydroelectric facility, which was intended to extend the service life of the facility to the year 2050 and beyond. Approach to the programmatic life extension program assessed the maintenance and rehabilitation needs of the facility and its components. Conducted detailed condition assessments of civil works such as powerhouse superstructure/substructure, overhead crane, intakes, penstocks, and discharge structures. Served as engineer of record and lead technical structural engineer for conducting the condition assessment and estimating the powerhouse crane, head gate, tailrace gate, penstock, and turbine inlet valve upgrade alternatives at the Spray Hydroelectric Station. Steel penstock evaluation and stress calculation (ASCE Manual 79 for steel penstocks) to review the effects of the calculated pressure surge for the results of the Hydraulic Transient review. Coordinated development of the final balance of plant, civil, electrical, and mechanical scopes of work based on TransAlta's desired objectives. Led the site evaluation, reviewed existing operational data and drawings, and prepared a work plan specification report to assist in the inspection of the Powerhouse 145/10 Ton Crane Condition Assessment for an uprate capacity. The project included the rebuild of Units 1 and 2 scheduled to begin in the year 2014 and required replacing the existing powerhouse crane to achieve larger lifting capacities. New Crane 160/20 Ton was required and worked with Reel COH the designer, installer, and fabricator of the overhead crane. Led and supported the structural evaluation of the Powerhouse frame superstructure, roof structure, crane runway support structure as well as any proposed modifications to meet loading requirements. This analysis included FEM modeling to existing steel superstructure, runway and roof framing, and generation of all existing and new loads, analysis of existing members, connections, base plates, anchor rods, as well as new member design and details. Also, Rock anchors were determined to be necessary to stabilize the powerhouse superstructure for the design lateral loads (side thrust) imposed during the crane operation. Analysis was based on codes and standards: CMAA 70, CISC "Guide for Design of Crane-Supporting Steel Structures", NBC, and CSA S16. Led the design of new modifications to the balance of plant overhaul in the powerhouse, which included design and analysis of cable tray supports, pipe supports, concrete foundation for mechanical and electrical equipment, and modification to the control room. Also, provided construction engineering services during construction related to all modifications of the superstructure, runway, and new rock anchors/connection support, including structural observation, review of submittals and RFIs, attended meeting, and answered design construction questions. In addition, assisted in acceptance testing of the new crane and the modification of the powerhouse superstructure. This included review and support in the load test requirements for the capacity within the hook approach.

- **Ketchikan Lakes and Beaver Falls FERC Part 12D Independent Consultant Services - Ketchikan Public Utilities, Alaska (2014 - 2015)**

The project involved assessing safety inspections in accordance with FERC Part 12D Guidelines, Dam Safety Performance Monitoring Program. Served as a project manager and civil structural engineer to perform a comprehensive field inspection of the existing Ketchikan Lake and Beaver Falls Dam facilities, which included the reservoir rim, several storage dams (rockfill embankment structure with a wood core wall), spillways, reservoir outlet facilities, power intake facilities, and multiple powerhouses. Work included on-site inspection, document review, and participation as a core team member in the PFMA review session for the development. Provided analyses, evaluations and assessments of project facilities, documents, plans,

and programs to ascertain compliance with FERC regulations, and prepared a CSIR report and associated documentation for Ketchikan submittal to FERC. Review the STIDs, DSSMP and the DSSMR for the project.

- **Wellington Wood Stave Surge Tank Building Inspection - SaskPower (2019)**

Project Manager and Engineer of Record for the pre-inspection planning, inspection, and post inspection analysis and conditions assessment, and reporting, which includes the evaluation of the repair and/or replacement alternatives and the feasibility of providing an inspection hatch for the project.

- **Seismic/Dynamic Assessment Phase 1 for 6 high consequence dams - Alberta Environment and Parks (2017-2018)**

Project Manager/Structural lead responsible in selecting the key sections of the critical components of the dam and appurtenant structures identified for the analyses at each site, based on the review of the background information (i.e. DSR, instrumentation & monitoring, historical info etc.), and field inspection of the facilities. Assessed the vulnerability of chosen structures to Induced (near field) and Natural Tectonic (far field) earthquakes. Perform a dynamic analysis of the selected critical dam and appurtenant structural components to assess the sensitivity of each structural system under the dynamic loading conditions. Newmark deformation analyses were completed for the earth dams. Performed a 2D stability assessments under dynamic loading conditions using equivalent-linear site response analysis and traditional rigid body / slope stability methods. Also, a nonlinear dynamic time-history analysis for Induced and Natural Tectonic earthquakes using OpenSees and ANSYS software. Prepared a calculation package for the evaluation and a report summarizing the analysis, results and providing recommendations. A risk assessment workshop for the analysis performed was discussed and provided recommendations to the next phase of the RIDM.

- **Coteau Creek Life Assessment Inspection - SaskPower, Saskatchewan (2017)**

Part of a multi-disciplinary team inspecting, assessing, and providing a condition assessment report for the turbine pit, discharge ring, runner, stay vanes, wicket gates, bottom ring, head cover, servomotor, operating ring, wicket gates links and levers, intake service gate and bulkhead gate, and hoist machinery equipment. Lead structural and engineer of record for the conditions assessment report.

- **E.B. Campbell Head Gate & Trashrack Technical Specification - SaskPower, Saskatchewan (2016)**

Part of a team that contributed to the technical specifications for a single leaf, fixed wheel, vertical lift head gate and intake trash rack. The intent of the Technical Specifications was to describe certain materials, features, and design requirements of the Work. The specification would provide the basis of the design, supply, install, and commission of the head gate and trash rack. The goal was to have a new trash rack with reduced losses, an improved cleaning provision, a new trash rack follower; new head gates with reduced maintenance, better sealing capacity, and new or refurbished embedded parts. The team also coordinated with mechanical engineers concerning the gate seals, hydraulic hoists, and gate assembly.

- **BC Hydro Seton Hydroelectric Facility Seismic Evaluation - L&S Electric (2018)**

Project Manager and Structural Engineer of Record performing an analysis and evaluation for structural equipment, and anchorage support of five plant control equipment components (Governor Control Cabinet, HPU, Accumulator Rack, Servomotor, Piping), and qualifying the conformance of the equipment, and support or means of anchorage to withstand seismic event loading, using the IEEE 693-05 *Recommended Practice for Seismic Design of Substations* and British Columbia Building Code (BCBC). In addition, performing an FEA dynamic analysis using SAP2000 Version 20 Advanced, on the HPU and Accumulator Rack assembly. The seismic analysis qualification method that is being used is a dynamic analysis to evaluate whether the equipment can withstand seismic loading. The equipment finite element model is analyzed using modal spectrum analysis. The Seismic Qualification reports provided descriptions of the equipment, mass distribution, spectral acceleration, and structural modeling. Results included modal responses, displacements, shell stresses, and frame forces. The frame forces were coded checked against

AISC Manual of Steel Construction and CSA S16-14.

- **TransAlta Generating Stations Thrust Bearing High Lift Modifications - Kingsbury (2020)**
Project Manager - As part of Transalta's upgrades to two of their Generating Station, high lift systems were added to each of the units. As a subcontractor to Kingsbury, KGS Group assisted with the design of the thrust bearing high pressure lift shoe modifications, addition of RTDs, and hydraulic piping. Reviewed and approved the thrust bearing calculations, thrust bearing machining details, pump and orifice sizing, hydraulic piping design, component selection, and design drawings.
- **Lower Valley Powerhouse Stability Analysis, Enel, New Hampshire (2015 - 2016)**
Evaluated the stability/overturning of Lower Valley Powerhouse structure in accordance with current industry state-of-the-practice for the analysis of water retaining structures, and in conformance with the current Federal Energy Regulatory Commission's Engineering Guidelines. The stability analysis load cases and the associated factors of safety were in accordance to Ch. 10, Section 8, and Ch. 3 of the FERC guidelines.
- **Wuskwatim and Conowapa Generating Station - MB Hydro, Manitoba (2004 - 2006)**
Design Engineer part of a large team - Performed detailed analysis and design for a new Wuskwatim 206MW hydroelectric generating facility Burntwood River. Also, review and design of Conowapa Hydroelectric Station. This design included dam and spillway structures, and new spillway hoist housing tower structure (moment and bolted connections), new stoplogs and gates, guides, reinforced concrete spillway structure, intake, service bay and other water retaining structures and earthfill retaining walls, and powerhouse. The analysis and design included concrete and steel components, such as two way slabs, columns, walls, foundation etc.
- **Sechelt Creek Powerhouse Ball Valve Lifting Analysis – Regional Power (2020)**
Engineer of record for the structural assessment of existing mezzanine floor structure members supporting ball valve lifting equipment, and review of temporary lifting beams and connectors, including design of new components and reinforcement for the below the hook lifting device for the handling of the valve.
- **Balch 1 Powerhouse Seismic Analysis and Support/Anchorage Design - Pacific Gas & Electric, California (2012)**
Seismic analysis and structural design requirements for the support system required for cable trays. Also provided assistance in the analysis and evaluation for anchorage of three plant control equipment components (two transformers, and a MCC) using the IBC, ASCE, IEEE, FEMA standards in accordance with design guidelines and applicable industry standards to comply with the recommended practice for Seismic Design of electrical/mechanical equipment.
- **Big Cliff Intake Gantry Crane Replacement - USACE, Oregon (2017)**
Structural Lead for the development of plans and specifications for the supply and erection of a new, 40-ton gantry crane. This work included design for the removal of the existing intake gantry crane, which was original, and its replacement with a new gantry crane, along with upgrades to the crane electrical bus system and enhancements to improve operations and safety. Deliverables included a Design Documentation Report, development of an interactive 3D model that will be used to assist the client with identifying the most efficient location for the crane cab on the new crane, preparation of the procurement specification package, and supporting calculation. This includes weight calculations of existing intake gates and stoplogs, friction forces associated with the removal of the gates, and analysis of lifting beams and spreader beams using the ASME BTH-1 2014. A stability analysis was performed to determine the minimum stability factor against overturning when specified loads were applied in the least favorable manner using the load combinations per CMAA#70 and applied reactions were compared to allowable deck limit constraints. The standards used for the structural procurement specification preparation were CMAA#70-

2014, OSHA, ASCE7-10, AISC 9th Ed., and AWS. The project was eligible for the National Register of Historic Places and emphasis was placed on maintaining the original design features of the gantry crane as feasible. Recommendations from the Crane Programmatic VE study will be incorporated into the project.

- **BC Hydro Mica Powerhouse Seismic Evaluation - L&S Electric (2018 - 2019)**

Served as Project manager and technical lead. Performed an analysis and evaluation for structural support and anchorage of four mechanical plant control equipment components and qualify the conformance of the support or means of anchorage to withstand seismic event loading, using the British Columbia Building Code (BCBC), IEEE 693-2005 Recommended Practice for Seismic Design of Substations (IEEE). The analysis was performed using a pseudo static equivalent lateral load method analysis. The frame support forces were coded checked against AISC Manual of Steel Construction and anchorage design using CSA S16-14/ACI 318-14.

- **BC Hydro Bridge River Hydroelectric Facility Seismic Evaluation - L&S Electric (2017 - 2018)**

Served as Project manager and technical lead. Performed an analysis and evaluation for structural support and anchorage of five plant control equipment components (a governor control cabinet, a Hydraulic Pump Unit, an accumulator bank, and two servomotors), and qualify the conformance of the support or means of anchorage to withstand seismic event loading, using the British Columbia Building Code (BCBC), IEEE 693-2005 Recommended Practice for Seismic Design of Substations (IEEE). The analysis was performed using a pseudo static equivalent lateral load method analysis. The frame support forces were coded checked against AISC Manual of Steel Construction and anchorage design using CSA S16-14/ACI 318-14.

- **BC Hydro GM Shrum Hydroelectric Facility Seismic Evaluation - L&S Electric (2017)**

Served as Project manager and technical lead. Performed an analysis and evaluation for structural support and anchorage of four plant control equipment components (sump tank, Governor Actuator Cabinet, and two accumulator tanks), and qualified the conformance of the support or means of anchorage to withstand seismic event loading, using the British Columbia Building Code (BCBC), National Building Code (NBC), and IEEE 693-2005 Recommended Practice for Seismic Design of Substations (IEEE). Also, performed a FEA dynamic analysis using ANSYS on a new governor control cabinet and distribution valve assembly. The seismic analysis qualification method used was a dynamic analysis to evaluate whether the equipment can withstand seismic loading capacity and conform to industry standards.

- **Pit 3, 4 & 5 Hydroelectric Project Design-Build - Pacific Gas & Electric, Burney, California (2009 - 2011)**

Full-time Field Site Engineer during construction, reporting to the Engineer of Record and Barnard Construction Company's (BCCI) Project Manager for an \$80 million design-build project. Responsibilities included overseeing construction activities to ensure compliance with the design intent, drawings, specifications and permits obtained. Also, performed regular inspections of both concrete and steel platforms, pipe supports, penstock, valve house superstructure/substructure, gate supports, and concrete foundations. Additional responsibilities included overseeing and interacting with site inspectors, reviewing and approving inspection reports, identifying technical support needed by HDR or its sub-consultants URS, Mead & Hunt, or SAGE throughout the construction process. Managed and approved requests for information/changes (RFIs) or design changes (DCNs) required to be prepared by HDR and its sub-consultants. Single-point-of-contact for BCCI and PG&E on all technical matters and staffing issues related to design support during construction. Interaction with agencies having jurisdiction over the project such as FERC, DSOD, USFS, and California Park Service. Designed review of new civil components or modifications to existing/new structures, penstocks, including design check, Quality Assurance/Quality Control, and drawing review. Penstock stress checks using the ASCE Manual 79 for steel penstocks. Lead in managing/coordinating the project closeout as construction was completed. Prepared and finalized the As-Built drawings and FERC exhibit drawings.

- **Top Running Overhead Crane Study & Modifications - DeZURIK | APCO | HILTON Valve, WA (2019)**

Project Manager and Engineer of Record for the uprate study of two existing overhead crane rated capacity of 5 tons (5T) and 10 tons (10T). The study is to replace the 5T crane with a greater capacity, 20T or 30T, top running bridge type multiple girder overhead crane. Analyzed the existing crane rail support structure and foundation with the loads from the existing 10T crane and a new crane to determine if it is feasible to install a new crane on the existing crane rail support structure. Provide recommended modifications to create an acceptable installation. Analysis was based from codes and standards: IBC 2015, ACI 318-14, CMAA 70, AISC 13th Ed., and ASCE/SEI 7-10. The study results were documented in a report. Final design and drawing upgrade modification to the crane supporting structure, including building permit support, and construction support.

- **Bonneville Powerhouse No. 2 Tailrace Gantry Crane Replacement - USACE, Oregon (2017)**
Structural Lead for the development of plans and specifications for the supply and erection of a new, 65-ton main hoist with a 15-ton auxiliary hoist gantry crane. This work included design for the removal of the existing Powerhouse 2 tailrace gantry crane, which was original, and its replacement with a new gantry crane of the same rated capacity, along with upgrades to the crane electrical bus system and enhancements to improve operations and safety. Deliverables included a Design Documentation Report, development of an interactive 3D model that will be used to assist the client with identifying the most efficient location for the crane cab on the new crane, preparation of the procurement specification package and supporting calculations. This included weight calculations of existing tailrace stoplogs, friction forces associated with the removal of the gates, and analysis of lifting beams and spreader beams using the ASME BTH-1 2014. The standards used for the structural procurement specification preparation were CMAA#70-2014, OSHA, ASCE7-10, AISC 9th Ed., and AWS. Recommendations from the Crane Programmatic VE study will be incorporated into the project.
- **Big Quilcene Dam & Headwork Rehabilitation Evaluation & Design - City of Port Townsend, Washington (2016 - 2018)**
As Lead Structural Engineer and assisted as Project manager, Phase 1, performed condition assessment of a timber crib rock fill dam and headwork facility. Headwork facility consisted of a concrete sluiceway with a bypass/sluice gate, and concrete intake structure with a trash rack and a control gate. Conducted an alternatives analysis to determine the best approach for repair or replacement of the timber crib dam and associated head work structure. Prepared conceptual layouts of project structures and estimated construction costs for feasibility. Assessment of alternatives considered both operational and physical constraints, environmental impacts, and addressed the sediment issues currently present at the headwork structure and dam. Also, a project description and construction plan were developed to assist the permitting approval stage with the agencies. The alternative chosen was the in-kind repair of the diversion dam. Phase 2, responsible for the design of the in-kind repairs to the dam, and providing the construction drawings, specifications, and bid package for the dam, apron modifications, including a new detailed design of sluice gate. Also, assisted with temporary diversion bypass and care of water for the construction repair. The repairs of the dam consisted of replacement of upstream/downstream timber facing boards, selective crib bent face and anchor logs with new logs and mechanically spliced to existing logs, and misc. hardware such as plate connectors and fasteners, rock fill restored, and concrete apron rehabilitation. Phase 3, provided engineering services during construction, including structural observation, review of submittals and RFIs, attended meetings, and answered design and construction questions.
- **Lac la Ronge Control Structure, Saskatchewan (2007)**
Completed detailed design of walkways, monorail hoist beams, support frames, stoplogs, stoplog follower, and stoplog storage cart.
- **Tunnel Inspection & Condition Assessment at Wynoochee Lake, City of Aberdeen, Washington (2020)**
The tunnel from the Wynoochee River to Lake Aberdeen is a gravity conduit tunnel with a 6.5 ft x 6.5 ft

horseshoe-shaped cross-section and a constant slope of 0.00085 ft/ft. The tunnel is concrete lined. Tunnel length is 15,063.3 feet (2.85 miles). KGS Group was retained and planned and executed a structural inspection, and condition assessment of the interior of the tunnel. Provided recommendations and a list of prioritizations related to maintenance and surveillance/monitoring plans. Also, KGS Group provided a site-specific inspection safety plan and procedures to define measures to be implemented to address worker safety, health, and protection of the environment for the field work, and worked with a contractor to provide safety and rescue retrieval stand-by support.

- **Wanapum Dam Spillway Displacement Root Cause Analysis - Grant County PUD, Ephrata, Washington**

The project team investigated the root cause analysis of cracking along a lift joint in a concrete gated spillway structure at Wanapum Dam. The cracking required and draw down of the reservoir and significant remediation efforts. The work included document review, developing field testing programs, conducting finite element analyses to evaluate stresses and deflections in the existing structure, and a Risk Informed Decision Making (RIDM) assessment of risk for an interim construction condition with a partial pool raise. The Technical team participated in several Board of Consultants meetings, working closely with the Owner, FERC, and the team of consultants working towards the successful, fast-track remediation of the project. I supported with initial investigation calculations review and reviewing data historical data and documentation.

- **Rush Creek Hydro Penstock Modification, Southern California Edison, California (2017)**

Due to record snowfall resulted in basin runoff projections that exceeded the discharge capacity considering the reservoir level restrictions imposed by FERC. HDR provided support to find means to increase discharge capacity. Assisted in evaluation of alternatives to increase discharge capacity, solution focused on existing modifications and new outlets on the penstocks. A team of hydraulic, structural, and geotechnical engineers were part of these modifications. Assisted with structural activities; 18" and 24" bypass new cut, design reinforcing, and welded tee section on existing 48" penstock (AWWA & ASME design criteria); 18" and 24" release bypass valves; 18-inch tee with design of a post-tensioned thrust block for a new penstock outlet, calculated penstock and pipe stress (AWWA & ASCE MOP79) at new valve locations and at modifications.

- **Alta Line Breaker Seismic Analysis and Anchorage Design - Pacific Gas & Electric, California (2009)**

Performed an analysis and evaluation for anchorage support of 17.5 kV breaker, for conformance of the structural support and anchorage using the IBC and ASCE standards in accordance with design guidelines and applicable industry standards to comply with the recommended practice for Seismic Design of electrical/mechanical equipment.

- **The Dalles Lock & Dam & Sam Rayburn Dam - USACE, USA (2016 - 2017)**

Provided structural support for upgrade and design components for a new fish unit breaker replacement project at The Dalles and a transformer upgrade at Sam Rayburn. Some of the tasks were based on analysis and design of existing and new lug plates, anchors design, transformer hold downs, transformer load rating of deck, design of concrete pad, transformer demo, containment wall barrier upgrade, cable tray and bus duct supports, and intake trolley pole anchor design.

- **Oxbow Development Penstock and Penstock Dresser Coupling Structural Condition Assessment - Idaho Power Company (2016)**

As Lead Structural Engineer performed a condition assessment and structural evaluation of four 23 foot diameter penstocks and bolted sleeve type couplings per FERC Requirements. The analysis consisted of evaluating the internal hoop stresses at two sections of the exposed penstocks and dresser couplings in accordance with ASCE MOP79 2nd edition and ASME2010. Prepared a calculation package using Mathcad 15 for the evaluation and a technical memo summarizing the results and providing recommendations.

- **Bucks Creek Intake Valve House 54-inch Penstocks Standpipe Replacement - Pacific Gas & Electric,**

California (2012-2013)

Tunnel entering a Valve house and bifurcating into two-54 inch penstock, with butterfly isolation valves. Standpipes 30 inches located directly downstream of the valve house. Both the penstocks and standpipes are constructed of riveted steel. Assisted in the inspection and evaluation of the existing penstocks/standpipes and developed various retrofit alternatives in a report. Hydraulic loads were provided through a Hydraulic Transient Analysis performed. Completed the detailed structural design for the selected retrofit alternative to replace the standpipe, and made modifications to the penstock to provide pressure relief to the system, including an access platform design with skillet flange details. The modification to the penstock; pressure relief consisted of main air valve (configuration set of 2 – 12 inch combination air and vacuum release valves) for each penstock, connected to each penstock by 12 inch headers and 12 inch dia, flanged nozzle welded to existing penstocks in the existing anchor block upstream of the standpipes.

- **Coleman-Asbury Pipe Project - Pacific Gas and Electric Company, California (2011)**
Provided project support and design review of a 36-inch-diameter steel penstock using the ASCE Manual 79 for steel penstocks.
- **Melvin R. Sampson Coho Hatchery Trashrack Design - Mekan Hydro, Washington (2018 - 2019)**
As part of a team with a fabricator and engineer, provided design support and was the engineer of record for a design of an HDPE trashrack panel and three horizontal support beams, including the anchorage connection to the existing concrete structure. This included review the engineering design, calculations, drawings, and shop drawing details.
- **Intake Design Mud Mountain Dam Fish Passage Facility - Cascade Water Alliance, Washington (2016 - 2017)**
Lead Structural Engineer in the analysis and design for a concrete intake structure modification using Finite Element Analysis. A BIM model REVIT to SAP2000 was used and the 3D model was modified into SAP2000 to defined boundary conditions, different load cases (including seismic, hydrostatic, impulsive and convective dynamic pressure), and load combinations based on ASCE7-10. Intake design included intake deck using an HS-20 truck and mobile crane loading, intake piers, training walls, sluiceway, foundations, bulkhead gate and a review of radial gates design.
- **Sewer Pipe Cap and Footing Design, Sutter Butte Flood Control Agency TO 15 Basis of Design, California (2016)**
As Lead Structural Engineer performed design and analysis of two sewer line cap structures comprised of a concrete structural slab and footing. Loading requirements were based on HS-20 truck loading and design was based on IBC2015. SAP2000 and RISA Foundation were used to analyse the slab and footing.
- **East Highline Reservoir Design, Imperial Irrigation District, California (2017 - 2018)**
New reservoir sites located in close proximity to the All-American Canal (AAC) and the East Highline Canal (EHC) to provide greater operational flexibility, meet water deliveries and conserve water. Served as Project manager and Lead Structural Engineer/Engineer of Record in the analysis and design for several different types of concrete structures for the reservoir site using Finite Element Analysis software SAP2000. The reservoir site structures include: Concrete Double box culvert, Concrete Inlet Structure, Concrete Outlet Structure, Concrete Meter Vault Structure, Concrete Outfall Structure, Transition upstream and downstream structures, Bridge Deck over Inlet structure and Steel Stoplogs. Analyzed and generated a 3D model for each of the structures in SAP2000 and defined boundary conditions, different load cases (including seismic, hydrostatic, impulsive and convective dynamic pressure, etc.), and load combinations based on Bureau of Reclamation Water Conveyance Systems Design Standard Chapter 12, and ASCE7-10. The design for different elements such as walls, slabs, decks, bulkhead gate and guides, and frame members was based on ACI318-14 and AISC 360 14th edition. AASHTO LRFD Bridge Design 7th Ed.

requirements were used for truck loading and additional farm equipment tractors loading were used for deck design.

- **Prospect No. 1, 2 & 4 Hydroelectric Project North Fork Dam Stress and Stability Analysis - PacifiCorp Energy, Oregon (2015)**

Lead Structural evaluated the stress/stability of the North Fork Dam for the concrete Non-overflow, Sluiceways and Intake Structure in accordance with current state-of-the-industry practice for the analysis of dams, and in conformance with the current Federal Energy Regulatory Commission's Engineering Guidelines. The load cases analyzed included normal, unusual and extreme loading conditions. Also, used structural SAP2000 model for the spillway seismic response spectrum analysis, consists of three major components as pier, ogee and the rock. Acceptance strength criteria for both cases of plain concrete and reinforced concrete are based on EM 1110-2-6053.

- **Elwha Temporary Diversion Pumping Facility, Olympic National Park, Washington (2013)**

Structural Engineer for this project, which included the design of a temporary diversion pumping station as well as the design various concrete and steel structures including HDPE Restraints, HDPE Anchor Blocks, and generator foundations for the pump station.

- **Weiss, Neely-Henry, and Logan Martin Development Draft Tube Working Platform, Coosa River Project - Alabama Power Company (2016 - 2017)**

Part of a team in a structural design of three different draft tube platforms for a turbine aeration enhancement project to install an aeration ring at the draft tube liner. The platform was designed using steel members and bolted/welded connections supported on the draft tube liner. Analysis and design of steel pipe supports and steel platforms for the new piping for the aeration system. Stress checks performed based on AWWA.

- **Lake Tapps Headgates Improvement - Cascade Water Alliance, Washington (2014)**

Lead Structural Engineer for the design of a steel platform for a mechanical actuator used to lift head gates. Existing Head gates were inspected, analyzed and modified for new pick points and to bring them back up to standards by strengthening the gate. Production of gate design drawings, and response to the corresponding fabricator/contractor RFIs and submittals.

- **Confidential Client, Due Diligence Engineering Assessment, Ontario, Canada & New York, United States (2012)**

As part of a large team, provided support for a due diligence effort associated with the acquisition of ten project facilities located in New York and Ontario. The activities in support of the due diligence effort were: review of design, construction, operating and maintenance documents; perform site visit; develop a CAPEX and major maintenance expenditure, and a technical memo documenting the findings of the due diligence engineering assessment.

- **Sewer Culverts, Pump House & Flap/Sluice Gate & Concrete/Steel Structures Inspections - City of Winnipeg (2006)**

Field inspection to assess the existing conditions of the sewer system facilities. Inspection included pumps, gates, concrete foundation, buildings, mechanical components, and sewer culverts (concrete lined, steel pipe, corrugated metal) and weirs. The inspections included thickness measurement to evaluate shell corrosion, pitting and visual inspection of rust blisters, plate joints, and rivet heads. Evaluated, assessed and provided recommendations for each component and foundation conditions.

- **American River Common Features Basin Reach I - USACE, California (2015)**

Structural Engineer responsible for a new concrete vault design for existing water main and storm drainage lines at the top of a levee for the Sacramento Department of the Army Corps of Engineers (USACE). The applicable codes and specifications used for the vault design were the US Army Corps of Engineers EM1110-

2-2104 reinforced-concrete hydraulic structures and ACI 350-06.

- **Minter Creek Hatchery Intake and Dam Facility Predesign - Washington Department of Fish & Wildlife, Washington (2016)**

Lead Structural Engineer responsible for a condition assessment of two low hazard dams (concrete dam and steel sheet pile dam) and their associated concrete gravity intake structures. Evaluated alternatives per hydraulic structure to rehabilitate or replace the existing structures, intakes, and pipeline. Determine the preferred alternative for the repair or replacement of the intakes including automated cleaning systems, associated controls and pipeline modifications. Prepared conceptual layouts of project structures and estimated construction costs for feasibility. Assessment of alternatives considered both operational and physical constraints, environmental impacts, and addressed the sediment issues at the intake structure facility.

- **Trash Rack & Bulkhead for Intake structure, Tazimina Hydroelectric Plant, Alaska (2016)**

Design and analysis of the trash rack intake. The trash rack assembly was comprised of fabricated wedge-shaped tubing welded to a square tube frame, with intermediate stiffeners. The trash rack design incorporated hollow steel tubing filled with a recirculating heated glycol mixture to aid in reducing icing. The tube rack design consisted of evaluating static stress, ice impact loads, head loss versus design head loss, and avoiding operating under resonance conditions. The natural frequency of the rack was checked versus the forcing frequency to prevent a resonant condition from developing. Design and analysis of an intake bulkhead using both a steel and aluminum structure.

- **FERC Part 12 Support Baker River Project - Puget Sound Energy, WA (2014)**

The project involved assessing safety inspections in accordance with FERC Part 12D Guidelines, Dam Safety Performance Monitoring Program. Part of a large team, as a structural engineer assisted with some aspects of the comprehensive field inspection of the Baker River Project, which included a 285-foot-high arch dam, a 300-foot-high concrete gravity dam, and a zoned embankment with a thin sloping core. These activities included Potential Failure Modes Analyses (PFMA), reviewed and updated the Supporting Technical Information Documents, and participated in the preparation and review of the Dam Safety Surveillance and Monitoring Plans (DSSMP) and Dam Safety Surveillance and Monitoring Reports (DSSMR).

- **Wanapum Dam Spillway Displacement Root Cause Analysis - Grant County PUD, Ephrata, Washington**

The project team investigated the root cause analysis of cracking along a lift joint in a concrete gated spillway structure at Wanapum Dam. The cracking required and draw down of the reservoir and significant remediation efforts. The work included document review, developing field testing programs, conducting finite element analyses to evaluate stresses and deflections in the existing structure, and a Risk Informed Decision Making (RIDM) assessment of risk for an interim construction condition with a partial pool raise. The Technical team participated in several Board of Consultants meetings, working closely with the Owner, FERC, and the team of consultants working towards the successful, fast-track remediation of the project. I supported with initial investigation calculations review and reviewing data historical data and documentation.

- **Brownlee Power Plant Parking Ledge Platform - Idaho Power Company (2016)**

Project Manager and Lead structural engineer on a parking ledge platform design for maintenance work to the bottom ring of a Francis Unit. The platform was designed in two half sections, using steel members and bolted/welded connections.

- **Howard A. Hanson Dam Spillway Gate Analysis - USACE, Washington (2015 - 2016)**

Structural Engineer responsible for the analysis of the trunnion girder, post-tensioned anchorage, and pier evaluation for the respective reaction loads generated by the SAAP 2000 tainter gate model. The evaluation was in accordance with EM 1110-2-2702, EM 1110-2-2105, and ETL 110-2-584.

- **Steam Station Groundwater Assessment Program - Duke Energy, North Carolina (2014 - 2015)**
Site Manager at Cliffside and Marshall for an environmental groundwater assessment program for ash basins located at Duke Energy fossil stations. Responsibilities were to manage the drilling operation of the well, installation of the wells, development of the wells, and sampling and testing of the wells. This included speciation sampling and slug testing. Responsibilities also included overseeing construction to ensure compliance with the design intent, drawings, specifications, and permits obtained.
- **Fish Barrier Structure Apron Repair - Cascade Water Alliance, Washington (2014 - 2015)**
The Lead Structural Engineer for the temporary fix of an apron on the timber crib dam. Assisted in the design of a steel cofferdam and connections for the phase 1 and 2 apron repair.
- **Due Diligence Engineering Assessment - Confidential Client, Chile (2014)**
As part of a large team, provided support for a due diligence engineering review of two Chilean hydroelectric projects to assess condition, value and life and, therefore, the viability of potential acquisition of two small run-of river hydroelectric plants in Chile, near Linares in Region VII. Design, construction, operating and maintenance documents were reviewed in detail. In addition, review of project cost, O&M costs, remaining useful life, and future capital cost replacement and upgrade costs associated with those life projections. The team identified potential risks and deficiencies and provided information on the potential future project risks.
- **Upper Baker Dam Foundation Drain Cleaning - Puget Sound Energy, Washington (2013 - 2014)**
Review the STIDs, DSSMP and the DSSMR, and Dam Safety Inspection Report FERC Part 12. This concrete dam had several drain systems in place to reduce uplift pressure with instrumentation in place to monitor the uplift pressures. Developed firm criteria to indicate when drains should be cleaned, and for documenting drain performance, and how it is affected by cleaning activities. Served as Project manager and technical lead in the efforts to develop and prepare a monitoring procedure, drain cleaning plan, and piezometer maintenance and testing procedure for these foundation drains. Also led the field crew in the inspection of the drains and implemented the actual drain cleaning activities.
- **Drum YB-137 Gate Controller & Building/Structure Replacement Project - Pacific Gas and Electric Company, California (2011 - 2012)**
This project involved replacement of actuators for the existing radial spill gate system and reconstructing the support structures, hoist housing buildings and new foundations with modifications to existing electrical and mechanical components. Served as Lead Structural Engineer in the design of a new support hoist housing structure and foundation. Assisted in the preparation of the scope, schedule and budget on the civil section of this project, as well as in the preparation of the design criteria and response to client needs on constructability issues and constraints. Dynamic response spectrum analysis was performed due to the various irregularities of the structure.
- **Rio Bravo Hydro Electric Project - Catalyst Energy Development Corporation, California (2013)**
Performed a stress analysis of the diversion dam due to the proposed modifications to the dam. These modifications included adding two piers on the crest of the dam to support the access bridge and adding two holes through the dam for sluicing the sediment.
- **Stanislaus Battery Building - Pacific Gas & Electric, California (2012)**
Design of a one level concrete building, concrete shear walls, foundation and roof system for a battery building enclosure.
- **Study of Sediment Management Alternative, Rio Bravo Hydroelectric Project - Kern Hydro Partners, Bakersfield, California (2013)**
Assisted in the assessment of alternatives, both operational and physical, to pass sediment through the Rio Bravo Diversion Dam. These alternatives addressed the problems of reduced powerhouse capacity due to

flow blockage by the accumulated sand and damage to the turbines due to the entrainment of the sand in the water. Assisted in managing/coordinating with HDR personnel in providing estimates for each alternative of the construction consideration costs and prepared a study report.

- **Study of Sediment Management Alternatives, Kern Diversion Dam - Pacific Gas & Electric, California (2012 - 2013)**

Assisted in the assessment of alternatives, both operational and physical, to pass sediment through the Kern Diversion Dam. Assisted in managing/coordinating with sub-consultants (Kleinfelder & Syblon Reid) to provide estimates for each alternative on the construction and geotechnical considerations/exploration costs.

- **Pine Falls Generating Station Thrust Bearing High Lift Modifications - Manitoba Hydro (2015 - 2016)**

As part of Manitoba Hydro's upgrades to their Pine Falls Generating Station, high lift systems were added to each of the 15 MW Kaplan units. As a subcontractor to Wartsila Hydro & Industrial services, HDR assisted with the design of the thrust bearing high pressure lift shoe modifications, addition of RTDs, and hydraulic piping. Reviewed and approved the thrust bearing calculations, thrust bearing machining details, pump and orifice sizing, hydraulic piping design, component selection, and design drawings.

- **Wanapum Dam Spillway Displacement Root Cause Analysis - Grant County PUD, Ephrata, Washington**

The project team investigated the root cause analysis of cracking along a lift joint in a concrete gated spillway structure at Wanapum Dam. The cracking required and draw down of the reservoir and significant remediation efforts. The work included document review, developing field testing programs, conducting finite element analyses to evaluate stresses and deflections in the existing structure, and a Risk Informed Decision Making (RIDM) assessment of risk for an interim construction condition with a partial pool raise. The Technical team participated in several Board of Consultants meetings, working closely with the Owner, FERC, and the team of consultants working towards the successful, fast-track remediation of the project. I supported with initial investigation calculations review and reviewing data historical data and documentation.

- **East Dam Structures, Three Developments - Fortis Generation Ontario (2014)**

Engineer of record provided analyses, evaluations and assessments of project facilities, documents, plans, and programs to ascertain compliance with Canadian Dam Association (CDA), Ontario Ministry of Natural Resources Regulation, and FERC regulations. Served as the project engineer, engineer of record and assisted with the evaluation of the Dam Condition Assessment Report based on the site reconnaissance of the facilities, provided stability analysis, and hazard classification assessment of the three dams/control structures (Marble Rock, Hart Lake and Devil Lake) located in the Gananoque and Cataraqui watersheds. Based on the engineering stability analysis and design, provided modifications and repairs to the dam structure to meet current standards.

- **Three Sisters and Canyon Dam Hydropower Development Dam Safety Review - TransAlta, Alberta (2013 - 2014)**

Served as Project Manager and Project Engineer/Engineer of Record for the Safety Review Inspection and Potential Failure Modes Analysis (PFMA) review at Three Sisters and Canyon Hydropower developments. The review was to demonstrate compliance with the Water Act and accompanying Ministerial Regulations, the *Dam and Canal Safety Regulation*, and general conformity to the requirements of the *Canadian Dam Association (CDA) Dam Safety Guidelines*. Work included on-site inspection, document review, and participation in the PFMA review session for the development. The project included the review of existing geotechnical information and the performance of screening level pseudo-static slope stability and liquefaction analyses for each dam (Three Sisters & Canyon). The DSR was conducted in three phases, beginning with reconnaissance and document review, continuing with a site visit and detailed DSR activities, and ending with preparation of a draft and final report. Specific dam safety categories evaluated

included the dam safety management system, operation, maintenance, surveillance, emergency planning/preparedness and dam design and capability.

- **Holtwood Boat Barrier Buoy System Design Review Support, Brookfield - Geniglace Inc. (2019)**
Project Manager for the Holtwood boat barrier buoy system design. Part of a team of structural engineers that reviewed the design criteria, worked with the manufacture in the design of the buoy system and anchor/fastener system, design report and drawings for different loading conditions such as flow, wind, debris, ice and boat impact. The buoy system criteria required to withstand loads during navigational conditions under the load of a boat impact combined with reasonable flow rate, wind, and debris conditions.
- **Spray and Rundle Hydropower Development Dam Safety Review - TransAlta, Alberta (2012 - 2013)**
Served as Project Manager and Lead Engineer/Engineer of Record and assisted in the support of a Dam Safety Review Inspection and Potential Failure Modes Analysis (PFMA) review at Spray and Rundle Hydropower Developments. Work included on-site inspection, document review, and participation as a core team member in the PFMA review session for the development. HDR provided analyses, evaluations and assessments of project facilities, documents, plans, and programs to ascertain compliance with the CDA, Alberta Provincial Regulation, and FERC regulations, and prepared a Dam Safety Review Report and associated documentation for TransAlta. The activities included the following: conducted a DSR in three phases, beginning with reconnaissance and document review, continuing with a site visit and detailed DSR activities, and ending with preparation of a draft and final report. Specific dam safety categories that were evaluated included a dam safety management system, operation, maintenance, and surveillance, emergency planning/preparedness and dam design and capability.
- **Dam Safety Review, Albany River Sites, Three Developments - Ontario Power Generation (2014 - 2015)**
A safety assessment of the Cedars Dams (Albany River) and associated structures was completed in accordance with the accepted engineering standards of Ontario Power Generation's Dam Safety Program, Ontario Ministry of Natural Resources Regulation, and the *Canadian Dam Association Dam Safety Guidelines*. Served as a Project Engineer, Engineer of Record and assisted with the evaluation of the hydrotechnical, stability analysis, and flow control study for the dam safety review of Ontario Power Generation-owned dams and associated structures located on the Albany River System. The sites reviewed included the Root River (Lake St. Joseph) Dam, the Rat Rapids Dams, and the Cedars Dams and associated structures. Structural Engineer for the analysis of the log lifters capacity rating and condition assessment.
- **BC Hydro Ruskin Hydroelectric Facility Seismic Evaluation - L&S Electric (2014)**
Performed an analysis and evaluation for structural support and anchorage of two plant control equipment components (an accumulator, and a hydraulic power unit), and qualified the conformance of the support or means of anchorage to withstand seismic event loading, using the British Columbia Building Code (BCBC), IEEE 693-2005 Recommended Practice for Seismic Design of Substations (IEEE).
- **Dam Safety Review of Ladore Dam, Sugar Lake & Wilsey Dam, Three Developments - BC Hydro, British Columbia (2013 - 2014)**
As Dam Safety Engineer of record, was responsible for reviewing and sealing the reports in accordance with the requirements of the British Columbia professional engineering code. The project consisted of a Dam Safety Review to identify possible hazards and the associated failure modes of the dam. Conducted the DSR in three phases, beginning with reconnaissance and document review, continuing with a site visit and detailed DSR activities, and ending with preparation of a draft and final report.
- **Corra Linn Trash Rack for Intake Structure - FortisBC, British Columbia (2012 - 2013)**
Structural Engineer and engineer of record for the design and analysis of the trash rack Unit 3 intake. The bar design consisted of evaluating static stress, head loss versus design head loss, and avoidance of

Zahra Zahmatkesh, Ph.D., PE, P.Eng.

WATER RESOURCES ENGINEER

PROFILE	Dr. Zahmatkesh has over 15 years of research and consulting experience in water resources engineering. She has worked as a hydrotechnical engineer on a range of dam safety and flood studies, including hydrologic and hydraulic modeling, floodplain mapping, climate change impact assessments, and review for numerous DSRs across Canada. In the U.S., she has performed energy and hydraulic assessments for hydroelectric assets in California and served as a subject matter expert in preparing multiple CARs in compliance with FERC Part 12D requirements. In addition to her technical expertise, Zahra has taken on project management and assistant project management roles, overseeing scope, schedule, and coordination for multi-disciplinary teams. She is currently working as a Water Resources Engineer in KGS Group's Seattle Office.
EDUCATION	• Ph.D., Water Resources Management (Civil Engineering), University of Tehran (2014) • M.Sc., Water Engineering (Civil Engineering), Sharif University of Technology (2008) • B.Sc., Civil Engineering, University of Kerman (2006)
PROFESSIONAL ASSOCIATIONS	• Professional Engineer (USA) – P.E. (Washington; No. 23026810 - Civil) • Professional Engineer (Canada) – P.Eng. (Ontario, No. 100513000; British Columbia, No. 58380)
EMPLOYMENT HISTORY	• Water Resources Engineer, KGS Group, Seattle, WA, US (2023 – Present) • Water Resources Engineer, KGS Group, Canada (2021 – 2023) • Water Resources Engineer, Aquafor Beech Ltd, Canada (2019 – 2021) • Water Resources Engineer, Golder Associates Ltd, Canada (2019) • Post-Doctoral Researcher, McMaster University, Canada (2017-2019) • Post-Doctoral Researcher, University of Manitoba, Canada (2016) • Visiting Scholar, University of Utah, US (2013) • Institute for Water & Environment R&D, Tehran, Iran (2009-2016)

PROJECT EXPERIENCE

Hydraulics and Hydro Assets

- **Pit 3 Dam Plunge Pool Rehabilitation & IFR Bypass Structure (Phase 1), California Pacific Gas and Electric Company (PG&E) (2026-ongoing)**
Development of a CFD model to simulate hydraulic conditions downstream of a dam and proposed outlet works. The modeling evaluates flow behavior, assesses potential scour under design conditions, and performs sensitivity analyses of key hydraulic parameters to understand uncertainties and inform potential energy dissipation needs.
- **Moose River Basin Greenfield Hydro Development at Nine Mile Rapids and Grand Rapids, Ontario Power Generation (2026-ongoing)**
Technical lead for hydraulic and energy generation studies supporting the development of a new generating station. Responsibilities include evaluating multiple optimization scenarios to assess hydraulic performance, and energy production potential. Study supports the development of a new hydropower generating station in the Moose River Basin.
- **Lower Notch Owner's Engineer Concept Phase Project, Ontario Power Generation (2025-ongoing)**
Technical lead for energy modeling to support reservoir and plant sizing studies, including development of loss calculations for conveyance options and integration of powerhouse and pumphouse operations. The work supports evaluation of system capacity requirements and optimization of installed capacity and storage performance in relation to grid needs.
- **Technical Due Diligence of Nine Canadian Hydropower Assets, Hull Street Energy (2025)**
Project Manager responsible for coordinating with internal teams and the client, facilitating communication, organizing meetings, and conveying technical and commercial discussions. Oversaw collaboration across disciplines and ensured alignment of project scope, schedule, and pricing throughout the due diligence process.
- **Feasibility Study for Full Unit Replacement of Hydro Generation Assets, California Pacific Gas and Electric Company (PG&E) (2023-2025)**
and hydraulics technical analysis supporting feasibility-level evaluation of hydroelectric generation assets. Responsibilities include hydraulic and energy modeling, assessment of operational constraints, technical input to long-term reinvestment and modernization strategies, and leading report preparation and on-time submittal of project deliverables.
- **Turlock Lake Powerhouse 2D Inundation Mapping, Turlock Irrigation District (2024-2025)**
Assistant Project Manager and Hydraulics Technical Lead. Led development, calibration, and QA/QC of the HEC-RAS 2D model; defined breach scenarios consistent with FERC guidance; evaluated canal overtopping and downstream inundation mechanisms; and coordinated hydraulic assumptions, mapping outputs, and deliverables with client.
- **Flume 48 Replacement, El Dorado Irrigation District (EID), El Dorado County, CA (2025)**
Hydraulics Technical Lead for modeling of existing and future conveyance systems using HEC-RAS, confirmation of canal geometry, flow capacity, velocity criteria, freeboard, and spillway adequacy. Evaluated storm-inflow contributions from localized tributaries, assessed scour potential, and supported design validation for replacement conveyance using a reinforced concrete U-shaped canal. Reviewed hydraulic performance of automated spillway gates and passive stop-log systems to confirm emergency flow control capacity and compliance with FERC safety requirements.
- **North Side Canal, Flumes 2 Through 5 Design, Merced Irrigation District, CA (2024)**
Technical lead for hydrologic modeling using HEC-HMS with NOAA precipitation inputs, with verification using StreamStats and WinTR-55. Technical lead for hydraulic modeling of existing and future conveyance using HEC-RAS, confirming canal geometry, flow capacity, velocity criteria, backwater effects, and invert geometry sensitivity. Performed hydraulic analysis of proposed culverts and inlet riser configurations and

determined that single-barrel culvert options did not maintain adequate freeboard under the 100-year design flow; recommended dual-culvert configurations to preserve hydraulic capacity and safety margins.

- **Trent River Floodplain Mapping Update, Lower Trent Region Conservation, ON, Canada (2023-24)**
Acted as Assistant Project Manager and technical lead for flood frequency analysis (spring and summer events), hydrologic and hydraulic modeling, and evaluation of regulatory flood standards; oversaw report development and conducted technical review.
- **Consecon Lake and Creek Floodplain Mapping, Quinte Conservation, ON, Canada (2022-23)**
Technical lead for flood frequency analysis (spring and summer events), hydrologic and hydraulic modeling, and evaluation of regulatory flood standards; oversaw report development and conducted technical review.
- **Island Lake Conservation Area Probable Maximum Flood (PMF) And Geotechnical Updates, Credit Valley Conservation, ON, Canada (2022)**
Hydrology and hydraulics technical analysis responsible for PMP method evaluation, PMF hydrologic modeling, spillway and routing analyses, and development of dam-break hydrographs to support dam safety assessment under extreme flood scenarios. Reviewed and verified discharge capacity calculations for the Dam low-level outlet conduit across multiple gate openings and reservoir levels, confirming hydraulic assumptions and consistency with industry standards.
- **Hydraulic 2-D modeling for Pennock Creek Tributary T1-02 and T1-1.1, Lakehead Region Conservation Authority, ON, Canada (2021)**
Conducted a refined floodplain delineation study for the Pennock Creek watershed using a two-dimensional (2-D) HEC-RAS hydraulic model to address limitations of a previous 1-D model in flat terrain near the Oliver Paipoonge municipal office. Developed and applied the 2-D model to simulate the Regulatory Flood and delineate flood extents. Documented modeling methodology, assumptions, and results in a technical memorandum.
- **Roseland Creek Erosion Control Project, City of Burlington, ON, Canada (2021)**
Hydraulic modeling and analysis
- **Credit River Erosion Control & Slope Stabilization, City of Mississauga, ON, Canada (2020)**
Hydraulic modeling, floodplain mapping, analysis and assessment, conceptual design memo, technical report and detailed design brief preparation, project coordinating
- **City of Toronto Major Maintenance Projects, Humber River Area 2– HR81.1, TRCA, ON, Canada (2020)**
Hydraulic modeling, conceptual design memo and technical report preparation, project coordinating

Dam Safety

- **Rio Dam 2023 Part 12D Comprehensive Assessment, NY (2024-2025)**
Provided Hydrology and Hydraulics Subject Matter Expert (SME) support for flood and dam-breach consequence analyses, including population at risk (PAR) and incremental loss-of-life (LoL) evaluations using RCEM and DST. Supported PFMA and L2RA workshops through development and screening of hydrology-related potential failure modes (PFMs), contribution to consequence and risk estimates consistent with FERC guidelines, and participation in final presentations to FERC.
- **FERC Part 12D Independent Consultant Safety Inspections – El Dorado Dams, El Dorado Irrigation District, CA (2024-2025)**
Hydrology and Hydraulics Subject Matter Expert (SME) responsible for flood and dam-break consequence analyses, population at risk (PAR) and incremental loss-of-life (LoL) evaluations using RCEM and DST. Supported PFMA and L2RA workshops through development and screening of hydrologic-related PFMs,

contribution to consequence and risk estimation consistent with FERC guidelines, and participation in final presentations to FERC.

- **Consecon Mill Dam DSR, Quinte Conservation, ON, Canada (2023-24)**
Served as Assistant Project Manager and contributed to hydrotechnical analysis, including desktop review for dam hazard potential classification and hydrologic and hydraulic modeling; supported preparation of technical reports.
- **Dam Safety Review Update for the Middle Durham Dam, Ministry of Natural Resources and Forestry, ON, Canada (2022-23)**
Technical hydrologic and hydraulic analysis. Developed and calibrated a watershed hydrologic model, updated the Probable Maximum Flood (PMF) based on Probable Maximum Precipitation (PMP), and performed dam classification and IDF selection. Built and applied a HEC-RAS hydraulic model to simulate flood and dam breach scenarios over a 10-km downstream reach to evaluate floodplain impacts and peak attenuation.
- **Lyndhurst Dam Safety Assessment and Detailed Design, Ministry of Natural Resources and Forestry, ON, Canada (2022-23)**
Performed hydrotechnical analysis for the Lyndhurst Dam, including watershed hydrology, flow data review, flood frequency analysis, extreme and regulatory flood estimation, and hydrologic modeling of spring and summer storm events. Conducted hydraulic assessments of stage-storage relationships, discharge capacity, level-pool routing, freeboard adequacy, and energy dissipation. Reviewed previous dam classification and evaluated hazard potential classification to support dam safety and regulatory compliance.
- **Matabitchuan River DSR, OPG, ON, Canada (2021)**
Conducted technical analysis for freeboard requirement in support of the Matabitchuan Dam Safety Review. Performed hydrotechnical assessment of freeboard adequacy under flood and non-flood conditions for passage of the Inflow Design Flood (IDF), in accordance with Ontario MNRF (2011) and Canadian Dam Association (CDA) guidelines. Reviewed wind and water level assumptions from OPG hydraulic modeling and provided technical recommendations to support dam classification and hydrotechnical decision-making.
- **Dam Safety Review for the French River Dams Complex, PSPC, QC, Canada (2021)**
Performed dam hazard potential classification for the Little Chaudiere, Big Chaudiere, and Portage dams by reviewing existing HEC-RAS dam breach modeling and evaluating downstream consequences. Used aerial imagery and available spatial datasets to assess potential impacts to people and property and to refine consequence estimates. Determined hazard classifications in accordance with Ontario Technical Bulletin and Canadian Dam Association (CDA) Dam Safety Guidelines.
- **Dam Safety Review for the Timiskaming Dams Complex, PSPC, QC, Canada (2021)**
Conducted hydrotechnical analysis for the Timiskaming Dams on the Ottawa River, including hydrologic assessment (PMF review, flood frequency and extreme flood analysis), hydraulic modeling, and dam breach simulations. Evaluated incremental consequences (loss of life, economic, environmental, and cultural impacts) and performed dam classification for both Ontario and Quebec regulatory frameworks. Assessed discharge capacity, freeboard adequacy, and energy dissipation under flood and dam breach conditions to support dam safety and regulatory compliance.

Flood Studies and Stormwater

- **Dingman Creek Subwatershed Stage 2 Lands: Schedule C Municipal Class Environmental Assessment, The Corporation of The City of London, ON, Canada (2021-23)**

Hydrologic model review and set-up for future development plan scenario

- **Whitson River Sub Watershed Study and Stormwater Master Plan, City of Sudbury, ON, Canada (2020-21)**
Hydrologic and hydraulic model development and analysis, Floodplain mapping, analysis and assessment
- **Stormwater Management Master Plan, City of Guelph, ON, Canada (2020-21)**
Data review and analysis, Sewershed system development
- **Whitewater Lake Sub-Watershed Study and Master Plan, City of Greater Sudbury, ON, Canada (2020)**
Hydraulic modeling and floodplain technical review and revision, Report technical review and QA/QC
- **Dingman Creek Subwatershed: Stormwater Servicing Study, City of London, ON, Canada (2020)**
Performed statistical analyses of hydrologic datasets to support stormwater servicing and infrastructure planning. Conducted technical review and QA/QC of reports.
- **Hydraulic Model QA/QC: Junction Creek Sub-Watershed Study, Conservation Sudbury, ON, Canada (2020)**
Provided technical review and QA/QC of hydraulic modeling and floodplain mapping for the Junction Creek sub-watershed study. Evaluated model setup, assumptions, and results; reviewed floodplain mapping outputs; and assessed flood risk and regulatory floodplain delineations.
- **Ramsey Lake Sub-Watershed Study and Stormwater Master Plan, City of Greater Sudbury, ON, Canada (2020)**
Developed and calibrated a water quality model to evaluate pollutant loading for watershed. Supported development of the stormwater master plan.
- **Clarington Emergency Flood Risk Management & Mitigation Study, Municipality of Clarington, ON, Canada (2020)**
Led a municipality-wide hydrologic and hydraulic assessment of more than 160 culverts and over 100 bridges, developing a multi-criteria prioritization framework to identify overtopping risks, structural vulnerabilities, and required upgrades under existing and future climate conditions. Integrated hydrologic modeling, flood sensitivity analysis, fish passage criteria, and roadway network resilience to support asset management planning and replacement sequencing for high-priority crossings.
- **Municipal Class EA Stormwater Management Master Plan, City of Waterloo, ON, Canada (2019)**
Statistical analyses and conducted technical review and QA/QC of planning and engineering reports in support of stormwater management master planning.
- **FloodNet Network for Enhancing Flood Forecasting and Management Capacity in Canada (2017-2019)**
Developed and calibrated hydrologic and hydraulic models; conducted floodplain mapping and analysis for southern Ontario watersheds in collaboration with the Toronto and Region Conservation Authority (TRCA); created automated calibration tools for hydrologic and hydraulic models; developed bias-correction algorithms for snow water equivalent estimates in Canadian basins; implemented rainfall forecasting models for Vancouver using North Pacific Ocean climate signals.
- **Evaluation of Flood Forecasting and Warning Systems across Canada (2016-2017)**
Collaborated with hydrologic and flood forecast centers in Quebec, New Brunswick, Newfoundland and Labrador, and Conservation Authorities in Ontario to review national flood forecasting and warning practices; prepared a comprehensive technical report on system performance and implementation approaches.
- **Farmington Bay Water Balance Study, UT, US (2013)**
Designed low-impact development (LID) stormwater management practices; managed project databases using SQL; developed and maintained a project website for data sharing and communication.
- **Institute for Water & Environment R&D, Tehran, Iran (2009-2012 & 2014, part time; 2015-2016)**

Technical Skills and Experience

Hydrologic and hydraulic model calibration and validation; floodplain mapping and GIS analysis; design of flood management practices for varied land uses; climate change impact assessment on watershed hydrology, riverine and coastal flooding; preparation of proposals, technical reports, and papers; technical review and QA/QC of research and engineering reports; project management (planning, decision-making, problem-solving, delegation, and communication); leadership and supervision of junior staff.

Representative Projects

Short-Term Water Consumption Prediction, Kashan, Iran: Demand forecasting using statistical and AI-based models.

Urban Water Use Behavior, Kashan, Iran: Analysis of consumption trends across user groups.

Water Treatment Plant Reliability, Tehran, Iran: Evaluation of treatment plant response under contamination scenarios.

Streamflow Simulation, Karaj Basin, Iran: GCM downscaling and HBV hydrologic modeling.

Pipe Vulnerability Assessment, Tehran, Iran: Risk and system performance evaluation of distribution networks.

Urban Drainage Analysis, Tehran, Iran: Flood risk modeling in steep urban catchments.

Snowmelt–Runoff Modeling, Tehran, Iran: Climate-informed assessment of snowmelt and runoff impacts

Select Publications

- Razmi, A., Mahjoobi, E., Mardani-Fard, H. A., & Zahmatkesh, Z. (2024). Bivariate frequency analysis of extreme sea level with rainfall and temperature in New York City. **Water Harvesting Research**, 7(2), 258–276.
- Zamani, M. G., Saniei, K., Nematollahi, B., Zahmatkesh, Z., Poor, M. M., & Nikoo, M. R. (2023). Developing sustainable strategies by LID optimization in response to annual climate change impacts. **Journal of Cleaner Production**, 416, 137931.
- Zahmatkesh, Z., Han, S., & Coulibaly, P. (2021). *Understanding uncertainty in probabilistic floodplain mapping in the time of climate change*. **Water**, 13(9), 1248.
- Ghodsi, S. H., Zahmatkesh, Z., Goharian, E., Kerachian, R., & Zhu, Z. (2020). Optimal design of low impact development practices in response to climate change. **Journal of Hydrology**, 580, 124266.
- Zahmatkesh, Z., Jha, S. K., Coulibaly, P., & Stadnyk, T. (2019). An overview of river flood forecasting procedures in Canadian watersheds. **Canadian Water Resources Journal**.
- Zahmatkesh, Z., Burian, S. J., Karamouz, M., Tavakol-Davani, H., & Goharian, E. (2015). *Low-impact development practices to mitigate climate change effects on urban stormwater runoff: Case study of New York City*. **Journal of Irrigation and Drainage Engineering**, 141(1), 04014043.
- Zahmatkesh, Z., Karamouz, M., Goharian, E., & Burian, S. J. (2015). Analysis of the effects of climate change on urban stormwater runoff using statistically downscaled precipitation data and a change factor approach. **Journal of Hydrologic Engineering**, 20(7), 05014022.
- Ghodsi, S. H., Kerachian, R., & Zahmatkesh, Z. (2016). A multi-stakeholder framework for urban runoff quality management: Application of social choice and bargaining techniques. **Science of the Total Environment**, 550, 574–585.
- Razmi, A., Golian, S., & Zahmatkesh, Z. (2017). Non-stationary frequency analysis of extreme water level: Application of annual maximum series and peak-over-threshold approaches. **Water Resources Management**, 31(7), 2065–2083.
- Ghodsi, S. H., Kerachian, R., Estalaki, S. M., Nikoo, M. R., & Zahmatkesh, Z. (2016). Developing a stochastic conflict resolution model for urban runoff quality management: Application of info-gap and bargaining theories. **Journal of Hydrology**, 533, 200–212.
- Zahmatkesh, Z., Karamouz, M., & Nazif, S. (2015). Uncertainty-based modeling of rainfall-runoff: Combined DREAM and K-means clustering. **Advances in Water Resources**, 83, 405–420.

- Karamouz, M., Zahmatkesh, Z., Goharian, E., & Nazif, S. (2015). Combined impact of inland and coastal floods: Mapping knowledge base for development of planning strategies. **Journal of Water Resources Planning and Management**, 141(8), 04014098

Steve Meicke, P.E.

HYDROMECHANICAL DESIGN LEAD
PROJECT ROLE: MECHANICAL SUBJECT MATTER EXPERT

PROFILE	Steve is a senior mechanical engineer specializing in mechanical design of hydroelectric facilities with 16 years of experience. His experience includes turbine replacement and overhaul projects, designing vertical and radial gate hoist systems, equipment troubleshooting, machinery inspection, pumping and piping systems. Steve has experience with full-time, on-site construction support and commissioning services and has 7 years of experience leading QA/QC program development and implementation. He has served in a variety of roles in Dam Safety projects including conducting periodic inspections, SME for Part 12D compressive assessment, and L2RA processes. His recent experience serving as the mechanical SME for the El Dorado Irrigation District Forebay Dam Part 12D process makes him well suited to serve in the same capacity for the Utica project as these facilities have many similarities between their features, key equipment, and operations.
EDUCATION	• Master of Science in Mechanical Engineering (M.S.), Oregon State University (2011), minor in Ocean Engineering • Bachelor of Science in Mechanical Engineering (B.S.), Virginia Tech (2009)
PROFESSIONAL LICENSING	Registered Professional Mechanical Engineer Licenses: Arizona (No. 75393), Alaska (No. 164878), California (No. 40960), Nevada (No. 030120), New York (No. 109697), Oregon (No. 91535PE), Washington (No. 24008032)

RELEVANT PROJECT EXPERIENCE

- **El Dorado Forebay Dam FERC Twelfth Part 12 D Comprehensive Assessment, El Dorado Irrigation District, Pollock Pines, CA**
Steve served as the mechanical subject matter expert for this Part 12D exercise, working on a multi-disciplinary team to assess the current condition and dam safety risks associated with the El Dorado Forebay Dam (FERC No. 184-CA), water conveyance structures, and selected powerhouse equipment. This project included FERC's new risk-informed decision-making process.
- **Flume 48 Spillway Design, American River, El Dorado Irrigation District, Pollock Pines, CA**
Steve served as the mechanical engineer of record for the design of a new spillway on EID's El Dorado Forebay inlet canal. This spillway contained two face-mount vertical slide gates for sand sluicing service and emergency water conveyance for the canal.
- **Potential Failure Modes Analysis, Trail Bridge Fish Passage Project, Eugene Water and Electric Board, McKenzie River, OR**
Senior Engineer responsible for participating in a Potential Failure Modes Analysis (PFMA) of the Trail Bridge Dam fish passage project with the United States Federal Energy Regulatory Commission. Participated

in a four-day PFMA session to identify risks to the high-hazard dam as a result of modification of the existing service spillway and installation of a new trap and haul fish passage facility at the toe of the dam. Provided feedback on probable failure modes, suggested risk mitigation measures, and voted in the classification of each potential hazard.

- **FERC Risk Analysis Training Course (8-hour)**

Attended and actively participated in a FERC Risk Analysis Training in the Summer of 2023, facilitated by FERC approved Independent Consultants and dam safety experts. Topics covered included but are not limited to FERC Guideline Chapters 16 (Part 12D), 17 (PFMA), and 18 (Level 2 Risk Analysis).

- **Construction and Site Support, Thermalito Dam, CA Dept of Water Resources, Feather River, CA**

Mechanical Engineer responsible for providing full-time on-site construction oversight of mechanical contractors performing restoration of Thermalito Powerplant's turbines, balance of plant mechanical systems, piping systems, and instrumentation from November 2017 through May 2018. Helped resolve issues encountered during construction, develop and maintain project schedule, manage contractors, and review safe clearance procedures. Assisted with review of submittals and development of as-built P&ID drawings to document construction.

- **Lake Spaulding Low-Level Outlet Replacement, Pacific Gas & Electric, Emigrant Gap, CA**

Mechanical engineer of record and project technical lead to replace the low-level outlet system and improve functionality and access to this facility. The key attributes of this project included: slip-lining of the existing LLO conduit through the dam, replacement of existing 30-inch guard valve inside the dam, installation of new 24-inch fixed cone valve and instream flow release valve at the tunnel outlet, addition of new concrete platform, thrust block, building protecting new equipment, relocation of existing seepage measurement weir, and addition of a flowmeter at the tunnel outlet. Due to the location of the worksite, the design was made to accommodate construction with all/most materials to be transported by helicopter. The project also included development of the Quality Control and Inspection Plan (QCIP), description of operation, and other documentation.

- **Capital Planning and Project Re-Development Alternatives Analysis, Pacific Gas & Electric, Five Powerhouses in California**

During this two-year long project, KGS assisted PG&E with a comprehensive capital planning exercise which examined current condition of five facilities in California and developed a long-term capital plan for reinvestment in these facilities. This process was developed by subject matter experts at KGS and has been applied for several clients across North America. The process began with a condition assessment of each facility including mechanical, structural, electrical, and geotechnical disciplines, coupled with a hydrology and hydraulics analysis to better understand historical and potential future water availability at each facility. The condition assessments included a 40-year CAPEX plan for each critical system or subsystem of the powerhouse assuming refurbishment or replacement of existing systems (status-quo). Following completion of the condition assessment, KGS conducted an alternatives analysis exploring potential redevelopment options for each site to improve power production, reliability, safety, flexibility, and adaptability to climate change. For alternatives deemed to be viable, concept drawings were created and used to develop AACE Class4 cost estimates. The costs were compared against the revenues and/or ancillary benefits for each option. Steve served as the condition assessment lead overseeing completion of the condition assessment reports, the mechanical condition assessment lead, and contributed to alternative concept development, cost estimation, and alternative analysis reports development for all sites.

- **Synchronous Bypass Valve Replacement, Verdi Powerhouse, Truckee Meadows Water Authority, Truckee River, NV**

Project Manager and Technical Lead responsible for leading the inspection and replacement of a 110-year-old 60-inch synchronous bypass valve at Verdi Powerhouse on the Truckee River in Nevada. Led a multi-

disciplinary team to develop a design to replace the existing valve with a modern equivalent, while reducing costs of construction through using alternate means for energy dissipation in the project's tailrace. Oversaw an inspection of the penstock and penstock transient analysis to support valve selection and controls/operation strategy.

- **Condition Assessment, Portland Hydro Project, City of Portland, Bull Run River, OR**
Lead Field Engineer responsible for powerhouse condition assessments at the City of Portland's Bull Run projects, Powerhouses 1 and 2. Led a team of electrical and mechanical engineers to assess and document the condition of the primary powerhouse mechanical and electrical systems in advance of turnover of powerhouse operations from Portland General Electric to a new independent contractor in charge of station O&M. Condition assessments were conducted visually on-site and supplemented by a review of existing O&M documentation and interviews with plant staff.
- **Life Extension Study, Washoe Powerhouse, Truckee Meadows Water Authority, Truckee River, NV**
Lead Engineer responsible for performing a condition assessment of two pressure case turbines installed in the early 1900's to determine if the units could be economically refurbished and returned to service. Assessed turbine, water conveyance, hydraulic power unit, powerhouse gantry crane, generator, and other critical equipment, to determine scope of refurbishment. Worked with the owner to plan work scope, powerhouse outages, and methods for equipment disassembly and installation. Developed a formal scope of refurbishment, conceptual cost opinion, and project schedule comparing three alternatives: refurbishment of the existing units, replacement in-kind, and replacement with a horizontal Francis unit, while weighing construction and FERC licensing implications.
- **Radial Gate Hoist and Spillway Deck Replacement Design, Rempel Dam Spillway Rehabilitation, Entergy Arkansas, Ouachita River, AR**
Technical team lead responsible for the development of plans and specifications for the rehabilitation of the existing concrete spillway at Rempel Dam, and the provision of new wire rope hoists and stoplog gantry crane. Oversaw the design of a new modular steel decking system to replace the existing concrete deck to relieve thermal expansion issues causing overstress and cracking of the right abutment. Coordinated with a subcontractor for the detailed design of a new fixed wire rope hoisting system and mobile stoplog gantry hoist to replace the existing mobile gate hoist trolleys. The new modular design is designed to be modular to permit Entergy to rehabilitate any of their 12 spillway bays as funding and outage requirements permit.
- **Spillway Gate Inspections, Dalles Dam Project, USACE, The Dalles, OR**
Mechanical Engineer responsible for assisting with the inspection of 23 spillway gates at the 1.8 GW Dalles Dam project. The project entailed inspection of gate hoist machinery, and reports were issued with recommendations on maintenance procedures and replacement of deficient components. Mr. Meicke helped inspect electrical motors, parallel shaft reducers, brakes, bearings, transmission shafts, and open gearing. Detailed measurements included documentation of open gearing for wear, undercutting, and alignment, wire rope measurements for crown wear, lay length (stretch), and other deficiencies.
- **Mechanical Design and Construction Support, Vertical Headgate Improvement Project, Cascade Water Alliance, White River, WA**
Project Engineer responsible for assisting with the design of a replacement hoist system for a vertical lift gate at the entrance to a water flume on the White River in Washington. Designed the mechanical-structural connections, new gate bearings and seals, emergency operating systems, and dual-stem ACME screw hoist system. Coordinated with manufacturers of screw hoist systems to ensure that the tight schedule constraints of the improvement project could be met. Provided on-site commissioning and troubleshooting support.

David Jermstad, PG, CEG, SWPPP

SENIOR ENGINEERING GEOLOGIST

PROFILE

David Jermstad has over 43 years of experience in all aspects of engineering geology and site assessment. His expertise covers all aspects of project development from project evaluation and feasibility study through conceptual and detailed engineering to equipment and materials selection, project construction, construction management and inspection. David is highly experienced in the Western US with technical rock mechanics and slope stability in the field of analysis, design, and construction of embankment dams, levees, tunnels, canals, flumes, penstocks, and pipelines for water conveyance projects. He has experience in subsurface investigations, soil mechanics, retaining wall design criteria, seepage and piping, slope stability evaluations using limit equilibrium analysis, erosion protection design, and earthwork construction. His experience includes forensic investigation of seepage, settlement, stability, and deformation problems associated with embankments constructed on weathered rock, alluvial soils, glacial outwash, and other geological formations. As an engineering geologist, David is proficient in assessing seepage and piping through and beneath earthen dams constructed on or within various geologic environments, including but not limited to fractured and faulted rock, as well as glacial materials. He is familiar with identification of geological hazards including soft sediment deformation and numeric liquefaction evaluation in high seismic areas, exploration techniques, field and laboratory testing, and instrumentation. David's experience includes the design of subsurface drains, grout curtains and cutoff walls and he has a working knowledge of grout rheology, concrete mix designs, and other materials used in foundation seepage barriers. He is proficient in uplift pressures, rock mechanics including post tensioned high strength steel anchors to stabilize concrete structures, rock strength parameters development, and specialized techniques specific to grouting in galleries. Since 1977, he has been involved with hundreds of slope stability and rock mechanics projects and has interfaced with Caltrans, US Forest Service (USFS), Federal Energy Regulatory Commission (FERC), Bureau of Land Management (BLM), US Fish & Wildlife Service (USFWS), and the California Regional Water Quality Control Board (RWQCB). He has a working relationship with the USFS staff on slope stability and rockfall mitigation including projects in the El Dorado National Forest, Tahoe National Forest, and Stanislaus National Forest.

EDUCATION

- **Bachelor of Science, Geology**, California State University, Sacramento, CA (1984)

Training

- PG&E Safety Training, Refreshed Annually

	• Heartsaver First Aid CPR AED Certification • TensarSoil™ Design 8-Hour (2015) • MSA Safety W65 Filter Self-Rescuer 8-Hour Training, MCI (2014) • Permit Required Confined Spaces Entry (Cal / OSHA Regulation 8 CCR 5157), Since 2011 • National Radon Proficiency Program (NRPP) Radioactive Materials Training / Radon Gas Tester Certification 40-Hour (1994) • Troxler Nuclear Testing Equipment Safety Training and Gauge Operation (1993) • Troxler IATA Hazmat Certification (49 CFR 172 Subpart H), Since 1990 • NPDES Training (40CFR122.26), since 1990 • OSHA 8-Hour Hazwoper Refresher Course (29 CFR 1910.120.e) • OSHA 40-Hour Hazmat Certification (29 CFR 1910.120.e), Since 1990
PROFESSIONAL ASSOCIATIONS	• Professional Geologist: California (#5591) • Certified Engineering Geologist: California (#1727) • Certified Qualified Stormwater Pollution Prevention Plan (SWPPP) Developer: California (#G01727) • Certified Environmental Manager: Nevada (#EM-1164)
EMPLOYMENT HISTORY	• Senior Engineering Geologist, KGS Group International (2023 – Present) • Senior Engineering Geologist, GHD (formerly Carlton Engineering, Inc.) (1995 – 2023) • Principal / Vice President, GHD (formerly Carlton Engineering, Inc.) (1995 – 2014) • Principal, Youngdahl & Associates, Inc. (1990 – 1995) • Geologist, Wheeldon and Associates (1976 – 1990)

PROJECT EXPERIENCE

Hydropower

- **PG&E Miocene Fire Damage Repairs – Mead & Hunt, Paradise, CA**
Technical Advisor. Responsible for supporting the project team currently performing a geotechnical investigation to evaluate the foundation conditions for damaged flume and associated structures. The investigation includes document review; development of a geotechnical / geophysical exploration plan;

field investigations; a geologic and engineering reconnaissance to collect data and soil samples; seismic refraction studies; preparation of detailed geologic mapping and analysis of any landslide conditions; development of seismic design information; and preparation of draft and final geotechnical reports summarizing our findings, conclusions, and recommendations for replacing 2,251 feet of wood-support flume as well as any needed improvements to a small concrete L-wall and wood cribbing, a wood box culvert, a concrete box culvert and steel walkway with wood cribbing, and a 2/1A steel flume and debris flow.

- **PG&E Spillway Assessments – Mead & Hunt Inc., Central and Northern CA**
Project Manager. Providing geotechnical consultation to assist in the assessment of 36 separate PG&E spillways throughout central and northern California. Reviewed geologic maps and descriptions of local soil and rock conditions; geologic and geotechnical reports relevant to the spillways; design information; supporting technical information documents; the most recent surveillance, monitoring, and inspection reports; operational records; and facility drawings. Assisted in identifying potential deficiencies and other items of concern and in developing summary reports. Produced a memorandum summarizing the recommendations for each of the 36 spillways investigated.
- **PG&E Rock Creek Dam Toe Void Repairs - FERC Project No. P-1962 – Mead & Hunt, Plumas County, CA.**
Senior Engineering Geologist. Responsible for the activities of the geotechnical team and conducting a document review of available geotechnical and geologic data, performing visual observations of geotechnical and geologic conditions, and developing a memorandum with geotechnical guidance and preliminary recommendations to be used for the alternatives analysis, preliminary design concepts, and cost estimating tasks in the subsequent phases of this high-priority project.
- **PG&E Poe Dam Toe Void Repairs - FERC Project No. 2107 – Mead & Hunt, Plumas County, CA.**
Senior Engineering Geologist. Responsible for providing geologic and geotechnical support for the alternative concept development and detailed civil / structural repair design to mitigate erosion below the apron toe of the spillway. Work included field visits, general geologic mapping of the area combined with limited previous geotechnical data, and preparation of a memorandum providing geotechnical design recommendations to support analysis and design of the chosen alternative for repair to the spillway trailing edge apron below Poe Dam.
- **PG&E Hamilton Branch Indian Ole Dam, Phase I - FERC Project No. 2107 – Mead & Hunt, Lassen County, CA.**
Senior Engineering Geologist. Responsible for the activities of the geotechnical team supporting the investigation of multiple leaks at PG&E's Indian Ole Dam at near 5,000 feet in elevation. Initially provided recommendations for seepage instrumentation of the existing dam. Subsequent work included geotechnical investigations; geophysical surveys to include seismic refraction and electrical resistivity, hand excavation and sampling, and laboratory testing; installation of piezometers; and preparation of a geotechnical report summarizing findings, conclusion, and recommendations for repair work.
- **PG&E Caribou 2 Penstock - FERC Project No. 2107 – Mead & Hunt, Caribou, CA.**
Senior Engineering Geologist. Responsible for the activities of the geotechnical team supporting slope and drain improvements in the vicinity of PG&E's Caribou 2 Penstock. Work included a geologic reconnaissance; a slope reconnaissance with rope access; collecting surface and shallow subsurface information in several locations including the slope adjacent to Anchor Blocks 4 & 6; compaction evaluation for road fill; preparation of a technical memo summarizing findings and recommendations for use in developing designs and alternatives; design level construction plans and specifications for slope protection work; and QSIP input for slope protection work.

- **PG&E Wise Tunnel No. 9 Repair – Syblon Reid General Engineering Contractors, Auburn, CA**
Project Engineering Geologist. Responsible for providing engineering support to include grout evaluation, research, discussions, review of testing results, and certification assistance. Contracted through Syblon Reid Construction for the repair of this existing PG&E water conveyance tunnel. In subsequent contract, responsible for providing geotechnical engineering support when requested to analyze and recommend repair of the portal and other portions of the tunnel. Provided data for the structural design of temporary support of lining for the grouting of a rectangular section of the tunnel and updated the plan for grouting methods and procedures. Also provided oversight of the quality assurance inspections and materials testing conducted during the construction phase.
- **PG&E Lake Valley Road Replacement Culvert - FERC Project No. 2310 – Mead & Hunt, Placer County, CA.**
Senior Engineering Geologist. Responsible for the activities of the geotechnical team supporting investigation for needed improvements. The culvert, located downstream of the Lake Valley Spill channel, is undersized, leading to flooding of the roadway, which is primary access for PG&E maintenance of Lake Valley Reservoir and also for third party access to Lake Valley Recreational facilities. The project consisted of three major components: culvert replacement, roadway repair, and stream remediation. Geotechnical work included field exploration, laboratory testing, characterization of subsurface materials, engineering analyses, development, and presentation of geotechnical recommendations to be used for design and construction of replacement culvert and road.
- **PG&E Belden Forebay Spillway Drain and Panel Repair - FERC Project No. 2105 – Mead & Hunt, Placer County, CA**
Senior Engineering Geologist. Responsible for geotechnical services to support the needed repairs at the Belden Forebay spillway. The left and right walls of the spillway chute are composed of eleven separate reinforced concrete panels and each pair of reinforced panels, facing each other, act as cantilever walls. Several of the wall panels along the left side of the chute have deflected inward toward the center line from their originally constructed positions. Geotechnical work for panel repair included field exploration, laboratory testing, characterization of subsurface materials, engineering analyses, development and presentation of geotechnical recommendations and criteria to be used for design and construction of panel repairs. In addition, during excavation to clean out a weir / underdrain filled with debris, an investigation was conducted to collect geotechnical data and develop / recommend the best course of action regarding removal of sediment from within the clogged drain. In a subsequent client request, provided an analysis of the multiple alternatives that included spillway chute wall panel permanent structural repairs and treatment of the known drain blockage as well as a review of the existing spillway drain, continued data capturing for the installed tilt meters, and recommendations for checking tension on the interim anchor cables.
- **Salt Springs Bear River Penstock & Powerhouse - FERC Project No. 137 – PG&E, Tiger Creek, CA**
Principal-in-Charge, Project Manager. Responsible for conducting a 2.5-mile-long tunnel inspection and preparing a Design Alternative Memorandum and Lifetime Cost Analysis with recommendations for tunnel restoration to support PG&E's goal of restoring rock / sand sluicing capabilities. Constructed in the 1952, the Lower Bear River Tunnel is a 2.5-mile-long tunnel in PG&E's hydroelectric power system and runs from Lower Bear Reservoir to Salt Springs 2 Penstock, carrying untreated water to the Salt Springs Powerhouse. Tasks included site visits, planning review meetings, and reporting to develop design alternatives for an outfall from the tunnel rock trap around back under the Salt Springs Bear River penstock of the powerhouse to an open settlement basin on the slope between the penstock and Cole Creek.
- **Tiger Creek Flume Evaluation - FERC Project No. 137 – PG&E, West Point, CA**
Project Engineering Geologist. Responsible for the geotechnical and civil engineering activities for this existing concrete flume that conveys water from the West Point Powerhouse downstream for use in other

powerhouses in PG&E's Mokelumne River Project. Scope was to evaluate PG&E's plans to improve the integrity of the canal by lining it and minimize the build-up of algae by increasing the velocity in the new liner as well as to evaluate the increased velocity and force on the existing walls. Tasks included a review of system maps and preliminary design information, data collection during helicopter flyover and at grade observations and measurements at Salt Springs Powerhouse and Cold Creek Tunnel No. 6, and summary reporting.

- **Ralston Penstock Access Stairs - FERC Project No. 2079 – Placer County Water Agency (PCWA), Placer County, CA**

Senior Engineering Geologist. Responsible for geotechnical services for this staged penstock access improvement project. Starting tasks, concerned with stairs between saddles 27 and 38, included geotechnical support in the preparation of a Design Criteria Memorandum that included preliminary layout sketches and cost estimates of the alternatives that considered structural, geotechnical and geologic, Occupational Safety and Health Administration (OSHA), helicopter installation limitations, penstock clearances, and security and safety requirements. Subsequent tasks, concerned with stairs from the top to saddle 15, included a geotechnical site assessment and recommendations. Newly contracted tasks include geotechnical support of the design of new access stairs, ships ladders, ladders, and platforms to replace existing ladders along the penstock between saddles 27 and 38.

- **Hayford Flume #2 Replacement - FERC Project No. 2079 – PCWA, Colfax, CA.**

Senior Engineering Geologist. Responsible for geotechnical engineering support for the design and replacement of approximately 450 feet of elevated flume that traverses a small, bowl-like valley. In an effort to minimize canal outages, the design allowed the new conveyance to be constructed without interrupting the service of the existing flume structure. Our goal was to reduce PCWA's maintenance costs, fire risk and liability while substantially increasing conveyance capacity. This flume is a portion of the Boardman Canal.

- **Water Canal System Evaluation - FERC Project – Confidential Client, Nevada County, CA**

Senior Technical Advisor. Supporting the project team providing professional and experienced assistance in evaluating the condition of the many elements of a confidential client's FERC-licensed water canal system in order to develop a Capital Improvement Program (CIP) that will be utilized for future maintenance and repair as well as for prioritizing projects to improve or replace critical infrastructure in the client's power-generation and water-delivery system. The multi-discipline engineering services includes a review of all available documents—technical reports, standard operating procedures, and drawings produced by the previous owner of the system; meetings with client and previous owner representatives; field assessments to photograph and document conditions along the canal system; tunnel inspection; analyzation and evaluation; summary reporting concisely presenting the collected data and the results of materials testing, risk assessment, prioritization, and suggested alternatives for repair or replacement; and a PowerPoint presentation that includes summaries of each element of the evaluation process.

- **FERC Project No. 184 – El Dorado Irrigation District, Pollock Pines, CA**

- **Flume 38-40 Canal Conversion.** Project Manager, Senior Engineering Geologist. Responsible for the activities of the multi-discipline project team that provided design and engineering for this canal conversion project that consisted of the replacement of existing elevated wooden Flume 38—destabilized following a historic breach—to a canal and the replacement of existing elevated wooden flume to a Mechanically Stabilized Earth (MSE) bench with canal. Included in this project were improvements to the canal bench and the design of two replacement bridges over the canal upstream and downstream of Flumes 38 and 39-40. With the improved access and eliminating complex elevated superstructure assembly at Flume 39-40, flume benches were reconstructed using MSE retaining walls to support the new Flume 38-40 flume sections. Following approval of construction documents,

provided bid support, a USFS survey, and an array of construction services to include construction staking, and QCIP and specialty inspection services.

- **Flume 30 Replacement Design.** Senior Technical Advisor, Engineering Geologist. Served as Senior Technical Advisor and Senior Engineering Geologist for this water conveyance replacement project. A 415-foot structure constructed of pre-cast, as well as cast-in-place concrete will replace the 25-year-old wooden flume, and a new access road will be constructed on a steeply sloping hillside within an undeveloped heavily forested area. Challenges included a natural 30-to-40-degree slope inclination throughout the project; the design and construction of MSE walls were utilized to provide support on the sloping terrain. Responsible for advising / mentoring new project manager as well as assisting with engineering design.
- **Wooden Flumes.** Principal-in-Charge / Senior Engineering Geologist. Since 1995, responsible for oversight of the multi-discipline engineering support for the assessment, maintenance, repair, and replacement of Canal facilities originally built from 1860 to 1876 for gold mining operations. Over the years, as the elevated and at grade wooden flumes and substructures deteriorated and environmental factors undermined their stability, tasked with a wide variety of objectives that all supported one goal: to keep the water flowing and mitigate water loss throughout the system.
- **Flume 44 Replacement.** Project Manager / Engineering Geologist. Responsible for oversight of the multi-discipline engineering for the replacement of multiple severely deteriorated flumes, including Flume 44—473 feet in length with two elevated sections—and located on USFS property. Work began with the development of a feasibility report, discussing interim repairs and recommendations of construction methods to replace the flumes in the most cost-effective manner without interrupting the normal operation of the El Dorado Canal. Subsequently provided PS&E then QCIP and engineering services during construction.
- **Spillway Design & Construction.** Principal-in-Charge / Project Manager. Responsible for multi-discipline engineering and land survey services for the design and construction of multiple spillways along the El Dorado Canal, a 22-mile water conveyance system: Spillways 5, 10, 11, 20, 23, 30, 41, 44, 46, 47C. Geotechnical investigations included research, site reconnaissance, field studies, laboratory testing, engineering analysis of the data, and reporting. Work included preparation of PS&E and project coordination meetings. Construction services included soil compaction and material testing, as well as concrete and material testing.
- **Emergency Storm Response.** Project Manager. Responsible for the coordination and quality control of the activities of the project team contracted to provide emergency assessment, interim repair recommendations and/or designs, and permanent improvement plans with the goal of restoring the integrity of the 22-mile El Dorado Canal system and “watering up” as soon as possible. Owned and operated by the El Dorado Irrigation District, the water storage system was put out of commission by severe storm damage, causing a daily revenue loss in the neighborhood of \$40,000. Sixteen (16) sites required a variety of survey and engineering services. Duties included initial site visits, assessment, immediate stabilization recommendations, client support / advocacy for meetings with Federal Emergency Management Agency (FEMA), and oversight of construction activities in accordance with the Quality Control Inspection Program.
- **El Dorado Powerhouse.** Geotechnical Project Manager. Responsible for project management for the geotechnical portion of project that included foundation investigation and subsurface studies to evaluate the engineering properties of the soil, as well as hazard mitigation. Access to the river canyon site was challenging and subject to flooding.

- **FERC Part 12 Dam Safety Inspections.** Principal-in-Charge / Project Manager. Responsible for the activities of the engineer supporting the independent consultant during 18 CFR Part 12 inspections of five significant to high hazard dams: Silver Lake Dam, Caples Lake Main and Auxiliary Dams, Echo Lake Dam, El Dorado Forebay, and Lake Aloha Main and Auxiliary Dams. Also facilitated development of the PFMA. Project included site inspections for hazard identification, reviewing and providing recommendations regarding operations, inspection, and maintenance, historic data review as it relates to dam safety and reporting on the conclusions and recommendations as they apply to the Code of Federal Regulations, Title 18, Part 12, FERC Order 122 dated March 1, 1981, and paragraph 12.37 (c) (7).
- **14 Mile Tunnel & Spillway 46 Improvements.** Principal-in-Charge / Project Manager. Responsible for multi-discipline engineering and land survey services for the design and construction of improvements at these El Dorado Irrigation District facilities. Work included design, construction documents, and construction administration services to extend the tunnel upstream for the addition of trash racks to better manage debris and construct a new automated spillway. Design included solutions to address the differing criteria for winter operation vs summer operation, repair of the Canal and earthen slopes above the Canal for approximately 150 feet upstream and downstream of the spillway and armoring the spillway channel and portions of Randolph Creek to reduce localized erosion associated with higher flows and velocities anticipated. New electrical service was extended to the Supervisory Control and Data Acquisition (SCADA) operated spillway. Assisted the District with obtaining regulatory permits and preparing legal descriptions for new PG&E easements for the electrical service and for temporary construction easements. Teamed with WAVE Engineers, Inc. to coordinate the new electric service with PG&E and designed the new power distribution to integrate the new SCADA system. The project also involved assisting the District in acquiring the adjacent private property to improve access and increase operational and storage space.
- **Tunnel Inspections.** Project Manager / Senior Engineering Geologist. Responsible for the inspection and assessment of 20,155 linear feet of water conveyance tunnels located in the foothills of the Sierra Nevada. The tunnels are integral to El Dorado Irrigation District's hydroelectric project. Following the dewatering process, tunnel inspections and condition assessments were conducted in 2014 and 2018. Provided a detailed report for each of the six tunnels inspected plus compiled a summary report that included recommendations for future needs and photos depicting specific findings. The inspection reports were submitted to the FERC as part of the District's operation plan.
- **Hazel Creek Tunnel Repair.** Principal-in-Charge / Project Engineering Geologist. Responsible for oversight of the geotechnical phase of this public water conveyance project. Negotiated the Damage Survey Report (DSR) and estimates for repair and funding with FEMA and Office of Emergency Services when the site was damaged by a landslide; once the true nature of the landslide was understood by the funding organizations, the authorized repair budget increased by nearly an order of magnitude. The geotechnical phase included evaluating the slope stability by numeric methods and developing a Factor of Safety for the existing conditions and post construction condition. Portions of the tunnel were distressed due to flooding, and tunnel stability was evaluated with a ROVER and camera then by physical inspection following dewatering and containment of the water. Stability improvements for the tunnel were designed and constructed utilizing shotcrete and rock bolts; access and haul roads were improved and included BMP design and installation; and the landslide was stabilized with dewatering techniques and mechanically stabilized earth construction. The original design included a Corrugated Metal Pipe (CMP) to convey the water through the landslide toe area; this design was improved with the installation of a box culvert that would facilitate ready access to the tunnel. Also responsible for a tunnel drainage water quality monitoring plan (FEMA) and coordination with the RWQCB, as well as

the QCIP consisting of observation services along with materials testing and special inspections during construction.

- **Esmeralda Tunnel Repair.** Principal-in-Charge / Project Manager. Responsible for the activities of the multi firm project team providing professional services to mitigate the failed tunnel, an important structure in El Dorado Irrigation District's El Dorado Canal. The team developed a Design Alternatives Memorandum summarizing the results of structural and geotechnical / geological analysis and detailing the design alternatives available to restore the integrity of the El Dorado Canal by reconstructing the Esmeralda Tunnel or constructing a bypass of the failed tunnel. The team also provided Construction Administration and QCIP services during the construction of the emergency repairs to the tunnel located near Pacific House in El Dorado County.
- **Echo Lake Tunnel Emergency Repairs.** Principal-in-Charge / Project Engineering Geologist. Responsible for oversight of the preparation of the technical Design Criteria Memorandum for the replacement of the existing 1+ mile conduit system that consisted of 36-inch diameter pipeline, five-foot-wide canal (at its bottom), and five-foot-wide trapezoidal tunnel. The document provided pertinent project information in support of meetings between the El Dorado Irrigation District, the USFS, Echo Lake Homeowners Association, and other interested parties where they discussed the most effective and efficient means of improving the Echo Lake Tunnel and Conduit water diversion system. Also provided pipeline foundation assessment. In subsequent contract, served as Project Manager responsible for a multi discipline Slip Line Feasibility Study. Slip lining the existing pipeline using a cure in place flexible resin was thought to be a likely interim measure to rehabilitate the pipeline. This project won a Consulting Engineers & Land Surveyors of California (CELSOC) 2008 Engineering Excellence Award.
- **Spillway 10 Upgrades.** Senior Engineering Geologist. Responsible for the geotechnical investigation to support the design and construction documents for replacement of an aged, automated spillway structure constructed primarily of wood components. The new structure includes passive and emergency spill sections, protective cover for maintenance and operations personnel, and an equipment and storage building.
- **Hydroelectric.** Principal-in-Charge / Geotechnical Manager. Responsible for oversight of all geotechnical and environmental activities related to this complex El Dorado Irrigation District project to include geotechnical studies for structures, pipelines, flumes, canals, and tunnel features; QCIP duties and reporting to FERC; obtaining environmental permits with the Regional Water Quality Control Board; and stormwater services. The geotechnical studies included prior study research; site reconnaissance; work plans submitted to FERC; field studies performed with backhoes and drilling rigs; field testing (including Standard Penetration Test (SPT) and the collection of representative samples); laboratory testing and analysis of the samples; and engineering analysis of the data and reporting. Following the dewatering process, inspections were conducted. Stormwater services consisted of reviewing and updating the California RWQCB Waste Discharge Requirements (WDR's) and SWPPP.
- **Flume Conditions Assessment.** Principal-in-Charge / Senior Engineering Geologist. Responsible for geotechnical evaluation of all elevated and at grade flume structures along the 22-mile water conveyance system. Duties included client consultation, programming, conducting site visits for evaluation of flume benches, supervision of project engineers performing field studies, soil stability analysis, report preparation, and quality assurance review of the completed work product. Findings of these flume condition assessments have been used to develop a capital improvement program, prioritize flume replacement projects, and schedule ongoing maintenance.
- **Flume 45 & Spur Road Retaining Wall Construction Services.** Principal-in-Charge / Project Engineering Geologist. Responsible for the multidiscipline project team providing a variety of construction services

to support the replacement of distressed flumes and restore the integral bench on portions of the El Dorado Canal. Evaluated the relative stability and worker's safety related to the slope when, early in construction, a six-foot-wide boulder fell from the slope onto the work area; recommended stabilization measures of an area approximately 77 feet long and 35 feet high. Construction was performed by District crews. Construction services included Specialty Inspection Services, participation in on-site construction meetings, field clarifications documenting key construction efforts and written justification / verification for the element, and to respond to any problems in the field at the District's request.

- **Flume 41 Replacement Design.** Principal-in-Charge. Responsible for the activities of the project team providing multi discipline engineering and land survey services for design and construction for the replacement of Flume 41 and Spillway 23. Also responsible for the geotechnical design recommendations and site investigations associated with the flume replacement, consisting of approximately 700 feet of up to 16-foot-tall hand stacked rock bench, and new automated spillway structure. Site constraints included complex terrain impacted by slope instabilities, rockfall hazards, highly variant soil conditions including areas of poor drainage, and remote site construction constraints. Following the dewatering process for annual system outage, a limited construction window further complicated option. The geotechnical team developed recommendations to grout in place and anchor the rock bench, saving import / export costs and greatly reducing construction costs. Also responsible for the QCIP's that took place during construction, as well as providing construction administration. Responsible for supervising QSP's providing stormwater services consisting of conducting SWPPP field inspection and monitoring services for Best Management Practices (BMP) items at the project site to ensure the project remains in full compliance with the State Water Board permit.
- **Flume 9 Replacement Design.** Principal-in-Charge / Project Engineering Geologist. Responsible for providing final geotechnical design and recommendations for the flume replacement to ensure optimal structure design. Also responsible for construction quality assurance including observation and materials testing. Project included a modern design fish screen at the Alder Creek diversion that redirects a portion of the creek water into the El Dorado Canal, as well as the assessment and mitigation of a landslide, stability analysis, drainage design and seepage mitigation as well as earthwork and foundation criteria, rock mechanics, and erosion control. Access to the project site is limited, so materials and equipment were delivered via helicopter. Provided oversight of the construction observation and testing services and special inspections during the construction phase.
- **Flume 51 Replacement Design.** Principal-in-Charge / Project Engineering Geologist. Responsible for providing final geotechnical design and recommendations for the flume replacement to ensure optimal structure design. Project included the assessment and mitigation of a landslide, stability analysis, drainage design and seepage mitigation as well as earthwork and foundation criteria, rock mechanics, and erosion control. The project design focused on the FERC mandated Factors of Safety and included hillside drainage control, landslide material removal, slope grading, extensive use of woven geotextile fabric at subgrade to promote drainage and to improve soil strength, and MSE wall construction. Following the dewatering process for annual system outage, a limited construction window further complicated options. Access to the project site is limited, so materials and equipment were delivered via helicopter. Responsible for daily construction administration, construction management and QCIP inspections observation and materials testing. This project received the ASCE 2009 Geotechnical Project of the Year Award and ASCE 2010 Region 9 (statewide) Award for Outstanding Small Water Project.

- **Flume 31 & 31A Replacement.** Principal-in-Charge / Project Engineering Geologist. Responsible for providing final geotechnical design and recommendations for the flume replacement to ensure optimal structure design. The geotechnical team designed slope stabilization, landslide repair, rock stabilization, elevated steel support ("bridge") studies, foundation studies, and channel reinforcement. Also responsible for construction quality assurance including earthwork compaction and materials testing and inspection.
- **Flume 49/50 Replacement.** Principal-in-Charge. Responsible for oversight of the multi discipline team for this flume replacement project, which consisted of three main areas of work: the demolition and bench rehabilitation of Flume 49 and 50, and the construction of Spillway 44. Stormwater services consisted of the development and preparation of SWPPP. As Project Engineering Geologist, provided final geotechnical design and recommendations to ensure optimal structure design. Geotechnical work included the design of slope and rock stabilization, landslide repair, channel reinforcement and armoring for the spillway. Also responsible for construction quality assurance, including QCIP services for earthwork compaction observation and materials testing and inspection.
- **Flume 12 Repair QCIP.** Geotechnical Manager. Responsible for geotechnical engineering activities to support the design and construction of the replacement of flume sections, transitions, and associated foundation support, walkway and handrails damaged by winter storms. Also responsible for construction quality assurance including QCIP services for earthwork compaction observation and materials testing and inspection.
- **Flume 10 Repair QCIP.** Principal-in-Charge / Project Engineering Geologist. Responsible for QCIP services for earthwork compaction observation and materials testing and inspection during the repair and replacement of this flume. Updated the plan sets for pre-cast flume sections and improved the construction details to keep El Dorado Irrigation's El Dorado Canal system current with Code changes and to provide a more reliable conveyance system.
- **Emergency Slide Repair Construction Management.** Principal-in-Charge / Project Manager / Project Engineering Geologist. Responsible for the geotechnical site investigation and associated reports for this phased utility system and Roadways project that included site planning. This \$3 million disaster emergency repair project included repair and stabilization of five landslides located on a Hydroelectric Project managed by El Dorado Irrigation District in El Dorado County, California. The slides threatened operations of the District's water conveyance system and hydro power plant. Soil boring reports included drilling, sampling, and testing at five locations along the three-mile route, as well as preparation of an accompanying GES. Special Engineering Reports were prepared to assess the disaster and coordinate with the FEMA through the preparation of Damage Survey Reports (DSR's) and to address seismic hazards including slope stability and landslide repair. Roadway and utility system design, specifications, and mitigation were also addressed in the Special Engineering Reports. Also responsible for testing services during construction including coordinating compaction testing, materials testing, import testing, and special inspection for structural concrete.
- **Flume 45A Emergency Slide Repair.** Principal-in-Charge / Project Engineering Geologist. Responsible for performing and supervising geotechnical site investigation to support the repair and stabilization of a landslide area adjacent to Flume 45A, which is owned and operated by El Dorado Irrigation District. Also responsible for construction quality assurance including QCIP services including observation and materials testing and inspection, as well as providing oversight of construction management services.
- **Flume 6/7 Slide Repair.** Principal-in-Charge / Project Engineering Geologist. Responsible for performing and supervising geotechnical site investigation to support the repair and stabilization of a landslide area adjacent to Flume 6/7, which is owned and operated by El Dorado Irrigation District. Also

responsible for construction quality assurance including QCIP services including observation and materials testing and inspection as well as providing oversight of construction management services.

- **FERC Project No. P-2101**

- **SMUD New Slab Creek Powerhouse & Boating Flow Release Facility** – McMillen Jacobs Associates, El Dorado County, CA. Senior Engineering Geologist. Responsible for providing professional support services to the design-builder. The Project scope includes the construction of an enhance Boating Flow Release Facility to meet new FERC license requirements, potential construction of a powerhouse to harvest the energy associated with these new release schedules, and a requirement to restore Iowa Canyon Creek in the vicinity of the Adit to promote year-round surface flow to provide rainbow trout spawning habitat. The powerhouse will be located approximately 0.25 miles downstream of Slab Creek Dam on the left abutment of the South Fork of the American River.
- **SMUD Lower Slab Creek Powerhouse** – SMUD, Camino, CA. Principal-in-Charge / Project Manager. Responsible for the activities of the multi discipline project team providing a comprehensive geotechnical engineering investigation to support the design of a new powerhouse for the Upper American River Project (UARP). Also responsible for the QA/QC process, as well as the geotechnical investigation, which provides a practical approach to assessing the complex geology of the site in relation to the proposed improvements. A key part of this project was identifying a plan to efficiently and cost effectively complete the required tasks during implementation of the investigation. Challenges to performing the GES include access, surface deposits, submerged improvements, bedrock, and in situ stress in the pressurized water conveyance tunnel.
- **SMUD Camino Powerhouse Deflection Wall** – LM Combs Construction, Camino, CA. Project Manager. Responsible for the activities of the project team providing engineering support when an unstable hillside threatened SMUD's Camino Powerhouse in El Dorado County. The project included mapping the unstable hillside that was pushing on the penstock and distressing the powerhouse as well as the design of a deflection wall to protect the facility. The 150,000-kW powerhouse is an important element in SMUD's hydroelectric system. In a related project, also responsible for mapping the UARP tunnel system for slope stability. The UARP included a five-mile-long tunnel that fed into the penstock.
- **SMUD Iowa Hill Pumped Storage Development Project** – McMillen Jacobs Associates, Camino, CA. Principal-in-Charge / Project Manager. Responsible for the activities of the project team providing multi discipline engineering and land survey services to support the development of this pumped storage project. Responsible for the quality management processes, land survey and controls, surface assess roads and bridges, and civil works. The first segment of the project was the geotechnical investigation's drilling program during which rock drilling and coring activities took place at three locations. Laboratory testing and analysis of the samples is currently underway. The results of the drilling program will help SMUD determine whether the Iowa Hill project site is viable for construction of the tunnels and underground cavern that would house the power generating equipment designed to pump water between the 6,400-acre foot capacity upper reservoir and a lower reservoir on the American River.
- **SMUD Brush Creek Boat Ramp Remediation** – SMUD, Pollock Pines, CA. Project Manager. Responsible for the activities of the multi discipline project team contracted to develop a restoration plan for the boat ramp at Brush Creek Reservoir, which had experienced erosion that was impacting its usability for SMUD's periodic inspections of the dam and reservoir. Services include a geotechnical site investigation and report, civil engineering V ditch drainage design, structural design, and calculations for a cast in place retaining wall, and the preparation of improvement plans. Brush Creek Reservoir is a key element of SMUD's Upper American River Hydroelectric Project.

- **SMUD Iowa Hill Pumped Storage Geotechnical Investigation Plan** – SMUD, Camino, CA. Principal-in-Charge / Project Manager. Responsible for the activities of the multi discipline project team producing a Geotechnical Investigation Plan for the development of a 400 MW pumped storage hydroelectric facility. Tasks included meetings; field data collection; developing field and laboratory criteria and standards; calculating quantities; determining data quality objectives; presenting alternatives; permitting; producing environmental exhibits; and determining schedule as well as reporting and graphics standards. Responsible for the quality assurance and quality control process, as the Plan would serve as SMUD's bid documents for the geotechnical investigation phase, estimated at \$25+ million. A key part of this project was identifying a process to efficiently and cost effectively complete the required tasks during implementation of the plan.
- **Murphys Forebay & Afterbay Dams - FERC Project No. 2019 – Utica Water & Power Authority, Calaveras County, CA**
Senior Engineering Geologist. Responsible for the geotechnical services at the dams. Geotechnical services included a subsurface investigation, sampling and testing, preparation of a revised Piezometer Installation Workplan to reflect a single piezometer installation. To address a FERC Part 12 recommendation, a field investigation was conducted at Murphys Afterbay Dam Spillway, a flat bottomed "U" shaped reinforced concrete trough cut into the embankment on one side for soil retainage. The geotechnical team researched existing documents and visited the site to take photographs and measurements, including that needed to determine the unconfined compressive strength of concrete.
- **FERC Part 12 Dam Safety Engineering - FERC Project No. 2019 – Utica Water & Power Authority, Calaveras County, CA**
Principal-in-Charge / Project Manager. Providing project oversight and responsible for the quality assurance and quality control process. Following the research and field inspections segments of the project, responsible for Work facilitating development of the Potential Failure Mode Analysis (PFMA), as well as providing input on geology and seismicity for the FERC Part 12 safety inspection reports and Supporting Technical Information Documents updates for each dam: Hunters Dam, Murphys Forebay Dams, and Murphys Afterbay Dam Spillway.
- **System Assessment - FERC Project Nos. 2019 and 2699 – Utica Water & Power Authority, Calaveras County, CA**
Principal-in-Charge. Responsible for oversight of the engineering project team providing technical assistance for the relicense of FERC Project Nos. 2019 and 2699. Project complexities included gauging plans, H Flume weir designs, a watershed restoration plan, slope stability evaluations, and system maps to successfully satisfy the USFS Federal Power Act Section 4(e) conditions and other FERC requirements.
- **Flume 14 Repair - FERC Project No. 2699 – Utica Water & Power Authority, Angels Camp, CA**
Project Manager / Project Engineering Geologist. Responsible for the activities of the multi discipline project team providing design and support services for the restoration of Flume 14, which was destroyed by the Darby Fire on September 5, 2001. The 0.75-mile flume is part of the Utica Hydroelectric Project, the sole source of water supply for about 9,000 residents in Calaveras County. The system also includes two power plants that generate up to 5 megawatts of electricity daily, enough power to meet the average needs of about 5,000 residents. Work included environmental document support, resource agency negotiations, permitting, design, FERC certification, construction management services, and QCIP to include construction observation and testing services.
- **Water Conveyance Tunnel - FERC Project – Confidential Client, Camino, CA**
Project Manager / Engineering Geologist. Responsible for all phases (past, current, and future) of this water conveyance tunnel assessment and repair project: planning and coordination consisting of document review, dewatering and outage coordination, inspection and reporting; bolt augmentation consisting of

design development and production of bid package for installation work; permitting; production of Opinion of Probable Construction Cost; and preparing QCIP. QCIP structural repairs included the installation of rock bolts patterned for safety as well as reinforced shotcrete for eroded areas. QCIP inspection activities consisted of construction observation and testing of rock bolts and shotcrete that included strength proof testing—required for 10% of the 22,000 new rock bolts anchored into the tunnel walls—as well as shotcrete sampling of 7,000 cubic yards of shotcrete lining with compressive strength breaks at three separate stages. Located on USFS property in El Dorado County, this five-mile-long tunnel project required documentation and reporting meeting federal regulations.

- **Tunnel Inspections - FERC Project No. 2409 – NCPA, Murphys, CA**
Principal-in-Charge / Project Manager / Engineering Geologist. Responsible for the inspection and assessment of 17,500 linear feet of water conveyance tunnels located in the foothills of the Sierra Nevada in Calaveras County. Tunnel inspections and condition assessments were conducted in 2009 and 2014. Provided a detailed report for each of the six tunnels inspected plus compiled a summary report that included recommendations for future needs and photographs depicting specific findings. The inspection reports were submitted to the FERC as part of NCPA's operation plan.
- **Caples Lake Boat Launch – El Dorado Irrigation District, Kirkwood, CA**
Principal-in-Charge. Responsible for oversight of the project team providing stormwater services for this project consisting of the construction of a parking area and Caltrans encroachment and road widening of approximately one third of a mile of State Highway 88 and its associated storm drainage features. Stormwater services consisted of the development and preparation of a SWPPP.

Water

- **Beckwourth Dam Seepage & Stability Analysis – Mirecal Family Trust, Beckwourth, CA**
Principal-in-Charge. Responsible for the activities of the project engineer conducting 3D finite element modeling using GeoSlope software Seep/W and Slope/W to perform seepage and stability evaluations, respectively, for a 300-foot-long earthen embankment dam in response to State of California Department of Water Resources' comments. Provided quality review.
- **Dam Safety and Maintenance Evaluation – Greenstone Country Community Services District (CSD), Placerville, CA**
Principal-in-Charge. Responsible for the activities of the project engineer conducting field explorations within a filled earthen embankment reservoir. Performed 3D finite element modeling using GeoSlope software Seep/W and Slope/W to perform seepage and stability evaluations, respectively. Proposed various solutions to mitigate excessive seepage. Provided cost estimates of future maintenance and surveillance for safety and continued operation of three dams within project system, including State of California Division of Safety of Dams (DSOD) regulated dams.
- **FEMA Levee Accreditation – Rancho Murieta CSD, Rancho Murieta, CA**
Principal-in-Charge / Project Manager. Responsible for the activities of the project team that successfully pursued US Department of Agriculture (USDA) Loan funding, provided support for California Environmental Quality Act (CEQA) / National Environmental Policy Act (NEPA) environmental processing, and prepared a Preliminary Engineering Report. Direct responsibilities included reviewing and providing feedback on a variety of documents, conducting research, and attending meetings and participating in discussions with project team members, agencies, and stakeholders. Also responsible for the quality assurance and quality control process and performing follow up with the client at project milestones.
- **Integrated Water Resources Plan – El Dorado Irrigation District, Placerville, CA**

Principal-in-Charge / Project Manager. Responsible for the oversight and coordination of the activities of the multi discipline project team developing an integrated water resources master plan for the El Dorado Irrigation District. Also responsible for participating in a series of activities and tasks culminating in the development of a Technical Memorandum, which is comprised of findings and recommendations—key issues and objectives for the project and planned steps for meeting those objectives.

- **NF Canal Project – ECORP Consulting, Butte Creek, CA**
Principal-in-Charge / Project Engineering Geologist. Responsible for geotechnical field and laboratory testing for this canal restoration project. Project included stream bed loading assessment, materials testing, and design parameters for stream bed restoration.
- **El Dorado Canal Mill to Bull Creek Tunnel Restoration – El Dorado Irrigation District, Kyburz, CA**
Geotechnical Project Manager. Responsible for the environmental studies and engineering needed to support permitting, requiring extensive coordination with FERC, RWQBC, and USFS. Also assessed geotechnical hazards and analyzed slope stability. Under separate contract, served as Project Manager responsible for the engineering and Water Quality Monitoring efforts provided during the reconstruction of the 160 cfs conveyance to the El Dorado Irrigation District powerhouse. Also prepared the Stormwater Pollution Prevention Plans for the dam, part of FERC's hydroelectric project.
- **Mill to Bull Tunnel Water Quality Monitoring – El Dorado Irrigation District, El Dorado County, CA**
Project Manager. Responsible for the activities of the project team providing water quality monitoring and reporting in compliance with National Pollutant Discharge Elimination System (NPDES) and WDR requirements to support the reconstruction of a 160 cfs water conveyance structure leading to the El Dorado Irrigation District powerhouse.
- **Weber Creek Restoration – El Dorado Irrigation District, El Dorado County, CA**
Project Manager. Responsible for the activities of the project team providing water quality monitoring and reporting services for this tributary to the Cosumnes River per the approved Water Quality Management Plan, which addressed the requirements of the RWQCB, Department of Fish & Game, and the USFWS. The team also monitored surface and ground water quality associated with the removal of sediment from the creek and its land discharge.
- **Folsom Lake Temperature Control Device – El Dorado Irrigation District, Folsom, CA**
Project Manager. Responsible for project approach, as well as the geotechnical site evaluation for the construction of the multi-level Temperature Control Device. The project included soil sampling and testing, as well as rock coring and testing to a depth of 250 feet. The core hole was carefully logged and sampled with HQ-sized rock coring bit and barrel. The project study included sequential packer tests in the field to measure water takes and to provide a qualitative assessment of the fractures. Rock cores were analyzed and tested in detail by Dr. Anders Bro of Geo Test Unlimited.
- **Grizzly Flat CSD Water System Improvement – Grizzly Flat CSD, Grizzly Flat, CA**
Principal-in-Charge. Responsible for the activities of the multi discipline project team providing civil, geotechnical and electrical engineering, CEQA / NEPA processing, and land surveying services. Responsible for the geotechnical team providing design recommendations and site investigations associated with improvements to the raw water storage system and distribution systems. Also responsible for the quality assurance and quality control process and performing follow up with the client at project milestones. Provided bid support services, construction administration and support, as well as construction observation and materials testing services throughout the construction phase of this project.
- **PCWA Lower Banvard Lozanos Road Overcrossing – PCWA, Placer County, CA**
Principal-in-Charge. Responsible for the activities of the multi discipline engineering and land survey project team supporting the replacement of a 16-inch steel irrigation line over Lozanos Road with a 20-inch ductile

iron pipe for PCWA. Also responsible for the geotechnical services, which consisted of a soils investigation and summary report that evaluated the suitability of the installation site and outlined recommendations for foundation design and construction. Coordinated and reviewed the construction observation and materials testing services provided during the installation of the irrigation line and responsible for the QA/QC process.

- **Pleasant Oak Main Station 66+50 – El Dorado Irrigation District, Folsom, CA**
Project Manager. Responsible for the activities of the project team carrying out a groundwater saturation and slope stabilization study for this El Dorado Irrigation main. Detailed tasks include attending client meetings, site visits, subsurface exploration to evaluate subsurface conditions and groundwater, laboratory gradation testing for design of dewatering, and written recommendations for interim and permanent repair.
- **Bypass Waterline and Pressure Reducing Station – El Dorado Irrigation District, Placerville, CA**
Project Manager. Responsible for the activities of the project team providing construction observation and testing services during construction of this El Dorado Irrigation District waterline and pressure reducing station. Testing included laboratory soil tests, nuclear density testing, concrete testing, and backfill testing. Since the waterline was in Pleasant Valley Road, the high volume of traffic required the road to be backfilled every day to allow traffic.
- **Deer Creek Access Road Waterline Replacement – El Dorado Irrigation District, Shingle Springs, CA**
Geotechnical Manager. Responsible for the activities of the project team providing construction quality assurance for earthwork on this project to replace a water line for El Dorado Irrigation District. This project's site development included sub drainage, trenching, fill placement, and high TI pavement construction. The construction quality assurance inspections included nuclear gage compaction testing, assessment of earthen native materials and import, and an evaluation of naturally occurring asbestos. This public project also included in house laboratory testing of native and imported fill materials.
- **Sly Park Waterline Trench Paving – El Dorado Irrigation District, Pollock Pines, CA**
Principal-in-Charge / Project Engineering Geologist. Responsible for oversight of the geotechnical phase of this public water conveyance project. A raw water line was partially constructed by the USACE, and El Dorado Irrigation District needed to complete the construction and resurface the road that provides access to the Sly Park recreation area. The alignment crossed several areas subject to seasonal saturation, so the geotechnical work included design of sub surface drainage improvements for these areas along with subgrade improvements utilizing woven geotextile fabric, as well as a pavement overlay for the entire roadway surface. A landslide was stabilized and dewatered at the northern end of the project. The work also included a geotechnical study report which summarized a number of findings: estimating the traffic count information, developing a Traffic Index, and recommending pavement section for the pavement overlay along the entire roadway surface. Also responsible for construction management and the QCIP and observation services along with materials testing and special inspections during construction.
- **Motherlode Force Main Replacement – El Dorado Irrigation District, Shingle Springs, CA**
Principal-in-Charge / Project Engineering Geologist. Responsible for the activities of the project team providing construction quality assurance for earthwork on this project to replace El Dorado Irrigation District's force main. This project's site development included trenching and high TI pavement construction. The construction quality assurance inspections included nuclear gage compaction testing, assessment of earthen native materials and import, and an evaluation of naturally occurring asbestos. This public project also included in house laboratory testing of native and imported fill materials.
- **Auburn Lake Trails Water Treatment Plant – Georgetown Divide Public Utility District, Greenwood, CA**

Project Manager. Responsible for directing the activities of the multi firm project staff tasked with providing the expertise necessary to successfully pursue USDA Loan funding, providing support for CEPA / NEPA environmental processing, and preparing a Preliminary Engineering Report. Direct responsibilities included reviewing and providing feedback on a variety of documents, conducting research, and attending meetings and participating in discussions with project team members, agencies, and stakeholders.

- **Rancho Ponderosa Wastewater Treatment Plant (WWTP) Investigation – El Dorado Irrigation District, Rescue, CA**
Project Manager. Responsible for directing the activities of the multi discipline project team tasked with providing environmental sampling at twelve locations, a topographic survey, and a GES. Direct responsibilities included conducting the GES site work, oversight of GES testing and report draft writing, review, and quality control of GES report, and attending a meeting of the El Dorado Irrigation District Board of Supervisors, and participating in discussions with project team members, agencies, and subcontractors.
- **El Dorado Hills WWTP Phase III Expansion – Psomas, El Dorado Hills, CA**
Project Manager. Responsible for directing the activities of the project staff tasked with providing a GES to support the construction of new plant facilities to increase its dry weather capacity. Utilizing the recommendations of the GES, the new structures were constructed adjacent to existing facilities that continued to operate during construction. Direct responsibilities included the review of seismic refraction data and GES report review for QA/QC purposes.
- **Camino Heights WWTP Infiltrometer Testing – El Dorado Irrigation District, Camino, CA**
Geotechnical Manager / Engineering Geologist. Responsible for the activities of the project team. Direct responsibilities included assisting with field infiltrometer testing in the existing spray field area, assisting with calculations and the development of the report of testing results, preparing presentation for and attending RWQCB meetings, and participating in discussions with project team members, teaming firm, and client.
- **Camino WWTP Monitoring & Reporting – El Dorado Irrigation District, Placerville, CA**
Project Manager. Responsible for the activities of the project team providing monitoring and reporting services for this wastewater treatment plant. Direct responsibilities consisted of quality assurance in the oversight of the project engineer conducting research, communicating with the client, facilitating RWQCB interaction, and performing analysis / reporting detailing drainage improvements and upgrades to the site. Also assisted with site work.
- **Camino WWTP Pond 3 Design – El Dorado Irrigation District, Camino, CA**
Project Manager. Responsible for the activities of the project team providing a Phase II Environmental Site Assessment for this wastewater treatment plant. Direct responsibilities consisted of quality assurance in the oversight of the project engineer conducting the installation of monitoring wells and preparation of quarterly monitoring reports required by California RWQCB WDR's. Also assisted with site work.
- **Camino WWTP Pond 3 Certification - El Dorado Irrigation District, Camino, CA**
Project Manager. Responsible for providing a mitigation report to support the certification of El Dorado Irrigation's Pond 3. Tasks included conducting field work, attending client meetings, and preparing a report regarding pond inflow.
- **Camino WWTP Sampling & Analysis Plan – El Dorado Irrigation District, Camino, CA**
Project Manager. Responsible for the activities of the project team providing a sampling and analysis plan to satisfy the groundwater monitoring requirement for the California RWQCB WDR's. Tasks included assisting in conducting field work and reviewing the sampling and analysis plan.
- **Carmichael WTP Infiltration – Carmichael Water District, Carmichael, CA**

Project Manager. Responsible for oversight of the project engineering investigating ways to dispose of filter backwash for the Carmichael Water District's consumptive water treatment plant which filters 17 mgd (million gallons per day) from the American River. Direct responsibilities consisted of QA/QC review of technical, economic, and regulatory feasibility analysis, the identification of preferred alternative, and review of report of waste discharge in accordance with Title 27 to allow permitting of disposal of the backwash to dry wells.

- **Sacramento Area Sewer District PCE Study – Sacramento Regional County Sanitation District, Sacramento, CA**

Principal-in-Charge. Served as Principal-in-Charge of this project involving PCE contamination detected in groundwater in the Fruitridge Road and Stockton Boulevard area of Sacramento. The goal was to identify the source(s) responsible for the contamination. Assessment included site visits to observe physical conditions at the study area and adjacent properties, reviews of historical documents and information provided by the District, as well as review and evaluation of sewer pipeline conditions. Deliverables included a map documenting defect locations within the pipeline, a PCE iso concentration contour map, and a Report of Findings, which summarized the information and assessed if a correlation existed between the documented sewer defects and PCE impacted soil and groundwater associated with past dry cleaning operations and other potential PCE uses.

- **Marin Quarry – Sierra Pacific Industries, Camino, CA**

Project Manager. Responsible for the activities of the project team providing evaluation of bedrock and groundwater conditions for this Sierra Pacific Industries facility. Direct duties include the development of mining plan and mine reclamation plan according to California's Surface Mining and Reclamation Act for a 40-acre hard rock quarry on the north side of the South Fork of the American River Canyon.

- **Mining & Reclamation Plan – Patterson Sand & Gravel, Sheridan, CA**

Project Engineering Geologist. Responsible for the development of mining plan and mine reclamation plan according to California's Surface Mining and Reclamation Act for a 600-acre sand and gravel mine on the Bear River bordering Placer and Yuba Counties.

- **Bear River Mill Site – Sierra Pacific Industries, Nevada County, CA**

Principal-in-Charge. Responsible for the quality control process for this project consisting of an abandoned mine site assessment after 150 years of human activity including hard rock mining and the production of lumber and wood products. Provided support to Sierra Pacific Industries to satisfy the CEQA requirements for the Voluntary Cleanup Agreement. Project scope included conducting research to obtain historical information and previously collected data; developing a conceptual site model; preparing a site specific Health & Safety Plan; preparing a work plan; performing field and laboratory studies; performing a well survey; preparing a monitoring well destruction work plan; providing oversight during installation of ten groundwater monitoring wells; completing a bio accessibility study and report of findings; providing agency coordination and meeting with several regulatory agency representatives; completing Voluntary Cleanup Program application and obtaining required permitting; and reporting.

- **Hazel Creek Mine Improvement – Sierra Pacific Industries, Pollock Pines, CA**

Project Manager. Responsible for the activities of the multi discipline project team during the mine closure and siting of a waste management unit to contain Class C mining waste. Services included mine closure design, construction documents, permitting, borrow site analysis, bid assistance, and construction quality assurance consisting of construction observation and materials testing. Also provided post closure water quality monitoring under permit from California RWQCB WDR's.

Amy Deakyne, PE

REGIONAL DIRECTOR HYDRO STRUCTURES AND DAMS

PROFILE	Amy Deakyne has over 20 years of experience in the engineering field, which includes structural engineering analysis, design, compliance with design standards and building codes, construction review and oversight, and project management for a variety of small and large projects in Northern California. She specializes in structural design and project management of water conveyance structures, flumes, canals, spillways, tunnels, bridges, buildings, retaining structures, and foundations for a variety of public and private clients ranging from water agencies, power agencies, municipal clients, as well as commercial and industrial development. Amy is experienced with management of multi-discipline engineering staff, field technicians, and subconsultants, all working within fixed budgets. She is adept at developing, reviewing, monitoring, and meeting budgets and project schedules; conducting site visits; organizing multiple internal engineering disciplines; coordinating with local regulatory agencies; performing construction observation; managing projects with limited site access; and providing designs to address site constraints. Amy has performed structural analysis and design for small and mid-rise commercial and industrial buildings, single-and multi-family residential buildings, tenant improvements, hydraulic structures, and bridge structures. Her experience includes the structural design of specialty foundation systems; Concrete Masonry Unit (CMU) and Cast-in-Place (CIP) concrete retaining walls; Mechanically Stabilized Earth (MSE) walls; and steel, concrete, timber, and CMU structures. As a project director, Amy provides support to project managers to ensure all the necessary resources are available for each project. She also serves as a client advocate, assuring that milestones are set and met, and that each client is fully satisfied with KGS's services and product.
EDUCATION	• Bachelor of Science, Architectural Engineering, California Polytechnic State University (2006)
PROFESSIONAL ASSOCIATIONS	• Professional Engineer: California C74859 • Leadership in Energy and Environmental Design Professional Accreditation (LEED AP)
RECOGNITION	• American Society of Civil Engineers (ASCE) Engineering Excellence awards; Project Manager and Engineer of Record various projects awarded ASCE Section 9 Engineering Excellence Award

DAM SAFETY PROJECT EXPERIENCE

Provided below is a breakdown of the work experience directly related to Dam Safety experience and including dates to show a consistent dam Safety experience from 2006 to Present. This work is further detailed in the resume below, as some items are relevant but not included in this spreadsheet

Project Duration	Project	Description of Experience
December 2023 – December 2025 Active Engagement 12 months	2024 Part 12D Comprehensive Assessment and L2RA for El Dorado Forebay Dam - FERC No. 184, El Dorado Irrigation District, CA	Served as the Notetaker, Project Manager and Structural SME for the comprehensive field inspection including CA Pre-Inspection preparation report and CA report for the dam in accordance with Appendix 16-C and 16-B of FERC guidelines respectively, and coordinate/conduct a PFMA / L2RA workshop as part of this CA in accordance with FERC guidelines Chapter 17 & 18.
December 2023 – December 2025 Active Engagement 12 months	2024 Periodic Inspections for Echo Aloha, Silver and Caples Lake Dams - FERC No. 184, El Dorado Irrigation District, CA	Served as the project manager and engineer responsible for preparation of the inspection reports for the dams in accordance with FERC guidelines. Oversaw the updates of the STID's.
May 2023 – December 2024 Active Engagement 19 months	PG&E Assets Infrastructure Improvements – Multiple FERC Project Numbers	Responsible for providing FERC Regulatory requirements for each project site, identifying future design constraints, environmental permitting, and regulatory requirements for each site. Worked with the team to review each site, including stie assessments, to collaborate on possible uprates for the powerhouse. Reviewed hydraulic design considerations and provided a structural evaluation of existing infrastructure at each site.
August 2021 – May 2022 Active Engagement 9 months	EID Flumes 4, 5 and 6 Replacement - FERC No. 184, El Dorado Irrigation District, CA - FERC No. 184, El Dorado Irrigation District, CA	Following the declared emergency of the Caldor Fire, provided engineering for the replacement of Flumes 4 5 and 6. Because of the emergency status worked side by side during construction to provide a constructable set of plans to replace the burned wooden flumes with properly designed concrete flumes built to withstand hydraulic, seismic, and geographic loadings so the conveyance system could again convey water to the El Dorado Forebay.
May 2019 – May 2022 Active Engagement 36 months	EID Flume 30 Replacement - FERC No. 184, El Dorado Irrigation District, CA	Responsible for the design and oversight for the replacement of a 25-year-old elevated wooden flume with a 415-foot-long concrete canal structure. Replacement work included flume alignment, a new shotcrete canal, and a new access road to be constructed on a steeply sloping hillside within an undeveloped heavily forested area. Challenges

		included a natural 30-to-40-degree slope inclination throughout the project; the design and construction of MSE bench and walls were utilized to provide support on the sloping terrain. Provided structural design of the new watertight concrete conveyance to meet hydraulic, seismic, and environmental loading conditions. Once design was complete and prepared to move to construction the Caldor fire ripped through and burned down the existing wooden structure making this an emergency. We redesigned the entire structure to be replaced in a shorter construction window meeting all FERC regulatory requirements and the clients water needs. Provided structural oversight and observation during construction
September 2020 – December 2025 Active Engagement 36 months	Northside Canal and Flume Replacements - FERC Project No. 2179 – Merced Irrigation District (MID), Merced County, CA	Engineer responsible for the oversight and activities of the project team including providing observations and assessment of the existing conditions of six flume structures along the Northside Canal. Tasks include data review, site visits, recordation of findings, seismic analysis, and development of alternatives for the retrofit and/or replacement of the aging water conveyance structures versus rerouting the canal around the flumes or under the valley. Following the initial inspection of all six structures we moved into the design phase. Design of new watertight concrete canal in elevated earth berms designed to meet hydraulic, seismic and environmental loading requirements. Following design provided structural observations during construction.
June 2020 – December 2020 Active Engagement 6 months	EID Flume Condition Assessments - FERC No. 184, El Dorado Irrigation District, CA	Performed structural and hydraulic evaluations of elevated and at-grade flume structures acting as water-retaining elements within a 22-mile conveyance system. Responsibilities included assessing load-bearing capacity under hydrostatic and hydrodynamic forces, reviewing structural stability against overtopping and seepage risks, and identifying potential failure modes. Applied industry-standard structural rating systems to quantify condition and prioritize risk mitigation measures. Conducted multiple site inspections, collected and analyzed condition data, and prepared detailed engineering reports. Assessment results supported risk-informed decision-making for the Capital Improvement Plan (CIP), prioritization of flume replacement projects, and scheduling of preventive

		maintenance to ensure compliance with dam safety standards and reliability of critical water infrastructure.
August 2018 – February 2020 Active Engagement 12 months	EID Flume 38-40 Replacement - FERC No. 184, El Dorado Irrigation District, CA	Responsible for oversight, technical direction and support of the multidiscipline project team providing design and engineering for this canal conversion project that consists of the replacement of existing elevated wooden Flume 38— destabilized following a historic breach—to a canal and the replacement of existing elevated wooden flume to a MSE bench with canal. Included in this project are improvements to the canal bench and the design of two replacement bridges over the canal upstream and downstream of Flumes 38 and 39-40. Construction services and observations during construction.
May 2018 – September 2019 Active Engagement 9 months	McKays Point Diversion Dam and New Spicer Meadows Dam Part 12 Periodic Inspection and PFMA - FERC Project No. 2019 – Northern California Power Agency (NCPA)	Responsible for the activities of the project team providing the Independent Consultant Dam Safety Engineering services for two Project 2409 dams in accordance with the requirements of Part 12D of Title 18 of the Code of Federal Regulations. Site inspections included McKays Point Diversion Dam and New Spicer Meadow Dam, both at high elevations, as well as the power tunnel associated with McKays Dam. Following inspections, provided review, evaluation, and updating the existing documentation—Potential Failure Modes Analysis (PFMA), Instrumentation Program, Supporting Technical Information Documents (STID's), and Dam Safety Surveillance Monitoring Plan (DSSMP)—for each dam and preparing Part 12D Summary Reports for FERC review and approval.
June 2019 – December 2019 Active engagement 6 months	EID Canal Condition Assessments - FERC No. 184, El Dorado Irrigation District, CA	Performed structural and hydraulic evaluations of the canal system acting as water-retaining berm elements up to 10 feet deep, within a 22-mile conveyance system, integral to overall dam safety. Responsibilities included assessing load-bearing capacity under hydrostatic and hydrodynamic forces, reviewing structural stability against overtopping and seepage risks, and identifying potential failure modes. Applied industry-standard structural rating systems to quantify condition and prioritize risk mitigation measures. Conducted multiple site inspections, collected and analyzed condition data, and prepared detailed engineering reports. Assessment results supported risk-informed decision-making for the Capital Improvement Plan (CIP), prioritization of flume replacement projects,

		and scheduling of preventive maintenance to ensure compliance with dam safety standards and reliability of critical water infrastructure.
Aug 2018 – February 2019 Active Engagement 6 months	EID Flume 44 Replacement - FERC No. 184, El Dorado Irrigation District, CA	Responsible for assisting with the structural design and engineering for the replacement of multiple severely deteriorated flumes, including Flume 44—473 feet in length with two elevated sections—and located on US Forest Service property. Work included development and preparation of Plans, Specifications, and Estimates (PS&E) and construction administration services in regard to structural engineering aspects.
January 2017– August 2018 Active engagement 18 months	Fordyce Lake Dam Repairs - FERC Project No. 2310 – Confidential Utility Client, Nevada County, CA	Responsible for the preparation of construction documents for repairs at Lake Fordyce Dam. The dam impounds approximately 50,000-acre feet of water before making its way to Lake Spaulding in Nevada County, California. The primary function is to provide storage capacity and regulation of flow for downstream power generation. The dam is approximately 145 feet high rockfill dam with an upstream concrete face. The dam has leaked since construction in the early 1900's. Multiple previous repairs have been attempted to reduce leakage and have not been successful. Performed an inspection and evaluation as well as an alternatives analysis to determine the preferred method for improving the dam to reduce leakage. The selected alternative consisted of installing a new concrete plinth with a grouting program to eliminate voids in the rock fractures below the dam, patching voids in the existing concrete face, abandoning and grouting the old low-level outlet, removing and re-compacting the material at the toe of the upstream face of the dam and covering the upstream face with an impermeable membrane liner. A portion of the project will be approached as design build allowing the contractor to collaborate with designers to streamline the approach to gain access to the site, design, and construction of the cofferdam, abandoning the old low- level outlet, and verifying the geotechnical parameters.
March 2013 – August 2018 Active engagement 15 months	Lower Drum Canal Liner Condition Assessments and Asset Management - FERC Project No. 2310 – Confidential Utility	Responsible for the system assessment of the Lower Drum Canal located between Colfax and Auburn, California from 2013 through 2018. The project consisted of physical walk downs during short outage windows for the canal with the goal of producing a scoring system to assist in creating a CIP for the

	Client, Placer County, CA	Agency's use to plan future projects for restoring the integrity of their system. The canal carries water from the Rollins Reservoir near Colfax to the town of Auburn, California. Provided the Agency with a detailed spreadsheet rating each segment of canal for their planning along their system of waterways.
March 2013 – August 2018 Active engagement 60 months	Lower Drum Canal Liner Replacement - FERC Project No. 14531 – Confidential Utility Client, Placer County, CA	Responsible for providing technical design oversight of engineering design services related to the replacement and rehabilitation of shotcrete canal liner on the Bear River and Lower Wise Canals. The various sites within the Lower Drum canal system have received new concrete or shotcrete canal linings to improve the efficiency of the canal water conveyance system. The design was performed in accordance with the water-tight structure provisions of ACI 350-06 and included specific drainage features at several site to address site-specific water intrusion issues. Specific responsibilities included project management; preparation of plans, specifications, and opinions of probable construction cost; technical oversight of design development; responding to contractor requests for information and unforeseen conditions during construction; and structural observation / inspection during construction at multiple concurrent sites during the seven-days-a-week outages to address modifications to the standard details and address site- specific conditions.
February 2011 – April 2013 Active Engagement 24 months	EID Flume 41 and Spillway 23 Replacement - FERC No. 184, El Dorado Irrigation District, CA	Responsible for preparation of the structural construction documents, opinion of probable construction cost, and technical specifications associated with the flume and spillway replacement project for the watertight conveyance structure. 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 meeting hydraulic, seismic, and environmental loading conditions. Also provided structural design of a new MSE retaining wall that supports the new stabilized flume bench. The project also included inspection, assessment, and 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. Oversaw construction activity.

January 2009 – December 2011 Active Engagement 18 months	EID Flume 9 Replacement	Responsible for preparation of the structural construction documents, opinion of probable construction cost, and technical specifications associated with the flume replacement project for the watertight conveyance project. Provided design suitable for construction constraints that included access exclusive to helicopter, hydraulic and seismic loading. Provided structural design of new pre-cast concrete flume and flume foundations.
March 2008 – December 2010 Active Engagement 18 months	EID Flume 51 Replacement - FERC No. 184, El Dorado Irrigation District, CA	Responsible for preparation of the structural construction documents, opinion of probable construction cost, and technical specifications associated with the 502-foot flume replacement project for EID. Provided structural design of new pre-cast concrete flume, flume foundations, and new shotcrete lined earthen embankment canal up to 10' in height to meet hydraulic and structural loading requirements. Designed new MSE retaining wall reaching up to 24 feet in height supporting the flume and bench. This project was awarded the ASCE's 2009 Geotechnical Project of the Year and ASCE's 2010 Region 9 Outstanding Small Water Project.
February 2007 – December 2009 Active Engagement 18 months	EID Flume 31 & 31A Replacement - FERC No. 184, El Dorado Irrigation District, CA	Prepared structural construction documents, cost estimates, and technical specifications for flume replacement critical to dam safety and water conveyance reliability. Developed multiple design alternatives to address challenging site constraints, including helicopter-only access, ensuring constructability without compromising structural integrity. Engineered elevated steel substructure and pre-cast concrete flume designed to withstand hydrostatic and hydrodynamic loads. Designed flume foundations and shotcrete-lined canal to maintain hydraulic performance and prevent seepage. Incorporated mechanically stabilized earth (MSE) retaining walls to provide slope stability and mitigate failure risks, ensuring compliance with FERC dam safety standards.
June 2006 – December 2008 Active Engagement 18 Months	EID Flume 49/50 Replacement - FERC No. 184, El Dorado Irrigation District, CA	Staff Engineer responsible for assisting in the structural design including seismic, hydraulic loading and environmental loading for salvaged concrete flume sections for a watertight conveyance system. Also assisted in the design of structural retaining walls reaching 16 feet in height to stabilize a flume bench above a replaced spillway. Served as the

		multi-discipline point of contact during construction and provided structural observation.
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- PG&E Grizzly Forebay Dam Access Improvements - Federal Energy Regulatory Commission (FERC) Project No. 2107 (P-619) – Mead & Hunt, Plumas County, CA**
 Project Manager. Responsible for oversight and support of geotechnical engineering team. The project consists of the design recommendations and geotechnical support during construction that is to take place over two years. Improvements include guardrails at the crest, structural steel stairs, and refurbishing existing ladders. In addition to typical geotechnical foundation recommendations, the report prepared criteria for rock anchors.
- Poe Tunnel Alternatives Analysis - FERC Project No. 2107 – Confidential Utility Client, Butte County, CA**
 Project Manager / Technical Lead. Served as Project Manager and Technical Lead for an alternatives analysis to evaluate measures to repair localized cracks in a segment of the Poe Tunnel, a 19- foot (lined) to 24-foot (unlined) diameter pressurized tunnel with a total length of about 32,829 feet. During a routine inspection, localized cracking was observed in a 30-foot segment of the lined tunnel. Teamed with a tunnel design consultant, developed, and evaluated 10 alternatives for repair of the tunnel and recommended the preferred alternative for design. Evaluation criteria included cost, constructability, design life, hydraulic performance, and anticipated head loss to generation. Specific responsibilities included identifying and evaluating multiple alternatives for liner repair, as well as working with staff to produce design analysis for each alternative including construction costs and design objectives. Served as the main point of contact for coordination with client and subconsultant.
- FERC Project No. 184 – El Dorado Irrigation District (EID), El Dorado County, CA**
 - 2024 Part 12D Comprehensive Assessment and L2RA for El Dorado Forebay Dam FERC No. 184, El Dorado Irrigation District, CA** Part of a team to perform a Part 12D and Level 2 risk assessment facilitation for El Dorado Irrigation District’s Forebay Dam. Served as the Notetaker, Project Manager and Structural SME for the comprehensive field inspection including CA Pre-Inspection preparation report and CA report for the dam in accordance with Appendix 16-C and 16-B of FERC guidelines respectively, and coordinate/conduct a PFMA / L2RA workshop as part of this CA in accordance with FERC guidelines Chapter 17 & 18.
 - Hydro General Bridge Design.** Project Director / Senior Engineer. Responsible for project team oversight and client relations. Tasked with providing a general bridge design that can be constructed at any location along the El Dorado Canal without having to perform geotechnical surveys for the bridge abutments. The bridge would allow maintenance crews to drive a 20, 000-pound mini excavator or a skid steer over the canal. Project includes site visits, meetings, engineering design, and construction drawings.
 - Canal Release Points Condition Assessment.** Senior Engineer. Responsible for oversight and quality review during the condition assessment of 26 release points along EID’s El Dorado Canal, which conveys water 22 miles from the American River at the systems diversion dam to El Dorado Forebay. Project included pedestrian and drone surveys of each spillway and the spillway channel from the canal to the American River and compilation of the findings into a summary report.
 - Pacific Tunnel Rehabilitation.** Project Director. Responsible for project team oversight and client relations. Tasked with providing comprehensive construction inspection and materials testing services for FERC-guideline-compliant rehabilitation work, which included the complete replacement of the upstream and downstream tunnel portals, reinforced air placed concrete tunnel liner, and reinforced

concrete tunnel invert including installation of rock anchors / mechanical couplers, and design improvements to the existing access roads to provide all weather and heavy equipment access.

- **Flume 38-40 Canal Conversion.** Project Director. Responsible for oversight and support of the multidiscipline project team providing design and engineering for this canal conversion project that consists of the replacement of existing elevated wooden Flume 38— destabilized following a historic breach—to a canal and the replacement of existing elevated wooden flume to a MSE bench with canal. Included in this project are improvements to the canal bench and the design of two replacement bridges over the canal upstream and downstream of Flumes 38 and 39-40. With the improved access and eliminating complex elevated superstructure assembly at Flume 39-40, flume benches could be reconstructed using MSE retaining walls to support the new Flume 38-40 flume sections. Following approval of construction documents, provided bid support, a US Forest Service survey, and an array of construction services to include construction staking, and Quality Control Inspection Plan (QCIP) and Specialty Inspection Services.
- **Flume 30 Replacement Design.** Co-Project Manager / Senior Engineer. Served as Co-Project Manager and Senior Project Engineer for the replacement of a 25-year-old elevated wooden flume with a 415-foot-long concrete canal structure. Replacement work included flume alignment, a new shotcrete canal, and a new access road to be constructed on a steeply sloping hillside within an undeveloped heavily forested area. Challenges included a natural 30-to-40-degree slope inclination throughout the project; the design and construction of MSE bench and walls were utilized to provide support on the sloping terrain. Responsible for advising / mentoring new project manager to provide seamless comprehensive project management, as well as assisting with structural engineering design.
- **Flume Conditions Assessment.** Senior Engineer. Responsible for assisting in the collection of data and the evaluation of all elevated and at grade flume structures along the 22-mile water conveyance system. Duties included client consultation, conducting multiple site visits / assessments, data analysis, and report preparation. Findings of these flume condition assessments have been used to develop a CIP, prioritize flume replacement projects, and schedule ongoing maintenance.
- **Canal Condition Assessments 2019.** Project Manager / Technical Structural Lead. Responsible for the system assessment of the El Dorado Canal located in Pollock Pines California. The project consisted of physical walk downs of the canal with the goal of producing a scoring system to assist in creating a CIP for the District. The CIP is used to plan future projects for restoring the integrity of their system. The canal carries water from the American River near Kyburz to the El Dorado Forebay in Pollock Pines, California. Provided the District with an assessment report for their use to rate the individual sections along the 22 miles of canal.
- **El Dorado Irrigation District Flume 44 Replacement.** Staff Engineer. Responsible for assisting with the structural design and engineering for the replacement of multiple severely deteriorated flumes, including Flume 44—473 feet in length with two elevated sections—and located on US Forest Service property. Work included development and preparation of Plans, Specifications, and Estimates (PS&E) and construction administration services in regard to structural engineering aspects.
- **Flume 41 and Spillway 23 Replacement Design.** Project Engineer. Responsible for preparation of the structural construction documents, opinion of probable construction cost, and technical specifications associated with the flume and spillway replacement project for the EID. 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 MSE retaining wall that supports the new flume bench. The project also included inspection, assessment, and 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.

- **14 Mile Tunnel & Spillway 46 Improvements.** Project Engineer. Responsible for preparation of the structural construction documents, opinion of probable construction cost, and technical specifications associated with the spillway replacement and upgrade project for EID. 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, responded to contractor requests for information, and performed structural observation / inspection at the site.
- **Esmeralda Creek Flume Restoration.** 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 the flume, timber supporting bents, foundations, and structural steel long span support for Lennon flume over the El Dorado Canal. The project also included inspection and repairs as well as 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 responded to contractor requests for information.
- **Diversion Dam & Fish Screen Repair.** Staff Engineer. Responsible for evaluation of a failure of the fish screen and catwalk support structure within the intake structure. Failure occurred during a high water event and disrupted the EID's ability to generate power. The impact on the district's revenue from power generation was potentially significant. Provided rapid response, close coordination with district efforts, and quick decision making to support the most cost efficient and expedient repair. Structural services included evaluation of failure mechanisms, consultation with district staff and management, preparation of a forensic evaluation report with recommendations, design of repairs, buoyancy evaluation and mitigation measures so that the facility could be safely dewatered, plus structural observation / inspection during construction. The facility was placed back in service in less than two weeks.
- **El Dorado Powerhouse.** Project Engineer. Responsible for preparation of the structural construction documents for the upgrades to an existing powerhouse. Provided structural calculations for new openings in an existing concrete building, as well as new steel ladder and exterior second floor landing for emergency egress. Work included fall protection requirements to various portions of the building to comply with OSHA Fall Protection requirements. In a subsequent contract, served as Responsible for the structural design to support the construction of two new access openings in CMU walls with man doors to provide access to the existing vertical air shafts located inside the building. Tasks included site visit / inspection, construction documents—plans and specifications—as well as construction support services during construction.
- **El Dorado Powerhouse Roof Condition Assessment.** Project Engineer. Responsible for the structural condition assessment of the roof at the El Dorado Powerhouse for the EID in Pollock Pines, California. Provided site visit / inspection and oversight for the coordination of subcontractors to preform non-destructive testing at the roof to identify structural concerns. The current condition of the roof lead to water leaks into the interior of the powerhouse. Oversaw the calculations associated with verification of the existing structural system to determine what necessary upgrades were required.
- **Typical Wood Flume Design Updates.** 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 and designed foundations for various conditions of soil and rock support. The construction documents would be utilized by the District's Construction Crew at various locations along the length of canal including remote sites, where materials would be hiked in or delivered by helicopter.

- **Flume 9 Replacement Design.** Staff Engineer. Responsible for preparation of the structural construction documents, opinion of probable construction cost, and technical specifications associated with the flume replacement project for EID. Provided design suitable for construction constraints that included access exclusive to helicopter. Provided structural design of new pre-cast concrete flume and flume foundations.
- **Flume 51 Replacement Design.** Staff Engineer. Responsible for preparation of the structural construction documents, opinion of probable construction cost, and technical specifications associated with the 502-foot flume replacement project for EID. Provided structural design of new pre-cast concrete flume, flume foundations, and new shotcrete lined canal. Designed new MSE retaining wall reaching up to 24 feet in height supporting the flume and bench. This project was awarded the ASCE's 2009 Geotechnical Project of the Year and ASCE's 2010 Region 9 Outstanding Small Water Project.
- **Flume 31 & 31A Replacement.** Staff Engineer. Responsible for preparation of the structural construction documents, opinion of probable construction cost, and technical specifications associated with the flume replacement project for EID. Responsible for providing various design alternatives to determine best structural system to overcome site construction constraints, including exclusively helicopter access. Provided structural design of elevated steel substructure to support new pre-cast concrete flume. Provided structural design of new pre-cast concrete flume, flume foundations, and new shotcrete lined canal. Designed new MSE retaining wall supporting the flume and bench.
- **Flume 3 Replacement Design.** Staff Engineer. Responsible for preparation of the structural construction documents and technical specifications associated with the 109-foot wood flume replacement project for El Dorado Irrigation. Work included design of the new updated wood flume and foundation system, providing the appropriate code updates. Because of the remote location, heavy equipment and construction equipment were brought in by helicopter.
- **Flumes 2 & 2A Replacement.** Staff Engineer. Responsible for preparation of the structural construction documents and technical specifications associated with the replacement of these wood flumes. Work included design of the new updated wood flumes and foundation systems and providing the appropriate code updates. Because of their remote locations, heavy equipment and construction equipment were brought in by helicopter for construction of the 99- and 64-foot-long replacement flumes.
- **Spillway 10 Upgrades.** Staff Engineer. Responsible for providing structural design for the replacement of an aged, automated spillway structure constructed primarily of wood components. The new structure includes passive and emergency spill sections. Work included site inspection and assisted in the design of a protective cover for maintenance and operations personnel, as well as an equipment and storage building.
- **Flume 49 / 50 Replacement.** Staff Engineer. Responsible for assisting in the structural design and construction administration for the replacement of this approximate 0.25-miles-long deteriorated elevated wood flume with salvaged concrete flume sections removed from another EID bench. Also assisted in the design of structural retaining walls reaching 16 feet in height. Served as the multi-discipline point of contact during construction for structural, civil, and geotechnical submittals and field questions.

- **Hazel Creek Tunnel Repair.** Staff Engineer. Responsible for assisting with the structural engineering services for this EID project to repair the landslide-damaged water conveyance including a 160-foot extension of the outlet portal of the tunnel utilizing a reinforced concrete box section. Tasks included review of shop drawings and submittals.
- **Slope Condition Assessment Update - FERC Project No. 2699 – Utica Water & Power Authority, Angels Camp, CA**
Senior Engineer. Responsible for oversight and quality review during the condition assessment of three portions of the Utica Canal previously evaluated in 2015. Work included a site walk of these areas followed by assessment and development of improvement alternatives and a summary report. Concluded that Flume 14, a 3/4-mile-long flume with documented rock damage, needed no further action. Presented alternatives for improving the over-steepened, unvegetated slope above Flume 9 as well as the slope's negative impact on the support structure. Alternatives for improving the slope above Flume 3A were also presented.
- **Nevada Irrigation District (NID) Texas Creek Flume 11219133 – Mead & Hunt, Nevada County, CA**
Project Manager. Responsible for the activities of the project team providing geologic and geotechnical observations and assessment of existing conditions at this flume owned and operated by the NID. Tasked to provide corresponding photos and recommendations for the need of interim and future repairs of the flume and/or the need for more comprehensive investigation and analysis.
- **Northside Canal Flume Analysis - FERC Project No. 2179 – Merced Irrigation District (MID), Merced County, CA**
Project Manager. Responsible for the activities of the project team providing observations and assessment of the existing conditions of six flumes relative to the Northside Canal. Tasks include data review, site visits, recordation of findings, seismic analysis, and development of alternatives for the retrofit and/or replacement of the aging water conveyance structures versus rerouting the canal around the flumes or under the valley. The alternatives analysis to consider costs, environmental aspects, and robustness of the proposed solutions.
- **Northside Canal Flume 7 Emergency Response & Flume Replacement - FERC Project No. 2179 – Merced Irrigation District (MID), Merced County, CA**
Project Manager. Responsible for providing emergency support in response to the collapse of the Flume 7 facility on the Northside Canal to include site visit, assessment, and preparation of report with findings and recommendations. Subsequently contracted to provide engineering design and drawings for the replacement of the damaged flume. Tasks included hydraulic analysis, slope geometry, design review meetings, construction documents, and engineering support during construction.
- **Collierville Fall Prevention – Northern California Power Agency (NCPA), Collierville, CA**
Project Manager. Responsible for the activities of the project team providing the engineering support and special inspections during construction. Special inspections included bolt testing to confirm anchorage and strength.
- **McKays Point Diversion Dam - FERC Project No. 2019 – Northern California Power Agency (NCPA), Calaveras and Tuolumne Counties, CA**
Project Manager. Responsible for the activities of the project team providing the Independent Consultant Dam Safety Engineering services for two Project 2409 dams in accordance with the requirements of Part 12D of Title 18 of the Code of Federal Regulations. Site inspections included McKays Point Diversion Dam and New Spicer Meadow Dam, both at high elevations, as well as the power tunnel associated with McKays Dam. Following inspections, provided review, evaluation, and updating the existing documentation—

Potential Failure Modes Analysis (PFMA), Instrumentation Program, Supporting Technical Information Documents (STID's), and Dam Safety Surveillance Monitoring Plan (DSSMP)—for each dam and preparing Part 12D Summary Reports for FERC review and approval.

- **Tunnel Inspections 2020 - FERC Project No. 2019 – Northern California Power Agency (NCPA), Avery, CA**
Project Manager. Responsible for the activities of the project team providing the inspection and condition assessment of five tunnels totaling approximately 13,861 linear feet. Tasks included inspections, terrestrial scanning of five tunnel repair areas, documentation of findings, and preparation of a summary report.
- **El Dorado Irrigation District (EID) Pacific Crest Trail Bridge - FERC Project No. 2019 – Doug Veerkamp General Engineering, El Dorado County, CA**
Project Director. Responsible for the activities of the project team providing the construction observation, inspections, concrete testing, and compaction testing during construction of a bridge over an eroded section of the Pacific Crest Trail. Project work also included laboratory testing for moisture density and core strength of concrete, as well as summary reporting.
- **MFP Powerhouse Pedestrian Bypass - FERC Project No. 2079 – Placer County Water Agency (PCWA), Placer County, CA**
Project Director / Project Manager. Responsible for the activities of the project team currently providing consultation, analysis, and an alternatives analysis to support the future design of a pedestrian bypass around PCWA's powerhouse and over the tailrace. Tasks include a review of existing documentation; conducting a site visit with client representative to observe existing conditions, collect data, and discuss possible alternatives; consulting PCWA FERC License and Operations staff for additional input; preparing an Alternatives Analysis Memorandum that includes cost estimates of the alternatives. Alternatives being considered are to design and construct a cantilevered steel walkway mounted to the powerhouse, a pedestrian bridge separate from the powerhouse, a native surface trail uphill of the powerhouse and switchyard with a bridge over the penstock, or a secure, chain-link tunnel through the switchyard.
- **Colfax Ballpark Tank Slope Stabilization - FERC Project No. 2079 – Placer County Water Agency (PCWA), Colfax, CA**
Project Manager. Responsible for the activities of the multi-discipline project team currently providing consultation and preliminary design of the alternative chosen for slope stabilization above PCWA's water tank at the Colfax Ballpark. The 60-foot-diameter tank surrounded by asphalt pavement is bounded on one side by a nine-foot-tall CMU retaining wall. The over-steepened slope above the CMU wall shows signs of distress with its own retaining wall's foundation undermined by erosion and movement of slope material. PCWA's chosen alternative was to stabilize the slope with a gabion basket gravity retaining wall above the CMU wall, which includes the removal of the upper retaining wall for construction of the gabions.
- **Spring Valley Flume Alternatives Analysis - FERC Project No. 2079 – Placer County Water Agency (PCWA), Colfax, CA**
Project Manager. Responsible for the activities of the project team currently providing consultation, analysis, and an alternatives analysis to support the future design of a water conveyance structure to replace PCWA's Spring Valley Flume, an aging 37-foot-long wooden flume portion of the Boardman Canal. Tasks include a review of existing documentation; conducting a site visit with client representative to observe existing conditions, collect data, and discuss possible alternatives; preparing an Alternatives Analysis Memorandum that includes cost estimates of the alternatives, a decision matrix, and construction sequencing for recommended alternative. Alternatives being considered are to replace the flume with a piped flume section, a gunite / concrete flume, or a steel Lennon flume.

- **Ralston Penstock Access - FERC Project No. 2079 – Placer County Water Agency (PCWA), Placer County, CA**

Project Manager. Responsible for the activities of the project team currently providing consultation, analysis, and design of improvements to the access stairs at the Ralston Powerhouse penstock. Work has progressed in stages. Starting tasks, concerned with stairs between saddles 27 and 38, included a review of existing documentation; conducting a site visit with client representative to observe existing conditions, collect data, and discuss possible alternatives; and preparing a Design Criteria Memorandum that included preliminary layout sketches and cost estimates of the alternatives that considered structural, geotechnical and geologic, Occupational Safety and Health Administration (OSHA), helicopter installation limitations, penstock clearances, and security and safety requirements. Subsequent tasks included surveys for topographic mapping, a geotechnical site assessment, and the design of access stairs from the top of the penstock downslope to existing stairs near saddle 15. Newly contracted tasks include a site visit to inspect and observe the existing ladder footings along the penstock between saddles 27 and 38; additional document review and topographic surveys; and the design of new access stairs, ships ladders, ladders, and platforms to replace that portion of existing ladders.

- **Wooden Flume Substructures - FERC Project No. 2079 – Placer County Water Agency (PCWA), Placer County, CA**

Project Manager. Responsible for the activities of the project team providing consultation, design, and construction documents for replacement of PCWA's water conveyance flume substructures (including Lennon flumes) that utilize structural steel components in lieu of the existing timber framing. Work included development of standardized designs for replacement of wood substructures with engineered steel structures of varying heights. Due to limitations on outages for construction, the structural system was engineered to allow for replacement while each flume remained in service.

- **Water Canal System Evaluation - FERC Project – Confidential Client, Nevada County, CA**

Project Director / Senior Engineer. Responsible for oversight and support of the multi-discipline engineering team. The project consisted of evaluating the condition of a 19-mile-long FERC-licensed water canal system to support the development of a Capital Improvement Plan utilized for future maintenance and repair as well as for prioritizing projects to improve or replace critical infrastructure in the client's power-generation and water-delivery system. Work included document review; field assessments to photograph and document conditions; drone survey; tunnel inspection; field testing and analysis of structures; development of risk matrix; meetings with the client; and summary report concisely presenting the collected data and the results of materials testing, risk assessment, prioritization, and suggested alternatives for repair or replacement; and a PowerPoint presentation that included summaries of each element of the evaluation process.

- **Fordyce Lake Dam Repairs - FERC Project No. 2310 – Confidential Utility Client, Nevada County, CA**

Project Manager. Responsible for the preparation of construction documents for repairs at Lake Fordyce Dam. The dam impounds approximately 50,000-acre feet of water before making its way to Lake Spaulding in Nevada County, California. The primary function is to provide storage capacity and regulation of flow for downstream power generation. The dam is approximately 145 feet high rockfill dam with an upstream concrete face. The dam has leaked since construction in the early 1900's. Multiple previous repairs have been attempted to reduce leakage and have not been successful. Performed an inspection and evaluation as well as an alternatives analysis to determine the preferred method for improving the dam to reduce leakage. The selected alternative consisted of installing a new concrete plinth with a grouting program to eliminate voids in the rock fractures below the dam, patching voids in the existing concrete face, abandoning and grouting the old low-level outlet, removing and re-compacting the material at the toe of the upstream face of the dam and covering the upstream face with an impermeable membrane liner. A portion of the project will be approached as design build allowing the contractor to collaborate with

designers to streamline the approach to gain access to the site, design, and construction of the cofferdam, abandoning the old low-level outlet, and verifying the geotechnical parameters.

- **PG&E Waterways Safety Improvements - FERC Project No. 2310 – Confidential Utility Client, California**
Project Manager / Engineer of Record. Responsible for engineering design services related to the structural analysis, design, and construction of improvements to PG&E's Lower Drum Water Conveyance System. The safety improvements to various water conveyance and power generation sites within the system included fencing along the canal, gates to limit access, safety gates at canal access ramps, escape ladders, and new pedestrian bridges over the canal. Work included construction support with review of construction submittals and contractor requests for information, as well as performing onsite structural observation.
- **PG&E Bear River Canal Liner Replacement - FERC Project No. 2310 – Confidential Utility Client, Placer County, CA**
Project Manager. Served as Project Manager for engineering design services related to the liner replacement of PG&E's Bear River Canal for 2014. The various sites within PG&E's Bear River Canal will receive new concrete lining during the 2014 construction season in order to improve the stability and efficiency of the canal water conveyance system. SAGE's role included inspection, assessment, and design of new concrete lining, sub drainage, and miscellaneous civil improvements.
- **Lower Drum Canal Liner Condition Assessments and Asset Management - FERC Project No. 2310 – Confidential Utility Client, Placer County, CA**
Project Manager. Responsible for the system assessment of the Lower Drum Canal located between Colfax and Auburn, California from 2013 through 2018. The project consisted of physical walk downs during short outage windows for the canal with the goal of producing a scoring system to assist in creating a CIP for the Agency's use to plan future projects for restoring the integrity of their system. The canal carries water from the Rollins Reservoir near Colfax to the town of Auburn, California. Provided the Agency with a detailed spreadsheet rating each segment of canal for their planning along their system of waterways.
- **Emergency Storm Response - FERC Project No. 2266 – Confidential Utility Client, Nevada County, CA**
Project Manager / Technical Lead. Served as Project Manager and Technical Lead for preparation of construction documents for emergency repairs at the 8/2 Flume on the South Yuba Canal with the goal of restoring the integrity of the canal put out of commission by severe storm damage. The canal carries water from Lake Spaulding to Deer Creek Forebay in Nevada County, California. Performed a condition assessment and 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 240-foot-long timber flume was constructed on a bench 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 into the gunite-lined canal downstream of the timber flume. The area above the slope was graded to drain away from the new slope, leaving it only exposed to surface water resulting from direct precipitation. Specific construction responsibilities included oversight, addressing detail modifications as well as site-specific conditions, responding to requests for information, reviewing contractor submittals, and reviewing field change notifications.
- **Chicago Park Flume Repair - FERC Project No. 2266 – Nevada Irrigation District (NID), Nevada County, CA**
Project Manager. Responsible for inspection, evaluation, preparation of construction documents, and support during construction for the repair of an elevated concrete flume located in Chicago Park along one of NID's canal systems. Along two sections of the elevated flume found evidence that supporting soil settlement was causing local distress. The flume required underpinning and installation of new foundation

support features. Responsibilities included engineering oversight, design quality control, and support during construction to include responding to contractor requests for information and reviewing construction submittals.

- **Chicago Park Flume Repair - FERC Project No. 2266 – Nevada Irrigation District (NID), Nevada County, CA**
Project Manager. Responsible for inspection, evaluation, preparation of construction documents, and support during construction for the repair of an elevated concrete flume. Along two sections of the elevated flume found evidence that supporting soil settlement was causing local distress. The flume required underpinning and installation of new foundation support features. Responsibilities included engineering oversight, design quality control, and support during construction to include responding to contractor Requests for Information (RFIs) and reviewing construction submittals.
- **Echo Lake Conduit Bridge – El Dorado Irrigation District (EID), El Dorado County, CA**
Project Manager / Engineer of Record. Responsible for the preparation of construction documents and construction administration for a new steel bridge crossing over the Echo Lake Conduit along the Pacific Crest Trail. The selected alternative consisted of a new weathering steel bridge to be placed on concrete bridge abutments, utilizing stamped and colored concrete. Specific responsibilities included performing an alternatives analysis to determine the preferred bridge type meeting all design constraints, as well as each stakeholder's aesthetic preferences, supporting the preparation of construction documents and bridge procurement, and providing construction administration services.
- **Lower Drum Canal Liner Replacement - FERC Project No. 14531 – Confidential Utility Client, Placer County, CA**
Project Manager. Responsible for providing technical oversight of engineering design services related to the replacement and rehabilitation of shotcrete canal liner on the Bear River and Lower Wise Canals in 2014, 2015, and 2017. The various sites within the Lower Drum canal system have received new concrete or shotcrete canal linings to improve the efficiency of the canal water conveyance system. The design was performed in accordance with the water-tight structure provisions of ACI 350-06 and included specific drainage features at several site to address site-specific water intrusion issues. Specific responsibilities included project management; preparation of plans, specifications, and opinions of probable construction cost; technical oversight of design development; responding to contractor requests for information and unforeseen conditions during construction; and structural observation / inspection during construction at multiple concurrent sites during the seven-days-a-week outages to address modifications to the standard details and address site-specific conditions.
- **Lower Wise Canal Impermeable Liner - FERC Project No. 14531 – Confidential Utility Client, Auburn, CA**
Senior Engineer. Responsible for supporting civil design services for the 2017 McClintock Lane Impermeable Liner site located on the Lower Wise Canal in Auburn, California. The site is located below a draw having historic issues with underseepage and canal uplift. The project objectives included inspection, assessment, and installation of 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. Specific responsibilities included supporting engineering efforts to provide design specifications for geomembrane liners, engineering detailing of new liner to existing concrete connections, and technical support for coordination with concrete structures upstream.
- **Canal System Design Standards – Confidential Utility Client, California**
Project Manager. Responsible for technical review to evaluate and update standard drawings for repair and rehabilitation of water conveyance canals for hydropower systems throughout California. The goal was to develop system-wide standards that address a wide range of canal capacity and topographic conditions. The lining design was performed in accordance with the water-tight structure provisions of American Concrete Institute (ACI) 350-06 and included benchmarking research into the state of the practice. The

standard drawings incorporate alternative materials, such as synthetic fiber-reinforced shotcrete, to improve constructability in remote locations. Specific responsibilities included developing standard drawings and specifications for concrete / shotcrete canal linings, revision of standard details and specifications to address lessons learned during construction, and technical and quality control review of construction documents.

- **PG&E Chili Bar Powerhouse Tailrace Gate Hoist Replacement - FERC Project No. 2155 – Confidential Utility Client, El Dorado County, CA**

Senior Project Engineer. Served as Senior Project Engineer responsible for the structural design review of construction drawings and calculations for the tailrace hoist support frames. The design included checking the existing structure for the new frame and hoist system, frame to concrete anchors, and pedestrian rated gate hatch covers. Coordinated efforts between the hoist supplier and PG&E's maintenance crew and electrical engineers.

- **PG&E Wise Tunnel No. 9 Repair – Syblon Reid General Engineering Contractors, Auburn, CA**

Project Engineer. Responsible for providing a structural inspection and analysis of an existing tunnel to determine an appropriate scheme to upgrade the tunnel. Performed a 3D computer analysis to model the stresses experienced in the tunnel and produced structural calculation for detailing the upgrades for the tunnel repairs. Work was contracted through Syblon Reid Construction on behalf of PG&E. The repair consisted of grouting voids and replacing deteriorated or non-existent liner and reinforcing at varying tunnel sections. The construction drawings provided grouting procedures and temporary shoring requirements for construction. Served as Responsible for assisting with an evaluation of the tunnel lining under anticipated grout pressures using Finite Element (FE) analysis methods. Also participated on the structural team providing drawings and specifications for the construction of the shoring system and grouting sequence.

- **PG&E Wise Tunnel No. 9 Repair – Syblon Reid General Engineering Contractors, Auburn, CA**

Staff Engineer. Responsible for preparation of the structural construction drawings associated with structural repairs to portions of an existing water conveyance tunnel. Work was contracted through Syblon Reid Construction on behalf of PG&E. The repair consisted of grouting voids and replacing deteriorated or non-existent liner and reinforcing at varying tunnel sections. The construction drawings provided grouting procedures and temporary shoring requirements for construction.

- **Tiger Creek Flume Evaluation - FERC Project 137 – PG&E, West Point, CA**

Project Engineer. Responsible for the structural computer modeling and structural calculations for this existing concrete flume that is an essential part of PG&E's hydroelectric system on Tiger Creek in Calaveras County.



Experience in Action



Item 7A

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June 16, 2026

Debbie-Anne A. Reese, Acting Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

**RE: Angels and Utica Hydroelectric Projects (FERC Project Nos. 2699 and 2019)
Submittal of Privileged (CUI//PRIV) Cultural Resources Evaluations and Finding of
Effect Analysis report and Request for Concurrence with the California State
Historic Preservation Office**

Dear Secretary Reese,

Utica Water and Power Authority (UWPA) is proposing conduit exemptions and license surrenders for the Angels Hydroelectric Project, Federal Energy Regulatory Commission (FERC) Project No. 2699 (Angels Project) and the Utica Hydroelectric Project, FERC Project No. 2019 (Utica Project) (the Projects or Undertaking), in Calaveras County, California. FERC is the lead federal agency for the Projects and would approve the Undertaking to remove FERC jurisdiction and oversight for portions of the existing Projects while operations and maintenance of the hydroelectric systems would continue. No new ground disturbance, system modifications, or rehabilitation activities are proposed as part of the Undertaking. On February 16, 2024, FERC designated UWPA as their non-federal representative for carrying out informal consultation pursuant to Section 106 of the National Historic Preservation Act.

Previous cultural resources investigations within the Projects' areas of potential effects (APEs) were conducted in 1991 for the preparation of the Historic Properties Treatment Plan for the Angels and Utica Projects.¹ These investigations documented numerous archaeological and built environment resources associated with the historic hydroelectric systems and earlier land uses within the region. The results of these efforts were incorporated into Historic Properties Management Plans prepared for the Angels Project in 2006 and the Utica Project in 2008. However, many previously identified resources were not formally reevaluated under current National Register of Historic Places (NRHP) criteria, and several determinations of eligibility were described only as "potentially eligible" or otherwise lacked sufficient information for formal evaluation. Additionally, it does not appear that many of the earlier eligibility recommendations received concurrence from the California State Historic Preservation Office (SHPO).

¹ Davis-King, Shelly, J. Marvin, D. Theodoratus, T. Brejla, and D. Hay. 1993. Waterscapes in the Sierra: Cultural Resources Investigations for the Utica Project (FERC 2019), Volumes I and II. Report submitted to Pacific Gas and Electric Company, San Francisco.

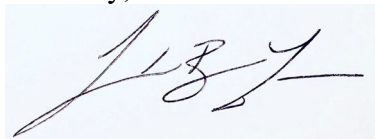
To address these information gaps and support ongoing Section 106 consultation for the proposed undertaking, in 2025, UWPA conducted focused field investigations and archival review to revisit previously identified cultural resources within the APEs. The work emphasized updating documentation for known archaeological sites, landscape features, and built environment resources; evaluating or reevaluating NRHP eligibility where needed; and assessing the potential effects of the proposed undertaking on historic properties associated with the Projects. The results of these efforts are presented in the Cultural Resources Evaluations and Finding of Effect Analysis Report for the Utica and Angels Hydroelectric Projects.

A draft version of this report was circulated to consulting parties on June 18, 2025, including the California SHPO and consulting Tribes, for review and comment as part of the ongoing consultation process. On February 25, 2026, the California SHPO provided concurrence on the findings included in the report.

Pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations (36 Code of Federal Regulations [CFR] Part 800), and on behalf of UWPA, SWCA Environmental Consultants has enclosed a copy of the Cultural Resources Evaluations and Finding of Effect Analysis report.

This report is being filed as Privileged (CUI//PRIV) pursuant to 18 CFR § 388.112. The security classification of each component in this filing is shown in the enclosure table. We respectfully request any additional written comments or cultural resource questions on the report or forms be submitted to Josh Peabody, Principal Investigator and Cultural Resources Director, at Joshua.Peabody@swca.com. Thank you for your review of this report and please let me know if you need anything further.

Sincerely,



Joshua Peabody, M.A
Principal Investigator, Cultural Resources Director
SWCA Environmental Consultants

Encl:	Transmittal Letter – Public		
	Cultural Resources Evaluations and Finding of Effect Analysis report - CUI//Privileged		
eFile:	Kimberly D. Bose, Secretary via eFile at www.ferc.gov	cc:	Robert Fitzgerald
			Associate State Archaeologist, California SHPO (916) 894-5496 Robert.Fitzgerald@parks.ca.gov

Document Content(s)

Public_Utica-Angels_P2019-P2699_FOE_Report_T-Ltr.pdf1