



AGENDA
REGULAR MEETING OF THE BOARD OF DIRECTORS
District Board Room, 2890 Mosquito Road, Placerville, California
October 23, 2017 — 9:00 A.M.

Board of Directors

George Osborne—Division 1
President

Michael Raffety—Division 3
Vice President

Greg Prada—Division 2
Director

Dale Coco, MD—Division 4
Director

Alan Day—Division 5
Director

Executive Staff

Jim Abercrombie
General Manager

Brian D. Poulsen, Jr.
General Counsel

Jennifer Sullivan
Clerk to the Board

Jesse Saich
Communications

Brian Mueller
Engineering

Mark Price
Finance

Jose Perez
Human Resources

Tim Ranstrom
Information Technology

Margaret Washko
Operations

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

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

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

CALL TO ORDER

Roll Call
Pledge of Allegiance
Moment of Silence

ADOPT AGENDA

COMMUNICATIONS

General Manager's Employee Recognition

PUBLIC COMMENT

COMMUNICATIONS

General Manager
Clerk to the Board
Board of Directors

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

APPROVE CONSENT CALENDAR

Action on items pulled from the Consent Calendar

CONSENT CALENDAR

1. Finance (Pasquarello)

Ratification of EID General Warrant Registers for the periods ending October 3 and October 10, 2017, and Board and Employee Expense Reimbursements for these periods.

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

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

Option 3: Take no action.

Recommended Action: Option 1.

2. Clerk to the Board (Sullivan)

Approval of the minutes of the October 10, 2017 regular meeting of the Board of Directors.

Option 1: Approve as submitted.

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

Option 3: Take no action.

Recommended Action: Option 1.

3. Finance (Pasquarello)

Funding approval for District Capital Improvement Plan (CIP) Projects.

Option 1: Authorize funding for the CIP project as requested in the amount of \$55,000.

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

Option 3: Take no action.

Recommended Action: Option 1.

4. Operations / Engineering (Washko/Mueller)

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

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

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

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

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

5. Engineering (Eden-Bishop)

Consideration to adopt a resolution authorizing the General Manager to sign and submit a grant proposal to the California Governor's Office of Emergency Services and the Federal Emergency Management Agency Hazard Mitigation Grant Program DR-4308 for flood water improvements related to the Upper Main Ditch Piping Project, Project No. 11032.

Option 1: Adopt a resolution authorizing the General Manager to sign and submit a grant proposal to the California Governor's Office of Emergency Services and the Federal Emergency Management Agency Hazard Mitigation Grant Program DR-4308 for flood water improvements for the Upper Main Ditch Piping Project, Project No. 11032.

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

Option 3: Take no action.

Recommended Action: Option 1.

6. Engineering (M. Johnson)

Consideration to award a contract amendment to C&M Backflow Testing and Repair, Inc. in the not-to-exceed amount of \$64,000 for 2017 annual inspection of residential recycled water dual-plumbed lots.

Option 1: Award a contract amendment to C&M Backflow Testing and Repair, Inc. in the not-to-exceed amount of \$64,000 for 2017 annual inspection of residential recycled water dual-plumbed lots.

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

Option 3: Take no action.

Recommended Action: Option 1.

7. Engineering (Corcoran)

Consideration to adopt by resolution the 2016 United States Bureau of Reclamation Five-Year Water Management Plan Update.

Option 1: Adopt by resolution the 2016 United States Bureau of Reclamation Five-Year Water Management Plan Update.

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

Option 3: Take no action.

Recommended Action: Option 1.

END OF CONSENT CALENDAR

WORKSHOPS

8. Office of the General Counsel (Poulsen)

Draft Amendments to Board Policy 9020: Establishing New Service.

Recommended Action: None – Information only.

9. Engineering (Mueller)

2018-2022 Capital Improvement Plan (CIP) Workshop.

Recommended Action: None – Information only.

INFORMATION ITEMS

10. Office of the General Counsel / Finance / Engineering (J. Noel/Price/Mueller)

FEMA, OES and Project 184 property insurance update.

Recommended Action: None – Information only.

11. Office of the General Counsel (Poulsen)

Administrative Regulation 3075: Responding to Public Records Act Requests.

Recommended Action: None – Information only.

ACTION ITEMS

12. Office of the General Counsel (Poulsen)

Consideration to waive the attorney-client privilege and publicly disclose confidential memoranda prepared by the District's former General Counsel regarding Proposition 218 compliance.

Option 1: Waive the attorney-client privilege and publicly disclose confidential memoranda prepared by the District's former General Counsel regarding Proposition 218 compliance.

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

Option 3: Take no action.

Recommended Action: Option 3.

13. Information Technology (Ranstrom)

Consideration to award a contract to CDW Government, Inc. (CDW-G) in the not-to-exceed amount of \$393,000 and Dell in the not-to-exceed amount of \$144,000 for the replacement of data center computer equipment; and authorize project funding of \$550,000 for the Data Center Computer Replacement Project, Project Number 17043.01.

Option 1: Award a contract to CDW-G in the not-to-exceed amount of \$393,000 and Dell in the not-to-exceed amount of \$144,000 for the replacement of data center computer equipment; and authorize project funding of \$550,000 for the Data Center Computer Replacement Project, Project Number 17043.01

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

Option 3: Take no action.

Recommended Action: Option 1.

CLOSED SESSION

A. Closed Session pursuant to Government Code Section 54956.9(d)(4) (Poulsen)

Conference with General Counsel – Initiation of litigation pursuant to paragraph (4) of subdivision (d) of Government Code Section 54956.9: (two potential cases)

B. Closed Session pursuant to Government Code Section 54956.9(d)(1) (Poulsen)

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

REVIEW OF ASSIGNMENTS

ADJOURNMENT

TENTATIVELY SCHEDULED ITEMS FOR FUTURE MEETINGS

Engineering

- Consideration to adopt the 2018-2022 Capital Improvement Plan (CIP), Action, November 13
- Consideration to award a construction contract for the Outingdale tank replacement, Action, November 13 (Wilson)

Finance

- 2017-2018 Mid-Cycle Operating Budget and 2018-2022 Financial Plan, Workshop, November 13
- Approve a resolution of the El Dorado Irrigation District authorizing the execution of an escrow agreement to fund a payment of \$3,000,000 for the Refunding Revenue Bonds, Series 2014A and approving certain acts in connection therewith and certain other matters. Additionally approve a resolution of the El Dorado Irrigation District authorizing the execution of an escrow agreement to fund a payment of \$3,000,000 for the Refunding Revenue Bonds, Series 2012A and approving certain acts in connection therewith and certain other matters, Action, November 13 (Price)

Office of the General Counsel

- Presentation of Annual Report by Reeb Government Relations, LLC for 2017, Information, December 11 (Leeper)

EL DORADO IRRIGATION DISTRICT
October 23, 2017

General Manager Communications

Awards and Recognitions

- a) Congratulations to Linda King, who is retiring after more than 11 years of service. Linda is a dedicated public servant, and proudly represented the District's mission and guiding principles. We wish her great health and relaxation in her retirement journey.

- b) We received an email from Danny Jones in appreciation of the District's Utility Billing staff. He wrote "thank you all very much for not only listening to me but to do so with a caring attitude and with intent of actually helping me..." Great job!

Staff Reports and Updates

- a) Update on former Rancho Ponderosa Wastewater Treatment Plant – Summary by Margaret Washko

General Manager Communications

October 23, 2017

Update on former Rancho Ponderosa Wastewater Treatment Plant

On December 12, 1986 the Central Valley Regional Water Quality Control Board (CVRWQCB) adopted Waste Discharge Requirements Order 86-236 which prescribed the requirements for the discharge of wastewater from the former Rancho Ponderosa Wastewater Treatment Plant which was located approximately one mile northeast of Rescue. Approximately 35,000 gallons per day of domestic wastewater was collected from the Rancho Ponderosa subdivision and treated in two facultative ponds with disposal by percolation and evaporation. The ponds are located adjacent to Kelly Creek with access via Skinner Lane.

In February 2006, the District notified the CVRWQCB that wastewater seeps were found on the outside of the pond containment berms. On May 26, 2006 the CVRWQCB issued a Cleanup and Abatement Order (No. R5-2006-0712) directing the District to mitigate the seepage from pond 2 into Kelly Creek. As ordered by the CVRWQCB, in December 2006 the District purchased a 4,000 gallon pumper truck to manually haul wastewater to the DCWWTP. Engineering determined that the best way to achieve compliance was to build a new lift station at the former treatment plant location and abandon the pond system. Along with the lift station the District built approximately 7,000 feet of 6-inch force main along Skinner Lane, Green Valley Road and an 8-inch gravity line along Old Meder Road to route flows to the Deer Creek Wastewater Treatment Plant (DCWWTP). The good news is that the additional flows are used as recycled water!

The plant was removed from service in February 2009 when it was fully replaced by the Skinner Lane lift station. The cost of the project was \$4 million which averted fines of up to \$10,000 per day for the bypass or overflow of untreated or partially treated wastewater to waters of the state, resurfacing of wastewater, and wastewater found outside the designated disposal area.

On June 1, 2011 the CVRWQCB approved a Decommissioning Plan submitted by the District and in March 2016 further information was provided and an inspection by the CVRWQCB confirmed that infrastructure was removed and the property graded as delineated in the Decommissioning Plan. We are delighted to let the public and the Board know that on August 11, 2017 Order No. R5-2017-0100 was adopted, by the CVRWQCB, rescinding the WDR Order No. 86-236.

EL DORADO IRRIGATION DISTRICT

Subject: Ratification of EID General Warrant Registers for the periods ending October 3 and October 10, 2017, and Board and Employee Expense Reimbursements for these periods.

Previous Board Action

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

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

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

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

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

Summary of Issue

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

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

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

Staff Analysis/Evaluation

Warrant registers submitted for October 3 and October 10, 2017 totaling \$730,783.00, and Board and Employee Expense Reimbursements for these periods.

Current Warrant Register Information

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

<u>Register Date</u>	<u>Check Numbers</u>	<u>Amount</u>
October 3, 2017	663142 – 663297	\$ 433,724.44
October 10, 2017	663298 – 663436	\$ 297,058.56

Current Board/Employee Expense Payments and Reimbursement Information

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

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

Board Decision/Options

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

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

Option 3: Take no action.

Staff/General Manager’s Recommendation

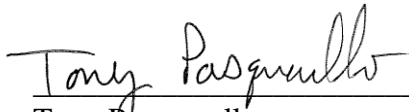
Option 1.

Support Documents Attached

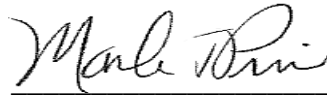
Attachment A: Executive Summaries

Attachment B: Board Expenses/Reimbursements

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



Tony Pasquarello
Finance Manager



Mark Price
Finance Director (CFO)



Jennifer Sullivan
Clerk to the Board



Brad Muller for
Jim Abercrombie
General Manager

Executive Summary for October 3, 2017 -- \$433,724.44:

This summary highlights significant disbursements made by major business activity:

General District Operations (Fund 110)

- \$18,917—AT&T for phone service
- \$9,801—Ferguson Enterprises, Inc. for warehouse inventory
- \$10,505—Hunt & Sons, Inc. for card lock fuel and fuel deliveries at various locations
- \$6,044—Pace Supply Corporation for warehouse inventory
- \$9,500—Reeb Government Relations, LLC for October 2017 retainer
- \$5,770—Tri-Signal Integration, Inc. for annual alarm maintenance

Engineering Operations (Fund 210)

- \$3,023—Tully & Young, Inc. for 2017 federal water management plan

Water Operations (Fund 310)

- \$4,290—AWWA CA-NV Section for conference registration for 12 employees
- \$8,269—E & M Electric & Machinery, Inc. for four outdoor video cameras
- \$3,574—Geocon Consultants, Inc. for geotechnical services at Outingdale
- \$10,231—Olin Chlor Alkali Products for sodium hypochlorite at EDHWTP and Reservoir A
- \$6,963—Serrano El Dorado Owners Association for road maintenance cost share
- \$3,693—Univar USA, Inc. for caustic soda at Reservoir A

Wastewater Operations (Fund 410)

- \$5,536—California Custom Tee's for 173 work shirts
- \$3,320—California Overhead Doors, Inc. for a belt press door
- \$4,471—Carnahan Electric, LTD for installation of odor control unit
- \$25,000—Central Valley Clean Water Association for toxicity studies for DCWWTP and EDHWWTP
- \$23,589—Denali Water Solutions, LLC for sludge hauling and disposal at DCWWTP and EDHWWTP
- \$7,325—Ferguson Enterprises, Inc. for pipe patch kits
- \$54,098—GHD, Inc. for geotechnical services for 2017 storm events
- \$5,674—Polydyne, Inc. for clarifloc at DCWWTP
- \$7,123—Univar USA, Inc. for caustic soda at DCWWTP
- \$8,119—WECO Industries, LLC for Sanafoam for the Vaporooter truck

Recycled Water Operations (Fund 510)

- \$6,915—Univar USA, Inc. for caustic soda at EDHWWTP

Hydroelectric Operations (Fund 610)

- \$4,721—Instrumart for pressure and level transmitters

Recreation Operations (Fund 710)

- \$12,124—Blue Ribbon Personnel Services for temporary labor at Sly Park Recreation
- \$9,786—Sage Engineers, Inc. for engineering consultant services to evaluate seepage from upper main ditch at Scout Hill complex, Pinecone Camp, Liberty Tree complex, and Hazel Creek complex
- \$3,000—Sierra Site Services, LLC for toilet pumping service

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

- \$19,009—Aecom Technical Services, Inc. for environmental studies – FERC C46-9 Recreation Resource (Project #06098H.01)
- \$9,325—Cardno, Inc. for surveying and consulting services – FERC C38-4B Caples Lake Stabilization (Project #06076H.01)
- \$5,298—Garcia and Associates for monitoring services:
 - >Project #17013.01 – Forebay Dam Modifications (\$2,423)
 - >Project #06021H.01 – FERC C37-8 Water Temperature (\$2,875)
- \$9,701—GEI Consultants, Inc. for engineering services:
 - >Project #15018.01 – Penstock Assessment (\$4,747)
 - >Project #11004.01 – Lake Aloha Dam Regulatory Improvements (\$218)
 - >Project #03011H.01 – Forebay Dam Upgrades (\$4,736)
- \$7,125—HydroScience Engineers, Inc. for engineering design services – Carson Creek 2 Lift Station Abandonment (Project #16040.01)
- \$3,513—Landmark Environmental, Inc. for environmental studies:
 - >Project #06097H.01 – FERC C59 Facility Management Plan (\$1,756)
 - >Project #07030H.01 – FERC C57 Transportation System Management (\$1,757)
- \$6,378—Sierra Security & Fire for security upgrades as Reservoir A and 1 – Security Equipment Replacement (Project #14036.01)

Executive Summary for October 10, 2017 -- \$297,058.56:

This summary highlights significant disbursements made by major business activity:

General District Operations (Fund 110)

- \$8,007—Ferguson Enterprises, Inc. for warehouse inventory
- \$4,580—Hunt & Sons, Inc. for fuel deliveries at various locations
- \$3,792—Life Insurance Company of North America for October life insurance premiums
- \$5,403—U.S. Bancorp Services, Inc. for conferences, training, and job postings

Engineering Operations (Fund 210) none to report

Water Operations (Fund 310)

- \$4,165—Aqua Tech Company for Reservoir A pump removal
- \$4,481—Eurofins Eaton Analytical, Inc. for analytical lab services

Wastewater Operations (Fund 410)

- \$4,244—Cintas Corporation for uniform cleaning service
- \$3,492—CLS Labs for regulatory lab testing
- \$4,040—Flo-Line Technology, Inc. for a lift station pump and ABS repair kit
- \$12,300—Gordon Mott Roofing Company, Inc. for a roof at Shingle Springs pump station
- \$3,142—Hach Company for monitoring equipment parts
- \$13,668—Hastie's Capitol Sand and Gravel Company for asphalt base rock and sand
- \$5,995—Industrial Electrical Company for four softstarts with remote display
- \$3,034—Muniquip, LLC for a level controller
- \$7,929—Seco Controls, LLC for a flowmeter

Recycled Water Operations (Fund 510)

- \$5,191—Polydyne, Inc. for antifoaming agent at DCWWTP

Hydroelectric Operations (Fund 610) none to report

Recreation Operations (Fund 710)

- \$11,500—Blue Ribbon Personnel Services for temporary labor at Sly Park Recreation
- \$9,000—Carsten Tree Service for tree removal at Sly Park Recreation
- \$8,917—El Dorado Disposal Service, Inc. for trash disposal services

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

- \$25,213—Doug Veerkamp General Engineering, Inc. for paving services – Sleepy Hollow Waterline Replacement (Project #16038.01)
- \$10,720—Flo-Line Technology, Inc. for pumps at Waterford 9 – 2017 WW Equipment Replacement Program (Project #17009.01)
- \$13,085—HydroScience Engineers, Inc. for engineering design services – South Point Lift Station Upgrade (Project #16008.01)
- \$14,751—ICM Group, Inc. for on-call construction inspection services :
 - >Project #06078H.01 – FERC:C50.3 Caples Dam Parking (\$3,688)
 - >Project #07008H.01 – FERC:C51.8 Silver Lake Camp Ground (\$3,688)
 - >Project #07009H.01 – FERC:C51.8 Woods Creek (\$3,688)
 - >Project #16042.01 – FERC:C51.8 Ferguson Point (\$3,687)
- \$11,711—Meyers, Nave, Riback, Silver & Wilson for legal representation – Camp 2 Bridge Replacement (Project #06030H.01)

Board Expenses/Reimbursements
Warrant Registers dated 10/03/17 - 10/10/17

DESCRIPTION	George Osborne	Michael Raffety	Greg Prada	Dale Coco, MD	Alan Day	Total
Personal Vehicle Expense			\$70.62	\$8.03		\$78.65
Hotel						\$0.00
Meals or Incidentals Allowance						\$0.00
Airfare, Car Rental, Misc Travel						\$0.00
Fax, Cell or Internet Service			\$80.00	\$40.00		\$120.00
Meeting or Conference Registration						\$0.00
Meals with Others						\$0.00
Membership Fees/Dues						\$0.00
Office Supplies			\$36.62			\$36.62
Reimburse prepaid expenses						\$0.00
Miscellaneous Reimbursements						\$0.00
	\$0.00	\$0.00	\$187.24	\$48.03	\$0.00	\$235.27

Employee Expenses/Reimbursements
Warrant Registers dated 10/03/17 - 10/10/17

EMPLOYEE	DESCRIPTION	AMOUNT
Anthony Hinchliffe	Wastewater Treatment Plant Operator Training Mileage	\$154.08
Mark Price	AICPA Membership Renewal	\$265.00
Ronald Kilburg	Safety Management Training Expenses, Asbestos Recertification Mileage	\$314.46
Jene Hayden	Water Treatment and Distribution Plant Operator Training Courses	\$377.23
Brian Mueller	CSDA Conference Expenses	\$308.88
Dianne Matteson	OSHA Training Mileage	\$150.64
		\$1,570.29



MINUTES
REGULAR MEETING OF THE BOARD OF DIRECTORS
 District Board Room, 2890 Mosquito Road, Placerville, California
 October 10, 2017 — 9:00 A.M.

Board of Directors

George Osborne—Division 1
 President

Michael Raffety—Division 3
 Vice President

Greg Prada—Division 2
 Director

Dale Coco, MD—Division 4
 Director

Alan Day—Division 5
 Director

Executive Staff

Jim Abercrombie
 General Manager

Brian D. Poulsen, Jr.
 General Counsel

Jennifer Sullivan
 Clerk to the Board

Jesse Saich
 Communications

Brian Mueller
 Engineering

Mark Price
 Finance

Jose Perez
 Human Resources

Tim Ranstrom
 Information Technology

Margaret Washko
 Operations

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CALL TO ORDER

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

Roll Call Board

Present: Directors Osborne, Prada, Coco and Day

Absent: Director Raffety

Staff

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

Pledge of Allegiance and Moment of Silence

President Osborne led the Pledge of Allegiance followed by a moment of silence dedicated to those affected by the ongoing fire events in California as well as the first responders who are working hard to protect their communities.

ADOPT AGENDA

ACTION: Agenda was adopted.

MOTION PASSED

Ayes: Directors Coco, Day, Osborne and Prada

Absent: Director Raffety

COMMUNICATIONS

General Manager's Employee Recognition

Awards and Recognitions

- a) Welcome to the District, Joseph Wicks. Joseph has been hired to the position of Customer Field Technician II in the Meter Services Division.
- b) Welcome to the District, Mark Dorey. Mark has been hired to the position of Construction and Maintenance Worker II in the Operations Department.
- c) Congratulations, Abbie Tompkins. Abbie has been promoted to the position of Records Management Technician II in the Office of the General Counsel.
- d) We received an email from Dean Kofford in appreciation of Karen Cross and Jesse Saich, Communications staff who designed and maintain the District's website. He wrote "You have done an absolutely perfect job on website design! I usually run into very user unfriendly websites that totally waste gobs of my time. I am not a 25 year old tech hound who loves this stuff. Websites for me are just a tool and I usually experience sites designed by IT people who are clueless or don't care about end user application." Way to go, Karen and Jesse.
- e) We received an email from Jim Rowe of El Dorado Hills in appreciation of EID staff. He wrote "I am a citizen customer of EID for over 14 years. Never have I been more impressed and proud with EID performance in delivery, maintenance, long range planning/finance and total safety culture than through the sometimes discordant elections and the incredible challenges of up/down economies and the burden of weather the last five years and last winter, in particular. I am an engineer/large project manager as a 50-year career and am now 90 years old, so I think I have some 'standing' in thanking all of you for what you have made EID and how you serve your constituency." Outstanding job!

PUBLIC COMMENT

Paul Raveling, El Dorado Hills

Ali Ghorbanzadeh addressed the Board and provided two handouts: a copy of correspondence with District staff (previously sent to the District) and a copy of Mr. Ghorbanzadeh's consumption history.

COMMUNICATIONS

General Manager

Staff Reports and Updates

None

Clerk to the Board

None

Board of Directors

Director Coco reported on meetings with the Cameron Park and Serrano Country Clubs to discuss his opposition to the proposed California Water Fix Plan and proposed legislation regarding water conservation.

APPROVE CONSENT CALENDAR

ACTION: Consent Calendar was approved.

MOTION PASSED

Ayes: Directors Coco, Day, Osborne and Prada

Absent: Director Raffety

CONSENT CALENDAR

1. Finance (Pasquarello)

Ratification of EID General Warrant Registers for the periods ending September 5, September 12, September 19 and September 26, 2017, and Board and Employee Expense Reimbursements for these periods.

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

MOTION PASSED

Ayes: Directors Coco, Day, Osborne and Prada

Absent: Director Raffety

2. Clerk to the Board (Sullivan)

Approval of the minutes of the September 11, 2017 regular meeting of the Board of Directors.

ACTION: Option 1: Approved as submitted.

MOTION PASSED

Ayes: Directors Coco, Day, Osborne and Prada

Absent: Director Raffety

3. Office of the General Counsel (P. Johnson)

Consideration of a resolution to authorize execution of an easement quitclaim to property owner Matthew C. Claudius (APN 120-391-14-100).

ACTION: Option 1: Adopted Resolution No. 2017-021, approving and authorizing execution of an easement quitclaim as submitted.

MOTION PASSED

Ayes: Directors Coco, Day, Osborne and Prada

Absent: Director Raffety

4. Office of the General Counsel (P. Johnson)

Consideration of a resolution to authorize execution of an easement quitclaim to property owners Steve R. Williams and Calle R. Williams (APN: 089-202-80) for an abandoned District ditch easement.

ACTION: Option 1: Adopted Resolution No. 2017-022, approving and authorizing execution of an easement quitclaim as submitted.

MOTION PASSED

Ayes: Directors Coco, Day, Osborne and Prada

Absent: Director Raffety

5. Finance (Pasquarello)

Funding approval for District Capital Improvement Plan (CIP) Projects.

ACTION: Option 1: Authorized funding for the CIP project as requested in the amount of \$145,000.

MOTION PASSED

Ayes: Directors Coco, Day, Osborne and Prada

Absent: Director Raffety

6. Engineering (Mutschler)

Consideration to award a contract to GHD in the not-to-exceed amount of \$77,898 for geotechnical investigation of the Flume 30 replacement, and authorize funding of \$104,898 for the Flume 30 replacement project, Project No. 17041.

ACTION: Option 1: Awarded a contract to GHD in the not-to-exceed amount of \$77,898 for geotechnical investigation of the Flume 30 replacement, and authorized funding of \$104,898 for the Flume 30 replacement project, Project No. 17041.

MOTION PASSED

Ayes: Directors Coco, Day, Osborne and Prada

Absent: Director Raffety

END OF CONSENT CALENDAR

ACTION ITEMS

7. Finance (Pasquarello)

Consideration to award a contract to Hudson Henderson & Company, Inc. in the not-to-exceed amount of \$126,750 for audit services in fiscal years ending December 31, 2017, 2018 and 2019.

ACTION: Option 1: Awarded a contract to Hudson Henderson & Company, Inc. in the not-to-exceed amount of \$126,750 for audit services in fiscal years ending December 31, 2017, 2018, and 2019.

MOTION PASSED

Ayes: Directors Prada, Coco, Osborne and Day

Absent: Director Raffety

8. Operations / Engineering (Washko/Mueller)

Consideration to ratify Resolution No. 2017-014 to maintain the emergency declaration as a result of ongoing storm activities; and update on the status of the SAD Bridge repair.

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

MOTION PASSED

Ayes: Directors Day, Coco, Osborne and Prada

Absent: Director Raffety

CLOSED SESSION

A. Closed Session pursuant to Government Code Section 54956.9(d)(4) (Poulsen)

Conference with General Counsel – Initiation of litigation pursuant to paragraph (4) of subdivision (d) of Government Code Section 54956.9: (one potential case)

ACTION: The Board met with general counsel and provided direction but took no reportable action.

REVIEW OF ASSIGNMENTS

None

ADJOURNMENT

President Osborne adjourned the meeting at 10:13 A.M.

George W. Osborne
Board President
EL DORADO IRRIGATION DISTRICT

ATTEST:

Jennifer Sullivan
Clerk to the Board
EL DORADO IRRIGATION DISTRICT

Approved: _____

EL DORADO IRRIGATION DISTRICT

Subject: Funding approval for District Capital Improvement Plan (CIP) Projects.

Recent Board Action

October 24, 2016 – The Board adopted the 2017-2021 CIP, subject to available funding.

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

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

Summary of Issue

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

Staff Analysis/Evaluation:

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

Funding Source

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

**Table 1-1
CIP Funding Request**

	Project Name and Number	2017-2021 CIP Plan¹	Funded to Date	Actual Costs to date²	Amount Requested	Funding Source
1.	Green Valley Bridge Relocation 17035	\$0	\$50,000	\$45,262	\$55,000	100% Water rates
	TOTAL FUNDING REQUEST				\$55,000	

¹ Includes all existing costs plus any expected costs in the 5 year CIP Plan.

² Actual costs include encumbrances.

The following section contains a brief breakdown and description of the project in the table.

CIP Funding Request

Project No.	17035	Board Date	10/23/2017
Project Name	Green Valley Bridge Relocation		
Project Manager	Wilson		

Budget Status	\$	%
Funded to date	\$ 50,000	--
Spent to date	\$ 45,262	91%
Current Remaining	\$ 4,738	9%

Funding Request Breakdown	\$
Outside labor	\$ 20,000
Outside services	\$ 10,000
Capitalized labor	\$ 25,000
Total	\$ 55,000

Funding Source
100% Water rates

Description
<p>El Dorado County plans to construct two new bridges on Green Valley Road, one at Mound Springs Creek and one at Indian Creek. The District has existing waterlines and two pressure reducing stations (Green Valley PRS #1 and Greenstone PRS #1) in Green Valley Road that will be impacted by the project and require relocation at District cost since in the public right of way. Based on preliminary information from the County, approximately 900 feet of 8 and 12-inch waterline may be impacted. The relocation work needs to be completed in front of the County's project next year as the District is potentially in conflict with the new bridge abutments. The District has pre-purchased all necessary pressure reducing valves, isolation valves, fittings, and enclosure for the relocation of both pressure reducing stations. These will be installed alongside the relocation of the District's waterline in Green Valley Road.</p> <p>The purpose of this funding request is to allocate funding for an outside contractor to complete potholing of the District's existing waterlines to determine the extent of the relocation. Funding will also be used to complete all necessary survey to determine the existing right of way and design for relocation. Additionally, funding will allow for staff time to design the relocation of the existing waterline and pressure reducing stations. Approximately \$325,000 has been included in the draft 2018-2022 CIP.</p>

Board Decisions/Options:

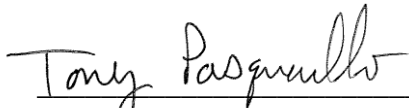
Option 1: Authorize funding for the CIP project as requested in the amount of \$55,000.

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

Option 3: Take no action.

Staff/General Manager Recommendation

Option 1.



Tony Pasquarello
Accounting Manager



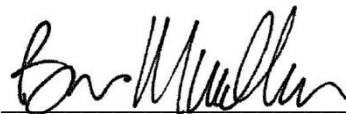
Elizabeth Wells
Engineering Manager



Brian Mueller
Engineering Director



Mark Price
Finance Director (CFO)



_____ for
Jim Abercrombie
General Manager

EL DORADO IRRIGATION DISTRICT

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

Previous Board Actions

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

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

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

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

April 10, 2017 –

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

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

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

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

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

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

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

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

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

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

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

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

Summary of Issue(s)

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

Staff Analysis/Evaluation

There have been over 40 separate storm related work tasks that have been documented since January 7, 2017. Remaining work is anticipated to continue through the end of the year and possibly into 2018. As long as active construction work authorized under the emergency declaration continues, staff recommends the Board continue to maintain the emergency

declaration. Currently, the repair of Rock Crusher Road and the canal breach downstream of Flume 10 continue under construction. The Rock Crusher Road repair project is anticipated to be completed by October 27, 2017. While not affecting water delivery, the repair of the canal breach downstream of Flume 10 may likely extend into 2018 as a result of the delay to repair the SAD Bridge to restore access to the project site combined with the anticipated onset of winter weather conditions.

Board Decisions/Options

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

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

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

Staff/General Manager's Recommendation

Option 1 (*four-fifths vote required*)

Supporting Documents Attached

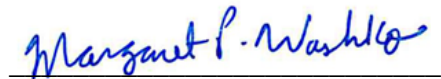
Attachment A: Resolution No. 2017-014



Brian Mueller, P.E.
Engineering Director



Mark Price
Finance Director



Margaret P. Washko, P.E.
Operations Director



Brian Poulsen
General Counsel

 for

Jim Abercrombie
General Manager

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

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

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

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

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

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

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

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

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

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

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

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

///

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

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

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

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

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

18 WHEREAS, District Board Policy 2050 authorizes the District’s General Manager to act “in
19 emergency situations where no Board Policies or Administrative Regulations exist;” and

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

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

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

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

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

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

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

7 Public Contract Code section 11102

8 CEQA Guidelines section 15359

9 Public Contract Code section 20567

10 District Board Policy 3060

11 Public Contract Code section 22050(a)(1)

12 Public Resources Code section 21080(b)(2)

13 Public Resources Code section 21080(b)(4) and CEQA Guidelines section 15269(c)

- 14 2. The foregoing findings and declarations are based upon written, oral, and visual evidence,
15 including both facts and professional opinions, presented to the Board at the hearing of this
16 Resolution and upon the Minutes of the meeting at which this Resolution was adopted.
- 17 3. The Board hereby ratifies all actions taken by the District General Manager and his
18 designees, prior to the adoption of this Resolution, which the General Manager and his
19 designees reasonably deemed necessary to respond to the emergency declared herein.
- 20 4. The Board hereby delegates, authorizes, and directs the District General Manager and his
21 designees to take all further actions reasonably deemed necessary to respond to the
22 emergency declared herein. The General Manager or his designees shall report to and seek
23 ratification of the Board of Directors for each action taken in excess of their normal
24 authority, at the first regular Board of Directors meeting held after each such action.
- 25 5. This Resolution shall take effect immediately upon adoption, and shall supersede
26 Resolution No. 2017-007. Subject to the ratification
27 required by Public Contract Code sections 22050(b)(3), (c)(1), and (c)(2), and by Board
Policy 3060, this Resolution shall remain in full force an effect until rescinded by a
subsequent Resolution of the Board of Directors.

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

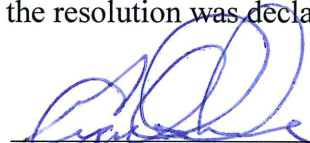
5 AYES: Directors Day, Prada, Osborne, Raffety and Coco

6 NOES:

7 ABSENT:

8 ABSTAIN:

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



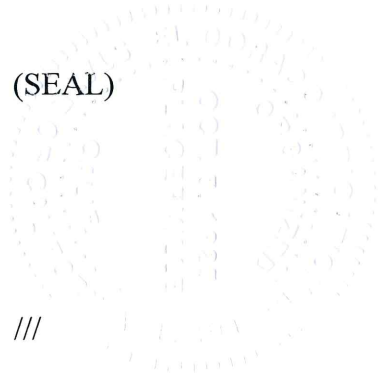
George W. Osborne, President
Board of Directors
EL DORADO IRRIGATION DISTRICT

11
12 ATTEST:

13 

14 Jennifer Sullivan
15 Clerk to the Board
16 EL DORADO IRRIGATION DISTRICT

17 (SEAL)



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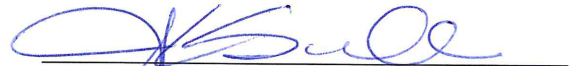
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1 I, the undersigned, Clerk to the Board of the EL DORADO IRRIGATION DISTRICT
2 hereby certify that the foregoing resolution is a full, true and correct copy of a Resolution of the
3 Board of Directors of the EL DORADO IRRIGATION DISTRICT entered into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



Jennifer Sullivan
Clerk to the Board
EL DORADO IRRIGATION DISTRICT

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EL DORADO IRRIGATION DISTRICT

Subject: Consideration to adopt a resolution authorizing the General Manager to sign and submit a grant proposal to the California Governor's Office of Emergency Services and the Federal Emergency Management Agency Hazard Mitigation Grant Program DR-4308 for flood water improvements related to the Upper Main Ditch Piping Project, Project No. 11032.

Previous Board Action

January 13, 2014 – The Board adopted a resolution authorizing the General Manager to submit a grant proposal to the United States Bureau of Reclamation for the WaterSMART: Water and Energy Efficiency Grants FY 2014 for the Main Ditch Improvements.

February 24, 2014 – The Board approved \$62,670 for the Main Ditch Project for preparation of a Basis of Design Report.

June 9, 2014 – The Board authorized funding of \$174,000 for the Main Ditch Project for topographical survey and research into the history and extent of existing easements and rights of way.

December 8, 2014 – The Board adopted a resolution authorizing the General Manager to sign/submit a grant proposal to the United States Bureau of Reclamation for the WaterSMART: FY 2015 for the Main Ditch.

May 11, 2015 – The Board approved a contract with PPC Land Consultants in the amount of \$176,362.62 for title research and easement acquisition and authorized funding of \$201,362.62.

June 22, 2015 – The Board approved a contract with Domenichelli and Associates in the not-to-exceed amount of \$160,291 for the Main Ditch Project final design and authorized funding of \$259,543.

October 13, 2015 – The Board adopted the 2016–2020 CIP, which included this project, subject to funding availability.

November 9, 2015 – The Board authorized project funding of \$50,000 for a 30% design cost estimate peer review, permeability modeling and staff time.

January 11, 2016 – The Board approved RWA Project Agreement in the not-to-exceed amount of \$12,500 and authorized funding of 72,500 for the Main Ditch Project.

April 25, 2016 – The Board approved a contract with Stantec Consulting Services, Inc. in the not-to-exceed amount of \$199,970 for preparation of an Environmental Impact Report for the Main Ditch Project, and authorized total funding of \$299,970.

July 25, 2016 – The Board adopted a Resolution authorizing the General Manager to execute a grant agreement with Reclamation in the amount of \$1,000,000; approved a change order to the professional services agreement with Stantec in the amount of \$124,972 for compliance with federal statutes and regulations; and authorized total funding of \$189,972.

June 26, 2017 – The Board approved professional services contract amendments with Domenichelli and Associates in the amount of \$155,668, Stantec in the amount of \$271,783, and PPC Land Consultants in the not-to-exceed amount of \$48,311 for incorporation of storm water flooding analysis and improvements and authorized total funding of \$595,762.

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

BP 5000, Water Supply Management: The Board is committed to provide a water supply based on the principles of reliability, high quality, and affordability in a cost-effective manner with accountability to the public.

BP 5030, Water Conservation: It is Board policy to take reasonable and prudent measures to conserve all water and to adopt and implement water-use efficiency programs that will benefit its customers.

Summary of Issue

In January 2017, storm water flooding occurred along the abandoned portion of the Main Ditch below the Reservoir 1 Water Treatment Plant (WTP), known as the Middle Main Ditch. As a result, on June 26, 2017, the Board approved professional services contract amendments to incorporate storm water flood improvements into the Upper Main Ditch piping project by returning storm water to natural drainage courses.

In an effort to offset improvement costs, staff submitted a Notice of Interest to the California Governor's Office of Emergency Services (Cal OES) for Federal Emergency Management Agency funding from its Hazard Mitigation Grant Program (HMGP). The proposed storm water improvements on the Upper Main Ditch have been determined by Cal OES to be eligible for hazard mitigation grant funding. Staff is currently preparing the full grant application which requires a resolution adopted by the Board of Directors authorizing the General Manager to submit the application.

Staff Analysis/Evaluation

The Upper Main Ditch is a water supply conveyance facility. Although it was not designed, and is not operated as a storm water conveyance facility, runoff from approximately 348 acres of the upper Long Canyon watershed passively flows into the Upper Main Ditch. During storm events, storm water enters the ditch and flows past the Reservoir 1 WTP to the middle portion of the Main Ditch when the WTP is offline for annual Project 184 maintenance. During the 2017 storm events, storm water collected in the Upper Main Ditch flowed into the Middle Main Ditch and overtopped the ditch banks, flowing onto neighboring private property. The District received numerous complaints and allegations of private property damage. In light of the long term liability facing the District related to the Middle Main Ditch, on June 26, 2017, the Board approved contracts incorporating storm water improvements into the Upper Main Ditch piping project alternatives that are intended to return storm water to natural drainage courses.

To mitigate for increased flows downslope of the ditch, preliminary evaluations suggest that channel and roadside ditch improvements would be required together with the replacement of four culverts crossing Blair Road. The preliminary estimated construction cost for these improvements is \$420,000 with a total project cost estimated to be \$650,000. Under the HMGP, the District will seek 75% grant funding of \$487,500 to offset the proposed flood water improvement costs.

The attached resolution will satisfy the application requirement for authorization and assurances that the District can comply with the grant program requirements. District Counsel has reviewed the "Subrecipient Assurances" for the HMGP. The resolution will become part of the application package, and must be submitted to Cal OES by November 1, 2017.

Fiscal Impact

The grant proposal will request a federal share of approximately \$487,500, with a District cost share of approximately \$162,500, for a total project cost of \$650,000. The District’s share will be funded through water rates as identified in the 2017 – 2021 Capital Improvement Plan for the Upper Main Ditch piping project.

Board Decision/Options

Option 1: Adopt a resolution authorizing the General Manager to sign and submit a grant proposal to the California Governor’s Office of Emergency Services and the Federal Emergency Management Agency Hazard Mitigation Grant Program DR-4308 for flood water improvements for the Upper Main Ditch Piping Project, Project No. 11032.

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


Option 3: Take no action.


Staff/General Manager’s Recommendation

Option 1


Support Documents Attached


Attachment A: Proposed Resolution


Tracey Eden- Bishop, P.E.
Senior Civil Engineer


Brian Mueller, P.E.
Engineering Director


Mark Price
Finance Director


Brian Poulsen
General Counsel

 for
Jim Abercrombie
General Manager

1 **RESOLUTION OF THE BOARD OF DIRECTORS OF**
2 **EL DORADO IRRIGATION DISTRICT**
3 **AUTHORIZING THE GENERAL MANAGER TO SIGN AND SUBMIT A GRANT**
4 **APPLICATION TO, AND ENTER INTO AN AGREEMENT WITH THE CALIFORNIA**
5 **GOVERNOR’S OFFICE OF EMERGENCY SERVICES AND THE FEDERAL**
6 **EMERGENCY MANAGEMENT AGENCY FOR THE**
7 **HAZARD MITIGATION GRANT PROGRAM DR-4308**

8 WHEREAS, the Board of Directors of the EL DORADO IRRIGATION DISTRICT desires to
9 submit a grant application to the California Governor’s Office of Emergency Services and the
10 Federal Emergency Management Agency for the Hazard Mitigation Grant Program DR-4308 for
11 flood water improvements associated with the Upper Main Ditch Piping Project (Project No.
12 11032) ; and

13 WHEREAS, the Board of Directors of the EL DORADO IRRIGATION DISTRICT supports
14 the subject grant application; and

15 WHEREAS, the Board of Directors of the EL DORADO IRRIGATION DISTRICT affirms
16 that the EL DORADO IRRIGATION DISTRICT is capable of providing funding and/or in-kind
17 contributions and assurances specified in the subject grant application; and

18 WHEREAS, the Board of Directors of the EL DORADO IRRIGATION DISTRICT affirms
19 that the EL DORADO IRRIGATION DISTRICT will work with the California Governor’s Office of
20 Emergency Services and the Federal Emergency Management Agency to meet all established
21 deadlines for entering into an agreement;

22 NOW, THEREFORE, BE IT AND IT IS HEREBY RESOLVED by the Board of Directors
23 of EL DORADO IRRIGATION DISTRICT that Jim Abercrombie, General Manager of the
24 EL DORADO IRRIGATION DISTRICT, is authorized to sign and submit a grant sub-
25 application for financial assistance in accordance with the Federal Emergency Management
26 Agency’s (FEMA) Hazard Mitigation Grant Program (HMGP) and the State Hazard Mitigation
27 Administrative Plan and certifies that the sub-applicant (District) will fulfill all requirements of the
28 program as contained in the program guidelines, and to enter into an agreement if the grant is
29 made.

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1 ///

2 Resolution No. 2017-

3 The foregoing Resolution was introduced at the regular meeting of the Board of Directors of
4 the EL DORADO IRRIGATION DISTRICT, held on the 23rd day of October 2017, by
5 Director xxx who moved its adoption. The motion was seconded by Director xxx and a poll
6 vote taken which stood as follows:

6 AYES: Directors

7 NOES:

8 ABSENT:

9 ABSTAIN:

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

12 _____
13 George Osborne
14 President, Board of Directors
15 EL DORADO IRRIGATION DISTRICT

14 ATTEST:
15 _____
16 Jennifer Sullivan
17 Clerk to the Board
18 EL DORADO IRRIGATION DISTRICT

18 (SEAL)

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I, the undersigned, Clerk to the Board of the EL DORADO IRRIGATION DISTRICT hereby certify that the foregoing resolution is a full, true and correct copy of a Resolution of the Board of Directors of the EL DORADO IRRIGATION DISTRICT entered into and adopted at the regular meeting of the Board of Directors held on the 23rd day of October 2017.

Jennifer Sullivan
Clerk to the Board
EL DORADO IRRIGATION DISTRICT

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EL DORADO IRRIGATION DISTRICT

Subject: Consideration to award a contract amendment to C&M Backflow Testing and Repair, Inc. in the not-to-exceed amount of \$64,000 for 2017 annual inspection of residential recycled water dual-plumbed lots.

Previous Board Actions

September 25, 2006 – Board adopted Board Policy 7010 Authorized and Mandated Use of Recycled Water.

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

BP 3060 and AR 3061 states that contracts for professional services greater than \$50,000 must be approved by the Board.

BP 7010 states the District mandates the future use of recycled water, wherever economically and physically feasible, as determined by the Board, for non-domestic purposes when such water is of adequate quality and quantity, available at a reasonable cost, not detrimental to public health, and not injurious to plant life, fish, and wildlife. The type of use is defined in Title 22 of the California Code of Regulations. In general, the lands subject to mandatory recycled water use are defined in the most current version of the District's Master Plans.

The District shall have authority to monitor and inspect the entire recycled water system, including on-site facilities, to ensure and enforce compliance with all applicable requirements and standards. The District shall have the right to access customers' premises as required for these purposes. The District may impose penalties and fines and require corrective action for misuse of recycled water.

AR 7012 states on-site facilities shall be constructed and inspected to conform to the District's On-Site Facilities Design and Construction Standards and in accordance with the District's Master Reclamation Permit issued by the Regional Water Quality Control Board - Central Valley Region.

Summary of Issue

The District's Engineering Department provides annual inspections of residential front and backyard recycled water irrigations systems and open trench inspections of all new installations as required by Title 22 of the California Code of Regulations and the District's Master Reclamation Permit. Since 2010, all such inspections have been completed by District staff possessing the required state certifications. However, in 2017 staff contracted with C&M Backflow Testing and Repair for \$48,000 to assist with a portion of these inspections in association with a temporary staffing shortage. Due to the rapid pace of owner-constructed onsite recycled water irrigation system development, annual inspections are still lagging behind and existing staff is unable to meet the District's regulatory obligations for these annual inspections for 2017. Therefore, additional contracting support is needed.

Staff Analysis/Evaluation

Among other duties, the Engineering Department's Environmental Division currently is responsible for recycled water compliance requirements, including annual inspections for 4,587 dual-plumbed residential lots. As of October 13, 2017 only 2,253 inspections have been completed, leaving 2,334 to be completed by the end of this inspection year. Since 2010, the District has seen continuous year over year increases in the rate of residential recycled water lot development with the numbers of new irrigation plans for 2017 already exceeding all of 2016. With a temporary shortage of Environmental Compliance Inspectors combined with rapid development of residential dual-plumbed lots occurring in 2017, residential recycled water annual inspections for 2017 are not keeping pace. The General Manager approved a short-term professional services contract with C&M Backflow Testing and Repair Inc. (C&M) to assist. However, the need for continued support exists and therefore staff is requesting to continue contracting support from C&M through the remainder of 2017 with an amendment to the C&M contract for \$64,000. The amendment brings their total contract over \$50,000 and requires Board approval.

In addition to contract recycled water inspections, the District currently is utilizing contract testing services to assist existing staff with a portion of the backflow prevention assembly (BPA) testing workload. In-house staff continues to conduct the remainder of BPA testing and recycled water lot inspections where feasible. Supplementation of contracted testing and inspection services allows staff to fulfill the many other compliance requirements. For the recycled water system, these responsibilities include: 1) annual front and backyard lot inspections; 2) pre-occupancy, 4-year, and change of ownership cross-connection shutdown tests; 3) front and backyard onsite irrigation system plan checks; 4) new construction open trench and final inspections; 5) potable service mainline and extension inspections; 6) initial water service sampling; and 7) initial BPA testing.

For the potable water system, staff conducts required cross-connection control surveys of properties with known actual or potential hazards to the public water system, initial BPA installation inspection/testing and distribution system water quality sampling and monitoring duties. It should also be noted that staff is responsible for all BPA repairs and any required field follow up resulting from the consultant's BPA testing results to ensure compliance. Staff is also responsible for regular compliance inspections and sampling related to the District's Industrial Pollution Prevention (IPP) program. These staff also conduct field installation, inspection and enforcement duties associated with the District's Temporary Water Use program that was initiated in May of 2010.

Procurement of Professional Services

District staff performed a comprehensive search for consultants qualified to perform the recycled water inspections, which included the District's current on-call consultant list. Staff identified three qualified consultants with staff possessing the required certifications and requested proposals from each. Upon review of all proposals, staff selected and negotiated a short-term contract in the amount of \$48,000 with C&M. The hourly rate for C&M to complete the required inspections is \$125 per hour. The agreement with C&M is nearing completion but a significant number of additional inspections remain that must be completed by the end of 2017. C&M has successfully completed the inspections to date, and therefore staff is requesting to extend C&M's services through the end of 2017 through a contract amendment. A total of 512 additional inspection hours are requested, which would result in a contract amendment in the amount of \$64,000.

The District has since filled the temporary vacancies that occurred in 2017. Depending on the rate of dual-plumbed residential development moving forward, staff currently anticipates all recycled water inspections will be completed by District staff in 2018 in combination with assistance from our annual BPA testing contract.

Funding

Annual inspections for residential recycled water dual-plumbed lots are funded through recycled water rates. All costs for the proposed contract amendment will be paid from the 2017 Engineering Department annual operations budget.

Board Decision/Options

Option 1: Award a contract amendment to C&M Backflow Testing and Repair, Inc. in the not-to-exceed amount of \$64,000 for 2017 annual inspection of residential recycled water dual-plumbed lots.

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


Option 3: Take no action.

Staff/General Manager’s Recommendation

Option 1

Supporting Documents Attached

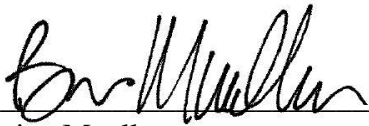
Attachment A: C&M Backflow Testing and Repair Inc. Contract Amendment Proposal



Marty Johnson
Environmental Compliance Analyst



Daniel Corcoran
Environmental and Water Resources Manager



Brian Mueller
Engineering Director



Mark Price
Finance Director



Brian Poulsen
General Counsel



for
Jim Abercrombie
General Manager



October 12, 2017

Eldorado Irrigation District
Attn: Marty Johnson
2890 Mosquito Road
Placerville, CA 95667

RE: Scope of Services Extension Amendment

Per your request, here is the information regarding the amendment extension of the current contract for the Residential Recycled Water inspections, and associated testing. All work performed will be in accordance with Eldorado Irrigation District requirements, and compliances with CA-SWRCB CCR Title 17 & 22.

Consulting fee is One Hundred and Twenty-Five per hour for each inspector. This includes the following:

- Amend the current contract to provide additional 512 Inspection hours.
- Inspections for annual Residential front and backyard recycled water irrigation system.
- Inspections for Residential exterior potable water system.
- System separation shutdown testing.
- Review approved plans for modifications and write non-compliance notices as warranted.
- Customer Service
- Correspondences

Description:

C&M at a minimum will provide two Inspectors for ten inspection days per week during a five day work week excluding District observed Holidays. The work week is Monday-Friday 8am to 4pm. C&M will provide two vehicles with small tools, and associated equipment to perform the work. EID will provide training, materials, additional tools, and equipment as needed.

If you need more information, or have any questions please contact us.

Respectfully,

A handwritten signature in black ink that reads "Mitch Prather".

Mitch Prather
C&M Backflow

EL DORADO IRRIGATION DISTRICT

Subject: Consideration to adopt by resolution the 2016 United States Bureau of Reclamation Five-Year Water Management Plan Update.

Previous Board Actions

March 27, 2006 – Board adopted Resolution 2006-039 adopting the 2005 USBR Five-Year Water Management Plan Update.

December 12, 2011 – Board adopted Resolution 2011-025 adopting the 2010 USBR Five-Year Water Management Plan Update.

September 10, 2012 – Board adopted Resolution 2012-026 adopting the revised 2010 USBR Five-Year Water Management Plan Update.

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

BP 5000: The Board is committed to provide a water supply based on the principles of reliability, high quality, and affordability in a cost-effective manner with accountability to the public.

BP 5030: It is Board policy to take reasonable and prudent measures to conserve all water and to adopt and implement water-use efficiency programs that will benefit its customers.

BP 1040 and AR 1041: The District prohibits uses of District-supplied raw, potable, and recycled water that constitutes water waste.

Summary of Issue(s)

The United States Bureau of Reclamation (USBR) Central Valley Project Long Term Water Service Renewal Contract No. 14-06-200-1357A-LTR1 for 7,550 ac-ft of water from Folsom Reservoir (Water Service Contract) requires the District to revise its USBR Water Management Plan (Plan) every five-years and submit the revised Plan for review and evaluation. The latest update to the Plan is required to be submitted to USBR by December 31, 2017.

Staff Analysis/Evaluation

On February 28, 2006, the Board entered into a Contract with the USBR for our Folsom Reservoir water supply. The USBR Contract requires the District to revise its Plan every five years to reflect the then-current conservation and efficiency criteria for evaluating water conservation plans established under Federal law, and to submit the revised Plan to the Contracting Officer for review and evaluation. The last Plan was submitted by the District in 2006 and an update to the Plan is required to be submitted to the USBR by December 31, 2017. Staff prepared the Plan in accordance with the Contract using the latest information and revised criteria contained in USBR's most recent Water Management Planner (January 2017). The Plan is divided into five sections as follows:

1. Description of the District – consisting of history, location and facilities, topography and soils, climate, natural and cultural resources, operating rules and regulations, water measurement, pricing, and billing, and water shortage allocation policies

2. Inventory of Water Resources – describing water supplies, uses, and accounting
3. Best Management Practices (BMPs) for Agricultural Contractors – not required because our Contract is for Municipal and Industrial rather than Agricultural purposes
4. BMPs for Urban Contractors – discussion of BMPs being implementing by the District for water conservation and efficiency
5. District Water Inventory Tables – listing of water supplies and uses in the required USBR format

One notable difference between this Plan and the Urban Water Management Plan Update required by Department of Water Resources, which was most recently adopted by the Board June 2016, is that this Plan focuses on the portions of the District’s service area served by the Water Service Contract. This area, known as the CVP Consolidated Place of Use, extends eastward to the Bass Lake Tank service zone, which follows approximately Cameron Park Drive. Additionally, the Plan focuses on current use and conservation rather than current and long term supply adequacy under normal and drought conditions. The Plan is a requirement of the Water Service Contract, and must be in place before the USBR will consider extending any discretionary benefits such as grant funding.

A Board resolution is required adopting the most recent update to the Plan. Therefore, staff recommends that the Board adopt the proposed resolution contained in Attachment A. A copy of the draft Plan is contained in Attachment B. Following the Board’s adoption of the Plan, USBR will post a notice of the Updated Plan in the Federal Register to complete the update process prior to December 31, 2017.

Board Decisions/Options

Option 1: Adopt by resolution the 2016 United States Bureau of Reclamation Five-Year Water Management Plan Update.

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

Option 3: Take no action.

Staff/General Manager’s Recommendation

Option 1

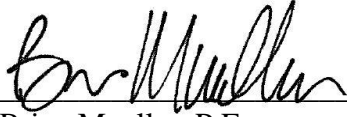
Supporting Documents Attached

Attachment A: Proposed Resolution

Attachment B: Draft 2016 USBR Five-Year Water Management Plan Update



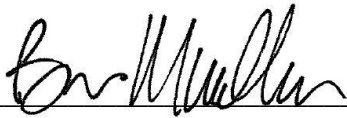
Dan Corcoran
Environmental and Water Resources Manager



Brian Mueller, P.E.
Engineering Director



Brian Poulson
General Counsel



for
Jim Abercrombie
General Manager

RESOLUTION OF THE BOARD OF DIRECTORS OF
EL DORADO IRRIGATION DISTRICT
ADOPTING THE 2016 FIVE-YEAR WATER MANAGEMENT PLAN UPDATE
FOR THE EL DORADO IRRIGATION DISTRICT

WHEREAS, Section 210 of the Reclamation Reform Act of 1982 (Public Law 97-293) and the Central Valley Project Improvement Act (CVPIA) of 1992 requires districts with repayment or water supply contracts to develop and maintain water management plans containing definite goals, appropriate water conservation measures, metering and time schedules for meeting conservation objectives; and

WHEREAS, the El Dorado Irrigation District has such a USBR contract and has therefore prepared a water management plan; and,

WHEREAS, on September 10, 2012 the Board of Directors adopted Resolution 2012-026 accepting and adopting the revised 2010 USBR Five-Year Water Management Plan Update; and

WHEREAS, the Board of Directors accepts the 2016 USBR Five-Year Water Management Plan Update prepared by District staff;

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of El Dorado Irrigation District as follows:

The 2016 USBR Five-Year Water Management Plan Update is adopted by the El Dorado Irrigation District.

The foregoing Resolution was introduced at a special meeting of the Board of Directors of the EL DORADO IRRIGATION DISTRICT, held on the 23rd day of October 2017, by Director _____, who moved its adoption. The motion was seconded by Director _____, and a poll vote taken which stood as follows:

1 AYES:

2 NOES:

3 ABSENT:

4 ABSTAIN:

5
6 The motion having a majority of votes “Aye”, the resolution was declared to have been
7 adopted, and it was so ordered.

8
9 _____
10 President, Board of Directors of
11 EL DORADO IRRIGATION DISTRICT

12 ATTEST:

13
14 _____
15 Clerk to the Board

16 (SEAL)

17
18
19
20 I, the undersigned, Clerk to the Board of the EL DORADO IRRIGATION DISTRICT
21 hereby certify that the foregoing resolution is a full, true and correct copy of a Resolution of the
22 Board of Directors of the EL DORADO IRRIGATION DISTRICT entered into and adopted at a
23 regular meeting of the Board of Directors held on the 23rd day of October 2017.
24

25
26 _____
27 Clerk to the Board
28 EL DORADO IRRIGATION DISTRICT



United States Bureau of Reclamation Five-Year Water Management Plan

2016 Update

United States Bureau of Reclamation Five-Year Water Management Plan

2016 Update

Prepared for El Dorado Irrigation District



Prepared by Tully & Young, Inc.



Final

October 2017

Attachments

Attachment 1 – District Water Inventory Tables

Attachment 2 – Document Appendix

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Section 1: Description of the District

District Name: El Dorado Irrigation District

Web Address: eid.org

Contact: Dan Corcoran

Title: Environmental and Water Resources Manager

Telephone: (530) 642-4082

E-mail: dcorcoran@eid.org

Secondary Contact: Kris Olof

Title: Water Resource Engineer – Preparing Consultant

Telephone: (916) 760-7465

E-mail: kolof@tullyandyoung.com

This Five-Year Water Management Plan (Plan) has been prepared for water used pursuant to Central Valley Project (CVP) Water Service Contract No. 14-06-200-1357A-LTR1, Warren Act Contract No. 06-WC-20-3317, and Warren Act Contract No. 06-WC-20-3315 (Contract water) for Municipal and Industrial purposes (Contract Service Area). A map of the Contract Service Area is provided in Appendix A. Although the Contract Service Area and CVO Consolidated Place of Use extends into Cameron Park, due to current infrastructure restrictions water supplied through these contracts serve the El Dorado Hills supply area as shown on the District-wide Service Area Map in Appendix B. Values in this report represent only areas which receive Contract water unless otherwise noted.

A. History

The El Dorado Irrigation District (District) was organized in 1925 under the Irrigation District Law. The District provides water to more than 109,000 people for municipal, industrial, and irrigation uses, as well as, wastewater collection and treatment, and recycled water services to meet the growing needs of our customers. As such, the District is one of the few California districts that provide a full complement of water-related services. The Board of Directors is comprised of five members elected by the citizens in five geographical divisions within the District service area.

1. Date District formed and original size

District formed – October 5, 1925
Date of first Reclamation contract – 1953
Original size – 31,560 acres
Current Year – 2017

2. Size, population, and irrigated acres

District-wide
Size – 220 square miles
Population served – 109,000 persons
Irrigated acres – ~4,100 acres

Contract Service Area
Size – 35 square miles
Population served – 62,000 persons
Irrigated acres – ~30 acres

3. Water supplies received - 2016

Water Source	Total District-wide (Acre-feet)	CVP and Warren Act Contract (Acre-feet)
Federal urban water – CVP Contract	5,704	5704
Federal agricultural water	0	
Local Surface Water – Project 184	5,511	
Local surface water – Jenkinson Lake	18,668	
Local Surface Water – Warren Act Contract	252	252
Groundwater	0	
Banked water	0	
Transferred water	0	
Recycled water*	2,815	
Total	32,950	5,956

Source: Section 5, Tables 1 and 3 and 2016 Diversion Report

*Recycled Source: 2016 Water Resources and Service Reliability Report,

4. Annual entitlement under each right and/or contract

Source	Acre-feet per year	Contract/Right	Restrictions
Folsom Reservoir	7,550	CVP Water Service Contract No. 14-06-200-1357A-LTR1	Shortage Policy cutback
Project 184	15,080	EID owned Pre-1914	40 cfs delivery rate
Jenkinson Lake	33,400	EID owned L11835 & L11836	23,000 ac-ft/yr (operated as a two-year supply)
Permit 21112	17,000	Warren Act Contract No. 06-WC-20-3317	none
Ditches/Weber Reservoir	4,560	Warren Act Contract No. 06-WC-20-3315	3,000 ac-ft during dry years

Source: 2015 Urban Water Management Plan

Note: Table provides a listing of all water sources District-wide

5. Anticipated land use changes

El Dorado County governs land use policies and changes under its adopted General Plan and the District has no governing authority or influence.

6. Cropping patterns

N/A EID does not operate an agricultural water delivery system within the Contract Service Area.

7. List major irrigation methods

N/A EID does not operate an agricultural water delivery system within the Contract Service Area.

B. Location and Facilities

1. Incoming measurements methods and locations

Location Name	Physical Location	Type of Measurement Device	Accuracy
Folsom Reservoir	El Dorado Hills WTP	Meter	±3%
Slab Creek	In-stream	Pressure Transducer	±8%
Weber Creek	In-stream	Pressure Transducer	±8%
Hangtown Creek	In-stream	Pressure Transducer	±8%
Weber Dam	In-stream	Pressure Transducer	± 8%

2. Agricultural conveyance system

EID does not operate an independent Agricultural Water system within the Contract Service Area. All water delivered for agricultural purposes is delivered through the Urban Distribution System described below and all services within the Contract Service Area are served with potable water.

3. Urban Distribution System

There are 336 miles of potable water mains in the Contract Service Area, which consist of steel, asbestos cement or PVC material.

Source: EID GIS/Drafting Services Section

4. Storage facilities

In the potable water system, where Contract water is served, the District operates 1 water treatment plant, 11 storage tanks, and 3 pumping stations.

Tanks:¹

- Monte Vista – 0.125 MG
- Ridgeview – 1 MG
- Valley View 835 – 2 MG
- Valley View 960 – 0.835 MG
- Oak Ridge 1 – 3 MG
- Oak Ridge 2 – 5 MG
- Bass Lake 1 – 4.1 MG
- Bass Lake 2 – 4.1 MG
- Salmon Falls – 2 MG
- Highland View – 0.32 MG
- Promontory – 3.3 MG

5. Agricultural spill recovery system

The 20 Agricultural customers within the Contract Service Area are served through the potable water system. As such, there is no spill recovery system.

6. Agricultural delivery system operation

As the agricultural deliveries within the Contract Service Area are from the potable system, there is no independent Agricultural delivery system. The operation of all water supplies delivered for agricultural purposes within the Contract Service Area are handled by the potable system staff.

¹ Note that there are a total of 15 tanks in the contract service area but only 11 of them can currently be served with Contract Water.

7. Restrictions on the contractor's water sources

Source	Restriction	Cause of Restriction	Effect on Operations
Folsom Reservoir	Drought/dry year	USBR CVP M&I Water Shortage Policy	Reduces annual contract volume
Various ditches	Seasonal diversions	Water rights season of use	No effect – planned for

Note: CVP and Warren Act Contract water only

8. Proposed changes or additions to facilities and operations for the next 5 years

The District anticipates the following District-wide changes to facilities over the next five years:

- Waterline replacements
- Pressure reducing station and pump station replacement including Folsom Lake Raw Water Pump Station with Temperature Control Device (Reclamation Cooperative Agreement R14AC00061)
- Lining/piping of open channel earthen ditches including Main Ditch Piping Project (Reclamation WaterSMART Cooperative Agreement R16AP00125)
- Reservoir dam safety program improvements
- Storage tank replacements and removals

No changes to operations are anticipated over the next five years.

C. Topography and Soils

1. Topography of the District and its impact on water operations and management

The District-wide service area is generally bounded by Sacramento County to the west and the Pollock Pines area to the east and ranges from 500 to more than 4,000 feet in elevation. For the area served by Contract water, elevations range from 500 to 1,600 feet in elevation. Although Contract water and the CVP Consolidated Place of Use extends into Cameron Park (EID Zones 1, 2, and portions of 4), due to current infrastructure restrictions water supplied through these contracts serves only the El Dorado Hills supply area (Zone 2) as shown on the District Service Area Map in Appendix B.

The District is primarily located in two major watersheds, the South Fork American River in the north and the North Fork of the Cosumnes River in the south, and is hydrologically split by the Placerville Ridge and Highway 50 between these two drainage watersheds. Although the rivers drain east to west, the minor streams trend northwest toward the American River and southwest toward the Cosumnes River. The ridges generally trend in a west to east

direction.

2. District's soils associations

Within the Contract Service Area, the lower foothills range from 500 feet along the El Dorado/Sacramento County line to the 1,600 foot elevation at Cameron Park. Beyond the contract service area, the water system reaches above 4,000ft. These vast changes in elevation necessitate varied water system operation. Contract water supplied in the west from Folsom Reservoir is currently pumped from the 400-foot elevation to currently as high as the 1,150-foot elevation.

Two main physiographic regions occur in the District: 1) The lower and middle foothill, and 2) The mountainous uplands. The Contract Service Area, which is located in the lower and middle foothill region, is characterized by rolling hills with rock outcroppings common. This region is composed of five soil associations, all having well drained loams weathered from slates, schist, igneous rock, and granite. This area makes up approximately one half of the District, with Auburn/Argonaut Soil association making up half of it.

3. Limitations resulting from soil problem

In the early periods of the district, the Contract Service Area had little agricultural activity owing to the difficulty in getting water supplies and the rolling hills being more difficult to cultivate than the near by areas of level land adjacent to the American River. Agricultural production became possible as water system improvements were made to deliver water but the rocky soil prevented large-scale operations from being attempted. Future agricultural production in the Contract Service Area are possible with engineered rootstocks on grapes being well suited to the rocky soil however property values and land use designations by the County will limit expansion of Agricultural users within the Contract Service Area.

D. Climate

1. General climate of the district service area

The District is located in a region of sunshine in the summer, moderate to heavy precipitation in the winter, and wide temperature ranges. Strong flows of marine air in the winter from the Pacific Ocean result in heavy precipitation. Precipitation in the summer is generally limited to a few scattered thunderstorms during July. A California Irrigation Management Information System (CIMIS) was installed slightly east of the Contract Service Area in September 2011. Average annual data since 2011 is provided below. Annual average precipitation is approximately 30 inches, with an average monthly precipitation during winter months of about five inches. Temperatures within the Contract Service Area range from hot in the summer to cold in the winter,

with average monthly temperatures of 89° F in July to 54° F in December. The highest temperatures recorded range from 107°F to 114°F.

Evapotranspiration (ET_o) records indicate average values ranging from 1.56 inches in January to 8.90 inches in July. Low humidity usually occurs in the summer months, from May through October. The combination of hot and dry weather results in high water demands during the summer months. Annual total precipitation is about 30 inches.

2013-2016 Month*	Total Precipitation (in.)	Average Air Temperature (°F)	Average Maximum Temperature (°F)	Average Minimum Temperature (°F)	Total ETo (in.)
January	2.37	48.7	58.5	40.9	1.77
February	4.00	50.9	61.1	42.2	2.47
March	4.05	54.3	64.2	45.3	3.75
April	2.32	57.4	68.2	46.8	5.23
May	0.68	62.2	73.6	51.2	6.44
June	0.24	72.9	85.6	59.9	7.99
July	0.02	77.1	89.5	64.5	8.49
August	0.01	75.2	87.5	63.1	7.63
September	0.17	70.8	83.0	59.4	5.61
October	3.03	63.0	74.3	53.5	3.82
November	3.00	52.2	62.4	44.3	2.03
December	5.31	45.9	54.6	38.7	1.33
Annual Totals/Average	25.17	60.9	77.9	50.8	56.53

Source: CIMIS data for station No. 228, Diamond Springs, CA

2. Impact of microclimates on water management within the district

Because the Contract Service Area ranges from the 500 to 1,600 foot elevation, water demands vary but the variance does not cause any water delivery issues.

E. Natural and Cultural Resources

1. Natural resources area within the District

EID does not serve water to any natural resources areas and has no current involvement in the operation of any natural resource areas. EID was an active member of the initial Gabbro Soil Preserve establishment and continues to provide funds for the purchase of parcels from willing sellers and also contributes funds annually to pay one-quarter share of the salary for the preserve manager position staff by a Bureau of Land Management employee.

Name	Estimated Acres	Description
Gabbro Soil Preserve	726	Gabbro Plant Preserve – Land dedicated to the protection of endemic species

2. Management of these resources in the past or present by the District

This District does not provide water to or manage the natural resources within the Contract Service Area.

3. Recreational and/or cultural resources areas

The following table lists the recreational sites within the District service area that are managed by the District.

Name	Estimated Acres	Description
Sly Park Recreation Area	1,100	Fishing, boating, camping, day-use
Forebay Reservoir	35	Fishing, day-use

Note: Areas reported are District-wide and are not within the Contract Service Area

The District also manages recreation sites at Silver Lake in Amador County and Caples Lake in Alpine County that are not within the District Service Area or the Contract Service Area.

There are no cultural resource areas managed by the District in the District Contract Service Area.

F. Operating Rules and Regulations

1. Operating rules and regulations

Board Policy 5000 series and associated Administrative Regulations pertaining to water supply are provided in Appendix C. A copy of all District Board Policies and Administrative Regulations can be found at www.eid.org.

2. Agricultural water allocation policy

N/A EID does not operate an agricultural water delivery system within the Contract Service Area.

3. Official and actual lead times necessary for water orders and shut-off

N/A EID does not operate an agricultural water delivery system within the Contract Service Area.

4. Policies regarding surface and subsurface drainage from farms

N/A EID does not operate an agricultural water delivery system within the Contract Service Area.

5. Policies on water transfers by the contractor and its customers

N/A To date, EID has not transferred any Contract water and does not have any formal policies in place. EID has engaged in transfers of EID owned rights, but all transfers have been temporary in nature and each contract was negotiated and approved by the EID Board and other agencies as necessary.

G. Water Measurement, Pricing, and Billing

1. Agricultural Customers

Source: 2016 Water Resources and Service Reliability Report

District-wide

- a. Total number of Ag connections – 909²
- b. Total number of metered Ag connections – 909
- c. Number of connections not billed by quantity - 0
- d. Percentage of water that was measured at delivery point – 100%
- e. Percentage of water that was billed by quantity – 100%

² Includes all Ag Metered, Ditches, and Small Farm Irrigation services

Contract Service Area (information provided for El Dorado Hills Supply Area – Zone 2)

- a. Total number of Ag connections – 20³
- b. Total number of metered Ag connections – 20
- c. Number of connections not billed by quantity - 0
- d. Percentage of water that was measured at delivery point – 100%
- e. Percentage of water that was billed by quantity – 100%

2. Urban Customers

Source: 2016 Water Resources and Service Reliability Report

District-wide

- a. Total number of connections – 45,578
- b. Total number of metered connections – 45,578
- c. Number of connections not billed by quantity - 0
- d. Percentage of water that was measured at delivery point – 100%
- e. Percentage of water that was billed by quantity – 100%

Contract Service Area (information provided for El Dorado Hills Supply Area – Zone 2)

- a. Total number of connections – 12,198
- b. Total number of metered connections – 12,198
- c. Number of connections not billed by quantity - 0
- d. Percentage of water that was measured at delivery point – 100%
- e. Percentage of water that was billed by quantity – 100%
- f. Measurement device table

³ Includes all Ag Metered, Ditches, and Small Farm Irrigation services in Zone 2

Meter Size/Style	Number Of Meters	Meter Accuracy	Reading Frequency	Calibration and Maintenance Frequency
5/8 " Displacement	3,959	98.5 to 101.5%	Bi-Monthly	Replace at failure or when upgraded to radio read
3/4 " Displacement	35,977	98.5-101.5%	Bi-Monthly	Repair/replace at failure or upgrade to radio read
1 " Displacement	2,352	98.5-101.5%	Bi-Monthly	Repair/replace at failure or upgrade to radio read
1 1/2 " Displacement	487	98.5-101.5%	Bi-Monthly	Repair/replace at failure or upgrade to radio read
1 1/2 " Turbine	91	98.5-101.5%	Bi-Monthly	Test every 5-10 years
2 " Displacement	252	98.5-101.5%	Bi-Monthly	Repair/replace at failure or upgrade to radio read
2 " Turbine and Compound	339	98.5-101.5%	Bi-Monthly	Test every 5-10 years
3 " Turbine	25	98.5-101.5%	Bi-Monthly	Test every 5-10 years
3 " Compound	46	98.5-101.5%	Bi-Monthly	Test every 5-10 years
4 " Turbine	10	98.5-101.5%	Bi-Monthly	Test every 5-10 years
4 " Compound	57	98.5-101.5%	Bi-Monthly	Test every 5-10 years
6 " Turbine	12	98.5-101.5%	Bi-Monthly	Test every 5-10 years
6 " Compound	18	98.5-101.5%	Bi-Monthly	Test every 5-10 years
8 " Turbine	3	98-102%	Bi-Monthly	Test every 5-10 years
10 " Turbine	1	98.5-101.5%	Bi-Monthly	Test every 5-10 years
14" Turbine	1	98.5-101.5%	Bi-Monthly	Test every 5-10 years
TOTAL	43,630			

Note: Meter accuracy per AWWA Standards

Note: Data for meter counts are for the entire system. EID does not track active meter counts by Contract Service Area.

3. Agriculture and Urban Customers

a. Current year agriculture and/or urban water charges

Current year water charges are provided in Appendix D.

M&I Rates: Basic charge with increasing tiered rate on quantity

b. Annual charges collected from single-family residential customers

The following tables provide the average annual water charges for a single-family residential and landscape account. Information is provided for the El Dorado Hills supply area only based on data from 2015.

Single-Family Residential Account Base Charge			
Charges (\$/customer)	Charge units (customers)	Units billed during year (6 bi-monthly)	\$ collected
\$57.34	10,734	64,406	\$3,692,830

Single-Family Residential Account Volumetric Charges			
Charges (per Tier)	Charge units (\$/CF)	Units billed during year	\$ collected
Tier 1	\$0.01345	41,581,526	\$1,307,739
Tier 2	\$0.01623	56,475,641	\$916,600
Tier 3	\$0.01904	47,676,891	\$907,768

Source: Customer Services Report of Single Family Residential rate accounts, September 7, 2017

Landscape Account Base Charge			
Charges (\$/customer)	Charge units (customers)	Units billed during year (6 bi-monthly)	\$ collected (\$ times units)
\$120.31	207	1,242	\$149,424

Landscape Account Volumetric Charges			
Charges	Charge units (\$/CF)	Units billed during year (CF)	\$ collected (\$ times units)
All Use	\$0.01601	13,096,346	\$209,674

Source: Customer Services Report of Recreational Turf rate accounts, September 7, 2017

c. Water-use data accounting procedures

Water meter use data is recorded on automated meter reading systems or electronic recorders that download information directly into the District computer database. Customer bills are then generated and include usage and charges for the last bi-monthly period. Customers can request a printout that shows water usage for the past two years. The District keeps historic water use records that are stored electronically. Water bill examples for a residential and commercial service are provided as Appendix E.

H. Water Shortage Allocation Policies

1. Current year water shortage policies

The actions required to respond to both near-term and long-term changing water supply conditions are outlined in the District's *Drought Preparedness Plan*, adopted by the Board of Directors on February 11, 2008, and *Drought Action Plan*, developed by District staff in March 2009 and updated in May 2014. Drought stages are defined by associating water supply conditions and demand reduction goals. Drought stage definitions are summarized below including the percent of water supply reduction anticipated for each stage and the corresponding percent of targeted demand reduction.

- Water supply normal and unrestricted - Drought Stage 0
Stage Zero is in effect at all times unless another subsequent stage is declared and reflects periods when normal water supplies and normal distribution capacity are available. A prohibition of water waste will be in effect during both normal and restricted water supply conditions.
- Water supply slightly restricted - Drought Stage 1
The objective of Stage 1 is to initiate public awareness of predicted water Shortage conditions, and encourage voluntary water conservation to decrease normal demand up to 15%.
- Water supply moderately restricted - Drought Stage 2
The objective of Stage 2 is to increase public understanding of worsening water supply conditions, encourage voluntary water conservation measures, and then if necessary enforce mandatory conservation measures in order to decrease normal demand up to 30%.
- Water supply severely restricted - Drought Stage 3
The objective of Stage 3 is to enforce extensive mandatory restrictions on water use, and/or implement water rationing to decrease normal demand up to 50% to ensure that water use is limited to health and safety purposes.
- Water supply extremely restricted - Drought Stage 4

The objective of Stage 4 is to enforce extensive mandatory restrictions on water use, and implement water rationing to decrease normal demand beyond 50% to ensure that water use is limited to health and safety purposes.

- Declared water shortage emergencies
The General Manager may also declare a water shortage emergency due to an existing condition or when there is a high probability that a condition will be realized in the near future. Such conditions may include an unexpected disruption of supply, storage, or distribution system facilities.

Drought indicators and associated trigger levels function to declare a drought early enough to maximize saved water, but not so early that a false drought declaration is issued. Indicators and associated drought stage triggers coordinate with drought stage demand reductions to avoid water supply shortfalls.

The District uses the Supply Remaining Index (SRI) to determine drought stages. A

key component of the SRI drought trigger plan is a measure of the number of days supply remaining (DSR). The DSR is a tool that predicts when the utility needs to reduce water demand. When the DSR is low, there is a limited amount of water supply left and drought restrictions should be imposed to stretch the supplies longer. The DSR indicator incorporates expected future supply and demand, and calculates the DSR for each month. The DSR indicator is a function of:

- Current storage in Jenkinson Lake, Echo Lake, Lake Aloha, Silver Lake, and Caples Lake,
- Worst case expected supplies – conservatively based on the minimum monthly hydrology in the historical record, and
- Normal projected demand by month.

District staff also takes action to determine annual water availability and commitments. Administrative Regulation 1041 is provided in Appendix G and describes those actions.

2. Current year policies that address wasteful use of water

The District prohibits any use that constitutes waste under Administrative Regulation for all District-supplied raw, potable, and recycled water. The objective is to encourage reasonable use of water supplies by prohibiting all intentional or unintentional water waste, including the use of wasteful equipment or techniques, when a reasonable solution or alternative is available.

I. Evaluate Policies of Regulatory Agencies Affecting the Contractor and Identify Policies that Inhibit Good Water Management

Implementation of the 2015 USBR Water Shortage Policy for CVP Municipal & Industrial contractors affects the District's water management. The District primarily serves the western portion of its service area from Folsom Reservoir and the CVP Water Service Contract is a significant source of water to meet District demands in this area. Although the District has secured two Warren Act Contracts to divert non-CVP District-owned supplies from Folsom Reservoir, the District remains subject to the volatility of CVP allocations as implemented by the February 2017 Water Shortage Policy Guidelines and Procedures and has limited capacity to serve this portion of its service area with alternative supplies. Acquisition and strategic management on additional non-CVP supplies with help guard against this volatility and increase overall reliability of the District's water supply portfolio.

Over the past several years the State Water Resources Control Board (SWRCB) has enacted or proposed several policies regarding water use and reporting that inhibit good water management. During the last drought the SWRCB curtailed many rights across the state, which significantly affected the ability of the District to meet its customers' needs in certain areas where alternative rights and/or previously stored water was not available. In association with this drought the state also enacted permanent annual reporting of pre-1914 rights, monthly reporting of water diverted (unless suspended), and standardized mandatory conservation independent of storage conditions. Each of these actions resulted in burdensome administrative reporting requirements with no apparent benefit to water management. Mandatory conservation, however, had much farther reaching effects to the District's ability to manage its water supplies. The District was forced to limit water available to its customers despite the fact that it maintained adequate supplies to meet anticipated demand with limited voluntary conservation measures and irrigation day restrictions as outlined in the District Drought Preparedness and Drought Action Plans. This broad brushed approach to all water rights holders failed to account for any potential benefit to supplies and the environment and resulted in water wasted the following winter that would have otherwise been put to beneficial use. The District has advocated for a more individualized analysis of a water supplier's available water supply during times of prolonged drought, in order to determine if the water supplier has reliable water supplies that can support existing water demand. This approach ensures that agencies such as the District can continue to serve their customers because the District has appropriately planned for drought and secured and managed water supplies.

More recently, SWRCB has been working to update the Bay-Delta Water Quality Control Plan (Plan), and is currently evaluating potential instream flow requirements which would require a specified unimpaired outflow condition that may conflict with water rights seniority law for the northern Sacramento/San Joaquin Delta and its tributaries. This action could result in significant impacts to the District's water rights

portfolio, which contains some of the most senior rights within the state of California. The unimpaired flow approach could significantly reduce the quantity of water available for municipal, industrial, and agricultural use, with potentially little to no measurable benefit to fish and wildlife. The District, in coordination with other water purveyors in the watershed, has been working to develop and propose to the SWRCB a science-based approach to implement an alternative means to accomplishing the goals of the Plan without significantly impacting the District's ability to meet the current and future anticipated needs of its customers.

Section 2: Inventory of Water Resources

A. Surface Water Supply

1. Acre foot amounts of surface water delivered to the District by each source

See Table 1 and 8 in Attachment 1.

B. Groundwater Supply

1. Acre foot amounts of groundwater pumped and delivered by the District

N/A The District currently does not use groundwater as a supply source. Groundwater in the service area occurs in fractured hard rock and is unreliable as a source.

2. Groundwater basin that underlies the district

N/A There is no Bulletin 118 defined groundwater basin or subbasin under the District. Groundwater in the service area occurs in fractured hard rock and is unreliable as a source.

3. Contractor operated wells and managed groundwater recharge areas

N/A The District does not operate or manage any wells or groundwater recharge areas.

4. If there is conjunctive use of surface and groundwater, describe it

N/A The District does not participate in a conjunctive use of surface and groundwater.

5. For managed groundwater basins, attach a copy of the management plan

N/A The District does not use water from a managed or adjudicated groundwater basin.

6. For participation in groundwater banking, attach a description of the banking plan

N/A The District does not participate in groundwater banking.

C. Other Water Supplies

The District distributes recycled water for golf course, street median, school, playground, soccer field, park, commercial, and residential landscape irrigation and construction (dust control, soil compaction and general construction use). The District recycled water system consists of supply from the El Dorado Hills and Deer Creek wastewater treatment plants (EDHWWTP and DCWWTP), an interconnected network of transmission and distribution pipelines, pump stations, storage tanks, pressure reducing stations, and appurtenant facilities located within the communities of El Dorado Hills and Cameron Park that are within the Contract Service Area.

D. Source Water Quality Monitoring Practices

1. Potable water quality

In 2016 the District exceeded the primary maximum contaminant level for total of five haloacetic acids (HAA5) in the Contract Service Area, which is a byproduct of drinking water disinfection. The 2016 Annual Customer Water Quality Report describes surface water quality testing results and is attached in Appendix F.

2. Agricultural water quality concerns

N/A EID does not operate an agricultural water delivery system within the Contract Service Area.

3. Description of the water quality testing program and the role of each participant in the program

The District complies with all current federal Safe Drinking Water Act monitoring requirements. The District also complies with applicable state requirements listed in Titles 17 and 22 California Code of Regulations and related statutes in the Health & Safety Code and Water Code.

4. Current water quality monitoring programs

The District maintains an approved water quality monitoring program on file with the California State Water Resources Control Board, Division of Drinking Water.

E. Water Uses within the Contract Water Service Area

1. Agricultural

Agricultural water needs within the Contract Service Area are limited to a small number of customers who must regularly apply for Ag water service off of the potable system. Annual use within the federal water service area varies depending on the number of customers maintaining their Ag service rates. See Table 5 in Attachment 1.

2. Types of irrigation systems used for each crop

There are no crop reports broken down by area for El Dorado County. The agricultural lands within the federal water service area consist of a small number of rural residential lots with sufficient space to produce agricultural products. Irrigation to these parcels consists of drip and spray irrigation.

3. Urban- 2015

The data provided in the table below is for the El Dorado Hills Supply Area which is within the Contract Service Area and receives Contract Supply in addition to two Warren Act contract associated with EID-owned rights and permits. The total use in ac-ft exceeds the amount of Contract water delivered because other sources of water are also supplied to the Contract Service Area and further breakdown by water source is not available.

Customer Type	Number of Connections	Use in AF
Single Family	10,287	6,000
Multifamily	1,430	254
Commercial	670	1,454
Industrial	0	0
Institutional	0	0
Landscape Irrigation	36	363
Recycled	4,302	2,349
Other Uses	n/a	282
Real & Apparent Losses	n/a	1,189
Total	16,725	11,891

Notes: Real and Apparent Losses does not include Recycled losses. The commercial category includes commercial, industrial, institutional, and school accounts.

Source: EID 2016 Consumption Report for El Dorado Hills Supply Area (Zone 2)

4. Urban Wastewater Collection/Treatment Systems serving the service area

The District has five wastewater service areas. The three largest service areas of El Dorado Hills, Deer Creek, and Motherlode are served by a series of lift stations, forcemains, and gravity mains that convey sewage to either the El Dorado Hills Wastewater Treatment Plant (EDHWWTP) or Deer Creek Wastewater Treatment Plant (DCWWTP). Sewage from both the Deer Creek and Motherlode Service Areas flow to the DCWWTP, whereas sewage from the El Dorado Hills Supply Area flows to the EDHWWTP. Together, these two wastewater treatment plants serve a population of nearly 60,000 people. Sewage collected within the Contract Service Area is treated at either the DC or EDH WWTP.

Treatment Plant	Treatment Level	2016 AF	Disposal to/uses
El Dorado Hills	3	2,894	Carson Creek/recycled water
Deer Creek	3	2,594	Deer Creek/recycled water
	Total	5,488	
Total discharged to ocean and/or saline sink			0

Source: Values from Operations Department September 26, 2017

5. Groundwater management plan/banking program

The District does not operate any groundwater recharge, management, or banking systems.

6. Transfers, exchanges, rescheduling, purchases, or sales into or out of the district

The District does not transfer or exchange Contract water into or out of the Contract Service Area. The District has conducted water transfers with District-owned rights, but no CVP water was transferred.

7. Wheeling or other transactions into or out of the district

The District does not transfer or exchange Contract water into or out of the service area. The District does maintain interties with the City of Folsom for emergency purposes but these interties have never been put to use. If these interties were used then the water would be Contract water.

8. Other uses of water

Within the Contract Service Area, there are no other uses of water other than for consumptive purposes. District-wide, the District makes non-consumptive use of water to generate hydroelectricity at the Project 184 El Dorado Powerhouse, and to provide instream flows for wildlife and habitat enhancement as required by water rights conditions, agreements, and regulatory permits. Water stored in and released from Caples Lake, Lake Aloha, Echo Lake, and Silver Lake is used to meet instream flow requirements below those reservoirs' dams, generate hydroelectric power, and meet bypass flows in the South Fork American River. Water releases from Clear Creek, Jenkinson Lake, and Weber Reservoir provide wildlife and habitat enhancement.

F. Outflows from the District (Ag only)

N/A EID does not operate an agricultural water delivery system within the Contract Service Area.

G. Water Accounting

1. Quantify contractors' water supplies

See Table 1 of Attachment 1 for Surface Water Supply.
See Table 2 of Attachment 1 for Groundwater Supply.
See Table 3 of Attachment 1 for Total Water Supply.

2. Quantify water used

See Table 4 of Attachment 1 for Distribution System Losses.

3. Overall water inventory

See Table 6 of Attachment 1 for District Water Inventory.

Section 3: BMPs for Agricultural Contractors

N/A EID does not operate an agricultural water delivery system within the Contract Service Area and does not have an agricultural water contract.

Section 4: BMPs for Urban Contractors

A. Urban BMPs

BMP and water efficiency implementation 5-year budget

BMP	2015 Actual	2016 Projected	2017 Projected	2018 Projected	2019 Projected	2020 Projected
BMP 1 – Foundational Conservation Coordinator Water Waste Prohibition Wholesale Agency Assistance Water Loss Control	\$871,860	\$870,000	\$870,000	\$870,000	\$870,000	\$870,000
BMP 2 – Education Public Outreach School Education	\$232,000	\$232,000	\$232,000	\$232,000	\$232,000	\$232,000
*BMP 3 – Residential Indoor Water Surveys Outdoor Water Surveys Plumbing Retrofits High-Efficiency Clothes Washers WaterSense Specification Toilets						
*BMP 4 – Commercial, Industrial, Institutional (CII) Water Conservation Measures and Incentives						
*BMP 5 – Landscape ETo Water Budgets Technical Assistance Landscape Water Surveys Irrigation Equipment Incentives						
Total	\$1,103,860	\$1,102,000	\$1,102,000	\$1,102,000	\$1,102,000	\$1,102,000

* Note: This information is based on available information from CUWCC reporting documents. Many changes have occurred in the CUWCC reporting platform, reporting options, and compliance requirements since the last Federal Water Management Plan in 2010. First, EID has switched to a GPCD based compliance option rather than programmatic method. Second, reporting requirements have been reduced since 2013 meaning that less detailed information is tracked. And finally, the CUWCC has been reorganized and is now the California Water Efficiency Partnership.

The following table provides a listing of all current actions with the schedule/monitoring. Examples of water conservation flyers and educational programs are provided in Appendix H.

BMP	Schedule/Monitoring	Description of Proposed Action
Foundational		
Conservation Coordinator	Ongoing position	EID has funded and employed one full-time position to support water conservation coordinator duties.
Water Waste Prohibition	Ongoing - prohibition is year-round; enforcement is conducted during normal business hours	EID's Administrative Regulation 1041 - Water Waste Prohibition, was adopted on February 26, 2008 and is in effect at all times to prohibit water waste.
Wholesale Agency Assistance	Ongoing assistance	EID provides water efficiency assistance to City of Placerville customers through a 1999 wholesale agreement between the agencies.
Water Loss Control	Ongoing implementation	EID completed a comprehensive and system-wide water audit through participation in an AWWA Research Foundation study that was completed in 2005. Several recommendations for water loss control were contained in the final report, and EID continues to implement these improvements as staff time and funding permits.
Metering with Commodity	Ongoing metering and bi-monthly bill	EID is 100% metered, and provides its customers with bi-monthly water bills, based on actual meter reads, in order to assist the customer in managing their water usage.

BMP	Schedule/Monitoring	Description of Proposed Action
Conservation Pricing	Ongoing implementation	EID has adopted tiered water rates for many years in order to encourage its customers to conserve water, and the current rate structure is compliant with this BMP.
Education		
Public Information Programs	Ongoing - with plan adoption each fiscal year; water efficiency information available 24/7 at www.eid.org	Implementation of this BMP is met through EID's membership in the Sacramento Regional Water Authority's Water Efficiency Program. Refer to Appendix I for the RWA Water Efficiency Program Fiscal Year 2012 Category 1 Business Plan for more detailed information. EID also offers water efficiency and leak detection information on its website.
School Education Programs	Ongoing - with plan adoption each fiscal year; literature and teaching aides available during normal business hours	Implementation of this BMP is met through EID's membership in the Sacramento Regional Water Authority's Water Efficiency Program. Refer to the attached <i>Fiscal Year 2012 Category 1 Business Plan</i> adopted by RWA members for more detailed information. EID also offers water efficiency literature and teaching aides to educators and youth leaders through a school education page on its website.
Residential		
Assistance Program	Ongoing - assistance provided during normal business hours	EID provides onsite leak detection assistance for the customer, along with the distribution of complimentary plumbing retrofits, as needed.

BMP	Schedule/Monitoring	Description of Proposed Action
Landscape Water Survey Program	Ongoing - with surveys provided during normal business hours	EID provides onsite landscape water surveys, including inspection of the customer's irrigation system for leaks and recommendations for water efficiency improvements.
High-Energy Clothes Washers	Ongoing – program is self funded and changes yearly depending on budget	EID now complies with the BMPs through the GPCD method. Rebate programs ended in 2010 and are periodically self funded by EID as funds allow.
WaterSense Specification Toilets	Ongoing – program is self funded and changes yearly depending on budget	EID now complies with the BMPs through the GPCD method. Rebate programs ended in 2010 and are periodically self funded by EID as funds allow.

BMP	Schedule/Monitoring	Description of Proposed Action
High Bill Contact with Single- and Multi-Family Customers	Ongoing - during normal business hours	Utility billing staff have daily contact with single- and multi-family customers regarding their high water bills, offering ways to reduce water usage, leak detection assistance if warranted or a complimentary water survey. (See below - Notifying Customer of Leaks for additional activity).
Educate Residential Customers about the Behavioral Aspects of Water Conservation	Ongoing - during normal lobby business hours; several times per year at events; and bi-monthly in newsletters	Multiple publications are offered to EID customers in the headquarters lobby and at booths during local events. In addition to publications, tools that address behavioral changes include indoor/outdoor self-checklists, and slide rulers/wheels showing ways to save water. A four page bi-monthly newsletter that contains water efficiency tips and information is mailed to all customers with their water bill.
Notify Residential Customers of Leaks on the Customer's Side of the Meter	Ongoing - all customer meters read bi-monthly; auditing during normal business hours	During bi-monthly readings, EID meter technicians check the meter reading for abnormal usage or a continuously turning leak detection needle. If either are noted, they contact the customer with a knock on the door and/or a door tag, notifying them that there is a possible water leak on their side of the water meter. Utility billing staff also audits meter reads for abnormally high water usage after each billing cycle, ordering a meter re-read and a meter leak detection check if warranted. The customer is notified automatically by mail if there is a possible water leak. Current meter technically utilized by EID does not allow for more frequent meter reading which is required for more advanced leak detection software.

BMP	Schedule/Monitoring	Description of Proposed Action
Provide Bill or Surcharge Refunds for Customers to Repair Leaks on Customer's Side of the Meter	Ongoing - but limited to one adjustment every five years per account	EID's Administrative Regulation 9051.3 allows for an adjustment to an account if excessive delivery is the result of water leakage that occurs from underground or unexposed pipes beyond the discharge flange of the water meter. EID must receive the request for credit in writing within 60 days from the bill date of the bill that reflects the leakage. An adjustment is made only after the leak has been repaired and it is reasonable to predict that the leak or loss will not occur again. The customer must submit repair receipts for verification that the leak has been repaired.
Provide Unique Water Savings Fixtures that are not in the BMP list above	Annual - displayed during winter months (landscape focus during irrigation season)	EID has provided a demonstration model in the headquarters lobby of a hot water re-circulating device to educate our customers of this unique water savings fixture for their homes.
Install Residential Water Use Monitors	Ongoing - monitoring through bi-monthly billing; leak detection information available 24/7 at www.eid.org	Customers are encouraged to monitor their water usage through their metered, bi-monthly water bills; and also by checking their meter using the leak detection needle. Leak detection instructions are available on the EID website and through customer contact during normal business hours.

BMP	Schedule/Monitoring	Description of Proposed Action
Implement an Automatic Meter Reading Program for Residential Customers	Ongoing - for new meter installations; dependent upon future funding availability for retrofits.	Approximately half of EID's existing meters have AMR capability. An AMR retrofit program was funded for a number of years; however, due to budget constraints, there is currently no retrofit program. All new meters are installed with AMR capability.
Other Residential Programs not Listed	Ongoing – program is self funded and changes yearly depending on budget	EID offers financial incentives to residential customers for the upgrade of landscape irrigation systems, and the conversion of automatic controllers to weather-based irrigation controllers. Rebate programs ended in 2010 and are periodically self funded by EID as funds allow.

Commercial, Institutional, and Industrial (CII)

BMP	Schedule/Monitoring	Description of Proposed Action
Water Audits - Interior and Exterior	Ongoing - program is self funded and changes yearly depending on budget	EID offers interior and exterior water audits to all CII customers, but is currently focusing efforts on comprehensive audits for institutional customers such as schools and community service districts. Upon completion of the interior audits, complimentary plumbing retrofit supplies are provided, along with financial incentives to replace high-flush volume toilets and urinals. Upon completion of the exterior audits, EID offers financial incentives for the upgrade of irrigation systems, and the conversion of automatic controllers to weather-based irrigation controllers.
Pool and Water Feature Recycling	Ongoing - prohibition is year-round; enforcement is conducted during normal business hours	EID's Administrative Regulation 1041, Water Waste Prohibition, requires recirculation devices in ponds, waterways, decorative basins or swimming pools. Discharging of backwash water is also limited to a reasonable frequency necessary to maintain the clarity and cleanliness of the water.
Sub-metering	Ongoing - for customer funded submeter installations	EID offers CII customers with a mixed use meter the opportunity to install a landscape submeter in order to better manage their irrigation demands. For eligible sites that have a minimum of 5,000 square feet of irrigated area, there are also financial incentives available for the submeter assembly and the conversion of a standard irrigation controller to a weather-based irrigation controller.

BMP	Schedule/Monitoring	Description of Proposed Action
High Efficiency Showerheads	Ongoing - offered during water surveys; available in lobby during normal business hours	EID offers CII customers complimentary low-flow showerheads to replace older high-flow models.
Faucet Flow Restrictions	Ongoing - offered during water surveys; available in lobby during normal business hours	EID offers CII customers complimentary low-flow faucet aerators to replace older high-flow aerators.
Pre-rinse Spray Values of 1.2 gpm or less	Ongoing - offered during water surveys; available in lobby during normal business hours	EID offers CII customers complimentary low-flow pre-rinse spray nozzles to replace older high-flow models.
Other Measures Chosen by Agency	Ongoing - offered as funds allow	EID offers financial incentives to CII customers for the upgrade of landscape irrigation systems, and the conversion of automatic controllers to weather-based irrigation controllers.
Landscape		
Monitor and Report on Landscape Water Use	Ongoing - program is self funded and changes yearly depending on budget	EID completed water budgets for large landscape customers with Prop 84 funding. EID provides onsite landscape water surveys, including inspection of the customer's irrigation system for leaks and recommendations for water efficiency improvements.

BMP	Schedule/Monitoring	Description of Proposed Action
Provide Incentives	Ongoing – program is self funded and changes yearly depending on budget	EID offers financial incentives to dedicated landscape customers for the upgrade of landscape irrigation systems, and the conversion of automatic controllers to weather-based irrigation controllers.
Participate in Local and Regional Planning and Regulatory Activities	Ongoing participation	EID is a member of: the Sacramento Regional Water Authority (RWA); RWA’s Water Efficiency Program Advisory Committee (RWEFAC); the American River Basin IRWMP; the Cosumnes, American, Bear, and Yuba (CABY) Rivers IRWMP; the California Urban Water Conservation Council (CUWCC); the Association of California Water Agencies (ACWA); and the Mountain Counties Water Resources Association (MCWRA).

Year of Data **Enter data year here**

Table 1

Surface Water Supply

2016 Month	Federal Urban Water (acre-feet)	Federal Ag Water. (acre-feet)	State Water (acre-feet)	Local Water (Warren Act Contract) (acre-feet)	Transfers into District (acre-feet)	Other Water (define) (acre-feet)	Total (acre-feet)
Method							
January	0	0	0	149	0	0	149
February	0	0	0	103	0	0	103
March	191	0	0	0	0	0	191
April	293	0	0	0	0	0	293
May	504	0	0	0	0	0	504
June	839	0	0	0	0	0	839
July	1173	0	0	0	0	0	1,173
August	1071	0	0	0	0	0	1,071
September	801	0	0	0	0	0	801
October	436	0	0	0	0	0	436
November	228	0	0	0	0	0	228
December	168	0	0	0	0	0	168
TOTAL	5,704	0	0	252	0	0	5,956

NOTE: In 2016 the El Dorado Hills Water Treatment Plant was offline for about 12 days of February for scheduled maintenance. During this time all demands within the Contract Water Service area were met through supplies provided from other sources. As such the value for February of 103AF, which is the basis for estimated Inside Use in Table 6, is artificially low.

Table 2

Ground Water Supply

2016 Month	District Groundwater (acre-feet)	Private Urban Groundwater *(acre-feet)
Method		
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0
TOTAL	0	0

*normally estimated

Table 3

Total Water Supply

2016 Month	Surface Water Total (acre-feet)	District Groundwater (acre-feet)	Recycled M&I Wastewater (acre-feet)	Total District Water Supply (acre-feet)
Method				
January	149	0	42	191
February	103	0	45	148
March	191	0	48	239
April	293	0	143	436
May	504	0	271	775
June	839	0	460	1,299
July	1,173	0	565	1,738
August	1,071	0	535	1,606
September	801	0	400	1,201
October	436	0	200	636
November	228	0	61	289
December	168	0	45	213
TOTAL	5,956	0	2,815	8,771

NOTE: Recycled Water listed is total volume sold, which includes approximately 571AF supplementation of potable water to the Recycled Water System to meet demands in 2016. Not all recycled water is delivered to El Dorado Hills Supply Area (Zone 2).

Table 4

Urban Distribution System

2016 Area or Line	Length (feet)	Leaks (acre-feet)	Breaks (acre-feet)	Flushing/Fire (acre-feet)	Total (acre-feet)
El Dorado Hills Supply Area	1,774,080	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
TOTAL	1,774,080	0	0	0	0

NOTE: The value for Leaks is only available for the entire system. As such, no assumption of leaks or flushing has been derived for the El Dorado Hills Service Area.

Table 5

Table 6

2016 District Water Inventory

Water Supply	Table 3		8,771
Environmental Consumptive Use		minus	0
Groundwater Recharge	(Perc ponds & recharge wells)	minus	0
Transfers out of District		minus	0
Flushing / Fire	Table 4b	minus	0
Distribution System Leaks & Breaks	Table 4b	minus	0
Water Available for sale to customers			8,771
Actual Water Sales 2016		From District Records	7,517
Inside Use	Feb urban use x 12		1,236
Landscape / Outside Use	(calculated)		6,281
Unaccounted for Water	(calculated)		1,254

NOTE: In 2016 the El Dorado Hills Water Treatment Plant was offline for about 12 days of February for scheduled maintenance. During this time all demands within the Contract Water Service area were met through supplies provided from other sources. As such the value for February of 103AF, which is the basis for estimated Inside Use in Table 6, is artificially low.

Table 7

Table 8

Annual Water Quantities Delivered Under Each Right or Contract

Year	Federal Urban Water (acre-feet)	Federal Ag Water. (acre-feet)	State Water (acre-feet)	Local Water (Warren Act Contract) (acre-feet)	Transfers into District (acre-feet)	Other Water (define) (acre-feet)	Total (acre-feet)
2007	6,559	0	0	2,572	0	0	9,131
2008	3,747	0	0	3,135	0	0	6,882
2009	4,568	0	0	2,124	0	0	6,692
2010	5,554	0	0	856	0	0	6,410
2011	1,225	0	0	4,560	0	0	5,785
2012	5,932	0	0	1,044	0	0	6,976
2013	2,406	0	0	3,294	0	0	5,700
2014	2,912	0	0	2,291	0	0	5,203
2015	327	0	0	5,340	0	0	5,667
2016	5,704	0	0	252	0	0	5,956
Total	38,934	0	0	25,468	0	0	64,402
Average	3,893	0	0	2,547	0	0	6,440

Appendix

Appendix A – Contract Service Area Map

Appendix B – EID Service Area Map

Appendix C – Board Policy 5000

Appendix D – 2015 Water Rates

Appendix E – Sample Water Bill

Appendix F – 2016 Water Quality Report

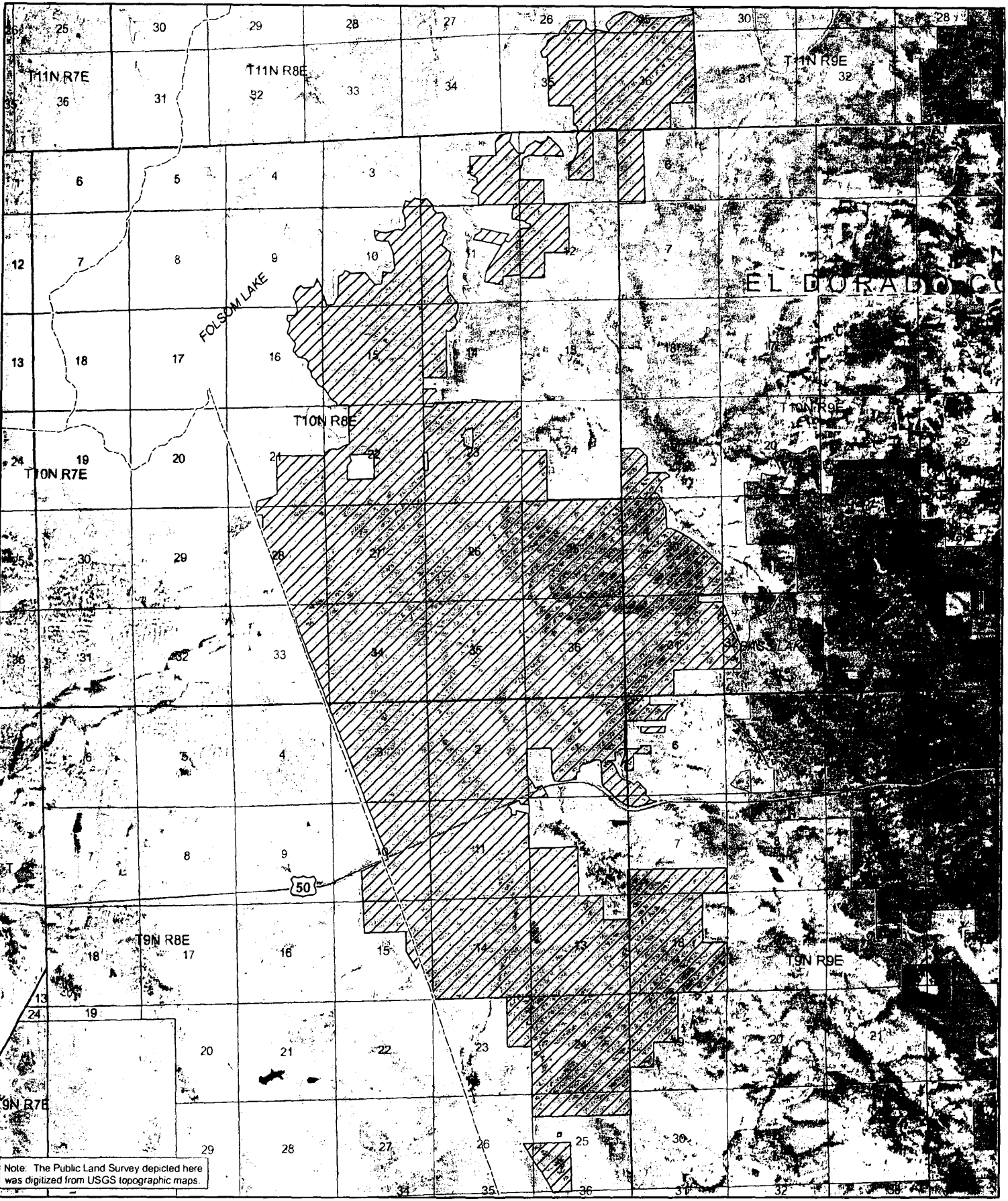
Appendix G – Administrative Regulation 1041

Appendix H – Educational Materials

Appendix I – Fiscal Year 2012 Category 1 Business Plan

Appendix J – 2015 CUWCC Filing

Appendix A – Contract Service Area Map





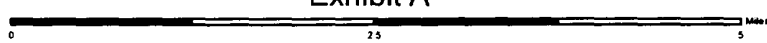
Note: The Public Land Survey depicted here was digitized from USGS topographic maps.

El Dorado I.D. - Folsom Service Area

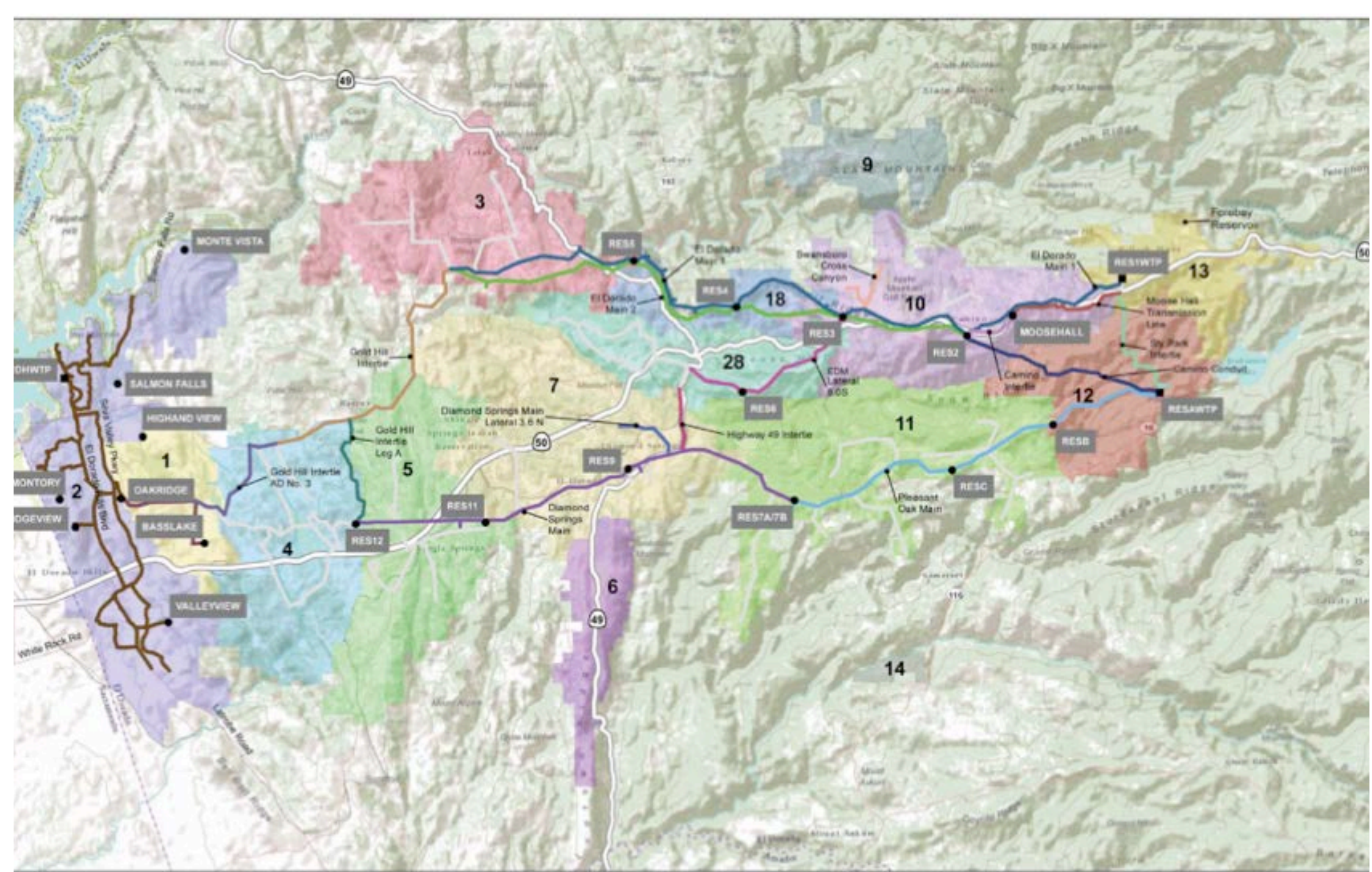
Contract No. 14-06-200-1357A-LTR-1

Exhibit A

-  Contractor's CVP Service Area
-  District Boundary



Appendix B – EID Service Area Map



Appendix C - Board Policy 5000



El Dorado Irrigation District

Board Policies (BP) and Administrative Regulations (AR) Updated on July 14, 2017

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El Dorado Irrigation District

BP 5000 WATER SUPPLY

BP 5010 Water Supply Management

Adopted: August 28, 2006

Supersedes: Regulation No. 1 – adopted March 24, 1982, amended April 21, 2003
 Regulation No. 2 – adopted July 24, 1989, amended August 6, 2001
 Regulation No. 3 – adopted October 25, 1993
 Regulation No. 7 – adopted December 14, 1988, amended October 21, 2002
 Regulation No. 10 – adopted September 30, 1981, amended February 7, 2000
 Regulation No. 11 – adopted June 17, 1984

The Board is committed to provide a water supply based on the principles of reliability, high quality, and affordability in a cost-effective manner with accountability to the public. It is the General Manager's responsibility to ensure that the tenets of this policy are carried out in an open, transparent manner through sound planning, to assure preparedness under varying conditions, and effective management.

It is the policy of the Board that the District will not issue any new water meters if the *Water Resources and Service Reliability Report* indicates that there is insufficient water supply. When warranted by the findings of the report, the General Manager will bring the possibility of restrictions on meter issuance to the Board's attention. Any such restrictions will be established pursuant to Water Code Section 350 et. Seq. of the California Water Code.

AR 5010 Water Availability and Commitments

Approved: December 12, 2006

AR 5010.1 Annual reporting

The District will maintain adequate water supply and demand records to ensure accurate monitoring and reporting. The General Manager will ensure that an updated *Water Resources and Service Reliability Report* is prepared annually for review by the Board of Directors. The report will include the current system firm yield of the overall District, along with the water supply and infrastructure capacity, potential demands, existing commitments, and meter availability for each water service area of the District as defined in the report.

AR 5010.2 Shortages

The *Water Resources and Service Reliability Report* will use a system firm yield method to determine that sufficient water supply exists to meet potential demands. Under this methodology, approximately 95% of the time sufficient water supply is available to meet normal water demands, but during the remaining 5% of the time water shortages may occur. Such shortages may result in the implementation of voluntary or mandatory conservation measures.

AR 5010.3 New meter restrictions

Should findings in the *Water Resources and Service Reliability Report* warrant restrictions on the issuance of new water meters, the General Manager will bring the situation to the attention of the Board of Directors. During emergency conditions when supplies are restricted or limited, the General Manager may also bring to the Board's attention possible restrictions on water meter availability.

AR 5011 Water Supply Management Conditions

Approved: December 12, 2006
Revised: July 25, 2008
Revised: April 7, 2015

The District recognizes that variations in weather patterns can cause watersheds to yield different quantities of water supply in any given year. In some years, dry weather or drought conditions may occur which result in varying degrees of water shortage. The District also recognizes that future climate change may impact the intensity and duration of future droughts.

The actions required to respond to both near- and long-term changing water supply conditions are outlined in the District's *Drought Action Plan*, regularly updated by the Board of Directors and available on the District's website. The following water supply management conditions, and corresponding drought stages, describe the incremental steps needed to manage increasing levels of water shortage.

AR 5011.1 Water supply normal and unrestricted Drought Stage Zero – Ongoing water conservation

Stage Zero is in effect at all times unless another subsequent stage is declared. Stage Zero reflects periods when normal water supplies and normal distribution capacity are available, and the District anticipates the ability to meet the unrestricted demands of its customers. A prohibition of water waste will be in effect during both normal and restricted water supply conditions.

AR 5011.2 Water supply slightly restricted Drought Stage 1 – Voluntary reductions in use

The objective of Stage 1 is to initiate public awareness of predicted water shortage conditions, and encourage voluntary water conservation to decrease normal demand up to the amounts stated in the *Drought Action Plan*.

***AR 5011.3 Water supply moderately restricted
Drought Stage 2 – Voluntary and mandatory reductions***

The objective of Stage 2 is to increase public understanding of worsening water supply conditions, encourage voluntary water conservation measures, and then if necessary, enforce mandatory conservation measures in order to decrease normal demand up to the amount stated in the *Drought Action Plan*.

***AR 5011.4 Water supply severely restricted
Drought Stage 3 – Mandatory restrictions***

The objective of Stage 3 is to enforce extensive mandatory restrictions on water use, and implement water rationing to decrease normal demand up to the amount stated in the *Drought Action Plan* to ensure that water use is limited to health and safety purposes.

AR 5011.5 Declared water shortage emergencies

The General Manager may also declare a water shortage emergency due to an existing condition or when there is a high probability that a condition will be realized in the near future. Such conditions may include an unexpected disruption of supply, storage, or distribution system facilities.

AR 5012 District Infrastructure and Facilities

Approved: December 12, 2006

Revised: May 25, 2010

AR 5012.1 Connections to District infrastructure

Connections to the District's infrastructure shall be made only by District employees or under the direct supervision of District employees. No connection to District infrastructure shall be made without prior approval.

AR 5012.2 Responsibility for infrastructure maintenance

The District's ownership of and responsibility for the operation and maintenance of facilities will end at the discharge side of the meter, or discharge conduit. In circumstances where the customer owns a testable check valve assembly, the annual testing and maintenance of internal components are conducted by the District. The District will be responsible to operate, maintain, and replace District water mains, flumes, ditches, and other facilities of the District's total supply, transmission, and distribution system. The District's water supply system shall be under the exclusive control and management of duly appointed District personnel, and no one shall have any right to operate, maintain or replace any of the District's water facilities, or interfere with the District system in any manner.

For service through private waterlines or community group systems, measuring devices placed within these systems shall be at the sole discretion of the District. Any such placement, however, does not create an obligation on the part of the District for the operation, maintenance, or replacement of the private waterlines or group system.

AR 5013 Water Service Interruptions or Restrictions

Approved: December 12, 2006
Revised: July 25, 2008
December 20, 2012

Water service interruptions or restrictions may occur during water supply conditions, especially Drought Stages 2 and 3, and water shortage emergencies as declared by the General Manager. The District may, with prior notification, temporarily remove or lock off meters or otherwise interrupt water service to classifications not assigned for human consumption.

Irrigation and agricultural services provided by the District may be subject to an interruption or restriction under these conditions. Temporary Water Use program services provided by the District may also be subject to removal, lock-off, restriction, or discontinuance.

The District may also restrict water availability for Temporary Water Use in certain locations due to constraints in the distribution system.

AR 5013.1 Violations

The District reserves the right to interrupt or restrict, without prior notice, any irrigation or agricultural service, construction, or Temporary Water Use that is found to violate the restrictions imposed by a water shortage condition.

AR 5013.2 Service interruptions due to planned or unplanned maintenance

The District reserves the right at any and all times to shut off water delivery or reduce pressure for the purpose of maintenance or making repairs and alterations to the water system. Whenever possible, advance notice of interruption of service will be given to all affected water users.

AR 5014 Fire Suppression

Approved: December 12, 2006
Revised: December 18, 2012
Revised: August 20, 2013
Revised: February 19, 2015

A fire suppression system may consist of a private interior fire sprinkler system or public fire hydrants. The fire protection agency having jurisdiction over the property will set the fire suppression requirements. The District will provide water for fire hydrants and other fire suppression facilities, but does not warrant or guarantee any range of pressures or rates of flow. The District will not be liable for water pressure or damage in any manner that arises from the availability of water or water pressure at any hydrant or facility used for fire suppression.

The District will provide water at no cost to fire protection agencies for the purpose of fire suppression activities. These activities are limited to equipment maintenance and testing, training, and the filling of fire suppression equipment. All other domestic uses of water, including but not limited to washing of tools, driveways and vehicles, and irrigation uses as well as interior uses at fire stations and any associated training facilities, will be supplied in accordance with District regulations and procedures and must be metered and paid for by the fire protection agency.

AR 5014.1 Fire hydrants

Public fire hydrants for parcels located inside District boundaries will be installed and connected to District mains when requested by the fire protection agency having jurisdiction or when required as a condition of a building permit or subdivision of land. The cost of the fire hydrant assembly and all other appurtenances, including installation, will be paid for by the holder of the building permit or the developer of the project. The District will review, approve, and inspect all public fire hydrant installations.

All public fire hydrants will be owned, operated, tested for functionality, flow tested and maintained by the District from the water main up to and including the hydrant. All fire hydrants may be inspected, tested for functionality, and externally maintained by the fire protection agency.

No person, other than authorized EID or fire protection agency personnel, shall open or draw water from any fire hydrant connected to the District's distribution system without prior specific authorization from the District. Refer to AR 9073 for authorized temporary water use.

The removal or relocation of any public fire hydrant must be approved by the District in advance, and any removal or relocation will be made at the expense of the person or entity requesting the change.

AR 5014.2 Commercial fire suppression services

The property owner will be responsible for the expense of installing a commercial fire suppression system and appropriate backflow prevention device as required by the District.

Water provided to a fire suppression sprinkler system will not be used for any purpose other than extinguishing a fire or testing of the fire protection system.

AR 5014.3 Residential fire suppression services

A residential fire sprinkler system may be served by the residential water meter except if a separate service line and water meter is needed to provide the required fire flow.

AR 5015 Ground Water Supply

Approved: December 12, 2006

Because of the unreliable nature of underground water sources in most of El Dorado County, ground water will not be relied on to augment firm yield supply or as a sole source of water for domestic, irrigation, or fire-fighting purposes. Any consideration of direct ground water augmentation to the existing water system will be evaluated on the basis of short- and long-term reliability, quality, and economics. More than one professional, expert opinion regarding adequacy will be required. The costs of necessary tests, expert opinions, and District staff time will be borne by the applicant.

BP 5020 Cross-Connection Control and Backflow Prevention

Adopted: August 28, 2006

Supersedes: Regulation No. 10 – Prevention of Contamination by Backflow and Cross
Connections, Adopted September 30, 1981, Amended February 7, 2000

The District will establish and maintain a cross-connection control program according to the California Code of Regulations - Title 17, Section 7583-7605, or their successors.

AR 5021 Cross-Connection Control and Backflow Prevention

Approved: September 16, 2009

In accordance with BP 5020, the District protects its public water system at the service connection against any actual or potential cross-connection between the public water system and any source or system containing used water, industrial fluid, gas or other substance that is not, or cannot be, approved as safe, wholesome and potable for human consumption. Such protection is enforced through California Code of Regulations Title 17 Section 7584, which requires the District to comply with all applicable state and federal laws required by the Safe Drinking Water Act of 1974, as they are now constituted, or as they may hereafter be amended or recodified, and implemented through the District's "Cross-Connection Control and Prevention of Backflow Program."

A copy of the current "Cross-Connection Control and Prevention of Backflow Program" is available upon request from the Environmental Division.

BP 5030 Water Conservation

Adopted: August 28, 2006

Supersedes: Regulation No. 21 – Conservation, Adopted June 10, 1981

It is Board policy to take reasonable and prudent measures to conserve all water and to adopt and implement water-use efficiency programs that will benefit its customers.

BP 5040 Drought Preparedness and Climate Variability

Adopted: August 28, 2006

Supersedes: Regulation No. 2 – Water Supply Reliability, Adopted July 24, 1989, Amended
6, 2001

August

The Board supports the adoption and implementation of a drought preparedness plan to ensure a proactive response to the impacts of drought conditions. Included in the planning effort is consideration of climate variability.

BP 5050 Watershed Management

Adopted: August 28, 2006
Supersedes:

It is Board policy to adopt and support watershed management strategies that will maximize water supply reliability and water quality.

Appendix D - 2015 Water Rates

**EL DORADO IRRIGATION DISTRICT
BI-MONTHLY RATE SCHEDULE**

BASE CHARGES		COMMODITY CHARGES PER CUBIC FOOT (cf)	
WATER RATES		WATER RATES	
Single Family Residential		Single Family Residential	
5/8" and 3/4" meters	\$55.37	0 - 1,800 cf	\$0.01345
1"	\$81.09	1,801 - 4,500 cf	\$0.01623
1 1/2"	\$139.92	Above 4,500 cf	\$0.01904
1 1/2"T	\$165.65		
2"	\$213.43		
2"T	\$213.43		
3"	\$430.91		
3"T	\$448.72		
4"	\$632.53		
4"T	\$790.61		
6"	\$1,253.67		
6"T	\$1,735.40		
8"	\$2,972.84		
10"	\$4,708.24		
12"	\$6,194.66		
Single Family Dual Plumbed Residential ^[1]	\$33.32		
Multi-Family Residential and Commercial/Landscape		Multi-Family Residential and Commercial/Landscape	
5/8" and 3/4" meters	\$58.23	All usage	\$0.01601
1"	\$85.96		
1 1/2"	\$149.38		
1 1/2"T	\$177.12		
2"	\$228.65		
2"T	\$228.65		
3"	\$442.66		
3"T	\$482.29		
4"	\$680.44		
4"T	\$850.86		
6"	\$1,338.32		
6"T	\$1,601.41		
8"	\$3,189.11		
10"	\$5,050.75		
12"	\$6,625.14		
Recreational Turf		Recreational Turf	
5/8" and 3/4" meters	\$52.49	All usage	\$0.01601
1"	\$76.21		
1 1/2"	\$130.44		
1 1/2"T	\$154.17		
2"	\$198.23		
2"T	\$198.23		
3"	\$381.26		
3"T	\$415.15		
4"	\$584.62		
4"T	\$730.36		
6"	\$1,147.25		
6"T	\$1,601.41		
8"	\$2,730.05		
10"	\$4,323.72		
12"	\$5,668.60		
Agricultural Irrigation (with residence) and Small		Agricultural Irrigation (with residence) and Small	
5/8" and 3/4" meters	\$55.37	0 - 1,800 cf	\$0.01345
1"	\$69.39	Above 1,800 cf	\$0.00112
1 1/2"	\$82.09		
1 1/2"T	\$87.64		
2"	\$97.98		
2"T	\$97.98		
3"	\$140.84		
3"T	\$148.77		
4"	\$188.46		
4"T	\$222.60		
6"	\$320.24		
6"T	\$426.62		
8"	\$690.95		
10"	\$1,094.31		
12"	\$1,379.22		

**EL DORADO IRRIGATION DISTRICT
BI-MONTHLY RATE SCHEDULE**

BASE CHARGES		COMMODITY CHARGES PER CUBIC FOOT (cf)	
WATER RATES		WATER RATES	
Agricultural Irrigation (without residence) and Raw metered		Agricultural Irrigation (without residence) and Raw metered	
5/8" and 3/4" meters	\$15.79	All usage	\$0.00112
1"	\$21.36		
1 1/2"	\$34.05		
1 1/2"T	\$39.61		
2"	\$49.93		
2"T	\$49.93		
3"	\$92.80		
3"T	\$100.74		
4"	\$140.42		
4"T	\$174.55		
6"	\$272.20		
6"T	\$378.58		
8"T	\$642.93		
10"T	\$1,018.23		
12"T	\$1,331.18		
RAW WATER RATES		RAW WATER RATES	
Metered Landscape Irrigation ^[2]		Raw Water - seasonal continuous flow	
Raw Water Year Round- 1/2" flow	\$72.50	All usage	\$0.00112
Raw Water Year Round- 1" flow	\$145.02		
Raw Water Year Round- 2" flow	\$290.02		
Raw Water Year Round- 4" flow	\$580.04		
Raw Water Year Round- >4" flow (per inch of flow)	\$145.02		
WASTEWATER RATES		WASTEWATER RATES	
Residential flat rate District average ^[3]	\$134.00	Single Family Residential	
Single Family Residential	\$71.95	All usage	\$0.03878
Multi Family Residential (per unit)	\$35.34	Multi-Family Residential	
Commercial - (all categories)	\$76.91	All usage	\$0.03041
Commercial without water service (per unit)	\$119.81	Commercial/Industrial	
Schools, per student and staff (billed annually)	\$11.80	Commercial - Low	\$0.04458
		Commercial - Medium/Low	\$0.06423
		Commercial - Medium	\$0.09578
		Commercial - Medium/High	\$0.14898
		Commercial - High	\$0.32453
RECYCLED WATER RATES		RECYCLED WATER RATES	
Single Family Dual Plumbed Residential ^[4]	\$22.05	Single Family Dual Plumbed Residential	
Commercial Landscape/Recreational Turf		0 - 3,000 cf (rate is 50% of potable water tier 1)	\$0.00636
5/8" and 3/4"	\$29.79	3,001 - 4,500 cf (rate is 70% of potable water tier 2)	\$0.01075
1"	\$43.26	Above 4,500 cf (rate is 90% of potable water tier 3)	\$0.01619
1 1/2"	\$74.04	Commercial Landscape (all meter sizes)	
1 1/2"T	\$87.51	All usage	\$0.00875
2"	\$112.51	Recreational Turf	
2"T	\$112.51	All usage	\$0.01034
3"	\$216.38		
3"T	\$235.63		
4"	\$331.81		
4"T	\$414.53		
6"	\$651.14		
6"T	\$908.91		
8"T	\$1,549.50		
10"T	\$2,454.01		
12"T	\$3,217.32		

FOOTNOTES:

[1] Single Family Dual Plumbed Residential services pay both a potable and a recycled base charge. Refer to both rate schedules for applicable base charges.

[2] For base charges refer to the agricultural irrigation (without residence) and raw metered base charges

[3] Effective 6/1/2015, the Residential flat rate District average consumption was recalculated. This reduced average consumption from 1800cf to 1600cf.

[4] Single Family Dual Plumbed Residential services pay both a potable and a recycled base charge. Refer to both rate schedules for applicable base charges.

LEGEND:

1 cubic foot = 7.48 gallons

1 miners inch = 11.22 gallons per minute (gpm)

1 miners inch day = 16,156.80 gallons or 2,160 cubic feet

Services outside of the District are billed at 1.5 times the adopted rate

Appendix E – Sample Water Bill

1



EL DORADO IRRIGATION DISTRICT
 2890 MOSQUITO ROAD
 PLACERVILLE, CALIFORNIA 95667

UTILITY ACCOUNT INFORMATION

Account Number 123456-001
 Statement Date 06/08/11
 Service Address 1234 ANY STREET
 Cycle C1
 Last Bill Amount 132.70
 Payments -132.70
 Adjustments 0.00
 Balance Forward 0.00
Due Date 06/29/11
Total Due \$166.29
3 MAIN PHONE & EMERGENCIES: 530-622-4513
BILLING PHONE: 530-642-4000 & 916-965-0930

ADDRESS SERVICE REQUESTED

AUTO5-DIGIT 95762 19 PS5 65817RB09-A-1
 4834 1 AV 0.340



JOHN SMITH
 1234 ANY STREET
 ANY CITY, CA 12345

Service Period	Days	Meter Number	Meter Size	Current Reading	Previous Reading	Usage (in CF)
04/01/11	05/31/11	60	65701456	0.75	91100	86900 → 4200
04/01/11	05/31/11	60	65330056	0.75	22500	21900 → 600
Service	Description	Consumption	Units	Rate	Charge	Total
	RECYCLED WATER CHARGE Tier 1	4200	4200	0.008310	34.90	\$34.90
TOTAL RECYCLE						\$34.90
Service	Description	Consumption	Units	Rate	Charge	Total
	RESIDENTIAL WATER CHARGE Basic Water Charge Tier 1	600	600	0.013090	7.85	\$33.74
	PHASE III-LINE/COVER		1		3.25	\$3.25
TOTAL WATER						\$36.99
Service	Description	Consumption	Units	Rate	Charge	Total
	SEWER CHARGE Basic Sewer Charge Tier 1	589	589	0.028980	17.07	\$94.40
TOTAL SEWER						\$94.40
Total Current Charges						\$166.29
Balance Forward						\$0.00
Total Due						\$166.29
Estimated Average Cost Per Day						\$2.77

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5

6

Online bill pay now available. Visit our website at www.eid.org to have e-statements, view your bills, make one time payments, or set up recurring payments. Should you have any questions please call our Billing Department at (530) 642-4000.

KEEP THIS PORTION FOR YOUR RECORDS - SEE REVERSE FOR CONSUMPTION HISTORY
 RETURN THIS PORTION WITH YOUR PAYMENT

7

PAYMENT COUPON

PLEASE RETURN THIS PORTION ALONG WITH YOUR PAYMENT
 MAKE YOUR CHECK PAYABLE TO: **EL DORADO IRRIGATION DISTRICT**

Cycle: C1

Service Address: 1234 ANY STREET

Billing Address

JOHN SMITH
 1234 ANY STREET
 ANY CITY, CA 12345

UTILITY ACCOUNT INFORMATION

Account Number 123456-001
 Statement Date 06/08/11
Due Date 06/29/11
Total Due \$166.29



Please check this box and fill out the reverse side of this form if your contact information has changed or if you would like to provide your e-mail address to receive important District news.

EL DORADO IRRIGATION DISTRICT
 2890 MOSQUITO ROAD
 PLACERVILLE CA 95667



8

QUESTIONS ABOUT YOUR BILL

If you have questions about your bill, please call our service representatives at 530-642-4000 or visit www.eid.org and click on customer services.

TERMS OF PAYMENT

All charges are due by the due date on the other side of this bill. Past due accounts are subject to a late payment charge of \$10.00, which will be reflected on a subsequent bill.

The **Due Date** on the bill applies to current charges only.

NON-PAYMENT OF BILL

The District reserves the right to disconnect any water, sewer, or recycled water system customer for non-payment of a bill.

If your service is disconnected because of non-payment, you will have to pay the past due amount and a reconnection fee to regain service.

RETURNED CHECK CHARGE

A fee will be charged for any returned check, and the returned check must be redeemed in cash or by money order within two working days.

ACCESS TO FACILITIES

When you apply and receive service, you license the District and its authorized employees and agents to enter your property at reasonable times to read, inspect, check, repair, maintain, or replace District meters, backflow prevention devices, and other facilities.

The meters need to be accessible at all times. If meters cannot be read because of obstructions, customers will be asked to correct the problem. If the condition persists, service will be subject to disconnection and a reconnection fee to regain service.

WATER CONVERSION FACTORS

Your meter reads in cubic feet.

1 cubic foot = CF

100 cubic feet = CCF

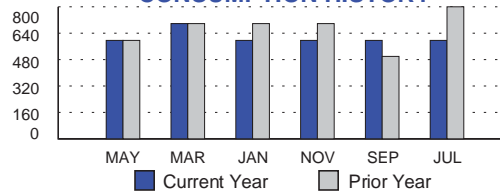
1 cubic foot = 7.48 gallons of water

1 acre-foot = 43,560 cubic feet of water

1 acre-foot = 325,829 gallons of water

One acre-foot of water = an acre of land covered by water one foot deep.

CONSUMPTION HISTORY



9

10

Would you like to receive important District news and information by e-mail?

Please provide your email address: _____

Your e-mail address will never be shared with third parties and you may unsubscribe at any time.

Please make any changes or corrections to your billing address or phone numbers below:

Name: _____

Phone Numbers: Home _____ Work _____ Mobile _____

Billing Address: _____

City: _____ State: _____ Zip: _____

1. El Dorado Irrigation District's Address

This is where you can send in payment or any other correspondence to the District.

2. Utility Account Information

This includes account number, statement date, service address, billing cycle, last bill amount, payments made since last statement, adjustments made since last statement, balances brought forward from last bill, and the bills due date. If you are on recurring payments with the District it will also state Recurring CC Statement Date or Direct Debit Date, depending on what type of recurring payment you have setup.

3. El Dorado Irrigation District's Contact Information

This includes the telephone number to the main office and for emergencies, and the direct telephone number for the Billing Department.

4. Meter Information

This includes service periods, days in billing cycle, meter numbers, meter sizes, current readings, previous readings, and usage in cubic feet (CF). To determine which meter is your recycled water and which is your potable water, please look at the usage in this section and cross reference to the units in the Billed Line Items section.

5. Billed Line Items

This includes the charges for water, sewer, and recycled water services. The recycled water charge will include the basic charge (if any), the consumption in cubic feet from the recycled meter, and the rate and charge for each applicable tier. The water charge will include the basic charge, the consumption in cubic feet from the potable meter, the rate and the charge for each applicable tier, Phase II Line and Cover Surcharge (if applicable), and Phase III Line and Cover Surcharge (if applicable). The sewer charge will include the basic charge, the commodity charge (tier 1) which is based on "Winter Quarter Average" consumption, reflected on your February statement, and El Dorado Hills Surcharge (if applicable).

If there are any additional fees or penalties, they would be reflected below the sewer charges in a service category called total other charges.

After all the charges are listed you will see a summary of total current charges, balance forward, total due, and estimated average cost per day based on this billing period.

6. Bill Messages

This is where the District places any important message regarding your billing or other District information.

7. Payment Coupon

If you wish to mail your payment in, please tear off and remit this coupon with your payment in the envelope provided.

8. Important Information Regarding This Bill

This shows how to contact the District if you have questions about your bill, the terms of payment, and water conversion factors. These are subject to change at any time.

9. Consumption History Graph

This graph shows a 2 year history of potable water consumption in cubic feet.

10. Account Information Change

This section is for adding an email address to your contact information and updating your mailing address and/or phone numbers. Please fill out and return the back part of the coupon and check the box on the front.

Appendix F – 2016 Water Quality Report

EL DORADO IRRIGATION DISTRICT



2016

Water Quality Report

Water testing performed in 2016

Main Water System

*Este informe contiene información muy importante sobre su agua beber.
Tradúzcalo o hable con alguien que lo entienda bien.*

ABOUT THE WATER QUALITY REPORT

The Water Quality Report is an annual summary of the results of ongoing tests for contaminants in drinking water. The report is designed to inform you of the quality of your drinking water. Each year, the State Water Resources Control Board and U.S. Environmental Protection Agency (EPA) require EID to compile and distribute a report to all of our water customers. The report includes a comparison of the District's water quality to state and federal standards.

WHERE YOUR WATER COMES FROM

EID has rights to approximately 75,000 acre-feet of water from various sources in the Sierra Nevada foothills. (An acre-foot equals one acre of land covered by a foot of water; there are 325,851 gallons in an acre-foot.) Jenkinson Lake, at the center of Sly Park Recreation Area, provides nearly one half of the Main System's water supply and is treated at the Reservoir A water treatment plant in Pollock Pines. Forebay Reservoir in Pollock Pines delivers water to the Reservoir 1 water treatment plant under a pre-1914 water right from the high-alpine streams and lakes that are part of our Project 184 hydropower system. We have a water contract with the Bureau of Reclamation at Folsom Lake, which Reclamation operates as part of the state's Central Valley Water Project. We also hold ditch water rights (Weber, Slab, and Hangtown creeks), water rights at Weber Reservoir, and a water right under Permit 21112 for Project 184 water—all of which is delivered from Folsom Lake through the El Dorado Hills water treatment plant. The EID Main water system provides water to 40,605 service accounts within a 225 square mile service area.



ABOUT EID

EID is a multi-service, water-based public utility serving about 118,000 people in El Dorado County. The District holds water rights in the Sierra Nevada foothills that date back to the Gold Rush. Today EID provides a unique combination of services—from drinking water and water for pastures, orchards, and vineyards to wastewater treatment, recycled water for irrigated landscapes and front and back yards, hydroelectric and solar power generation, water efficiency programs, and outstanding recreation in Sierra Nevada alpine and western slope environments.

INFORMATION ABOUT POTENTIAL SOURCES OF POLLUTION

The State Water Resources Control Board requires water providers to conduct a source water assessment to help protect the quality of water supplies. The assessment describes where a water system's drinking water comes from, the types of polluting activities that may threaten the quality of the source water, and an evaluation of the water's vulnerability to the threats.

Updated assessments of EID's drinking water sources were completed in 2006, 2008, and 2013. Our source water is considered most vulnerable to recreation, residential sewer, septic system, and urban runoff activities, which are associated with constituents detected in the water supply. Our source water is also considered most vulnerable to illegal activities, dumping, fertilizer, pesticide and herbicide application, forest activities, and wildfires, although constituents associated with these activities were not detected.

Copies of the assessments are available at the State Water Resources Control Board, Division of Drinking Water, P.O. Box 997377, Sacramento, CA 95899-7377. To view them, contact Ali Rezvani, DDW Sacramento District Engineer, at 916-445-5285, or Dana Strahan, EID Drinking Water Division Operations Manager, at 530-642-4060.

TESTING THE WATER

To help ensure that safe water is delivered to our customers, EID's water quality monitoring program includes taking samples of raw and treated water throughout the year from many locations in the District's service area. Analyses cover more than 100 different constituents. Analysis of the water is performed at state-certified commercial labs.

The state of California may grant monitoring waivers for contaminants when historical monitoring results are less than the Maximum Contaminant Level. As a result, some of our data, although representative, may be more than a year old. The information shows that EID continues to deliver safe drinking water. When available, the data reported reflects the treated water supply.

A NOTE FOR SENSITIVE POPULATIONS

Some people who drink water containing Haloacetic Acids (five) (HAA5) in excess of the maximum contaminant level (MCL) over many years may have an increased risk of getting cancer. The MCL violations occurred in a part of our service area along Salmon Falls Road served from the Monte Vista tank from January 1, 2016 to December 31, 2016 and the Gold Hill area served by Reservoir 5 from April 1, 2015 to March 31, 2016.

As part of our ongoing efforts to supply the highest quality drinking water to our customers, we are implementing operational practices and/or design modifications that will reduce the formation of disinfection by-products in your drinking water. Some people may be more vulnerable to contaminants in drinking water than the general population.

Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the U.S. EPA Safe Drinking Water Hotline at 1-800-426-4791.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. EID is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking.

If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, test methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline, or at www.epa.gov/safe-water/lead.

QUESTIONS?

For more information from EID about this report, contact Dana Strahan, Water Division Operations Manager, at 530-642-4060.

For information from the State Water Resources Control Board, Division of Drinking Water, contact Ali Rezvani, DDW Sacramento District Engineer, at 916-445-5285.

U.S. EPA Safe Drinking Water Hotline: 1-800-426-4791

This Consumer Confidence Report (CCR) reflects changes in drinking water regulatory requirements during 2016. All water systems are required to comply with the state Total Coliform Rule. Beginning April 1, 2016, all water systems are also required to comply with the federal Revised Total Coliform Rule. The new federal rule maintains the purpose to protect public health by ensuring the integrity of the drinking water distribution system and monitoring for the presence of microbials (i.e., total coliform and E. coli bacteria).

The U.S. EPA anticipates greater public health protection as the new rule requires water systems that are vulnerable to microbial contamination to identify and fix problems. Water systems that exceed a specified frequency of total coliform occurrences are required to conduct an assessment to determine if any sanitary defects exist. If found, these must be corrected by the water system. EID did not exceed specified frequency of total coliform occurrences.

The following definitions help explain information in the table on the next page.

Maximum contaminant level (MCL): The highest level of a contaminant allowed in drinking water. Primary MCLs are set as close to the PHG or MCLGs as is economically and technologically feasible. Secondary MCLs (SMCL) are set to protect the odor, taste, and appearance of drinking water.

Maximum contaminant level goal (MCLG): The level of contaminant in drinking water below which there is no known or expected risk to health. The U.S. Environmental Protection Agency (EPA) sets these levels.

Maximum residual disinfectant level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for the control of microbial contaminants.

Maximum residual disinfectant level goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Primary drinking water standard (PDWS): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Public health goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. The California Environmental Protection Agency sets PHGs.

Regulatory action level (AL): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements for water systems.

Treatment technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Turbidity: Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

Main Water System - Source Water Quality							
Primary Standards - Health Based (units)	Primary MCL	PHG (MCLG)	Highest Single Measurement	Lowest Monthly Percentage of Samples Meeting Limits	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Turbidity							
Highest single measurement of the Treated Surface Water (NTU)	TT = 1.0	n/a	0.19	n/a	No	2016	Soil runoff
Lowest Monthly % of the Treated Surface Water Meeting NTU Requirements	TT = 95% of samples ≤ 0.3 NTU	n/a	n/a	100%	No	2016	Soil runoff
Secondary Standards - Aesthetic (units)	Secondary MCL	PHG (MCLG)	Range of Detection	Average Level	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Chloride (mg/L)	500	n/a	3-5.5	4.1	No	2016	Runoff/leaching from natural deposits; seawater influence
Corrosivity (A.I.)	Non-corrosive	n/a	9.6-9.8	9.70	No	2016	Natural or industrially-influenced balance of hydrogen, carbon and oxygen in the water; affected by temperature and other factors
Odor-Threshold (units)	3	n/a	1-2	2	No	2016	Naturally-occurring organic materials
Specific Conductance (µmhos/cm)	1600	n/a	39-75	53	No	2016	Substances that form ions when in water; seawater influence
Sulfate (mg/L)	500	n/a	0-1.3	0.6	No	2016	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (mg/L)	1000	n/a	35-39	38	No	2016	Runoff/leaching from natural deposits
Turbidity (NTU)	5	n/a	0-0.18	0.06	No	2016	
Other Parameters (units)	Notification Level	PHG (MCLG)	Range of Detection	Average Level	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Alkalinity (mg/L)	Unregulated	n/a	10-25	17	n/a	2016	No Known Typical Source of Constituent
Bicarbonate (mg/L)	Unregulated	n/a	19-26	22	n/a	2016	
Calcium (mg/L)	Unregulated	n/a	2.0-5.4	3.3	n/a	2016	
Hardness as CaCO ₃ (mg/L)	Unregulated	n/a	11-16	13	n/a	2016	
Hardness as CaCO ₃ (grains/gal)	Unregulated	n/a	0.65-0.94	0.76	n/a	2016	
Hexavalent Chromium (ug/L)	Unregulated	0.02	ND-0.07	ND	n/a	2013	
Magnesium (mg/L)	Unregulated	n/a	0.7-1.5	1.1	n/a	2016	
pH (pH units)	Unregulated	n/a	7.2-8.1	7.7	n/a	2016	
Sodium (mg/L)	Unregulated	n/a	5.7-6.1	5.9	n/a	2016	
Strontium (ug/L)	Unregulated	n/a	ND-53	35	n/a	2013	
Vanadium (ug/L)	50	n/a	ND-0.63	0.18	n/a	2013	
Disinfection Byproduct Precursors (units)	Action Level	PHG (MRDLG)	Range of Detection	Lowest RAA Quarterly Average	MCL Violation?	Most Recent Sampling Date	
Total Organic Carbon [TOC] Filtered water (mg/L)	TT= Removal	n/a	0.98-1.20	n/a	n/a	2016	Various natural and manmade sources
Total Organic Carbon [TOC] Removal Ratio (Actual/Required)	TT=>1.0	n/a	n/a	1.0	No	2016	Various natural and manmade sources
Main Water System - Distribution System Water Quality							
Microbiological Constituents (units)	Primary MCL	PHG (MCLG)	Value		MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Total Coliform Bacteria > 40 Samples/Month (Present / Absent)	No more than 5% positive monthly sample	(0)	Highest number of monthly samples positive was 1%		No	2016	Naturally present in the environment
Disinfection Byproducts and Disinfectant Residuals (units)	Primary MCL (MRDL)	PHG (MRDLG)	Range of Detection	Highest Running Annual Average (RAA)	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Chlorine [as Cl ₂] (mg/L)	(4.0)	(4)	0.44-1.07	0.60	No	2016	Drinking water disinfectant added for treatment
HAA5 [Total of five Haloacetic Acids] (ug/L)	60	n/a	16-84	62 *	Yes	2016	Byproduct of drinking water disinfection
TTHMs [Total of four Trihalomethanes] (ug/L)	80	n/a	10-96	76*	No	2016	Byproduct of drinking water chlorination
Inorganic Constituents (units)	Action Level	PHG (MCLG)	Sample Data	90th % Level	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Copper (mg/L)[at the tap]	1.3	0.3	None of the 56 samples collected exceeded the action level	0.16	No	2014	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ug/L)[at the tap]	15	0.2	1 of the 56 samples collected exceeded the action level	ND	No	2014	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Other Parameters (units)	Notification Level	PHG (MCLG)	Range of Detection	Average Level	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Chlorate (ug/L)	800	n/a	74-240	131	n/a	2013	No Known Typical Source of Constituent
Hexavalent Chromium (ug/L)	Unregulated	0.02	0.06-0.09	0.08	n/a	2013	No Known Typical Source of Constituent
Strontium (ug/L)	Unregulated	n/a	38-55	45	n/a	2013	No Known Typical Source of Constituent
Vanadium (ug/L)	50	n/a	0.38-0.72	0.50	n/a	2013	No Known Typical Source of Constituent

Footnotes:

Unregulated contaminant monitoring helps EPA to determine where certain contaminants occur and whether the contaminants need to be regulated.

*Highest Locational Running Annual Average (LRAA)

KEY

NA=not applicable
 ND=not detected
 NR=not reportable

NTU=nephelometric turbidity unit (measure of clarity)
 mg/L=milligrams/liter
 µg/L=micrograms/liter
 µmho/cm=micromhos per centimeter

YOUR DRINKING WATER—WHAT YOU SHOULD KNOW

The sources of drinking water—both tap and bottled—include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material and can pick up substances resulting from the presence of animals or from human activity.

The following contaminants may be present in source water before it is treated.

- **Microbial contaminants** such as viruses and bacteria from sewage treatment plants, septic systems, livestock operations, and wildlife.
- **Inorganic contaminants** such as salts and metals that occur naturally or stem from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, and farming.
- **Pesticides and herbicides** from sources such as agriculture, urban stormwater runoff, and residential uses.
- **Organic chemical contaminants** such as synthetic and volatile organic chemicals that are byproducts of industrial processes and petroleum production or that come from gas stations, urban stormwater runoff, agricultural applications, and septic systems.
- **Radioactive contaminants** that occur naturally or are the result of oil and gas production and mining.

To ensure that tap water is safe to drink, the EPA and the State Water Resources Control Board prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State Water Board regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

Unregulated contaminant monitoring helps EPA and the State Water Resources Control Board determine where certain contaminants occur and whether the contaminants need to be regulated.

NOTE: Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. Contact the EPA's Safe Drinking Water Hotline at 1-800-426-4791 for more about contaminants and potential health effects.

GET INVOLVED

The El Dorado Irrigation District Board of Directors meetings are open to the public and are held on the second and fourth Mondays of each month. Meetings begin at 9:00 A.M. in the Placerville headquarters building at 2890 Mosquito Road. Go to the District website at www.eid.org to learn more.

The information provided in this report is required by law to be issued to every water user. Property owners: please share this information with your tenants.



Jenkinson Lake at Sly Park Recreation Area in Pollock Pines



In accordance with the Americans with Disabilities Act and California law, it is the policy of the El Dorado Irrigation District to offer its public programs, services and meetings in a manner that is readily accessible to everyone, including individuals with disabilities. If you are a person with a disability and require information or materials in an appropriate alternative format; or if you require any other accommodation, please contact the ADA Coordinator at the number or address below at least 72 hours prior to the meeting or when you desire to receive services. Advance notification within this guideline will enable the District to make reasonable arrangements to ensure accessibility. The District ADA Coordinator can be reached by phone at (530) 642-4045 or e-mail at adacoordinator@eid.org.

Appendix G – Administrative Regulation 1041

Fourth reported violation of any provision of AR 1041: the District shall levy a \$500 fine on the violator's water bill. If all four violations occurred within an 18-month period, the District may elect to discontinue service of the water supply that has been wasted. If service is discontinued due to AR 1041 violations, the District will charge a reconnection fee of \$100 to restore service after abatement of the violation and payment of the fine. Restoration of service may occur without prejudice to any party's position pending appeal under AR 1041.6.

Unpaid fines are subject to the property lien procedure of Water Code section 25806.

AR 1041.6 Appeal and Hearing

A customer may appeal any notice of water waste violation by filing a written request for a hearing with the District's General Counsel within seven calendar days after receiving the notice. The appeal shall identify the property and state the grounds of appeal together with all material facts in support of it. Appeals will be heard by the General Counsel or her or his designee. The filing of a request for hearing shall stay any consequences for violation until the appeal is decided.

When a hearing is requested, the hearing officer shall send written notice to the appellant by certified mail, return receipt requested, stating the time and place of the hearing. Hearing procedures shall be informal, but serve the goals of proper decorum and the pursuit of the truth. At the hearing, the appellant shall have the right to present information as to the alleged facts upon which the notice was issued, and as to any other facts that may aid the hearing officer in determining whether a violation has occurred and, if so, the appropriate consequences.

Within ten calendar days after the close of the hearing, the hearing officer shall issue a written determination either upholding, reversing, or modifying the notice of water waste violation, and briefly stating the reasons that support the determination. Failure to issue a written determination within ten calendar days shall automatically reverse the notice of water waste violation. The hearing officer's written determination shall constitute the District's final action.



www.eid.org
530.622.4513

Striving for water efficiency every day

El Dorado Irrigation District



Water Waste Prohibition

Administrative Regulation 1041

Water Waste Prohibition

Administrative Regulation (AR) 1041

Approved: February 26, 2008

Last Revised: May 13, 2016

The District prohibits uses of District-supplied raw, potable, and recycled water that constitutes water waste. The objective is to encourage reasonable use of water supplies by prohibiting all intentional or unintentional water waste, including the use of wasteful equipment or techniques, when a reasonable solution or alternative is available. See AR 5011 for additional water waste regulations that apply during declared drought conditions.

AR 1041.1 Definition of Water Waste

Any of the following acts or omissions, whether willful or negligent, shall constitute the waste of water.

- A. Causing or permitting water to discharge, flow, or run to waste into any gutter, sanitary sewer, water course, or storm drain, or to any adjacent lot, from any tap, hose, faucet, pipe, sprinkler, or nozzle. In the case of irrigation, “discharge,” “flow,” or “run to waste” means that the earth intended to be irrigated has been saturated with water to the point that excess water flows over the earth to waste. In the case of washing, “discharge,” “flow,” or “run to waste” means that water in excess of that necessary to wash, wet or clean the dirty or dusty object, such as an automobile, sidewalk, or parking area, flows to waste.
- B. Allowing water fixtures or heating or cooling devices to leak or discharge.
- C. Maintaining ponds, waterways, decorative basins, or swimming pools without water recirculation devices.
- D. Backwashing, so as to discharge waste water from swimming pools, decorative basins, or ponds in excess of the frequency reasonably necessary to maintain the clarity and cleanliness of the water.
- E. Operation of an irrigation system that applies water to an impervious surface or that is in disrepair.
- F. Hosing off sidewalks, driveways and other impervious hardscapes, except where necessary to address an immediate health and safety need or to comply with a term or condition in a permit issued by a state or federal agency
- G. Use of a water hose not equipped with a control nozzle capable of completely shutting off the flow of water except when positive pressure to leave the hose on is applied.
- H. Irrigation of landscaping during or within 48 hours of measurable precipitation.
- I. Overfilling of any pond, pool, or fountain that results in water discharging to waste.
- J. Irrigating ornamental turf with potable water on public street medians.
- K. Failure to comply with any conservation practices during a District-declared drought.

AR 1041.2 Exceptions

Notwithstanding AR 1041.3, the following acts do not constitute the waste of water.

- A. Flow resulting from temporary water supply system, water fixture, or heating/cooling device failures or malfunctions lasting 48 hours or less.
- B. Flow resulting from firefighting or routine inspection of fire hydrants or from fire training activities.
- C. Water applied to abate spills of flammable or other hazardous materials, where water is an appropriate abatement methodology.
- D. Water applied to prevent or abate imminent health, safety, or accident hazards when alternate methods are not available.

AR 1041.3 Informing District Customers of the Regulation

The District shall inform customers at least once a year of the water waste regulation, either through a special item in the newsletter that accompanies each two-month bill or as a separate insert in the bill.

AR 1041.4 Enforcement

To enforce this regulation, District personnel will follow the process outlined in AR 1041.5, Penalties for Violation of the District’s Water Waste Regulation.

AR 1041.5 Penalties for Violation of the District’s Water Waste Regulation

District personnel may report or receive reports of violations of AR 1041, which prohibits uses of raw, potable, and recycled water that result in waste. Violations will be penalized as follows:

- First reported violation of any provision of AR 1041: the District shall issue to the customer a written warning notice of and direction to cease and desist violation.
- Second reported violation of any provision of AR 1041: the District shall levy a fine on the violator’s bill of \$100, or 20% of the two-month water bill, whichever is greater.
- Third reported violation of any provision of AR 1041: the District shall levy a \$200 fine on the violator’s bill. If all three violations occurred within a 12-month period, the District may elect to discontinue service of the water supply that has been wasted. If service is discontinued due to AR 1041 violations, the District will charge a reconnection fee of \$100 to restore service after abatement of the violation and payment of the fine. Restoration of service may occur without prejudice to any party’s position pending appeal under AR 1041.6.

Appendix H – Educational Materials

CONSERVATION
CONNECTION

WATER & ENERGY USE IN



WE NEED WATER AND ENERGY

S T U D E N T B O O K



Think About It...

- 💧⚡ What would a day be like **without** water or energy?
- 💧⚡ How have you personally used water and energy today?
- 💧⚡ How do you think your use of water and energy compares to people's use 100 years ago?
- 💧⚡ Is there enough water and energy to last forever?

Learn About It...

We need water and energy.

Water makes up about 65% of our bodies; we cannot live more than about a week without drinking water. And we need water to grow our food and make products that we use every day.

Energy is essential to life; we could not exist without the heat, light, and food that are created by the energy the sun provides. And, of course, we use energy in so many other ways, from cooking our food to running our cars.

We use **a lot** of water and energy every day. Is there a never ending supply? Well, yes...and no.

Water does fall from the sky, but it is not “new” water, just recycled water. The amount of water on Earth never increases or decreases. We have a fixed supply.

Heated by the sun, water on the ground in oceans, lakes, rivers, streams, and other areas evaporates; water vapor is also released from plants through transpiration. All this water vapor rises into the air, cools, and condenses into tiny droplets that gather and form clouds or fog. Finally, when the clouds meet cool air over land, precipitation in the form of rain, hail, sleet, or snow is triggered, and water returns to the land or sea. Thus, the water

you use is the same water used by dinosaurs, early Native Americans, pilgrims, and your great grandparents.



WE NEED WATER AND ENERGY



Energy—which produces heat, light, or motion—comes from many sources, such as:

- ⚡ fossil fuels (oil, natural gas, coal)
- ⚡ the sun
- ⚡ the wind

Some of our energy sources are *renewable*; they can keep on providing energy. For example, we expect the sun to keep shining and the wind to keep blowing. However, the energy sources that we depend on the most—oil, natural gas, and coal—are *non-renewable*. There is only a limited supply of these fossil fuels in the earth. Once they're gone, they're gone forever.

Our supply of water and energy meets our needs most of the time. But, in times of drought and during periods of high energy demand, we don't have enough water and energy. And the demand for water and energy is growing—every day—while our supply is decreasing as the population

grows and as we find more ways to use these precious resources.

So how can we be sure we have enough for the future?

CONNECTION: Water Sources &



Think About It...

- Where does the water you drink and use every day come from?
- How much of the water from rain, and other precipitation, is available for us to actually use?

Learn About It...

We get all the water we use from only two places – **on** the ground and **under** the ground.

Surface Water

Water on top of the ground is called surface water. We can see this water in:

- lakes
- streams
- oceans
- rivers

How does the water get there?

From rain, of course, and snow and sleet and hail. In California, about 200 billion acre-feet of water falls from the sky every year; that's about the same as 200 million football fields each filled a foot deep with water. That's a lot of water. But only about 1/3 of that water actually ends up in rivers, lakes, and streams. The rest of it is either used by trees, plants, and animals or soaks into the ground or evaporates.

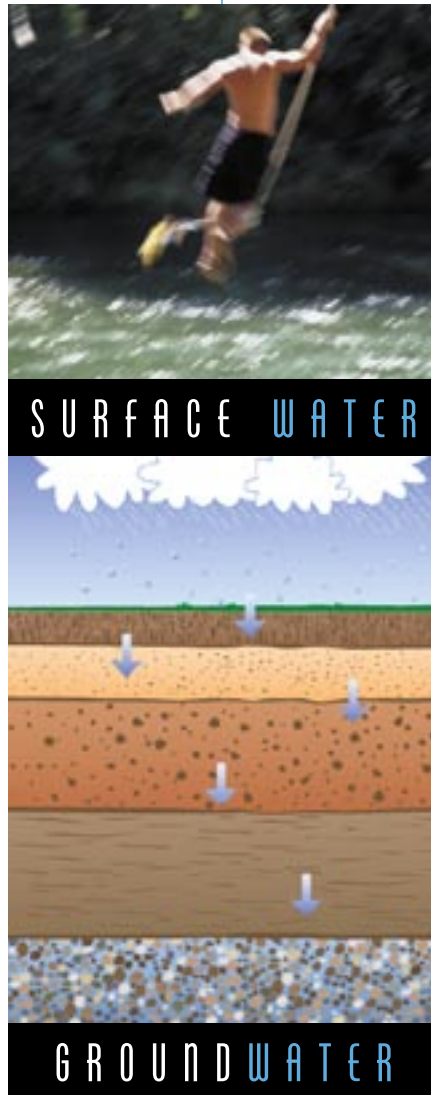
Groundwater

Water that soaks into the ground collects in basins called aquifers. These aquifers are not like lakes above ground. They are more like sponges, holding water in spaces between particles of sand and gravel and in cracks in rocks.

California has about 500 aquifers. Some are just the size of small pools; others are miles long and hundreds of feet deep. Some are just a few feet underground; others are thousands of feet underground. In all of them, the water gets there by soaking into

the ground from:

- rain



- irrigation of crops
- river and stream beds
- recharge ponds where water is purposely spread on the ground to refill the aquifer.

That's how water gets into the ground. How do we get it out? Wells are drilled into the ground and electric pumps push the water up to the surface. But even though a lot of water is stored underground, we can't pump it all up. Some of it is too deep and too expensive to reach, and some of it is too salty or too polluted.

Even if we could, we shouldn't pump out all the groundwater because that can cause "overdraft," which causes problems, such as:

- The ground may compact and never be able to hold water again.
- Land may sink, causing buildings, roads, and pipelines to crack or break.
- Plants depending on the groundwater may die.

In California, during most years—

- about 2/3 of the water we use comes from surface water
- about 1/3 of the water we use comes from groundwater.



CONNECTION: Water Use &

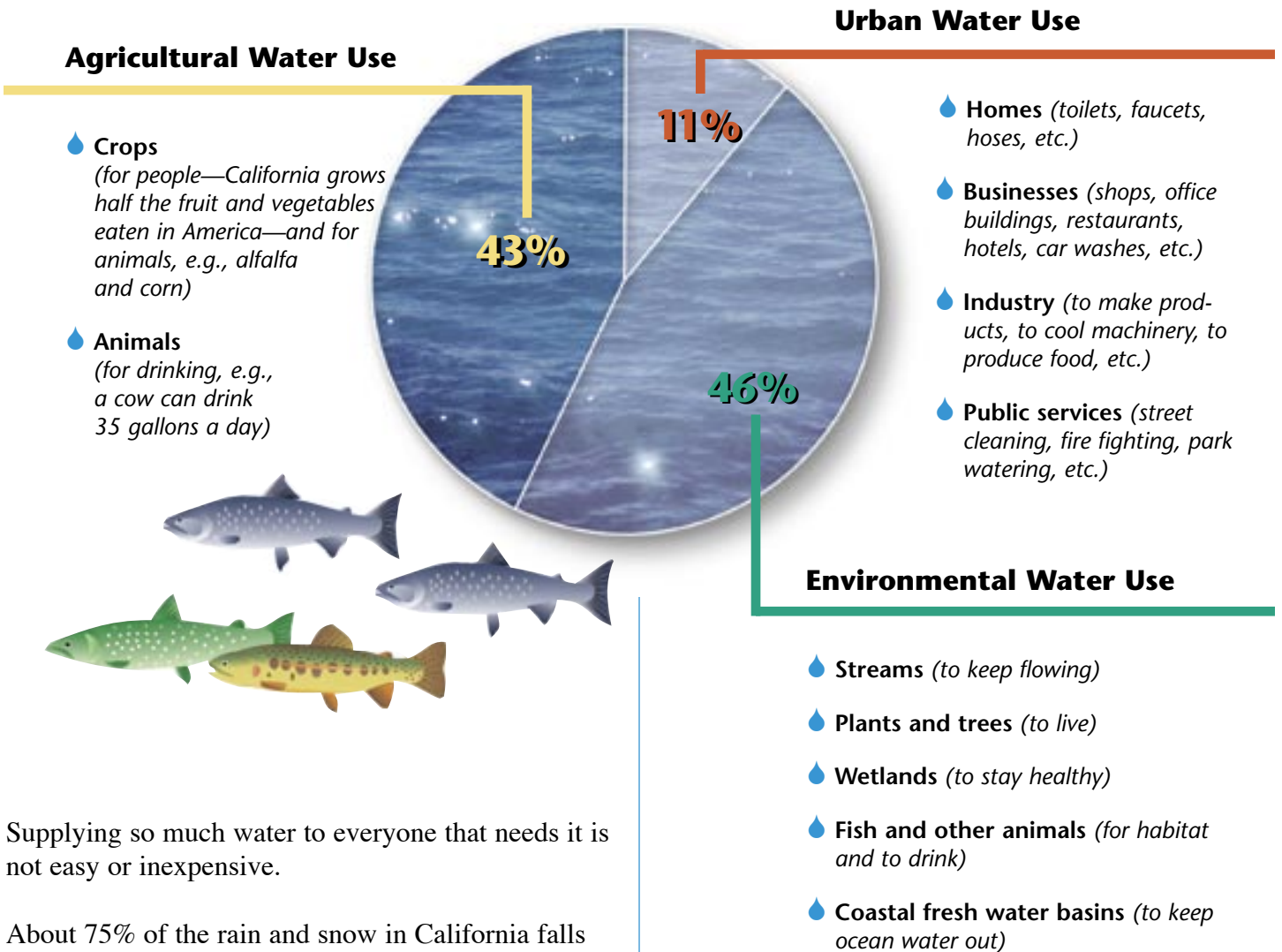


Think About It...

- Besides personal uses, what else is water needed for?
 - What do you think the most water is used for in

Learn About It...

In California, we use all the water we have available to use. We even bring extra water into California from other states. Here's where the water goes:



Supplying so much water to everyone that needs it is not easy or inexpensive.

About 75% of the rain and snow in California falls in the northern part of the State. But about 75% of the people live in the central and southern part of the state. So the water must be moved to where it is needed.

CONNECTION: Water Use &



Continued....

Aqueducts—channels, pipelines, and tunnels—carry water across land and over or through mountains. The system of aqueducts in California moves more water farther than anywhere else in the world. All along the aqueducts are **reservoirs** that are used to store the water until it is needed. These reservoirs might be large storage tanks or lakes formed by dams.

This system of aqueducts and reservoirs allows us to live throughout California. And there are other

benefits. Reservoirs are often used for recreation—like fishing, swimming, boating, and waterskiing. Also, reservoirs and the dams that create them can provide flood control by holding back water and can provide electricity

by releasing water to turn turbine-generators.

So, what's the problem?

◆ **First, money.**

It is very expensive to build and maintain aqueducts and reservoirs. Water must be pumped along the way and lifted over huge mountains. Great amounts of electricity are used, which costs a lot of money.

◆ **Second, the environment.**

Taking water out of rivers and streams can have negative impacts on the plants and animals that depend on them and on the people that enjoy them. Water companies try to affect the environment as little as possible. But even so, large amounts of land are taken up by aqueducts, pumping plants, dams, and reservoirs. And when dams are built to form reservoirs, land is flooded, which obviously affects the people, animals, and plants that live there.



Think About It...

- 💧 If there's only a fixed supply of water, how can we get more?
- 💧 Do you waste any water?

Learn About It...

We can't manufacture water. The surface water and groundwater that we have are all that we'll ever have. But we can stretch our supply.

Recycling

Water that goes down the drain ends up at a wastewater treatment plant. At these plants, water goes through a series of cleanings and treatments. Some of this "reclaimed" water is put back into the environment—rivers, lakes, the ocean, the ground. But some of it, after even more cleaning, is recycled—that is, it is delivered to people to use.

California has been using reclaimed water for irrigation for about 70 years. Now recycled water can be used for all purposes except drinking:

- 💧 to water school grounds, cemeteries, golf courses, nurseries, parks, greenbelts
- 💧 to irrigate crops and pastures
- 💧 to manufacture products and cool industrial machinery
- 💧 to make snow, fight fires, clean streets
- 💧 to flush toilets
- 💧 to recharge groundwater

Using recycled water for these purposes saves large amounts of fresh water. But reclaiming water to recycle it is expensive. First, of course, money must be spent to clean the water. But then we must also build separate pipelines, pumps, and storage reservoirs for the recycled water.

However, as more facilities are built and more recycled water is used, the cost of recycled water will decrease. Using more recycled water can help California maintain a reliable supply of fresh water.

Desalination

Where is most of the surface water on the earth? In the ocean, of course. But ocean water is too salty to drink. We can, however, take the salt out of the water in a process called *desalination*.

California already has several desalination plants. One plant on Santa Catalina Island, off the coast of Southern California, produces 25% of the island's drinking water. The desalination plant in the Monterey Bay area is the largest in the state.

Because California is next to the ocean, plenty of salt water is available. However, turning seawater into fresh water is much more expensive than other methods of supplying fresh water. Money must be spent not only to build and maintain the plants but also to pay for the huge amounts of energy it takes to remove the salt. Then the salt must be disposed of. It is often put back into the ocean, where it may upset the delicate eco-

logical balance of the marine environment.

As technology improves and as we need more water to meet our growing demand, desalination may not be so expensive.



WATER RECYCLING



DESALINATION

CONNECTION: Water & the

Continued....



Conservation

The best way to stretch our water supply is to conserve water. Conservation means not wasting water and using water efficiently.

Californians are familiar with conservation. California has always had droughts—long dry periods without much rain or snow. The longest drought in California lasted 60 years! During these times, people had no choice but to use less water. But if we used less water *every day*, we could:

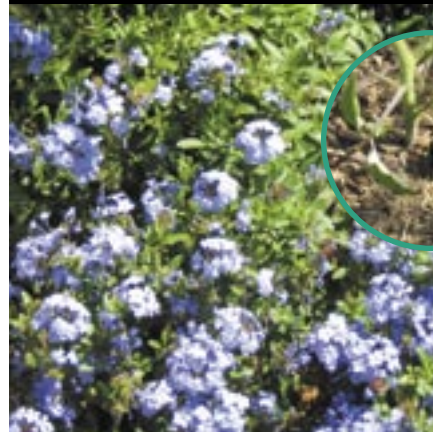
- make our water supply go further
- reduce costs for distributing water
- benefit the environment by taking less fresh water out and putting less wastewater back in.

Water can be conserved in homes, on farms, at businesses, and in industries—through both improved technology and non-wasteful practices.

New technologies include:



NEW TECHNOLOGIES



CONSERVATION PRACTICES



- faucets and showerheads that put out fewer gallons per minute
- toilets that use a lot less water with every flush
- recycling systems for water used in car washes, laundromats, amusement parks, factories, power plants
- clothes washers and dishwashers that use 40% less water
- drip irrigation systems that put water only where it is needed
 - evapotranspiration (ET) systems that monitor the evaporation from soil and the transpiration from plants to determine the exact amount of water lawns and plants need
- irrigation systems that return runoff from the bottom of a field to be used again.

Conservation practices include:

- turning water off when brushing your teeth or washing dishes
- taking shorter showers
- keeping drinking water in the refrigerator instead of running water until it becomes cool
- planting low-water-use plants
- turning off sprinklers when it's raining
- using a broom instead of a hose to clean pavement.

Conservation—with both water-saving devices and practices—would save millions of gallons of water, as well as millions of dollars, every day.

CONNECTION: Energy Sources &



Think About It...

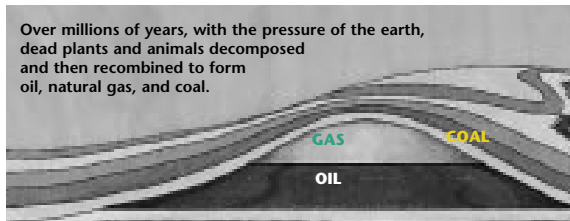
- ☀ Where does the energy you use every day come from?
- ☀ Are the energy sources we depend on the same as those in the past?

Learn About It...

Over the years, Americans have used several energy sources to meet our energy needs. Before 1900, wood was burned to provide most of our energy. Then people began to depend on coal—to power trains, steamboats, factories, and furnaces, and eventually to generate electricity. Today, the United States—and California—rely on a variety of resources to meet our energy requirement, but fossil fuels supply the majority of our energy.

Fossil Fuels

Petroleum (oil), natural gas, and coal are fossil fuels. Millions of years ago, when the plants and animals that lived on earth died,

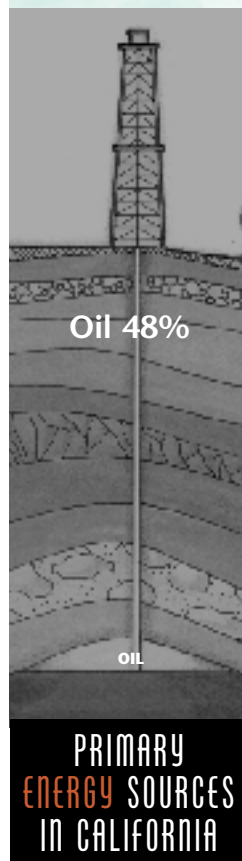
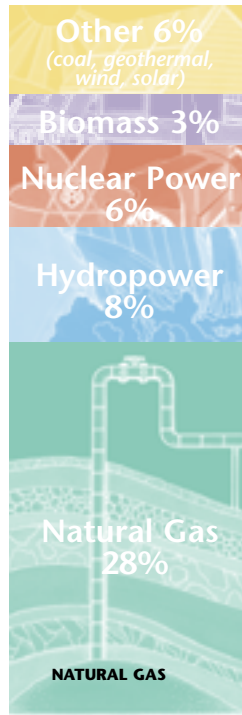


they were covered with water, mud, and rock. Over millions of years, with the pressure of the earth, the dead plants and animals decomposed and then recombined to form oil, natural gas, and coal. These fuels are rich in stored up energy. When we burn fossil fuels, the stored energy is released as heat.



Oil, a thick, brown liquid, is found under land and water. We drill holes to find the oil and then pump it out of the ground.

Most oil is used to make gasoline and other vehicle fuels. But it is also used to make



heating oil to burn in furnaces and to make petrochemicals, which are used to make such products as plastic, fabrics, and cosmetics.



Natural gas is an invisible, odorless gas that is sometimes found along with oil. Drills are used to reach the natural gas, which then rises through pipes to the surface. Most natural gas is delivered to homes and businesses through underground pipes and is used in furnaces and stoves. Natural gas is also used in power plants to generate electricity and, like oil, used to make chemicals used in such products as ink, glue, and nylon.



Coal, which looks like rough black rocks, must be dug out of the ground. The primary use of coal is to generate electricity in power plants, though it is also burned in some buildings and factories to provide heat.

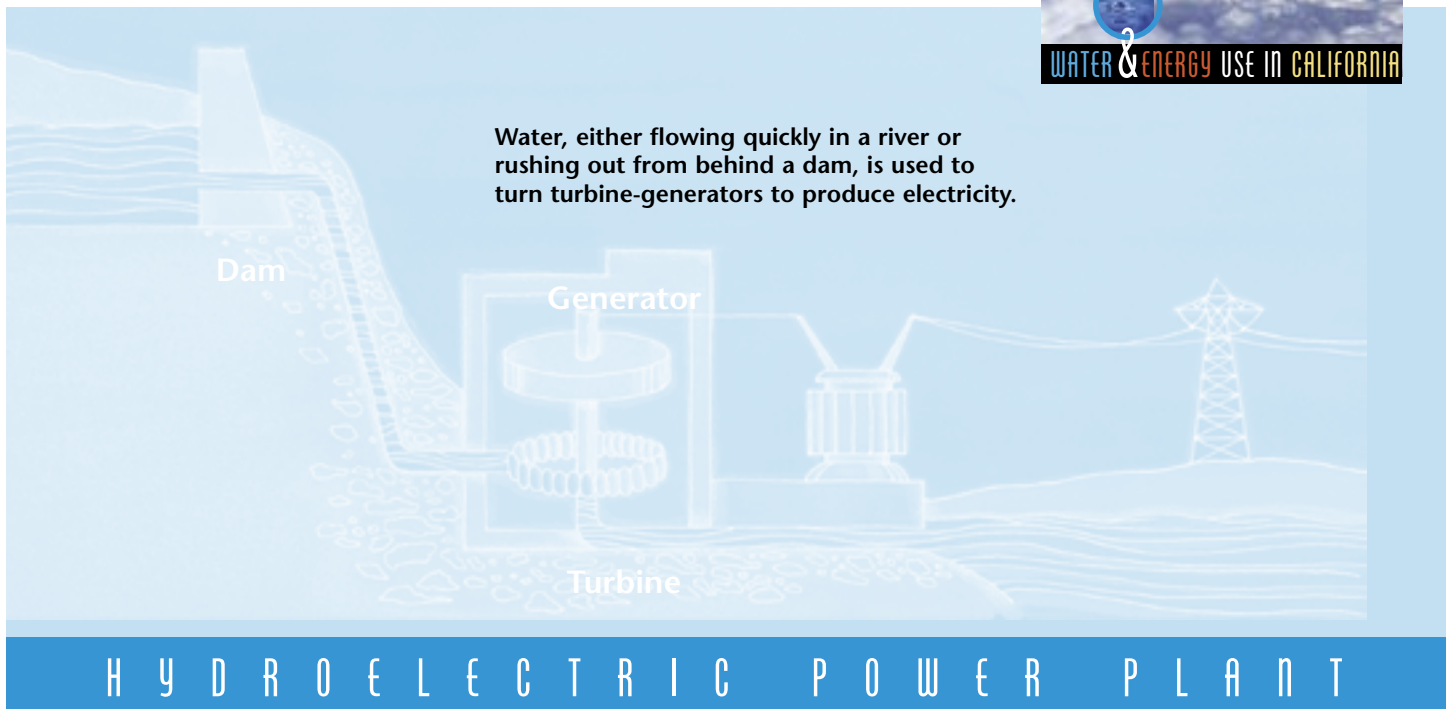
Fossil fuels have been fairly easy to obtain and to use. We have established systems for using them in our cars, homes, factories, and power plants. In California, we use them to generate more than 50% of our electricity. But there are disadvantages to using fossil fuels.

- ☀ First, fossil fuels are nonrenewable. They are becoming more difficult to find and recover, and once they are used up, they cannot be replaced.
- ☀ Second, the use of fossil fuels causes environmental problems. Whether burned in power plants or in our cars, fossil fuels release harmful pollutants into the air, causing smog and other air pollution problems.

CONNECTION: Energy Sources &



Continued....



Hydropower



Hydro means water. So *hydropower* means “water power.” Water, either flowing quickly in a river or rushing out from behind a dam, is used to turn turbine-generators to produce electricity. Hydropower is an important

source of electricity for the nation and for California. About 23% of the total electricity in California is from hydropower.

Some hydroelectric power plants are both producers and consumers of electricity. Here’s how it works. During times when a lot of electricity is being used—such as on hot summer days—water is released from a dam at a high elevation to generate electricity. The water ends up in a reservoir at a lower elevation. Then at night, when less electricity is needed, the water is pumped from the lower reservoir back to the higher reservoir to be used again.

Hydropower is a renewable energy source, as long as rivers and streams continue to flow. But there are only so many places with water that we can use for

hydropower.



Nuclear Power

Nuclear energy comes from the tiny dense core of the atom—the nucleus. In a nuclear power plant, the nuclei of atoms of uranium, a heavy mineral, are split apart. As each one splits, it releases neutrons, which travel at high speed, hitting other atoms, splitting them apart, causing a chain reaction. This splitting of millions of atoms—called *fission*—creates a lot of heat, which is then used to make steam to turn turbine-generators in a nuclear power plant.

There are two nuclear power plants in California, producing about 16% of our electricity.

Uranium, the fuel for nuclear fission, is nonrenewable; however, it is a common, inexpensive mineral found worldwide. The primary problem with nuclear energy is that the material left over after the atoms are split apart is radioactive, which means that it gives off radiation that can be harmful to us. Thus, the waste material must be stored carefully since it remains radioactive for hundreds of years.

CONNECTION: Energy Sources &



Continued....

Biomass

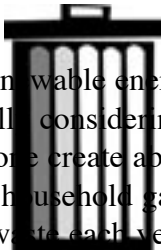


Bio means *life*, so *biomass* refers to organic waste material, such as:

- ☀️ lumber waste from harvesting trees
- ☀️ plant waste from agricultural crops
- ☀️ trash and garbage from our homes.

Biomass is burned in power plants to produce heat, which is used to create steam to turn turbine-generators to produce electricity.

In California, there are about 100 waste-to-energy power plants that contribute about 2% of our total electricity.



Biomass is a renewable energy source, especially considering that Californians alone create about 45 million tons of household garbage and industrial waste each year; that's nearly 3,000 pounds every second! Burning waste material does, however, release pollutants into the air.

Geothermal



Geothermal energy comes from heat inside the earth. We can see the results of that heat in volcanoes, geysers,

and hot springs. The heat underground often heats water or creates steam that we can tap to generate electricity in power plants. The hot water can also be used directly by piping it through buildings to heat them.

California has more than 40 geothermal power plants that produce



GEOTHERMAL POWER PLANT



WIND FARM

almost 5% of our total electricity.

Geothermal energy is considered to be renewable since heat from the core of the earth is expected to last indefinitely. However, geothermal energy can be

tapped only in areas where the heat is close enough to the surface. Also water that is removed must be reinjected into the earth so that the land doesn't sink and the source doesn't "dry up."



People have been using wind for energy for thousands of years.

Wind has powered sailboats, pumped water from wells, and turned grinding stones to mill wheat or corn. Today, wind also turns wind turbines to make electricity. A wind turbine is similar to a child's pinwheel or the propeller of an airplane. The giant blades are connected to a shaft, which in turn is connected to a generator that produces electricity. Often, hundreds of wind machines are grouped together in wind farms in particularly windy areas.

In California, more than 14,000 wind turbines produce about 1% of our electricity.

Wind is, of course, a renewable energy source—but it's not reliable. Winds must blow at a constant high speed to generate electricity, and that condition is not found in very many places and never all year long.

CONNECTION: Energy Sources &



Continued....

Solar



Solar energy—energy from the sun—is the principal source of all the earth’s energy. Sunlight heats the land and warms the water. It causes the winds to blow and the rains to fall. It allows

plants to grow, providing the stored energy on which all animals live. Even fossil fuels are “stored sunshine.” Without the sun, the earth as we know it could not exist. But the energy source that powers the planet can also power the many machines that have become a part of our lifestyle.

There are basically two different ways in which we can capture and use the sun’s energy.

- ☀ Thermal heat – The sun’s heat can be used to heat water, which can be used directly or used to generate electricity.
- ☀ Photovoltaic cells – These devices actually convert sunlight into electric current.

Thermal Heat

The intense energy of the sun has long been used to heat water. Pioneer families had homes equipped with solar water heaters. Today, homes across the nation have solar hot water heaters installed. In these systems, cold water from the home’s regular water line is pumped to a thermal collector on the roof, where the sun’s heat warms the water. The heated water then flows into the regular hot water tank. These systems are used to heat water for homes and businesses and for swimming pools.

Solar heat can also be used to heat water in power plants. At a solar thermal power plant, huge mirrors—solar collectors—are used to focus sunlight onto a tank filled with water or other fluids. The sun

heats the fluid to a very high temperature, creating steam to power turbine-generators to produce electricity. California has a few such power plants located in the Mojave Desert.



SOLAR POWER PLANT



SOLAR CELL PANELS

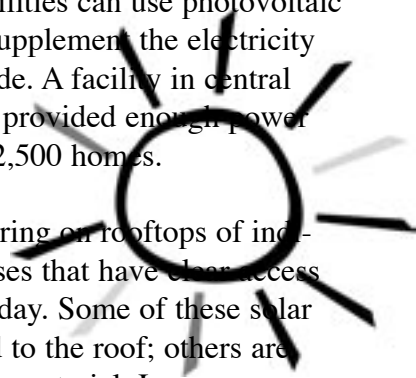
Photovoltaic Cells

Photovoltaic cells—or PVs or, more commonly, solar cells—are composed of thin layers of silicon and other materials. When sunlight strikes a solar cell, chemical reactions release electrons, generating a little electric current. We find solar cells in calculators, camera light meters, sidewalk lighting systems, and freeway phones for stranded motorists. But solar cells, put together into solar panels or modules, are now also providing electricity for homes and businesses.



Electric utilities can use photovoltaic plants to supplement the electricity they provide. A facility in central California provided enough power for about 2,500 homes.

Now, solar cells are appearing on rooftops of individual homes and businesses that have clear access to the sun for most of the day. Some of these solar panels are simply attached to the roof; others are actually part of the roofing material. In some cases, a PV system can be connected to the electric utility’s system. Then, if the solar panels are providing more power than the home or business uses, the extra electricity goes to the utility for other people to use—and the home or business’s electricity meter actually spins backwards!



CONNECTION: Energy Use &



Think About It...

- ⊗ Besides personal uses, what else is energy needed for?
- ⊗ What do you think the most energy is used for in California?
 - ⊗ What costs are involved in making energy available for us to use?

Learn About It...

From 1960 to 2000, California's population doubled. But California's energy use almost tripled!

What is all that energy used for?

Transportation 38%

- ⊗ cars & trucks
- ⊗ airplanes
- ⊗ trains
- ⊗ ships
- ⊗ etc.



Businesses 15%

- ⊗ offices
- ⊗ hotels
- ⊗ restaurants
- ⊗ stores
- ⊗ schools
- ⊗ etc.

Homes 17%

- ⊗ heating
- ⊗ lighting
- ⊗ cooking
- ⊗ running appliances
- ⊗ etc.

Industry 30%

- ⊗ generate electricity
- ⊗ make products
- ⊗ manufacture steel
- ⊗ produce & package food
- ⊗ pump water
- ⊗ etc.

In California, we use a lot of energy for transportation; in fact, California ranks first in the nation in gasoline consumption! Even without all our cars, SUVs, motor homes, trucks, trains, ships, and airplanes, we use a lot of energy; and each of us seems to be using more every year as more and more things are manufactured that use energy—from computers to camera phones.

A lot of energy is used to generate electricity, which we then use in our homes and businesses. California generates about $\frac{3}{4}$ of the electricity we use. The remaining $\frac{1}{4}$ we get from other states. Natural gas is imported to burn in power plants. And electricity generated at hydroelectric plants in the Pacific Northwest—Oregon and Washington—is delivered across power transmission lines.

CONNECTION: Energy Use &

Continued....



So what's the problem?

☼ First, supply.

The amount of energy we have doesn't always match the amount we need. In the 1970s, the "energy crisis" had us waiting in long lines and paying high prices to buy gasoline, sometimes only on specified days. Because we depend on other countries for much of the oil we need to manufacture gasoline, our supply is not always certain.

In 2001, the "energy crisis" caused "rolling blackouts" throughout California, meaning that various areas were without electricity for periods of time. Along with other factors, the shortage of electricity was caused by:

- more demand during hot summer weather
- less supply from the hydroelectric plants in the Pacific Northwest where rainfall was low.

☼ Second, the environment.

Most of our energy comes from burning fossil fuels, which emit pollutants into our air. In California, and other places, these pollutants cause smog. In other parts of the country, fossil fuels also contribute to acid rain; and in the world they may be causing global warming.

Other energy sources also impact the environment—whether taking up space, flooding land behind dams, or creating radioactive waste. The more energy we use, the more the environment is affected.



SUPPLY



ENVIRONMENT



POPULATION

☼ Third, money.

It's expensive to supply the energy we need. Fossil fuels must be drilled for or dug out of the ground and transported to where they are needed; power plants must be built; transmission lines must be connected. When we import energy, even more money must be spent. As the demand goes up and our supply goes down, consumers will be spending even more each month for the energy they use.

☼ Fourth, population.

California is the fastest growing state in the nation.

- In 2004, our population was approximately 35 million.
- By 2050, it is projected to be 55 million.

Energy will be needed to make the products and distribute the water consumed by all these people. And, of course, each person will use energy every day just to live their lives.

So how will we have enough energy for the future?

Think About It...

- ⊗ What can we do to have enough energy for the future?
- ⊗ Do you waste any energy?

Learn About It...

There is probably not one solution to the problems we face supplying energy. Rather the key is likely to find a mix of new technologies and practices that will help us have enough energy for the future.

Technology

Efficiency

Increasing energy efficiency—that is, using less energy to do more—is an important part of our energy future.

The appliances we use every day eat up a lot of electricity, but they can be—and many have been—designed to consume less. Since 1980, appliances have improved in energy efficiency by 30 to 90%. Today, products that meet strict energy efficiency guidelines set by the EPA and the U.S. Department of Energy earn the Energy Star label. These products have advanced technologies that use 10 to 50% less energy than standard models. Energy Star products include big appliances such as refrigerators, clothes washers, dishwashers, and air conditioners, as well as table lamps and windows.

Other improvements in technology include:

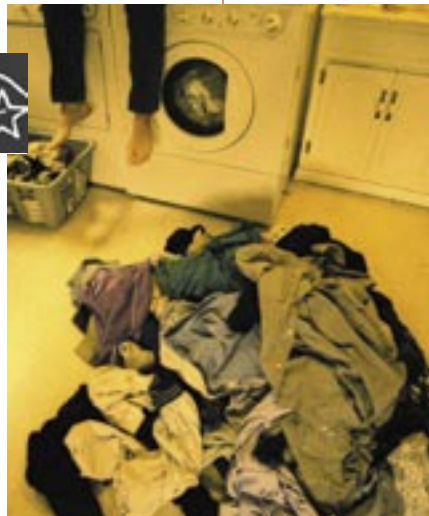
- ⊗ Smarter thermostats that can cut heating and air-conditioning costs up to 33%. Using a micro-computer, these thermostats allow you to divide the day into periods and to program each period with a specific temperature. For example, at 6 a.m., a half hour

before you get up on a cold day, the thermostat can increase the heat to a comfortable temperature. When everyone leaves the house at 8 a.m., the thermostat goes back down. Then at 5 p.m., just before people come home, the heat comes back on, until 10 p.m. when everyone goes to bed.

- ⊗ Compact fluorescent light bulbs (CFLs) that can last up to 10,000 hours—10 times longer than a standard light bulb. To get the same light, the CFL needs to be just one-fourth the wattage of the standard incandescent bulb, thus using 75% less electricity. These bulbs can replace standard bulbs in table lamps, desk lamps, and ceiling or wall fixtures. They are particularly efficient in lights that will be left on for 3 to 4 hours at a time. CFLs also produce less “waste heat,” thus reducing air-conditioning in warmer weather.

Entire buildings can be made more energy efficient by using these improved technologies and by installing:

- ⊗ solar roof panels
- ⊗ skylights
- ⊗ light sensors that naturally reduce lighting
- ⊗ separate climate control zones
- ⊗ low-emission windows that allow in maximum light but minimum heat



ENERGY EFFICIENCY



CONNECTION: Energy & the

Continued....



Solar and Other Renewables

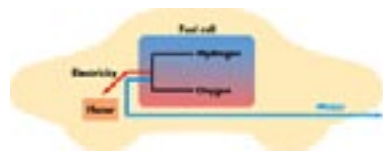
Such renewable energy sources as solar, wind, and geothermal represent only a small part of our current energy supply, but we may need to depend on them much more in the future. Using these sources, as well as other renewables, provides several benefits:

- ☀ They are sustainable—meaning they will never run out.
- ☀ They do not add pollutants to our air or water.
- ☀ They can reduce our dependence on energy from other countries.

Advances are being made particularly in solar technology. Soon we may have solar cells placed in window panes or glass roofs, turning buildings into micro-power plants!

Fuel Cells

Fuel cell technology is often thought of as “space-age” technology because fuel cells have been successfully used in space craft to provide electricity. Now the technology can be used to power vehicles, homes, and businesses.



In a fuel cell, no fuel is burned; instead, hydrogen and oxygen are combined to produce electricity. And the only emissions are heat and pure water vapor!

Unfortunately, the hydrogen needed for the fuel cell is very expensive, and it must be stored at high pressure and at an extremely low temperature. But fuel cell systems can include a “fuel reformer,” which chemically changes another fuel—such as natural

gas, methanol, even gasoline—to hydrogen to power the fuel cell. This process emits some pollutants but much less than using the original fuel.



CONSERVATION

Fuel cells are being used in some experimental vehicles. They are being designed for use in electric power plants as well as for buildings—hospitals, hotels, manufacturing plants, shopping centers. Eventually, small systems may be used in homes with natural gas supplying the fuel.

Conservation

Even with improved energy efficiency, each of us is still using more energy than we did in the past.

Not only do we have more “things” that use energy—at home and in businesses—but also many of our appliances continue to use energy even when they have been turned off. TVs, DVD players, audio systems, security systems, cable boxes, computers—all can drain electricity when they are just waiting to be used. This “standby power” can add up to almost 10% of residential use and can cost \$100 per year per household.



FUEL CELLS

To reduce the amount of energy we use, we all need to conserve energy—that is, use it wisely and not waste it. Turning off lights, lowering the water heater temperature, weather stripping around windows and doors, along with other conservation practices, can all help reduce our demand for energy. We'll save money, protect the environment, and increase our supply for the future.

WATER AND ENERGY EFFICIENT HOME

With improved technology and non-wasteful practices that conserve water and conserve energy you can help protect the environment, stretch our supply of water and energy, and reduce your costs.



TREE:
• Tree shades houses from sun

INSULATION:
• R-30 or higher insulation in ceiling
• R-19 or higher insulation in outside walls

WHOLE HOUSE FAN:
• Whole house fan forces hot air out or attic, pulls cooler air in windows

SHOWER/BATH:
• Low flow showerhead
• Brief showers and shallow baths taken

THE THERMOSTAT:
• Heat set at 68 or lower during day, 58 or lower at night
• AC set at 78 or higher
• Programmable thermostat automatically changes temperatures at certain times

VEHICLE:
• Roof vent in exhaust heat
LAMPS:
• Lights turned off when not being used
• Compact fluorescent bulbs
• Lowest wattage need
• Bulbs kept clean

OUTLETS:
• Caulking around plugs, cracks, seams, and other areas where air can leak in or out

TOILET:
• Low flush model
• Not used as wastebasket
• No leaks

FANS:
• Floor and Ceiling Fans used to circulate air

HUMIDITY:
• Sunny window shaded
• Air conditioner shaded from direct sunlight

LIGHT:
• Photoresistors turn lights on at dark, off with daylight

CAR:
• Hybrid car using electric motor and gasoline engine
• Carpooling and public transportation used when possible
• Bucket of water, not running hose, used to wash car

WINDOWS:
• Shades or curtains closed over sunny windows
• Windows kept closed when heat or AC is on
• Window frame caulked
• Low-emission windows let in less heat

Faucet:
• Aerator on faucet
• Water turned off while brushing teeth and shaving
• No leaks

CLOTHES WASHER:
• Energy Star rated
• Full loads washed
• Short cycle and cold water used when possible

ENTERTAINMENT UNIT:
• TV, stereo, turned off when not being used
• Clock timers used

PERSON:
• Dress appropriately for weather

DOOR:
• Weather stripping around outside doors
• Doors kept closed when heat or AC is on

PLANTS:
• Low water-use plants and ground cover
• Basins around plants direct water to plant roots and reduce runoff
• Mulch around plants, and trees reduces evaporation

WATER HEATER:
• Temperature set at 130° or less
• Insulation around heater and pipes

POOL:
• Cover on pool
• Temperature of water kept low

CLEAN-UP:
• Broom, not hose, used to clean pavement

HEATER:
• Energy efficient model
• Furnace filter changed every month or two
• Serviced every year
• Ducts inspected for breaks and leaks

DISHWASHER:
• Full loads washed
• Dishes air-dried
• Not used in warmest part of day

Faucet:
• Aerator on faucet
• Water off while washing dishes and cleaning produce
• No leaks

REFRIGERATOR:
• Energy Star rated
• Opened and closed quickly
• Coils kept clean

HOSE:
• Shut-off nozzle on hose

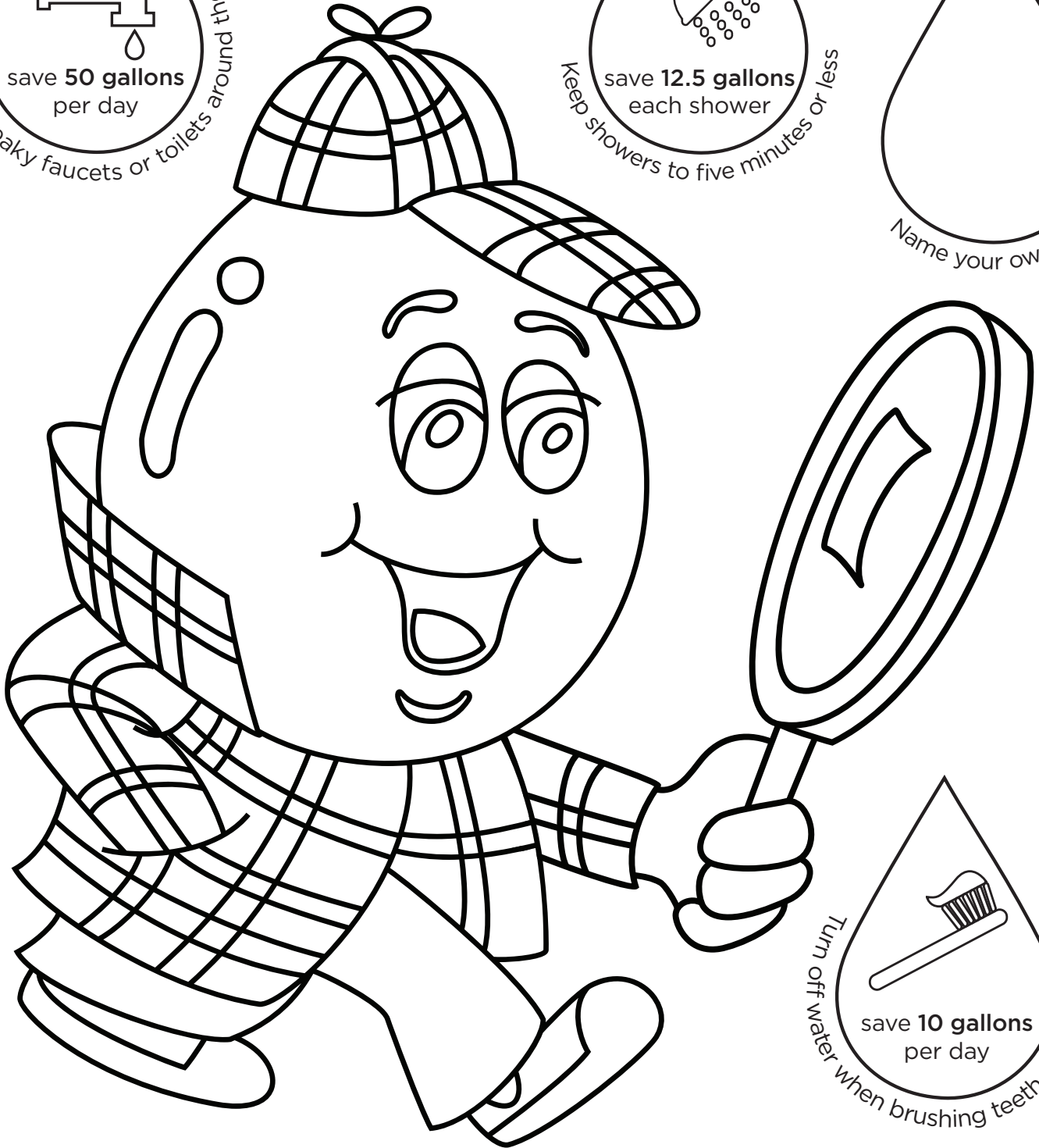
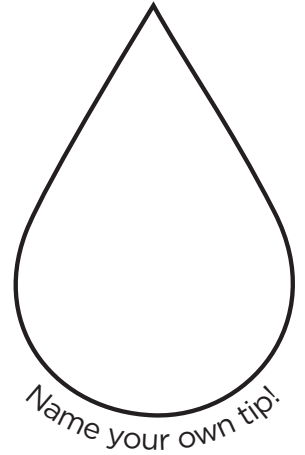
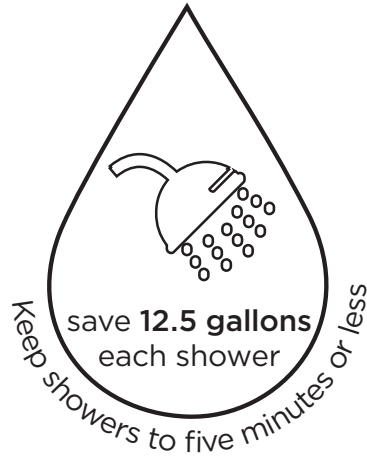
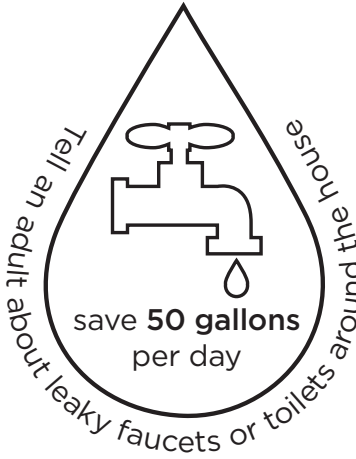
LIGHTS:
• Lights powered by solar cells

LAWN:
• Sprinklers unlogged, watering lawn not pavement
• Lawn watered in early morning only when needed
• Lawn aerated, so water soaks in
• Automatic timer on sprinkler system



HELP LES LEAKY

Find and Stop Water Waste





WATER CONSERVATION AND YOU!



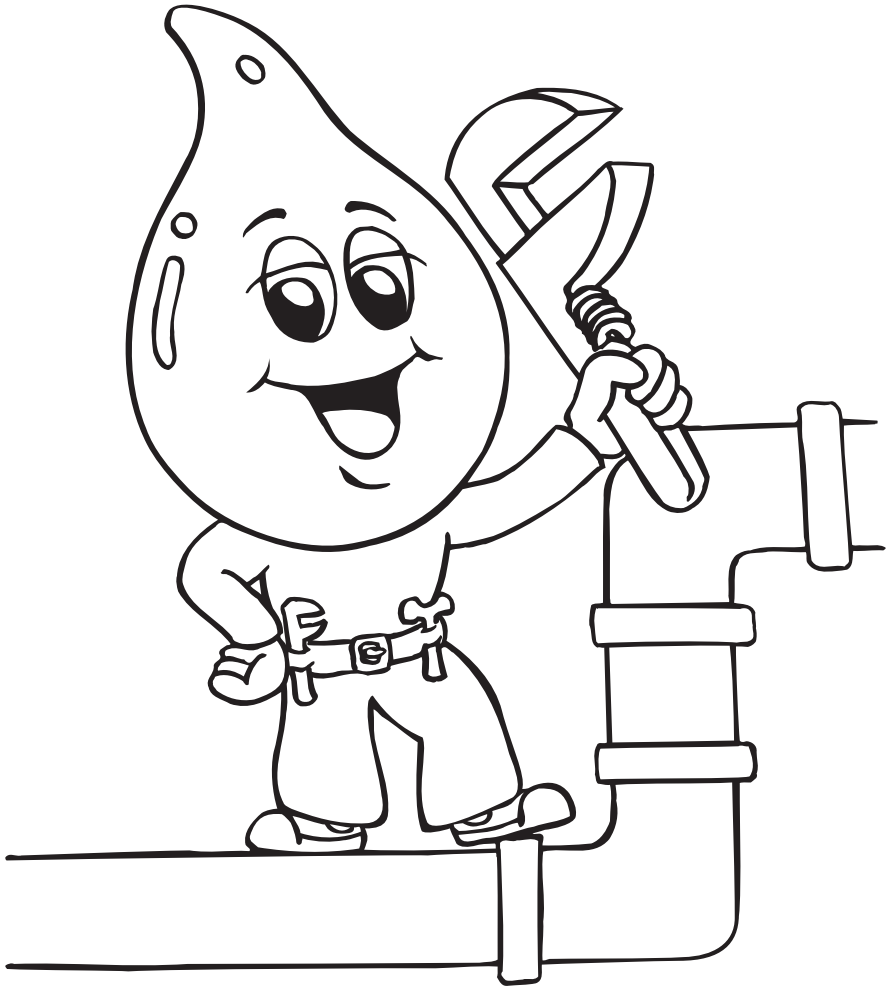
FUN
WAYS TO COLOR
MR. LEAKY
AND **STOP**
WATER
WASTE



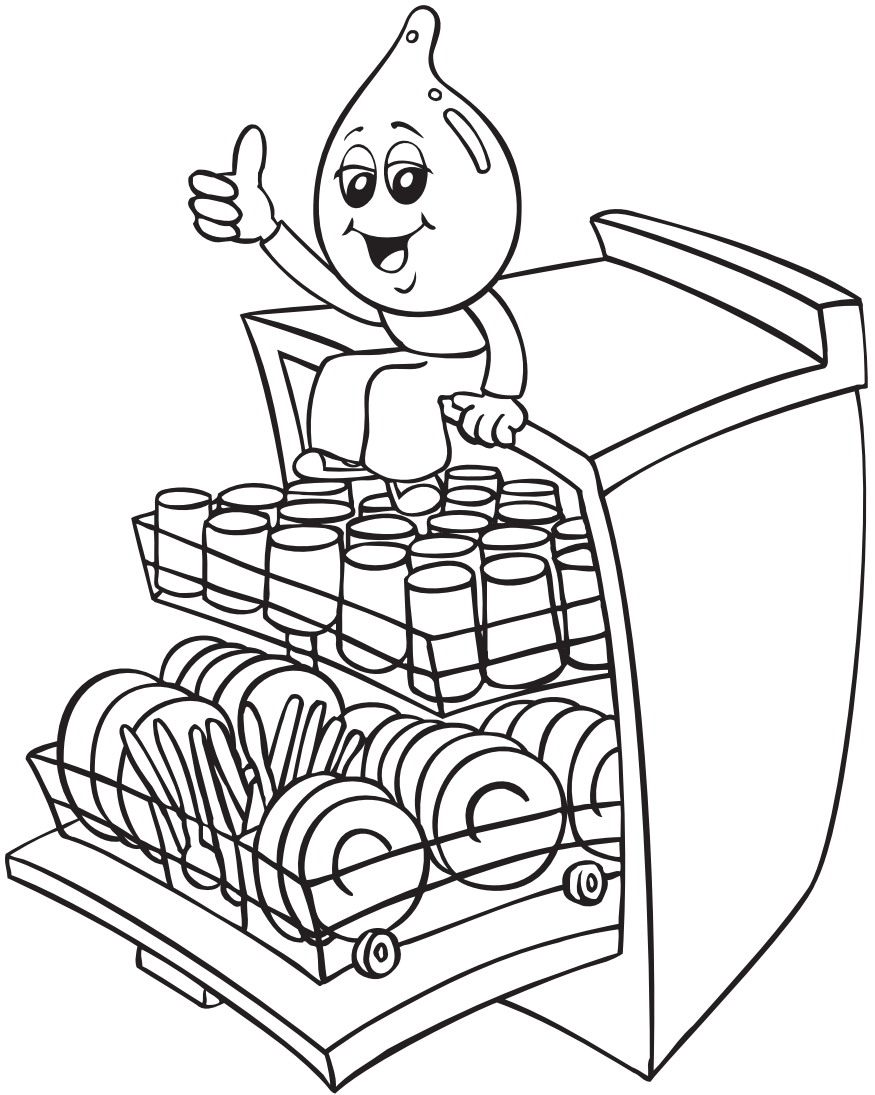
HELP MR. LEAKY STOP WATER WASTE!

We all depend on water each and every day — at home and at school. So it's important to take care of our water supply and to always use water wisely. That means using only what we need and making sure not to waste even a single drop! It's easy to be water smart. Think about water — and when you do — think about conserving it.



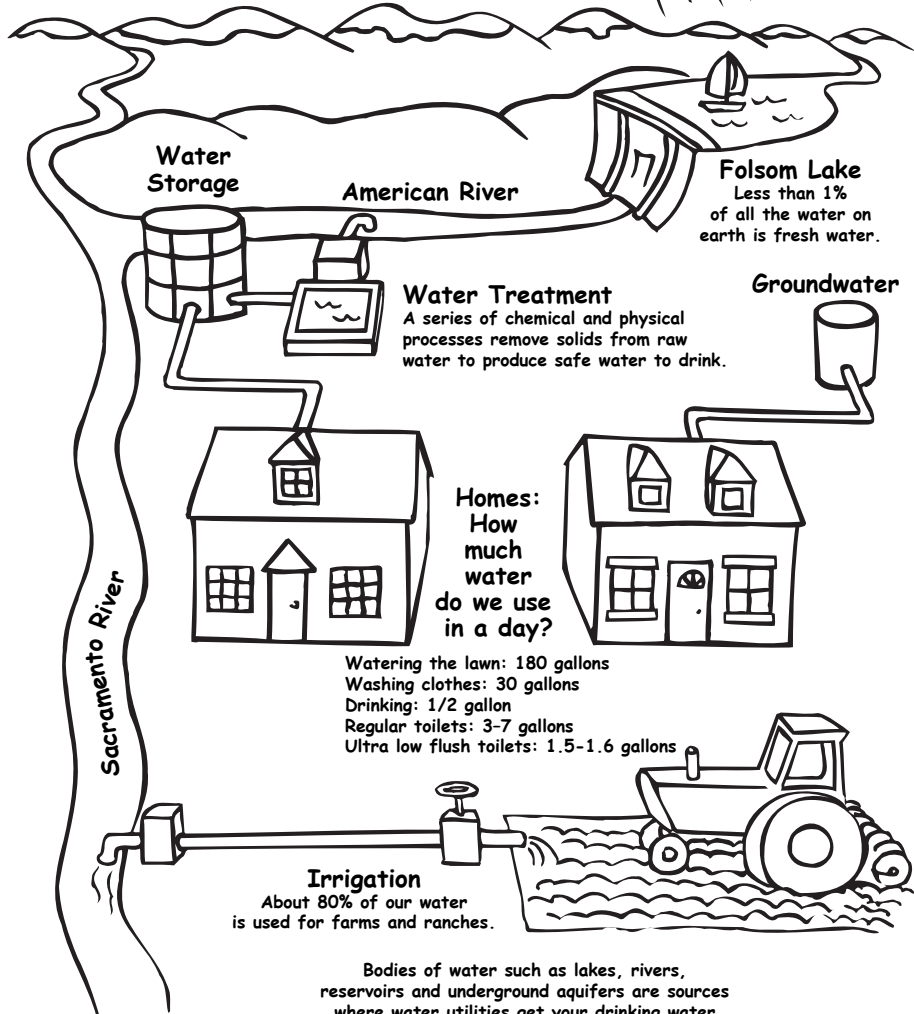
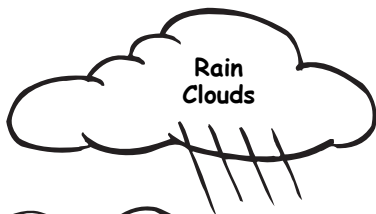


Mr. Leaky fixes leaks!



Mr. Leaky runs the dishwasher only when it is full.

Where does our water come from?
Who uses it?



Folsom Lake
Less than 1% of all the water on earth is fresh water.

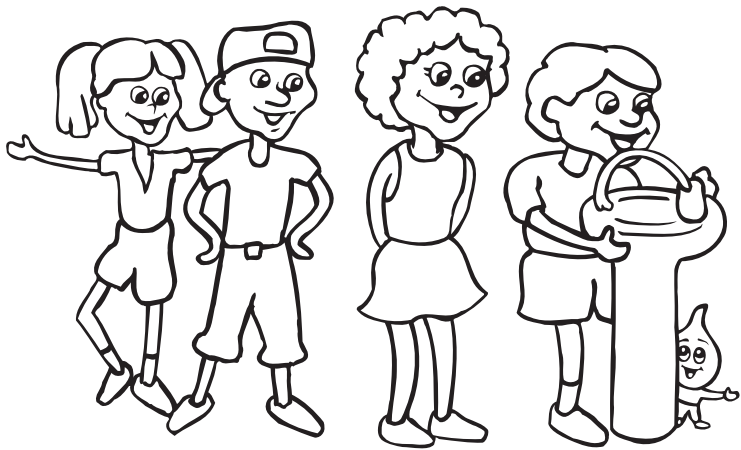
Water Treatment
A series of chemical and physical processes remove solids from raw water to produce safe water to drink.

Homes:
How much water do we use in a day?

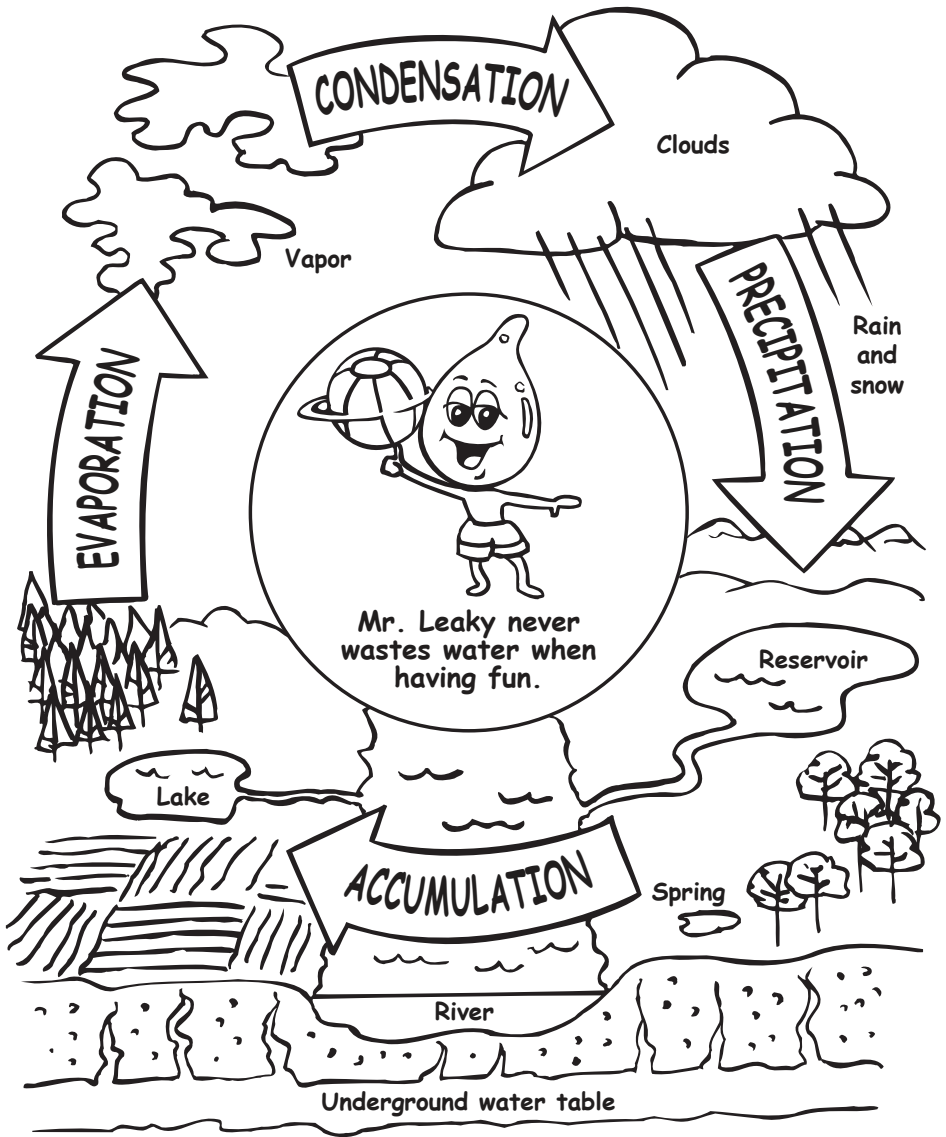
- Watering the lawn: 180 gallons
- Washing clothes: 30 gallons
- Drinking: 1/2 gallon
- Regular toilets: 3-7 gallons
- Ultra low flush toilets: 1.5-1.6 gallons

Irrigation
About 80% of our water is used for farms and ranches.

Bodies of water such as lakes, rivers, reservoirs and underground aquifers are sources where water utilities get your drinking water.

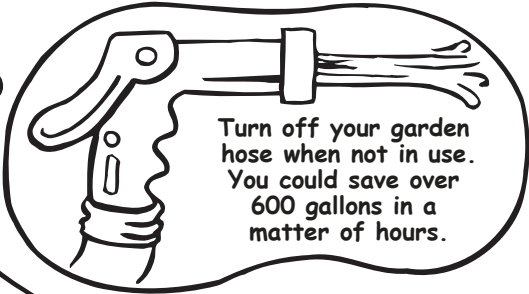
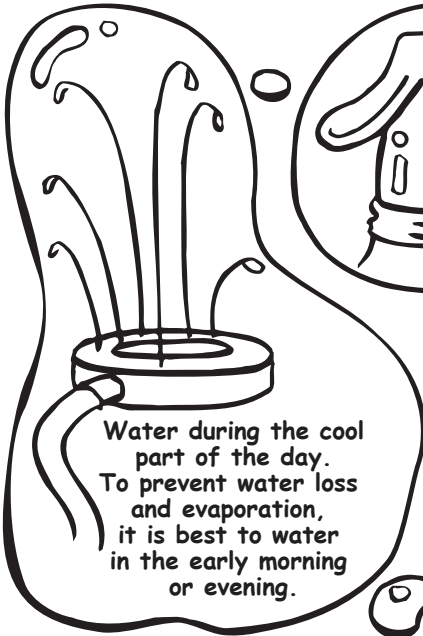


Find **Mr. Leaky**.



The **water cycle** helps **Mr. Leaky** have fun.

On the trail of water waste



For cold drinking water, fill a pitcher with tap water and put it in your refrigerator.



Don't use the toilet as a wastebasket.

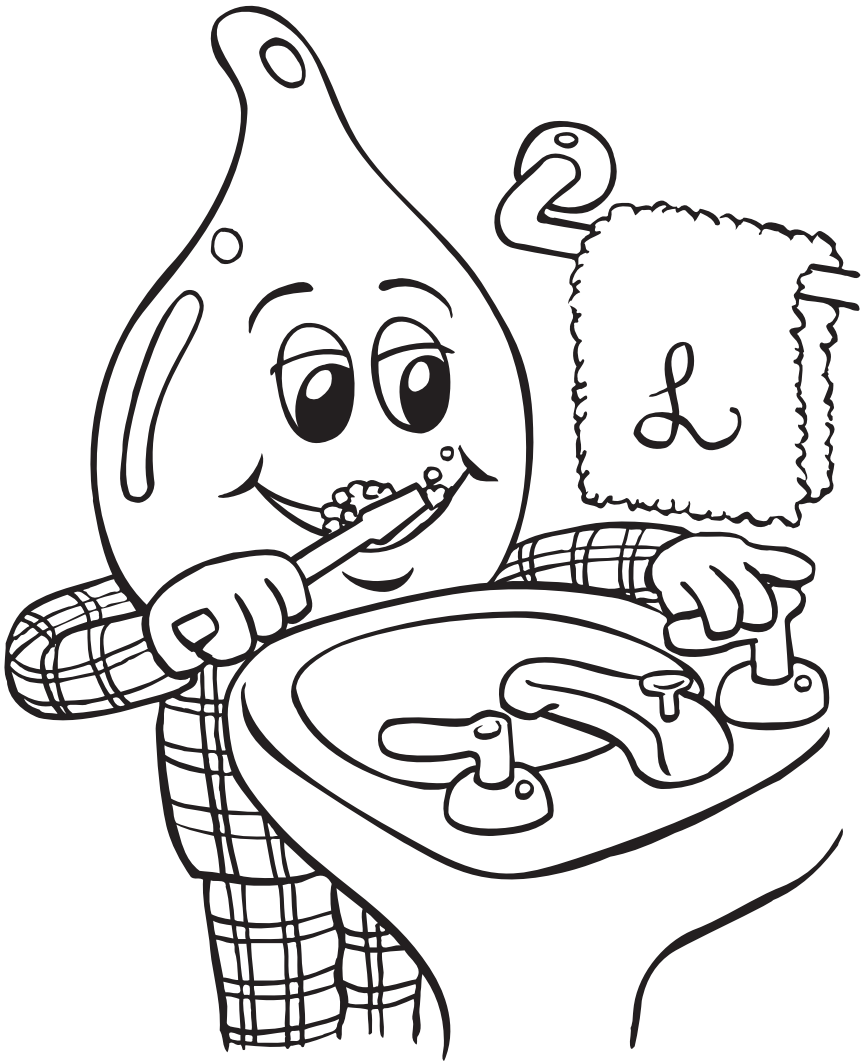


Know when Mother Nature plans to water the garden so you can shut off the sprinklers.



Cut water waste. Check for leaky faucets, toilets or pipes around the house. You could be losing 10 gallons per day to leaks.





Mr. Leaky always shuts off the water while brushing his teeth.

Be Water Smart Water Facts Crossword Puzzle

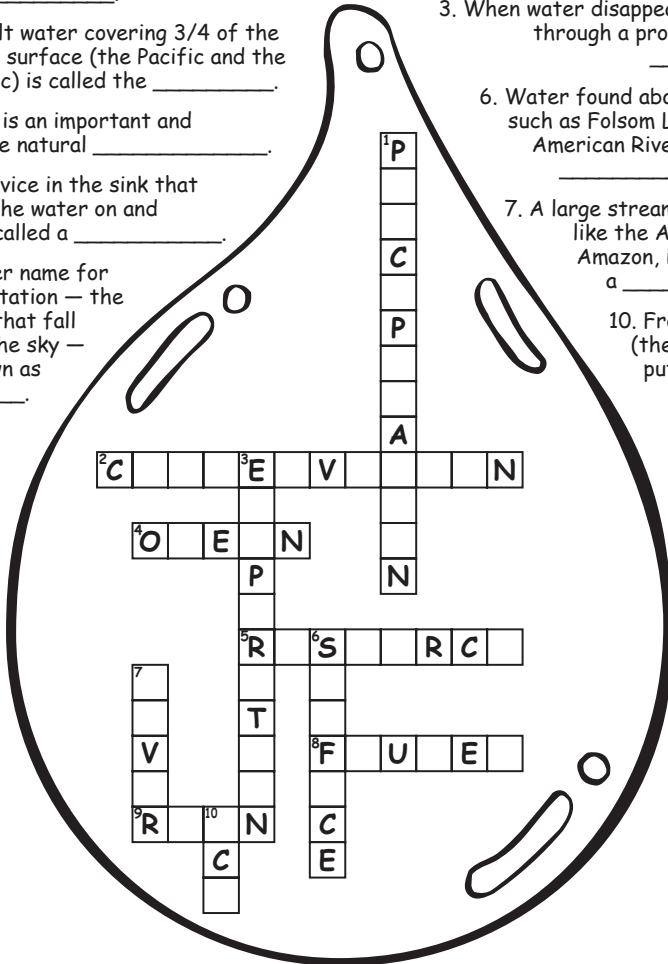
Test your water knowledge. Read the sentences below and fill in the correct word at the corresponding number. Some of the letters have already been filled in.

ACROSS

2. Another name for saving water is _____.
4. The salt water covering 3/4 of the earth's surface (the Pacific and the Atlantic) is called the _____.
5. Water is an important and valuable natural _____.
8. The device in the sink that turns the water on and off is called a _____.
9. Another name for precipitation — the drops that fall from the sky — is known as _____.

DOWN

1. Another name for rain is _____.
3. When water disappears, it goes through a process called _____.
6. Water found above ground, such as Folsom Lake or the American River, is called _____ water.
7. A large stream of water, like the American or Amazon, is known as a _____.
10. Frozen water (the cubes you put in drinks) is called _____.



W	E	L	L	S	A	V	E	A	M
A	P	B	C	E	L	A	K	E	R
T	I	F	A	U	C	E	T	O	L
E	P	L	I	Q	U	I	D	S	E
R	E	S	O	U	R	C	E	N	A
D	F	I	C	D	I	R	L	O	K
H	O	S	E	E	V	M	A	W	Y
G	H	T	A	J	E	O	N	I	R
I	C	E	N	K	R	E	R	P	N

Water Words Search

The words below relate to the many places water is found and the different ways water is used. Find and circle the words in the box. They are found across, down and diagonal.

FAUCET

HOSE

ICE

LAKE

LIQUID

MR LEAKY

OCEAN

PIPE

RAIN

RESOURCE

RIVER

SAVE

SNOW

WATER

WELL

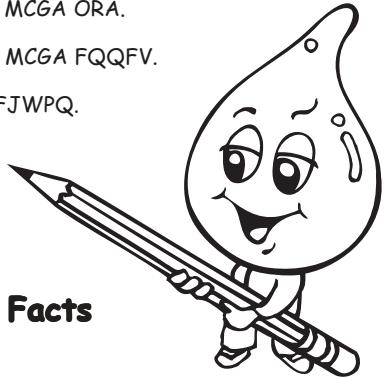
Water De-Coder

Each letter represents a different letter. Use the letter code below to discover Mr. Leaky's important messages.

Letter Code

A=R	B=N	C=O	D=P	E=Q	F=T
G=U	H=V	I=W	J=S	K=Z	L=X
M=Y	N=B	O=C	P=D	Q=E	R=A
S=J	T=F	U=G	V=H	W=I	X=L
		Y=M	Z=K		

1. NQ IRFQA JYRAF.
2. OCBJQAHQ IRFQA.
3. PCB'F XQF FVQ VCJQ AGB IVQB MCG IRJV MCGA ORA.
4. FGAB FVQ TRGOQF CTT IVQB MCG NAGJV MCGA FQQFV.
5. IRFQA MCGA XRIB IVQB WF WJ OCCX CGFJWPQ.
6. OVQOZ TRGOQFJ TCA XQRZJ.
7. FRZQ JVCAF JVCIQAJ.

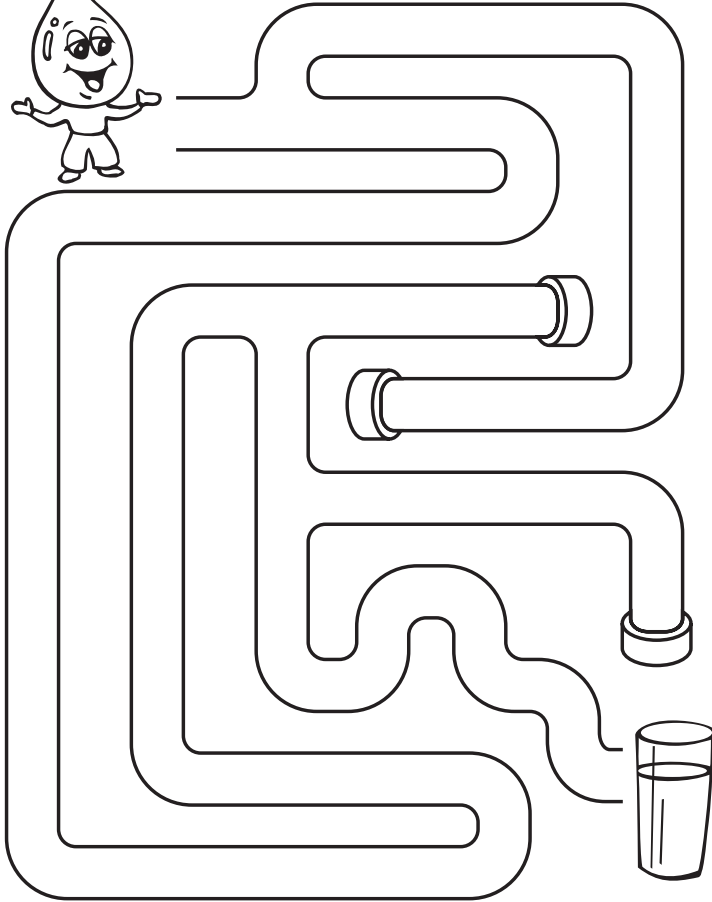
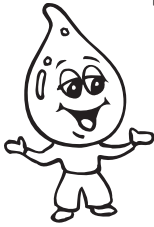


Wacky Water Facts

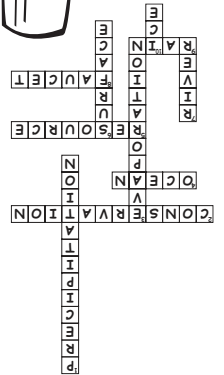
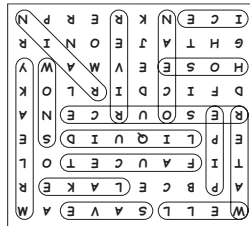
Fill in the blanks and learn important water facts.

1. There are three states of water:
_____, _____ and _____.
2. An animal with a hump on its back that can go for days without water is called a _____.
3. When water boils, it makes _____.
4. Hot, dry land that has very little water is called a _____.
5. The room in the house that uses the most water is the _____.
6. The process that moves water from the earth to the air and back to the earth again is called the _____.
7. Long periods without rain are known as a _____.

Help **Mr. Leaky** find his way home.



- Wacky Water
Facts Answers
1. BE WATER SMART.
 2. CONSERVE WATER.
 3. DON'T LET THE HOSE RUN.
 4. WHEN YOU WASH YOUR CAR, TURN THE FAUCET OFF WHEN YOU BRUSH YOUR LAWN WHEN IT IS COOL OUTSIDE.
 5. WATER YOUR LAWN WHEN IT IS COOL OUTSIDE.
 6. CHECK FAUCETS FOR LEAKS.
 7. TAKE SHORT SHOWERS.
- Wacky Water
Facts Answers
1. liquid, solid,
 2. camel
 3. steam
 4. desert
 5. bathroom
 6. water cycle
 7. drought





Be a friend to **Mr. Leaky**. Help him be water smart.
You can visit **Mr. Leaky's Web site** at
www.BeWaterSmart.info

You are ready to take the pledge!
Together we can help Mr. Leaky.



I PLEDGE
to be water smart and
conserve and protect
our drinking water.

Name _____

Thanks for helping us!

REGIONAL WATER AUTHORITY



Regional Water Authority

This book was made possible by your local water agency.
www.BeWaterSmart.info

Appendix I - Fiscal Year 2012 Category 1 Business Plan

RWA Water Efficiency Program
Fiscal Year 2012
Category 1 Business Plan



INTRODUCTION

The Regional Water Authority (RWA) Water Efficiency Program (WEP) priorities include assisting participating agencies in compliance with conservation requirements of the following: California Urban Water Conservation Council (CUWCC), Water Forum Agreement Water Conservation Element, U.S. Bureau of Reclamation conservation requirements, and SBX7 7.

The WEP consists of two categories of programs to achieve these priorities:

- **Category 1 Program** consists of core subscription services that address water efficiency activities common to all participants. Category 1 programs are designed to benefit the entire WEP membership. Participating WEP members fund Category 1 through annual dues to support staff and other direct costs of program implementation.
- **Category 2 Programs** are specialized subscription services offering additional water efficiency programs beyond Category 1 programs. Category 2 programs are structured as “pay for services” programs and benefit only those WEP members who committed financially to participate in the programs. Supplementary funding supports Category 2 programs and these resources may come from the U.S. Bureau of Reclamation, California Department of Water Resources, Sacramento Regional County Sanitation District, Sacramento Municipal Utility District, Pacific Gas & Electric Company and other resources as available.

The WEP Category 1 Program is subject to approval of an annual business plan including scope, budget and fee schedule for member participation. To develop the Fiscal Year (FY) 2012 WEP Category 1 Business Plan, staff discussed their plan with the RWA Executive Committee on March 23, 2011 and solicited feedback from the Regional Water Efficiency Program Advisory Committee (RWEPEC) on May 10, 2011. Based on feedback, the WEP Category 1 Business Plan for Fiscal Year 2012 will focus on the following areas:

- 1) Analyzing 2010 Urban Water Management Plans (UWMPs) and 2009-10 CUWCC BMP reports.
- 2) Complying with the CUWCC’s public information and school education BMP’s through a regional program.
- 3) Detailed program implementation and activity reporting and grant implementation and activity reporting, including water savings.
- 4) Identifying and assisting with regional grant writing efforts.

The top priority for FY12 is the review of current and planned future conservation activities discussed in the UWMPs of the current 19 RWA members. This review will enable RWA to best plan for the next 3-5 years of the Regional Water Efficiency Program. The information collected will specifically help RWA to understand the current baseline gallons per capita per day (gpcd) usage for each member’s service area, and which conservation best management practices (BMPs) will be emphasized to meet Senate Bill (SB) 7x-7 targets. Another key outcome of this planning effort is preparation for the next round of Prop 84 and other grant opportunities. In

addition, data from the UWMPs will support the regional public outreach efforts (e.g., sharing with media the regional statistics on current and forecasted water supply and demands and planned conservation and recycling programs).

BUDGET SUMMARY

To implement the priorities under the Category 1 Program, a budget including \$471,000 in planned expenses is proposed. Total planned revenues for FY12 include \$387,000 in member fees and an estimated \$69,000 from grants, \$9,500 encumbered from School Education funds from FY2011, and \$5,500 from WEP Cash reserves, for a total of \$471,000.

Table 1. Budget Summary	
Program Revenues	
Projected FY 2012 Category 1 Income	387,000
Grant Revenue DWR Drought Assistance	60,000
Grant Revenue EPA Grant (Green Gardener Program)	9,000
Revenues	456,000
Encumbered School Education funds from FY11	9,500
Total from Cash Reserves	5,500
Total Revenues	471,000

Program Expenses	
Program Management and Implementation, Technical Assistance	
Staff, Legal, and Audit Services	199,000
Consulting Services	40,000
Foundational BMP 2. Education Programs	
Public Outreach	166,000
School Education	34,000
Programmatic BMP's Support	
Landscape	23,000
EPA funded Green Gardener Program/RWA Cost Share	9,000
Total Expenses	471,000

FY 2012 PROGRAM MANAGEMENT ACTIVITIES

Category 1 program management activities for FY12 are designed to assist participating agencies in complying with conservation requirements and increase public support for water conservation. Staff activities are outlined in Table 2. Some activities include the use of RWA staff and others may include the use of consultant support. While maintaining existing partnerships and contractual obligations, we will continue to represent the region in statewide initiatives and forums and report back to WEP participants. Staff will serve as a regional spokesperson and respond to water conservation related media requests.

Working with the Water Forum and water agency staff, RWA staff plans to assist participants in conservation program development and reporting. Assistance may include: (1) review or help in determining BMP compliance targets for CUWCC tracks and SBx7-7 as agencies engage in their own annual conservation program planning; (2) suggestions for quantification of water savings associated with targets to meet GPCD reduction goals; and (3) information sharing to determine cost effectiveness and BMP program costs, including RWA support for planned CUWCC training in cost effectiveness.

In ongoing support of the CUWCC MOU implementation, RWA will continue to organize and provide data for foundational BMP's and programmatic BMP's as applicable from WEP Category 1 and 2 programs (e.g.; clothes washer rebates, toilet rebates, CII rebates, etc.).

TABLE 2. Category 1 Program Management Activities

Staff Activity	Description
BMP Compliance Assistance and Reporting	<ul style="list-style-type: none"> • Organize and provide reporting data for BMP programs that RWA provides implementation services for (e.g., Foundational BMP 2 – Education). • Additional data provided for Programmatic BMP's as applicable from WEP Category 2 programs (e.g.; toilet rebates, clothes washer rebates, etc.). • Manage the regional public information and school education programs (Foundational BMP 2 programs).
Coordinate Grant Efforts, Grant Writing Assistance and Reporting	<ul style="list-style-type: none"> • Identify and assist with regional grant writing efforts to build financial investments through regional grants and cost sharing opportunities. • Coordinate outside contract support to follow up as needed. • Track and report on grant programs for member agencies and funding agencies.
Technical Assistance	<ul style="list-style-type: none"> • Long range regional program planning beginning with analyzing agency 2010 UWMP's and 2009-10 CUWCC reports and aims to support future grant applications (e.g., Prop 84 and USBR). • Compile or develop regional statistics, data and other appropriate information, including review of SB 7x-7 implementation targets. • Support for member agency's quantification of water savings associated with targets. • Provide review and technical assistance with BMP program costs quantification, cost-effectiveness analysis, and cost-benefit analysis.
Building and Maintaining Partnerships	<ul style="list-style-type: none"> • Maintain contact with Landscape Organizations (CLCA, UC Extension/Master Gardeners, River Friendly Landscape Program) • Coordinate outside contract support to follow up with partnership activities as needed.

Regional Representation to Key State and Local Agencies and Organizations	<ul style="list-style-type: none">• Attend Water Forum meetings, committees, and plenary.• Participate in CUWCC Board Meetings, participate on select committees, and track BMP modifications and identify opportunities for regional implementation.• Participate on California Irrigation Institute Board, AWWA, others as available.
---	---

FY 2012 FOUNDATIONAL BMP 2 EDUCATIONAL PROGRAMS

WEP Category 1 activities for FY12 are designed to fully implement CUWCC Foundational BMP 2 Educational requirements for program participants. Program tasks and budget estimates are outlined in Table 3 below.

Since the public outreach campaign and RWA's fiscal year are not on the same cycle, funds remaining in the FY11 budget will be encumbered for 2012. Working with the outreach consultant and the Public Outreach Committee, we will complete the second year of our successful Blue Thumb public outreach campaign, evaluate the campaign's effectiveness after reviewing results of the planned telephone survey, and refresh the Blue Thumb campaign for future years. Specific details of the refreshed campaign will be developed by the outreach consultant and the Public Outreach Committee based on survey results and overall review of campaign goals.

FY2011/2012 will be an ambitious year for the school education component of RWA's Water Efficiency Program. We propose continued activities with our established partners, the Sacramento Bee, through the Media in Education (M.I.E.) Program, and Project WET (Water Education for Teachers) through the Water Education Foundation. The basic purpose of these efforts is to meet the California Urban Water Conservation Council's Best Management Practice's baseline requirement for school education and ultimately to reduce water use in our region. The committee's goal for next year is to increase involvement of both students and teachers in the various activities that comprise RWA's Water Efficiency School Program. The School Education Committee recommends hiring a part-time education consultant to focus on the following program goals: (1) Increase student and teacher participation in water efficiency programs by 10% per year; (2) Provide and/or support up to 4 teachers workshops annually; (3) Reach 10% of all the region's 5th grade classrooms per year for the next 10 years with the Environmental Education Initiative state adopted curriculum; (4) Create and organize capacity building opportunities and partnerships for member agencies and their school districts; (5) Develop and implement a Water Awareness PSA/Video contest as a new component of Sacramento Bee's M.I.E. program; and (6) Advance future strategies for RWA's Water Efficiency school education program with the school committee.

FY 2012 identifies \$ 24,500 in the school education budget to be used for this purpose.

Table 3. BMP Program Implementation Activities – Foundational BMP 2. Education Programs

		\$200,000
PUBLIC OUTREACH AND EDUCATION		TOTAL \$200,000
Regional Outreach Campaign "Blue Thumb"	Refresh Blue Thumb common message and branding	
	Media Buys and Marketing (i.e.; TV and Radio ads, PSA's)	
	Collateral materials (i.e.; lawn signs, gloves, t-shirts, other)	146,000
	Outreach Consultant and additional partnerships	
	River Cats Partnership beginning April 2012	10,000
Other Outreach Activities	Reprinting, Redesign, order new publications as needed	5,000
	Gardensoft Gallery on RWA website	5,000
SCHOOL EDUCATION		
School Education	Newspapers in Education - Grades K- 8	6,500
	Encumbered FY11 for Develop School Education Program	9,500
	Develop School Education Program/Consultant	15,000
	Project WET workshops	3,000

FY 2011 PROGRAMMATIC BMP's SUPPORT

Programmatic support for FY2012 is designed to assist participating agencies in implementing and promoting Programmatic BMP's 3 and 5, (Residential and Landscape), while satisfying additional requirements for the Outreach BMP. Expenses for these activities are summarized in Table 4.

This year's activities consist of partnering with the UC Cooperative Extension (UCCE) for homeowner and Master Gardener workshops, sponsorship of EcoLandscape of California's bi-annual conference for landscape professionals, updating the Water Wise Gardening in the Gold Country Region web site, and conducting the Green Gardener Training Program in English and Spanish. The Green Gardener Training Program is sponsored in part by grant funding from the EPA Climate Showcase Communities Grant awarded to the Sacramento County Stormwater Department.

In addition to the expense activities above, RWA plans to work with the Landscape Committee and consultant to leverage momentum of existing landscape community relationships by hosting a booth at the Sacramento Landscape and Nursery Expo in January 2012 and work with the City of Roseville to develop a Green Gardener Training Program for Homeowners.

Table 4. Programmatic BMP's Supported Sponsorships (BMP 3 and 5)

BMP EXPENSES	TOTAL \$32,000
	GRANT FUNDED \$9,000
Green Gardener Training Program Materials	\$5,000
Landscape Consultant/Green Gardener Program Manager	\$15,000
EcoLandscape of California Sponsorship	\$500
UC Cooperative Extension	\$2,500
Green Gardener Training Program RWA Cost share for EPA grant	\$9,000

Appendix J - 2015 CUWCC Filing



CUWCC BMP Retail Coverage Report 2015

Foundational Best Management Practices for Urban Water Efficiency

BMP 1.1 Operation Practices

ON TRACK

6293 El Dorado Irrigation District

1. Conservation Coordinator provided with necessary resources to implement BMPs?

Name:

Title:

Email:

2. Water Waste Prevention Documents

WW Document Name	WWP File Name	WW Prevention URL	WW Prevention Ordinance Terms Description
Option A Describe the ordinances or terms of service adopted by your agency to meet the water waste prevention requirements of this BMP.		http://eid.org/home/showdocument?id=402	EID adopted and enforces Water Waste Prohibition Regulation No. 1041 - web link inserted above and file uploaded.
Option B Describe any water waste prevention ordinances or requirements adopted by your local jurisdiction or regulatory agencies within your service area.		..\.AB 1881 - MWEL\EI Dorado County Adopted Landscape Ordinance.pdf	EID coordinated with El Dorado County during its adoption of a water efficient landscape ordinance (attached).
Option C Describe any documentation of support for legislation or regulations that prohibit water waste.			
Option D Describe your agency efforts to cooperate with other entities in the adoption or enforcement of local requirements consistent with this BMP.	EID Requirements and Checklist.pdf		EID works in cooperation with El Dorado County staff to review and approve water audits for new landscape installations under the County's water efficient landscape ordinance.
Option E Describe your agency support positions with respect to adoption of legislation or regulations that are consistent with this BMP.			
Option F Describe your agency efforts to support local ordinances that establish permits requirements for water efficient design in new development.	BMP 1.1 Option F EDC Excerpt of Section 493.1 Irrigation Audit EID6293.pdf		Attached is an excerpt from El Dorado County's water efficient landscape ordinance that describes the water audit procedure developed between EID and El Dorado County staff to review and approve water audits for new landscape installations.

At Least As effective As

Exemption



CUWCC BMP Retail Coverage Report 2015
Foundational Best Management Practices for Urban Water Efficiency

BMP 1.1 Operation Practices

ON TRACK

Comments:



CUWCC BMP Coverage Report 2015

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.2 Water Loss Control

ON TRACK

6293 El Dorado Irrigation District

Completed Standard Water Audit Using AWWA Software? Yes

AWWA File provided to CUWCC? Yes

BMP 1.2_AWWA_Water_Audit_EID_6293_6293.xls

AWWA Water Audit Validity Score? 74

Complete Training in AWWA Audit Method Yes

Complete Training in Component Analysis Process? Yes

Component Analysis? Yes

Repaired all leaks and breaks to the extent cost effective? Yes

Locate and Repair unreported leaks to the extent cost effective? Yes

Maintain a record keeping system for the repair of reported leaks, including time of report, leak location, type of leaking pipe segment or fitting, and leak running time from report to repair. Yes

Provided 7 Types of Water Loss Control Info

Leaks Repairs	Value Real Losses	Value Apparent Losses	Miles Surveyed	Press Reduction	Cost Of Interventions	Water Saved (AF)
1538	618872	958573		False	871860.75	

At Least As effective As

Exemption

Comments:



CUWCC BMP Coverage Report 2015

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.3 Metering With Commodity

ON TRACK

6293 El Dorado Irrigation District

Numbered Unmetered Accounts	No
Metered Accounts billed by volume of use	Yes
Number of CII Accounts with Mixed Use Meters	1198
Conducted a feasibility study to assess merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?	Yes
Feasibility Study provided to CUWCC?	Yes
Date:	12/12/2006
Uploaded file name:	
Completed a written plan, policy or program to test, repair and replace meters	Yes
At Least As effective As	<input type="text" value="No"/>
Exemption	<input type="text" value="No"/>

Comments:

BMP 1.3

Meter Reads/Year:

SF: 244,087 MF: 6,074 COM: 9,088 AG: 5,927 Other (municipal): 94

Estimated Meter Reads/Year:

SF:421 MF: 18 COM: 20 AG: 3 Other (municipal): 0



CUWCC BMP Coverage Report 2015

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.4 Retail Conservation Pricing

ON TRACK

6293 El Dorado Irrigation District

Implementation (Water Rate Structure)

Implementation Option: Use Canadian Water Wastewater Association Rate Design Model

V Use 3 years average instead of most recent year

Canadian Water and Wastewater Association

Customer Class	Water Rate Type	Conserving Rate?	(V) Total Revenue Commodity Charges	(M) Total Revenue Fixed Charges
Single-Family	Increasing Block	Yes	9131562	11456607
Multi-Family	Uniform	Yes	910636	607722
Commercial	Uniform	Yes	987081	794040
Dedicated Irrigation	Increasing Block	Yes	1280195	358700
Agricultural	Increasing Block	Yes	319722	436977
Other	Uniform	Yes	568588	410270
			13197784	14064316

Calculate: $V / (V + M)$ 48 %

Upload file:

Agency Provide Sewer Service: Yes

Customer Class	Rate Type	Conserving Rate?
Single-Family	Uniform	Yes
Multi-Family	Uniform	Yes
Commercial	Uniform	Yes

At Least As effective As

Exemption

Comments:



CUWCC BMP Coverage Report 2015

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.1 Public Outreach

ON TRACK

6293

El Dorado Irrigation District

Retail

Does your agency perform Public Outreach programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

Sacramento Regional Water Authority (RWA)
 Regional Water Efficiency Program (RWEF)
 Amy Talbott, Program Manager
 atalbott@rwah2o.org

The name of agency, contact name and email address if not CUWCC Group 1 members

Did at least one contact take place during each quarter of the reporting year? Yes

Public Outreach Program List	Number
Newsletter articles on conservation	25
Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets	123567
Website	50
Email Messages	573
General water conservation information	17
Total	124232

Did at least one contact take place during each quarter of the reporting year? Yes

Number Media Contacts	Number
Written editorials	43
Total	43

Did at least one website update take place during each quarter of the reporting year? Yes

Public Information Program Annual Budget

Annual Budget Category	Annual Budget Amount
EID Water Efficiency Outreach	232000
Total Amount:	232000

Public Outreach Additional Programs

Website - Includes water efficiency information, link to interactive plant database, school education materials, teacher resources, and water management plan

Water Wise/Drought Tolerant Demonstration Garden - Located at our headquarters site, printed and viewable plant list available

Customer Notifications - Letters mailed to customers when meter reads show rise in use of 20% or more from same time in previous year; letter or call when reports of runoff, leaks, or broken sprinklers are noted or received



CUWCC BMP Coverage Report 2015

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.1 Public Outreach

ON TRACK

Description of all other Public Outreach programs

EID partners with local chapter of Native Plant Society

Comments:

Unless otherwise noted, the activity reported above was performed by EID. RWA's Regional Water Efficiency Program (RWEF), of which EID is a member, also performed media contacts, training, and outreach programs on behalf of their member agencies.

At Least As effective As

No

Exemption

No

0



CUWCC BMP Coverage Report 2015

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.2 School Education Programs

ON TRACK

6293 El Dorado Irrigation District

Retail

Does your agency implement School Education programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

Sacramento Regional Water Authority (RWA)
Regional Water Efficiency Program (RWEF)
Amy Talbott, Program Manager
atalbott@rwah2o.org

Materials meet state education framework requirements? Yes

Through RWEF: student newspaper supplement called BeWater Smart News. It tells the never-ending story of the water cycle. Teacher's guide provides a regional focus and lessons based on the CA Content Standards

Materials distributed to K-6? Yes

Through RWEF: Be Water Smart News (2-6) supplement with teachers guide; Mr. Leaky's Water Conservation & You Booklet (K-4); and the California Waterways Map (4-8).

Materials distributed to 7-12 students? Yes (Info Only)

Through RWEF: Living Rivers of the Sacramento Valley newspaper supplement with teacher's guide (grades 7-12) ; and the Water Spots Video Contest (grades 9-12) with the unveiling at a River Cats game.

Annual budget for school education program: 18000.00

Description of all other water supplier education programs
EID partnerships with youth organizations, Farm Day for 3rd graders, Earth Day, and other community events.

Comments:

ALL reported activity is EID specific unless otherwise noted as "through RWEF" with the only exception being "Teacher Trainings" which were provided by Project WET (Water Education for Teachers) through EID's membership in RWEF.

At Least As effective As No

Exemption No 0



CUWCC BMP Coverage Report 2015

6293 El Dorado Irrigation District

Baseline GPCD: 346.82

GPCD in 2015 181.05

GPCD Target for 2018: 284.40

Biennial GPCD Compliance Table

ON TRACK

Year	Report	Target		Highest Acceptable Bound	
		% Base	GPCD	% Base	GPCD
2010	1	96.4%	334.30	100%	346.80
2012	2	92.8%	321.80	96.4%	334.30
2014	3	89.2%	309.40	92.8%	321.80
2016	4	85.6%	296.90	89.2%	309.40
2018	5	82.0%	284.40	82.0%	284.40

EL DORADO IRRIGATION DISTRICT

Subject: Draft Amendments to Board Policy 9020: Establishing New Service.

Previous Board Actions

September 11, 2006 – Board adopted Board Policy 9020.

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

BP 9020 sets forth requirements pertaining to establishing new service.

BP 1030 states the Board of Directors may amend the Board Policies by an affirmative vote of at least three members at a publicized public hearing.

Summary of Issue

Presently, Board Policy 9020 requires that to establish new service, a customer must be located within the District's annexed service area. Staff proposes to amend Board Policy 9020 to allow the District to establish out-of-District service when such service is necessary to address a documented health and safety concern.

Staff Analysis/Evaluation

Board Policy 9020 declares as follows:

The District provides drinking water, recycled water, and wastewater services to residential, municipal, commercial, industrial, and agricultural customers within the District's service area. These services are subject to the provisions of all Board Policies and applicable Administrative Regulations and to the payment of appropriate rates, fees, deposits, and charges.

Administrative Regulation 9021 requires the customer applying for new service to be "annexed to the District." This Board policy and administrative regulation allow the District to provide new service only to customers located within the District's annexed service area.

Earlier this year, the District was contacted by Norm Brown, a residential developer, regarding the possibility of providing out-of-District service to a parcel owner, Kenneth Welsh, whose parcel is located immediately adjacent to the District's Bass Lake tank facility in El Dorado Hills. Mr. Brown is presently in the process of developing a subdivision in the vicinity of the Bass Lake tanks, and it is the District staff's understanding that Mr. Brown is negotiating with Mr. Welsh regarding ingress to the proposed subdivision over Mr. Welsh's property.

Notwithstanding the close proximity of Mr. Welsh's parcel to District infrastructure, the parcel is not within the District's annexed service area. Relying on the authority above, District staff informed Mr. Brown that the District would not accept an application for out-of-District service, unless the applicant initiated the annexation process through the El Dorado County Local Agency Formation Commission ("LAFCO"). Staff also met with Mr. Brown and his attorney Craig Sandberg to discuss this situation.

On September 6, 2017, the District received a letter from Norm Brown’s attorney, Craig Sandberg, submitted on behalf of Mr. Welsh (attached to hereto as Attachment A). The letter alleges that Mr. Welsh’s property has no reliable water supply and that the lack of water supply poses an actual threat to his health and safety. The letter is accompanied by a well production test indicating the groundwater well located on Mr. Welsh’s property does not meet the minimum gallons per minute requirement of El Dorado County. Also attached to Mr. Sandberg’s letter is a letter from the County’s Environmental Management Department discussing the basis for the County’s minimum sanitation standards and health and safety concerns raised by failure to obtain such minimum standards.

Government Code section 56133(a) authorizes the District to provide out-of-District service by contract or agreement, but the District must first submit the contract or agreement to LAFCO for approval. LAFCO may authorize the District to provide new or extended services outside its jurisdictional boundary but within its sphere of influence in anticipation of a future annexation or even outside of its sphere of influence “to respond to an existing or impending threat to the health and safety of the public or the residents of the affected territory.” (Gov. Code § 56133(b)-(c).)

Based on this information, staff proposes to amend Board Policy 9020 by authorizing the District to provide out of District service when necessary to address documented health and safety concerns. Staff seeks Board feedback on the proposed amendments, and if directed, will notice a public hearing for adoption of amendments to Board Policy 9020. Once adopted, staff will revise Administrative Regulation 9021 to make it consistent with the revised Board policy, and also to set forth guidelines for establishing out of District service agreements made pursuant to Board Policy 9020.

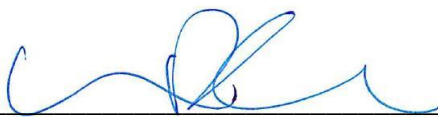
Board Decision/Options

None – Information only

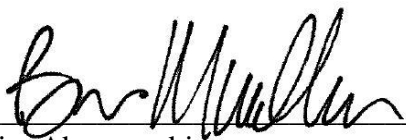
Supporting Documents Attached

Attachment A: Letter from Craig Sandberg to Jim Abercrombie, dated August 31, 2017

Attachment B: Draft Amendments to Board Policy 9020: Establishing New Service



Brian D. Poulsen, Jr.
General Counsel



Jim Abercrombie
General Manager

for

1024 Iron Point Road
Ste. 100 #1280
Folsom, CA 95630

LAW OFFICES OF
CRAIG M. SANDBERG

Tel: (916) 357-6698
Email Craig@Sandberglaw.net

August 31, 2017

Jim Abercrombie
General Manager
El Dorado Irrigation District
2890 Mosquito Road
Placerville, CA 95667

SEP 06 2017

Re: Kenneth Welsh/Request for Service
3021 Crystal View Drive, El Dorado Hills, CA
APN 119-090-59

Dear Jim:

This letter is written on behalf of Kenneth Welsh, the owner of the above-described property. We have discussed this situation informally, but by this letter we are requesting that the matter be submitted to the Board of Directors for their consideration.

Mr. Welsh has lived on the property for a number of years and has never been able to find a sustainable well and in recent years the problem has gotten progressively worse and now has reached the point that the lack of available water poses an actual threat to his health and safety. Inquiries have been made on Mr. Welsh's behalf as to the possibility of obtaining water service from the District through the vehicle of an out of district service agreement. Two of the parcels adjacent to Mr. Welsh's property are currently served in accordance with such out of district agreements due to similar problems obtaining a working well, so there was some expectation that such an arrangement could be made. Particularly in light of the fact that the District facilities are immediately available to the property. Ironically, the Welsh property is literally in the shadow of the Bass Lake storage tanks. However, you and Brian Poulsen pointed out that policy changes were made by the District Board since those out of district service agreements were entered into, which appear to prevent further such agreements. Specifically Board policies AR9020 and 9021 provide that service would only be provided to properties within the District.

We understand the District's reluctance to encourage out of district service agreements, but we also believe that there may be justifiable exceptions given the right set of circumstances. In the case of Mr. Welsh, he has a demonstrable problem with the ability to obtain adequate water from his well. Attached for your information is a well report conducted on August 15, 2017, which indicates that even after the heavy rainfall experienced this past winter, the well fails to achieve the County's minimum flow requirements for residential use. Also enclosed is a letter received from the County's Environmental Management Department discussing the basis for the County's minimum sanitation standards and health and safety concerns raised by failure to obtain such minimum standards. Further, the Welsh property is within the sphere of influence

of the District and, as indicated above, District facilities are immediately available to the property, so no extension of facilities would be required. Mr. Welsh has cooperated with the County and EID in the past by providing easements on his property for the construction of new facilities serving the Bass Lake Hills area in anticipation that eventually his property would be served as well. The Welsh property is in the path of development, as many of the properties in Bass Lake Hills are in the process of obtaining the necessary entitlements to move forward and it only a matter of time that the Welsh property may become part of one of those applications. However, in the meantime Mr. Welsh needs water.

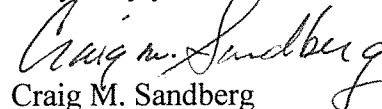
It has been suggested that Mr. Welsh apply for annexation, thereby solving the problem. However, the reality is that an annexation application, even for a small annexation as the Welsh property would be, may cost in excess of \$50,000.00 and take years to complete. A developer seeking entitlements, perhaps in conjunction with other parcels in the area may be able to bear such costs, but Mr. Welsh does not have the resources to even pay the application fees to begin that process.

Based on the foregoing conditions at the property, we feel justified in asking the District for relief to allow the use of an out of district service agreement, which would include the requirement to pay the necessary connection fees and an appropriate usage rate for the provision of such service, to relieve the hardship Mr. Welsh is currently facing. . The circumstances create an unusual enough situation that providing relief in this case would not have a precedential effect, setting the District up for a myriad of applications for out of district service.

Based on the foregoing, we respectfully ask the Board of Directors to consider this request for relief and allow for the use of an out of district service agreement either by exercising its discretion in construing its own policies to allow the relief, in essence granting a variance to the policy, or alternatively, consider amending the existing policies allowing for the use of out of district service agreements if the Board, or you, as General Manager, find that there are extenuating circumstances such as those presented here.

We appreciate your attention to this matter and an opportunity to present a case.

Very truly yours,


Craig M. Sandberg

CMS/ms

cc: Brian Poulsen
Client

Well Production Test

BY: TOM

WELL LOCATION: **3021 CRYSTAL VIEW, 95762** Date of Test: **8/15/17**

Ordered By: NORM BROWN	Ph: 916.966.3456
Bill To:	Em:
	Ph:
Instructions:	Gate:

TIME	METER READING	GALLONS PUMPED	PUMP RATE
1:25			6
1:55		4	
2:00		158	BROKE SUCTION

Depth of Well:	<u>N/A</u>	feet	Bacterial/Mineral:	<u>N/A</u>	day
Final Yield:	<u>0.8</u>	gpm	Gallons Pumped:	<u>158</u>	gal
Pump Duration:	<u>35</u>	min	Storage Tank:	<u>YES</u>	gal
Broke Suction:	<u>YES</u>	y/n	Filtration:	<u>NO</u>	y/n

*Pump Operation:	<input type="checkbox"/>	Functional	Deficient	<input type="checkbox"/>	Not Observed	<input checked="" type="checkbox"/>
*Electrial/Well Head:	<input type="checkbox"/>	Functional	Deficient	<input type="checkbox"/>	Not Observed	<input checked="" type="checkbox"/>
*Pressure Tank:	<input type="checkbox"/>	Functional	Deficient	<input type="checkbox"/>	Not Observed	<input checked="" type="checkbox"/>
*Plumbing/Well Head:	<input type="checkbox"/>	Functional	Deficient	<input type="checkbox"/>	Not Observed	<input checked="" type="checkbox"/>
*Storage Tank	<input type="checkbox"/>	Functional	Deficient	<input type="checkbox"/>	Not Observed	<input checked="" type="checkbox"/>
*Booster Pump	<input type="checkbox"/>	Functional	Deficient	<input type="checkbox"/>	Not Observed	<input checked="" type="checkbox"/>
*Filtration	<input type="checkbox"/>	Functional	Deficient	<input type="checkbox"/>	Not Observed	<input checked="" type="checkbox"/>
*Fire Hydrant System	<input type="checkbox"/>	Functional	Deficient	<input type="checkbox"/>	Not Observed	<input checked="" type="checkbox"/>

COMMENTS/RECOMMENDED REPAIRS:

1. THIS WELL PRODUCES .8 GALLONS PER MINUTE AND IS UNDER THE MINIMUM GPM ALLOWED BY EL DORADO COUNTY FOR A LEGAL PRODUCING WELL

Approved by: *Tom Lang, Officer* Date: **8/21/2017**

Rumsey Lang Well Drilling & Pump Inc.
PO BOX 1021, SHINGLE SPRINGS, CA 95682

Lic #936606
WWW.RUMSEYLANG.COM



COMMUNITY DEVELOPMENT SERVICES ENVIRONMENTAL MANAGEMENT DEPARTMENT

<http://www.edcgov.us/EMD/>

PLACERVILLE OFFICE:

2850 Fairlane Court
Placerville, CA 95667
(530) 621-5300
(530) 642-1531 Fax

LAKE TAHOE OFFICE:

924 B Emerald Bay Rd.
South Lake Tahoe, CA 96150
(530) 573-3450
(530) 542-3364 Fax

August 9, 2017

Kenneth D. Welsh
3021 Crystal View Drive
El Dorado Hills, CA 95762

RE : Health and Safety Requirements for Private Residences

Mr. Welsh,

Minimum sanitation standards are required by law for private residences to maintain the health and safety of the public. Section 17920.3(a)(5) of the California Health and Safety Code lists a lack of hot and cold running water to plumbing fixtures in a dwelling unit as a reason to declare a dwelling unit as a "substandard building" that cannot be occupied. In addition, Section 110.32.060 of the El Dorado County Ordinance Code, "Pollution Prohibited", requires that all sewage be disposed of through an approved method of collection. Without an adequate water supply for the dwelling, toilets cannot be flushed and sewage cannot be properly disposed of into the septic system.

Health and safety hazards are created in residences without an adequate supply of water. Sewage cannot be disposed of into portable toilets, collection buckets, or by other means on the property. To remain in compliance with State and County laws, sewage must be disposed of into an approved, permitted septic system or into public sewer. Please let me know if you have any questions.

Sincerely,

Bryan Vyverberg
Supervising Environmental Health Specialist
(530) 621-5924
bryan.vyverberg@edcgov.us

BP 9020 Establishing New Service

Adopted: November 11, 2006

Supersedes: Regulation Nos. 1, 5, 6, 8, 12, 14, 17, 18, 22

The District provides drinking water, recycled water, and wastewater services to residential, municipal, commercial, industrial, and agricultural customers within the District's service area, or outside the annexed service area but within the District's sphere of influence when allowed by law and in response to documented health and safety concerns. These services are subject to the provisions of all Board Policies and applicable Administrative Regulations and to the payment of appropriate rates, fees, deposits, and charges.

Draft Amendments to Board Policy 9020 Establishing New Service

El Dorado Irrigation District

October 23, 2017

Previous Board Action

- **September 11, 2006 – Board adopted Board Policy 9020**

Board Policies, Administrative Regulations, and Board Authority

- **BP 9020 sets forth requirements pertaining to establishing new service.**
- **BP 1030 states the Board of Directors may amend the Board Policies by an affirmative vote of at least three members at a publicized public hearing.**

Staff Analysis/Evaluation

- **Board Policy 9020 declares as follows:**

The District provides drinking water, recycled water, and wastewater services to residential, municipal, commercial, industrial, and agricultural customers within the District's service area.

These services are subject to the provisions of all Board Policies and applicable Administrative Regulations and to the payment of appropriate rates, fees, deposits, and charges.

Staff Analysis/Evaluation

- **Administrative Regulation 9021 requires the customer applying for new service to be “annexed to the District.”**
- **This Board policy and administrative regulation allow the District to provide new service only to customers located within the District’s annexed service area.**

Staff Analysis/Evaluation

- **The District is in receipt of a request to provide out-of-District service to a parcel within the District's sphere of influence and adjacent to the District's Bass Lake Tank facility in El Dorado Hills.**
- **The request alleges that the parcel lacks a reliable water supply, and that the domestic well does not meet the County's minimum standards for health and safety.**

Staff Analysis/Evaluation

- **Government Code section 56133(a) authorizes District to provide out-of-District service by contract or agreement, but the District must first submit the contract or agreement to LAFCO for approval.**
- **LAFCO may authorize District to provide new or extended services outside its jurisdictional boundary but within its sphere of influence in anticipation of a future annexation or even outside of its sphere of influence “to respond to an existing or impending threat to the health and safety of the public or the residents of the affected territory.” (Gov. Code § 56133(b)-(c).)**

Staff Analysis/Evaluation

- **Based on this information, staff proposes to amend Board Policy 9020 by authorizing District to provide out-of-District service when necessary to address documented health and safety concerns.**

Staff Analysis/Evaluation

- **The District provides drinking water, recycled water, and wastewater services to residential, municipal, commercial, industrial, and agricultural customers within the District's service area, or outside the annexed service area but within the District's sphere of influence when allowed by law and in response to documented health and safety concerns. These services are subject to the provisions of all Board Policies and applicable Administrative Regulations and to the payment of appropriate rates, fees, deposits, and charges.**

Staff Analysis/Evaluation

- **Staff seeks Board feedback on proposed amendments, and if directed, will notice a public hearing for adoption of amendments to Board Policy 9020.**
- **Once adopted, staff will revise Administrative Regulation 9021 to make it consistent with the revised Board policy, and also to set forth guidelines for establishing out of District service agreements made pursuant to Board Policy 9020.**

Board Decision/Options

No Action – Information Item Only

Q U E S T I O N S ?

EL DORADO IRRIGATION DISTRICT

Subject: 2018-2022 Capital Improvement Plan (CIP) Workshop.

Previous Board Action

October 26, 2016 – The Board approved the 2017 – 2021 CIP, subject to available funding.

December 12, 2016 – The Board adopted the 2017– 2018 operating budget and 2017-2021 Financial Plan.

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

BP 3010 states that the Board shall adopt, every year, a five-year Capital Improvement Plan (CIP) and approve funding on an as-needed basis.

Summary of Issue

This CIP workshop will review the draft 2018-2022 capital improvement plan for Board and public input.

Staff Analysis

On October 24, 2016, the Board adopted the 2017-2021 CIP. The five-year plan projected expenditures of \$126 million, and \$27 million in 2017. As of October 11, 2017, capital expenditures for 2017 total \$17.5 million, which includes some of the capitalized emergency projects to mitigate damage at Flumes 5, 9, 10, and the Powerhouse road. The following lists capital projects that were completed in the last year or were approved and are currently ongoing. These projects respond to mandated regulatory requirements, maintain and improve service reliability, and/or protect health and safety:

Completed or substantially complete:

- Storm mitigation work
 - Flume 5, 45A
 - Powerhouse Road slide
- American River Bridge waterline replacement
- Penstock assessment
- Reservoir A WTP chemical containment improvements
- Bridlewood lift station rehabilitation
- FERC C40 gaging stations
- Promontory 1 lift station odor control
- Camp 5 repaving

Projects under construction:

- Storm mitigation at Flume 9 and Flume 10
- Forebay dam remediation
- Polaris and Gilmore waterline replacement
- Tank 7 in-conduit hydro
- Waterford 7 lift station rehabilitation
- Carson Creek 2 lift station
- Town Center force main replacement
- Reservoir 3 tank rehabilitation

Other ongoing projects

- Main ditch piping (design and environmental review)
- Flume 44 canal conversion (design)
- Folsom Lake raw water pump station (design)
- Sly Park Intertie (preliminary design)
- Solar assessment
- IT network and shared IT computing reliability programs
- FERC license requirements

Capital Expenses Actual vs Budgeted

As of October 11, 2017, capital expenses totaled approximately \$17.5 million. Estimated capital expenditures for all of 2017 are estimated to be \$31 million. These expenditures include approximately \$12 million in unplanned capitalized emergency expenditures following the 2017 Storm events (Approximately 80% of the cost is anticipated to be refunded by FEMA, OES or insurance). Approximately \$19 million in expenditures are estimated for 2017 projects included in the adopted plan.

	2017 Adopted Plan	Unplanned Storm Capital Outlay	2017 Total Estimated Capital Expenses
Planned	\$27.4M	-	-
Estimated Actual Expenditures	\$19M	\$12M	\$31M

The 2018-2022 CIP process

Staff updated the descriptions, funding status and priority of ongoing and planned projects and developed new estimates of expenditures for the five-year planning period.


Funding for the 2018-2022 CIP includes three components:

- 1) 2016 bond issuance - \$49 million
- 2) Future 2021 bond issuance – estimated \$50 million (after issuance of the \$50 million, outstanding debt is anticipated to be about \$335 million)
- 3) Pay-as-you-go from annual revenue – Approximately \$10 million per year

With these three funding components, staff targeted total 5-year CIP expenditures of approximately \$150 million. After staff’s initial proposal resulted in total expenses of \$162 million, staff went through a process to trim down projects and defer others based on priority and staff resources to implement them, which resulted in a reduction to \$143 million.

Projects in the 5-year plan funded by the 2016 Bond issue include Forebay dam, Main Ditch piping and Flume 44 replacement. Projects anticipated to be funded by a new 2021 bond issue include the El Dorado Hills raw water pump station Phase 1 replacement, Silver Lake dam replacement, Sly Park intertie, and several replacements of infrastructure in the P184 system including Flume 30, Flume 38-40, Flume 45, Flume 48 and Pacific tunnel rehabilitation. The remaining projects would be funded by annual revenues on a pay-as-you-go basis. Pipeline replacement/rehabilitation projects include the Main Ditch piping, Town Center force main, Sly Park intertie, and an annual program of approximately \$500,000 per year in water and wastewater pipeline replacement.

The new five-year estimate totals approximately \$143 million. Annual expenditures are higher in 2018 and 2019 than they are in the out years, primarily due to large projects such as Forebay dam remediation, Main Ditch improvements, Flume 44 replacement, and the EDH raw water pump station planned for construction in these years.

 El Dorado Irrigation District		2018-2022 CAPITAL IMPROVEMENT PLAN					FIVE-YEAR PLAN TOTAL
		DRAFT					
	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2022 PLANNED		
FERC	\$2,789,371	\$3,066,762	\$848,195	\$619,671	\$491,191	\$7,815,190	
Water	\$8,017,500	\$14,825,000	\$7,845,000	\$10,575,000	\$10,265,000	\$51,527,500	
Wastewater	\$4,432,380	\$4,275,000	\$4,800,000	\$1,750,000	\$2,350,000	\$17,607,380	
Recycled Water	\$50,000	\$10,000	\$100,000	\$0	\$0	\$160,000	
Hydroelectric	\$21,732,500	\$14,204,500	\$12,027,836	\$8,035,000	\$2,360,000	\$58,359,836	
Recreation	\$100,000	\$100,000	\$150,000	\$0	\$50,000	\$400,000	
General District	\$2,632,600	\$1,859,000	\$882,000	\$781,000	\$1,050,000	\$7,204,600	
TOTAL	\$39,754,351	\$38,340,262	\$26,653,031	\$21,760,671	\$16,566,191	\$143,074,506	

Prioritization

All projects have been prioritized according to the criteria developed in 2014:

Priority 1 projects are a) required for health and safety; b) required by law, regulations, contract, agreement or license; or c) under construction.

Priority 2 projects a) maintain existing assets, including life cycle replacement of pump stations, pipelines, flumes, canals and other assets; b) provide for increased revenues and/or reduced costs; or c) meet demands of increasing growth and increased water supply.

Priority 3 projects are discretionary projects to a) increase service levels; b) improve efficiency; or c) provide aesthetic or community benefit.

Each project has been assigned a letter category (a, b or c) in accordance with the defined priorities outlined above, and an additional sub-category (1, 2 or 3) has been assigned to each project in an effort to distinguish the relative importance and condition of similar ranked projects, and the timeline for when work on a project should be commencing.

Financial Planning

The Board approved financial plan includes 3% annual rate increases in each utility for 2017-2020. This includes approximately \$49 million in 2016 debt proceeds to fund large projects including Forebay Dam, flume replacements, Main Ditch piping, and Esmeralda tunnel. The financial plan generates annual cash flow to fund pay-as-you-go construction projects of approximately \$10 million per year. The financial plan also contemplated a future bond issuance in 2021 to pay for continued replacement of large capital, long-lived assets.

The draft 5-year CIP complies with this financial plan. The total 2018-2022 planned expenditures are approximately \$143 million, and actual expenditures are expected to be \$125 million. Subtracting those larger projects that are proposed to be paid through the bonds leaves approximately \$8 million per year for smaller pay-go projects, which is in the range contemplated in the adopted financial plan.

Following the review of this plan and incorporation of Board input, the 2018–2022 CIP will be presented for consideration of adoption on November 13, 2017.

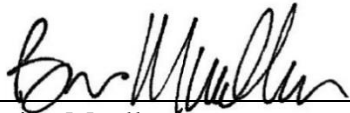
Board Decisions/Options

None – Information only.

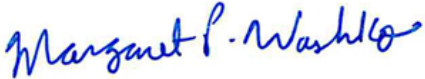
Supporting Documents Attached

Attachment A: Overall 2018-2022 Capital Improvement Plan (draft)

Attachment B: CIP project worksheets



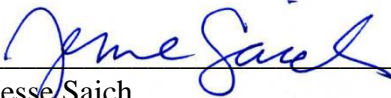
Brian Mueller
Engineering Director



Margaret P. Washko, P.E.
Operations Director



Tim Ranstrom
Information Technology Director



Jesse Saich
Public Information Officer



Jose Perez
Human Resources Manager



Mark Price
Finance Director



Brian Poulsen
General Counsel



for
Jim Abercrombie
General Manager



2018-2022 CAPITAL IMPROVEMENT PLAN DRAFT

	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2022 PLANNED	FIVE-YEAR PLAN TOTAL
FERC	\$2,789,371	\$3,066,762	\$848,195	\$619,671	\$491,191	\$7,815,190
Water	\$8,017,500	\$14,825,000	\$7,845,000	\$10,575,000	\$10,265,000	\$51,527,500
Wastewater	\$4,432,380	\$4,275,000	\$4,800,000	\$1,750,000	\$2,350,000	\$17,607,380
Recycled Water	\$50,000	\$10,000	\$100,000	\$0	\$0	\$160,000
Hydroelectric	\$21,732,500	\$14,204,500	\$12,027,836	\$8,035,000	\$2,360,000	\$58,359,836
Recreation	\$100,000	\$100,000	\$150,000	\$0	\$50,000	\$400,000
General District	\$2,632,600	\$1,859,000	\$882,000	\$781,000	\$1,050,000	\$7,204,600
TOTAL	\$39,754,351	\$38,340,262	\$26,653,031	\$21,760,671	\$16,566,191	\$143,074,506

EL DORADO IRRIGATION DISTRICT FIVE-YEAR CAPITAL IMPROVEMENT PLAN 2017-2021 Approved October 24, 2016

	2017 PLANNED	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	FIVE-YEAR PLAN TOTAL
FERC	\$2,246,020	\$2,033,371	\$2,831,762	\$256,195	\$678,670	\$8,046,018
Water	\$9,685,378	\$6,460,000	\$10,395,000	\$10,430,000	\$7,485,000	\$44,455,378
Wastewater	\$3,880,000	\$5,230,000	\$1,195,000	\$1,395,000	\$2,200,000	\$13,900,000
Recycled Water	\$430,000	\$10,000	\$100,000	\$0	\$0	\$540,000
Hydroelectric	\$6,593,000	\$19,473,500	\$14,436,500	\$3,842,500	\$1,697,000	\$46,042,500
Recreation	\$0	\$0	\$0	\$0	\$0	\$0
General District	\$4,532,870	\$3,582,000	\$1,874,000	\$1,688,000	\$1,771,000	\$13,447,870
TOTAL	\$27,367,268	\$36,788,871	\$30,832,262	\$17,611,695	\$13,831,670	\$126,431,766



2018 - 2022 Capital Improvement Plan FERC Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2022 PLANNED	2018-2022 TOTAL
10007	FERC C51.2 RM Caples Boat Launch	FERC	1	40,000	40,000	40,000	40,000	40,000	200,000
15016	FERC:C50.2 CAPLES LAKE CAMPGROUND	FERC	1	2,100,000	0	0	0	0	2,100,000
16028	Mill Creek Diversion Structure	FERC	1	60,000	250,000	0	0	0	310,000
06019H	FERC C35 OYSTER CREEK	FERC	1	100,000	0	0	0	0	100,000
06021H	FERC C37.8 WATER TEMP	FERC	1	25,000	35,000	25,000	35,000	25,000	145,000
06025H	FERC C41 Canal Release point	FERC	1	10,000	0	0	0	0	10,000
06076H	FERC:C38.4B CAPLES Spillway Channel Stabilization	FERC	1	40,000	320,000	0	0	0	360,000
06081H	FERC:C50.8 Pacific Crest Trail Crossing	FERC	1	0	0	0	0	0	0
06082H	FERC:C50.1 SILVER LAKE EAST CG FS Upgrade	FERC	1	20,000	2,200,000	500,000	0	0	2,720,000
06086H	FERC:C33 LAKE ALOHA TROUT	FERC	1	12,000	0	0	0	0	12,000
06087H	FERC:C37.1 FISH MONITORING	FERC	1	0	0	0	65,000	65,000	130,000
06088H	FERC:C37.2 MACROINVERTEB	FERC	1	0	0	0	60,000	60,000	120,000
06089H	FERC:C37.3 AMPHIBIAN MON	FERC	1	17,000	0	0	75,000	0	92,000
06090H	FERC:C37.4 RIPARIAN SPEC	FERC	1	0	0	0	25,000	0	25,000
06091H	FERC:C37.5 RIPARN RECRUIT	FERC	1	0	0	0	25,000	0	25,000
06092H	FERC:C37.7 GEOMORPH EVAL	FERC	1	0	20,000	0	75,000	0	95,000
06096H	FERC:C56 HERITAGE RSRCE	FERC	1	50,000	0	0	0	0	50,000
06097H	FERC C59 Facility Management Plan	FERC	1	0	0	0	0	15,000	15,000
06098H	FERC:C46-9 RECREATION RSC	FERC	1	25,000	0	0	0	0	25,000
07003H	FERC C37.9 WATER QUALITY	FERC	1	80,000	0	80,000	0	80,000	240,000
07005H	FERC C51.3 RM ECHO TRAIL	FERC	1	8,000	8,000	8,000	8,000	8,000	40,000
07006H	FERC C51.5&C51.7 RM USFS	FERC	1	50,371	51,762	53,195	54,671	56,191	266,190
07010H	FERC C15 PESTICIDE USE	FERC	1	80,000	70,000	70,000	70,000	70,000	360,000
07011H	FERC C38 ADAPTIVE MGMT	FERC	1	50,000	50,000	50,000	50,000	50,000	250,000
07030H	FERC C57 Transportation Management Plan	FERC	1	5,000	5,000	5,000	5,000	5,000	25,000
08025H	FERC C44 Noxious Weed Implementation	FERC	1	17,000	17,000	17,000	32,000	17,000	100,000
				2,789,371	3,066,762	848,195	619,671	491,191	7,815,190



2018 - 2022 Capital Improvement Plan Water Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2022 PLANNED	2018-2022 TOTAL
15025	American River Bridge Pipeline	WA	1	75,000	0	0	0	0	75,000
16005	Diamond Springs Parkway	WA	1	147,500	0	0	0	0	147,500
16016	DOT Construction Projects - Water	WA	1	25,000	25,000	25,000	25,000	25,000	125,000
16039	Western Placerville Interchange	WA	1	400,000	400,000	0	0	0	800,000
17035	Green Valley Bridge Relocation	WA	1	325,000	0	0	0	0	325,000
11032	Main Ditch - Forebay to Res 1	WA	2	500,000	2,575,000	2,175,000	0	0	5,250,000
13013	Tank 7 In-Conduit Hydro	WA	2	350,000	0	0	0	0	350,000
14027	PLC Replacement	WA	2	45,000	0	0	0	0	45,000
15009	Sly Park Intertie	WA	2	400,000	550,000	550,000	6,625,000	6,575,000	14,700,000
15024	EDH Raw Water Pump Station Upgrades	WA	2	1,440,000	8,960,000	3,110,000	0	0	13,510,000
16048	Outingdale Water Intake Replacement	WA	2	100,000	40,000	0	0	0	140,000
PLANNED	Res 1 WTP Improvement Program	WA	2	325,000	280,000	100,000	100,000	100,000	905,000
PLANNED	Sly Park - Res A WTP Improvement Program	WA	2	100,000	425,000	300,000	100,000	100,000	1,025,000
PLANNED	Storage Replacement Program	WA	2	1,750,000	200,000	750,000	2,600,000	1,500,000	6,800,000
PLANNED	Waterline Replacement Program	WA	2	940,000	550,000	550,000	400,000	400,000	2,840,000
PLANNED	Folsom - EDHWTP Improvement Program	WA	2	325,000	100,000	100,000	100,000	100,000	725,000
PLANNED	PRS Replacement Program	WA	2	335,000	320,000	185,000	550,000	890,000	2,280,000
PLANNED	Pump Station Replacement Program	WA	2	400,000	200,000	0	75,000	575,000	1,250,000
11040	Ditch Water Rights/SCADA (close, open new)	WA	3	5,000	0	0	0	0	5,000
PLANNED	Construction Storage Facility	WA	3	30,000	200,000	0	0	0	230,000
			TOTAL:	8,017,500	14,825,000	7,845,000	10,575,000	10,265,000	51,527,500



2018 - 2022 Capital Improvement Plan Wastewater Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2022 PLANNED	2018-2022 TOTAL
16017	DOT Construction Projects - WW	WW	1	25,000	25,000	25,000	25,000	25,000	125,000
16040	Carson Creek 2 / Business Park 3 Abandonment	WW	1	500,000	70,000	0	0	0	570,000
17023	Rancho Ponderosa LS Relocation	WW	1	80,000	370,000	0	0	0	450,000
PLANNED	Deer Creek Main Circuit Breaker	WW	1	300,000	900,000	0	0	0	1,200,000
12021	WW SCADA System Reliability (close, reopen)	WW	2	600,000	600,000	600,000	0	0	1,800,000
14038	EDHWWTP WAS DAFT	WW	2	100,000	0	0	0	0	100,000
15036	Silva Valley - EDH Sewerline	WW	2	100,000	0	0	0	0	100,000
16007	Waterford 7 Lift Station Rehab	WW	2	282,380	0	0	0	0	282,380
16008	South Point Lift Station Rehab	WW	2	0	680,000	600,000	0	0	1,280,000
16025	Town Center Force Main Phase 2	WW	2	265,000	0	1,650,000	0	0	1,915,000
16026	Wastewater Generator Program	WW	2	0	100,000	0	100,000	0	200,000
16030	Solar Assessment and Design (add 15023 \$)	WW	2	170,000	0	0	0	0	170,000
17020	WW Collection System Pipeline Replacement	WW	2	525,000	500,000	500,000	500,000	500,000	2,525,000
17021	Fall Protection at Lift Stations	WW	2	65,000	100,000	0	0	0	165,000
17033	DCWWTP Process Control Design	WW	2	75,000	175,000	0	0	0	250,000
17034	Wastewater Collections Facility Relocation	WW	2	0	0	0	0	0	0
PLANNED	Wastewater Communication Upgrade	WW	2	250,000	250,000	500,000	500,000	0	1,500,000
PLANNED	Strolling Hills Pipeline Improvements	WW	2	150,000	0	0	0	0	150,000
PLANNED	Wastewater Lift Station Upgrade Program	WW	2	0	80,000	600,000	300,000	1,500,000	2,480,000
PLANNED	2018 Wastewater Equipment Replacement Program	WW	2	200,000	200,000	200,000	200,000	200,000	1,000,000
PLANNED	Business Park 1 Odor Control	WW	2	120,000	0	0	0	0	120,000
PLANNED	2018 Wastewater Facility Replacement Program	WW	2	625,000	125,000	125,000	125,000	125,000	1,125,000
PLANNED	Ridgeview 10 Elimination	WW	3	0	100,000	0	0	0	100,000
			TOTAL:	4,432,380	4,275,000	4,800,000	1,750,000	2,350,000	17,607,380



2018 - 2022 Capital Improvement Plan Recycled Water Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2022 PLANNED	2018-2022 TOTAL
17030	DC Discharge Management	RW	3	5,000	10,000	100,000	0	0	115,000
PLANNED	Recycled Water SCADA Remote Control	RW	3	45,000	0	0	0	0	45,000
			TOTAL:	50,000	10,000	100,000	0	0	160,000



2018 - 2022 Capital Improvement Plan Hydroelectric Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2022 PLANNED	2018-2022 TOTAL
17003	HM / Canal Failure DS at Flume 10	HY	1	500,000	0	0	0	0	500,000
17004	HM at Flume 5	HY	1	50,000	0	0	0	0	50,000
17008	HM at Flume 9	HY	1	50,000	0	0	0	0	50,000
17013	Forebay Dam Modifications	HY	1	14,000,000	7,000,000	655,336	0	0	21,655,336
PLANNED	Diversion Gaging Requirements	HY	1	50,000	75,000	25,000	0	0	150,000
PLANNED	Weber Dam Access	HY	1	150,000	0	0	0	0	150,000
PLANNED	Lake Aloha Dam Repairs	HY	1	200,000	0	0	0	0	200,000
PLANNED	Silver Lake Dam Replacement	HY	1	150,000	300,000	300,000	300,000	300,000	1,350,000
14024	Flume 44 Canal Conversion	HY	2	4,900,000	3,925,000	75,000	0	0	8,900,000
14041	Project 184 SCADA System HW Replacement	HY	2	0	0	0	85,000	0	85,000
16022	Flume 38-40 Canal Conversion	HY	2	100,000	0	0	6,900,000	200,000	7,200,000
16044	Pacific Tunnel Portal Rehab	HY	2	65,000	160,000	1,742,500	50,000	0	2,017,500
16046	Powerhouse Roof	HY	2	225,000	0	0	0	0	225,000
17025	Flume 45 Abutment Replacement	HY	2	0	0	95,000	100,000	1,060,000	1,255,000
17026	Flume 47C Replacement	HY	2	0	1,494,500	75,000	0	0	1,569,500
17027	Spill 3 Cribwall	HY	2	182,500	0	0	0	0	182,500
17041	Flume 30 Replacement	HY	2	300,000	350,000	8,250,000	0	0	8,900,000
PLANNED	Annual Canal and Flume Program	HY	2	500,000	500,000	500,000	500,000	500,000	2,500,000
PLANNED	Flume 48 Replacement / Tunnel option	HY	2	100,000	200,000	0	0	0	300,000
PLANNED	Hydro Facility Replacement Program	HY	2	100,000	100,000	100,000	100,000	100,000	500,000
PLANNED	Penstock Stabilization and Repair	HY	2	110,000	100,000	210,000	0	0	420,000
PLANNED	Flume 46A Canal Conversion	HY	2	0	0	0	0	200,000	200,000
			TOTAL:	21,732,500	14,204,500	12,027,836	8,035,000	2,360,000	58,359,836



2018 - 2022 Capital Improvement Plan Recreation Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2022 PLANNED	2018-2022 TOTAL
PLANNED	Recreation Facility Replacement Program	RE	2	50,000	0	50,000	0	50,000	150,000
PLANNED	Sly Park Recreation Area Facility Improvements	RE	2	50,000	100,000	100,000	0	0	250,000
			TOTAL:	100,000	100,000	150,000	0	50,000	400,000

General District Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2022 PLANNED	2018-2022 TOTAL
06004G	SMUD / El Dorado Agreement Water Rights	GD	1	300,000	0	0	0	0	300,000
16003	Permit 21112 Change in Point of Diversion	GD	2	150,000	200,000	0	0	0	350,000
16027	Network Switch Upgrade (3560)	GD	2	178,600	0	0	0	0	178,600
16037	SCADA Configuration & Alarm Response	GD	2	45,000	0	0	0	0	45,000
17001	AMR/Small Meter Replacement	GD	2	200,000	100,000	100,000	100,000	100,000	600,000
PLANNED	2018 Vehice Replacement	GD	2	622,000	304,000	97,000	331,000	410,000	1,764,000
PLANNED	Shared IT Computing Reliability Program	GD	2	250,000	200,000	0	45,000	450,000	945,000
PLANNED	IT Network and Communications Reliability Program	GD	2	382,000	400,000	10,000	20,000	45,000	857,000
PLANNED	Security Equipment Reliability Program	GD	2	60,000	0	0	0	0	60,000
PLANNED	SCADA Master Plan Implementation	GD	2	250,000	200,000	0	0	0	450,000
PLANNED	Cyber Security Improvements	GD	2	0	250,000	120,000	230,000	0	600,000
PLANNED	Radio TLM and Network Replacement Program	GD	2	35,000	35,000	10,000	10,000	0	90,000
17018	SCADA Software Efficiency Program	GD	3	45,000	45,000	45,000	45,000	45,000	225,000
PLANNED	Hansen 7 Software Replacement	GD	3	0	125,000	500,000	0	0	625,000
PLANNED	Mobile GIS and MMS	GD	3	115,000	0	0	0	0	115,000
			TOTAL:	2,632,600	1,859,000	882,000	781,000	1,050,000	7,204,600

ATTACHMENT B



**FIVE YEAR
CAPITAL IMPROVEMENT PLAN
2018—2022
DRAFT
PROJECT WORKSHEETS**

October 23, 2017

FERC Projects

Project Number: 06019H
Project Name: FERC: C35 Oyster Creek
Project Category: Regulatory Requirements

Priority: 1 **PM:** Money **Board Approval:**

Project Description:

This project is required by Condition 35 of the Settlement Agreement, and the USFS 4(e) Conditions part of the FERC License. The licensee shall be responsible for those portions of the plan that the FS, in cooperation with the licensee, determines to be Project-related by 2011. The District has conducted a channel assessment and prepared a stabilization plan as required by FS for the Oyster Creek channel. The FS and SWRCB have approved the District's revised plan in 2013. Environmental permitting is ongoing through 2017 with construction anticipated in fall of 2017.

Basis for Priority:

EID would not be in compliance with the Settlement Agreement and USFS 4(e) Condition requirements contained in the FERC License.

Project Financial Summary:			
Funded to Date:	\$ 294,950	Expenditures through end of year:	\$ 268,389
Spent to Date:	\$ 234,078	2018 - 2022 Planned Expenditures:	\$ 100,000
Cash flow through end of year:	\$ 34,312	Total Project Estimate:	\$ 368,389
Project Balance	\$ 26,561	Additional Funding Required	\$ 73,439

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction	\$ 100,000					\$ 100,000
						\$ -
TOTAL	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000

Funding Sources	Percentage	2018	Amount
Water FCCs	53%		\$38,923
Water Rates	47%		\$34,516
			\$0
Total	100%		\$73,439

Funding Comments:

Project Number: 06021H
 Project Name: FERC C37.8 Water Temperature
 Project Category: Regulatory Requirements
 Priority: 1 PM: Deason Board Approval:

Project Description:

Mandatory requirement of the FERC license. Funding is necessary to implement an annual water temperature monitoring program at project reservoirs and stream reaches. The data collected from this monitoring effort will be used to determine if the coldwater beneficial uses are being met in designated project reaches.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Sections 7 and 12 of the Settlement Agreement, USFS 4(e) conditions 37 and 42, and SWRCB Water Quality Certification condition 14.

Project Financial Summary:

Funded to Date:	\$ 254,500	Expenditures through end of year:	\$ 248,406
Spent to Date:	\$ 223,406	2018 - 2022 Planned Expenditures:	\$ 145,000
Cash flow through end of year:	\$ 25,000	Total Project Estimate:	\$ 393,406
Project Balance	\$ 6,094	Additional Funding Required	\$ 138,906

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Monitoring	\$15,000	\$25,000	\$15,000	\$25,000	\$15,000	\$ 95,000
Reporting	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 25,000
Staff Time	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 25,000
						\$ -
TOTAL	\$ 25,000	\$ 35,000	\$ 25,000	\$ 35,000	\$ 25,000	\$ 145,000

Funding Sources	Percentage	2018	Amount
Water FCCs	53%		\$10,020
Water Rates	47%		\$8,886
			\$0
Total	100%		\$18,906

Funding Comments:

Annual monitoring is required until it can be demonstrated that operation of the project reasonably protects the cold freshwater beneficial use as determined by the SWRCB, FS, and ERC; coordinated with water quality sampling in even numbered years

2018

CAPITAL IMPROVEMENT PLAN Program:

FERC

Project Number: 06025H
Project Name: FERC: C41 Canal Release Points
Project Category: Regulatory Requirements

Priority: 1 PM: Noel Board Approval:

Project Description:

Required by the License Settlement Agreement and USFS 4(e) Condition 41, the District must develop and file for FERC approval a canal drainage structure and release point plan. The licensee shall implement the plan upon approval. The plan has been approved and implementation is underway. An update to the plan is needed in 2018 to include upgrades that have been implemented (e.g., Spillway 46), identify future upgrades, and evaluate the condition of spillway channels. Future design and construction costs will depend on the scope of activities identified in the updated plan.

Basis for Priority:

This project is required by the Project 184 FERC License and is on-going.

Project Financial Summary:

Table with 4 columns: Category, Amount, Description, Amount. Rows include: Funded to Date (\$50,000), Expenditures through end of year (\$28,848), Spent to Date (\$28,848), 2018 - 2022 Planned Expenditures (\$10,000), Cash flow through end of year (\$-), Total Project Estimate (\$38,848), Project Balance (\$21,152), Additional Funding Required (\$-).

Table with 7 columns: Description of Work, 2018, 2019, 2020, 2021, 2022, Total. Rows include: Study/Planning (\$10,000), Design (\$-), Construction (\$-), TOTAL (\$10,000, \$-, \$-, \$-, \$-).

Table with 4 columns: Funding Sources, Percentage, 2018, Amount. Rows include: Water FCCs (53%, \$0), Water Rates (47%, \$0), Total (100%, \$0).

Funding Comments:

Project Number: 06076H
Project Name: FERC C38.4b Caples Spillway Channel Stabilization
Project Category: Regulatory Requirements
Priority: 1 **PM:** Money **Board Approval:**

Project Description:

This Project is a requirement of the conditions of the FERC license including Section 8 of the El Dorado Relicensing Settlement Agreement, USFS 4(e) condition 38.4b, and SWRCB Water Quality Certification condition 5. These conditions require a stabilization plan (Plan) be developed and implemented in the spillway channel below the Caples Lake Auxiliary Dam where historic operations have caused unstable channel conditions and areas of erosion. The USFS and SWRCB required the District conduct an alternatives analysis to evaluate stabilization of the channel at three different flow regimes: 60 cfs, 120 cfs, and 250 cfs in order to determine the appropriate level of mitigation necessary to stabilize the spillway channel. In June 2017, the District received USFS and SWRCB conditional approval to proceed with design of the 60 cfs stabilization alternative. The District is currently preparing a final Plan incorporating comments from the USFS and SWRCB conditional approvals and will distribute for USFS, SWRCB, and FERC approval in 2017. Once the Plan is approved by these agencies, the District plans to initiate environmental review and permitting and currently anticipates construction in fall 2018 or 2019, depending on when all necessary regulatory authorizations are received.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Section 8 of the Settlement Agreement, USFS 4(e) conditions 38.4b, and SWRCB Water Quality Certification condition 5.

Project Financial Summary:

Funded to Date:	\$ 432,857	Expenditures through end of year:	\$ 417,816
Spent to Date:	\$ 401,341	2018 - 2022 Planned Expenditures:	\$ 360,000
Cash flow through end of year:	\$ 16,475	Total Project Estimate:	\$ 777,816
Project Balance	\$ 15,041	Additional Funding Required	\$ 344,959

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning	\$ 40,000					\$ 40,000
Design						\$ -
Construction		\$ 320,000				\$ 320,000
TOTAL	\$ 40,000	\$ 320,000	\$ -	\$ -	\$ -	\$ 360,000

Funding Sources	Percentage	2018	Amount
Water FCCs	53%		\$13,228
Water Rates	47%		\$11,731
			\$0
Total	100%		\$24,959

Funding Comments:

Project Number: 06081H
Project Name: FERC: C50.8 Pacific Crest Trail Crossing
Project Category: Regulatory Requirements
Priority: 1 **PM:** Kessler **Board Approval:**

Project Description:

This project is a requirement of the FERC License, Settlement Agreement, and the USFS 4(e) Condition 50.8 which states the licensee shall construct a crossing to meet FS design standards for the Pacific Crest National Scenic Trail across the Echo Conduit at a location agreed to by the FS.

The District has coordinated with the FS regarding the location and general design concepts of the crossing. The District has obtained USFS approval, and is awaiting FERC's approval of a time extension to October 18, 2018 to allow additional time to complete consultation with the FS regarding the design of the crossing, complete environmental review, obtain any necessary permits, and construct the crossing.

Funding is required to conduct cultural resource and biological resource assessments, perform design, and to construct the bridge in accordance with USFS standards.

Basis for Priority:

Project is required by Project 184 license.

Project Financial Summary:

Funded to Date:	\$ 12,000	Expenditures through end of year:	\$ 8,006
Spent to Date:	\$ 8,006	2018 - 2022 Planned Expenditures:	\$ 260,000
Cash flow through end of year:		Total Project Estimate:	\$ 268,006
Project Balance	\$ 3,994	Additional Funding Required	\$ 256,006

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning	\$ 20,000					\$ 20,000
Design	\$ 40,000					\$ 40,000
Construction		\$ 200,000				\$ 200,000
TOTAL	\$ 60,000	\$ 200,000	\$ -	\$ -	\$ -	\$ 260,000

Funding Sources	Percentage	2018	Amount
Water FCCs	53%		\$29,683
Water Rates	47%		\$26,323
			\$0
Total	100%		\$56,006

Funding Comments: Final construction costs TBD after consultation with USFS

Project Number: 06082H
Project Name: FERC: C50.1 Silver Lake Campground East Re-Construction
Project Category: Regulatory Requirements
Priority: 1 **PM:** Wilson **Board Approval:**

Project Description:

Required by the License Settlement Agreement and the USFS 4(e) Conditions, the District must reconstruct the paved surfaces, toilets, and water system at the 62-unit USFS Silver Lake Campground, including upgrade of this facility to meet the current FS design standards and the USDA Forest Service Region 5 accessibility standards requirements of the Americans with Disabilities Act (ADA). The construction schedule shows that improvements to the Silver Lake East and West Campgrounds occurring at the same time to realize cost savings due to the close proximity, similarity of the work to be completed, and construction efficiencies. Project funding represents the cost estimates agreed upon by USFS and EID in the Dangermond Report for the campground improvements and have been adjusted to reflect 2017 dollars (\$2,200,000). The District is required to install a new water system within the campground to the source. The existing source is located approximately 2.5 miles away from the campground, however the District's well is located approximately 1 mile away. The District is working with the USFS to utilize the District's well as the new source to the campground. The USFS is proposing a potential joint project to expand the upgrade project at their cost. This will require additional staff time to review the proposal and manage the cost share throughout the project. The remaining amount is for District staff time and should not be considered as part of the potential USFS settlement amount. Design for the campground re-construction will take place in 2018 and anticipated construction in 2019.

Basis for Priority:

This project is required to comply with the FERC License Condition No. 50.1 and USFS 4(e) Condition requirements. The District is requesting FERC and FS approval of a time extension to October 18, 2019 to allow additional time to complete consultation with the FS, complete environmental review, obtain the necessary permits, and construct the improvements.

Project Financial Summary:

Funded to Date:	\$ 223,935	Expenditures through end of year:	\$ 119,137
Spent to Date:	\$ 94,137	2018 - 2022 Planned Expenditures:	\$ 2,720,000
Cash flow through end of year:	\$ 25,000	Total Project Estimate:	\$ 2,839,137
Project Balance	\$ 104,798	Additional Funding Required	\$ 2,615,202

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design	\$ 20,000					\$ 20,000
Construction (Campground)		\$ 2,200,000				\$ 2,200,000
Construction (Water System)			\$ 500,000			\$ 500,000
TOTAL	\$ 20,000	\$ 2,200,000	\$ 500,000	\$ -	\$ -	\$ 2,720,000

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

Funding Comments: Project funding represents the cost estimates agreed upon by USFS and EID in the Dangermond Report for the campground improvements and have been adjusted to reflect 2015 dollars and staff time.

Project Number: 06086H
 Project Name: FERC C33 Lake Aloha Trout Removal
 Project Category: Regulatory Requirements
 Priority: 1 PM: Deason Board Approval:

Project Description:

Mandatory requirement of the FERC license. Funding only necessary in years when a spill occurs over the auxiliary dams at Lake Aloha. If spill occurs, EID is required to manually remove trout from the pools downstream of the auxiliary dams to help reduce potential impacts to mountain yellow-legged frogs by trout predation.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Section 7 of the Settlement Agreement, USFS 4(e) conditions 33, and SWRCB Water Quality Certification condition 4.

Project Financial Summary:

Funded to Date:	\$ 87,000	Expenditures through end of year:	\$ 43,694
Spent to Date:	\$ 43,694	2018 - 2022 Planned Expenditures:	\$ 12,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 55,694
Project Balance	\$ 43,306	Additional Funding Required	\$ -

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning	\$12,000	\$0	\$0	\$0	\$0	\$ 12,000
Design						\$ -
Construction						\$ -
						\$ -
TOTAL	\$ 12,000	\$ -	\$ -	\$ -	\$ -	\$ 12,000

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

Funding Comments: Amphibian surveys also required if Lake Aloha spills; funding for amphibian surveys from CIP # 06089H

Project Number: 06087H
Project Name: FERC C37.1 Fish Monitoring
Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:**

Project Description:

Mandatory requirement of the FERC license. The objective of this monitoring effort is to evaluate the status of fish populations in selected stream reaches for comparison to the ecological resource objectives to help determine if ecological resource objectives are achievable and being met, as specified in the El Dorado Hydroelectric Project No. 184 Adaptive Management Program.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Section 7 of the Settlement Agreement, USFS 4(e) conditions 37, and SWRCB Water Quality Certification condition 13.

Project Financial Summary:

Funded to Date:	\$ 290,000	Expenditures through end of year:	\$ 254,247
Spent to Date:	\$ 204,247	2018 - 2022 Planned Expenditures:	\$ 130,000
Cash flow through end of year:	\$ 50,000	Total Project Estimate:	\$ 384,247
Project Balance	\$ 35,753	Additional Funding Required	\$ 94,247

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Monitoring				\$ 50,000	\$ 50,000	\$ 100,000
Staff time				\$ 15,000	\$ 15,000	\$ 30,000
						\$ -
TOTAL	\$ -	\$ -	\$ -	\$ 65,000	\$ 65,000	\$ 130,000

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

Funding Comments:

2018

CAPITAL IMPROVEMENT PLAN Program:

FERC

Project Number: 06088H
Project Name: FERC: C37.2 Macroinvertebrate Monitoring
Project Category: Regulatory Requirements
Priority: 1 **PM:** Deason **Board Approval:**

Project Description:

Mandatory requirement of the FERC license. The objective of this monitoring effort is to evaluate the status of macroinvertebrates in selected stream reaches for comparison to the ecological resource objectives to help determine if ecological resource objectives are achievable and being met, as specified in the El Dorado Hydroelectric Project No. 184 Adaptive Management Program.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Section 7 of the Settlement Agreement, USFS 4(e) conditions 37, and SWRCB Water Quality Certification condition 13.

Project Financial Summary:

Funded to Date:	\$ 216,000	Expenditures through end of year:	\$ 190,667
Spent to Date:	\$ 140,667	2018 - 2022 Planned Expenditures:	\$ 120,000
Cash flow through end of year:	\$ 50,000	Total Project Estimate:	\$ 310,667
Project Balance	\$ 25,333	Additional Funding Required	\$ 94,667

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Monitoring				\$ 55,000	\$ 55,000	\$ 110,000
Staff time				\$ 5,000	\$ 5,000	\$ 10,000
						\$ -
						\$ -
TOTAL	\$ -	\$ -	\$ -	\$ 60,000	\$ 60,000	\$ 120,000

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

Funding Comments:

Project Number: 06089H
Project Name: FERC: C37.3 Amphibian Monitoring
Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:**

Project Description:

Mandatory requirement of the FERC license. Amphibian surveys are required June through September if at any time flows in the South Fork of the American River (SFAR) are 100 cfs or less and the diversion into the canal causes the flow in the SFAR to change 50 cfs or more in 1 day. The objective of these surveys is to assess the effects of flow fluctuations on foothill yellow-legged frog egg masses and tadpoles. Amphibian surveys for mountain yellow-legged frog (MYLF) and foothill yellow-legged frog (FYLF) are also required every five years at project reservoirs and stream reaches as part of the El Dorado Hydroelectric Project No. 184 Adaptive Management Program. Amphibian surveys are also required in years when a spill occurs over the auxiliary dams at Lake Aloha. If spill occurs, EID is required to survey for mountain yellow-legged frogs in the pools downstream of the auxiliary dams.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Section 7 of the Settlement Agreement, USFS 4(e) conditions 37, and SWRCB Water Quality Certification condition 13.

Project Financial Summary:

Funded to Date:	\$ 293,000	Expenditures through end of year:	\$ 268,224
Spent to Date:	\$ 267,224	2018 - 2022 Planned Expenditures:	\$ 80,000
Cash flow through end of year:	\$ 1,000	Total Project Estimate:	\$ 348,224
Project Balance	\$ 24,776	Additional Funding Required	\$ 55,224

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
FYLF/MYLF monitoring				\$ 75,000		\$ 75,000
SFAR flow fluctuations	\$ 5,000	\$ -	\$ -	\$ -	\$ -	\$ 5,000
Lake Aloha monitoring	\$ 12,000	\$ -	\$ -	\$ -	\$ -	\$ -
						\$ -
TOTAL	\$ 17,000	\$ -	\$ -	\$ 75,000	\$ -	\$ 80,000

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

Funding Comments: Flow fluctuation monitoring only required if license criteria is triggered. Monitoring at Lake Aloha is only necessary in years when a spill occurs over the auxiliary dams.

Project Number: 06090H
Project Name: FERC: C37.4 Riparian Species Composition
Project Category: Regulatory Requirements
Priority: 1 **PM:** Deason **Board Approval:**

Project Description:

Mandatory requirement of the FERC license. The objective of this monitoring effort is to evaluate riparian species composition at selected stream reaches for comparison to the ecological resource objectives to help determine if ecological resource objectives are achievable and being met, as specified in the El Dorado Hydroelectric Project No. 184 Adaptive Management Program.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Section 7 of the Settlement Agreement, USFS 4(e) conditions 37, and SWRCB Water Quality Certification condition 13.

Project Financial Summary:

Funded to Date:	\$ 35,000	Expenditures through end of year:	\$ 34,051
Spent to Date:	\$ 34,051	2018 - 2022 Planned Expenditures:	\$ 25,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 59,051
Project Balance	\$ 949	Additional Funding Required	\$ 24,051

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Monitoring				\$ 20,000		\$ 20,000
Staff time				\$ 5,000		\$ 5,000
						\$ -
						\$ -
TOTAL	\$ -	\$ -	\$ -	\$ 25,000	\$ -	\$ 25,000

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

Funding Comments:

2018

CAPITAL IMPROVEMENT PLAN Program:

FERC

Project Number: 06091H
 Project Name: FERC: C37.5 Riparian Vegetation Recruitment
 Project Category: Regulatory Requirements
 Priority: 1 PM: Deason Board Approval:

Project Description:

Mandatory requirement of the FERC license. The objective of this monitoring effort is to evaluate riparian vegetation recruitment at selected stream reaches for comparison to the ecological resource objectives to help determine if ecological resource objectives are achievable and being met, as specified in the El Dorado Hydroelectric Project No. 184 Adaptive Management Program.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Section 7 of the Settlement Agreement, USFS 4(e) conditions 37, and SWRCB Water Quality Certification condition 13.

Project Financial Summary:

Funded to Date:	\$ 35,000	Expenditures through end of year:	\$ 34,093
Spent to Date:	\$ 34,093	2018 - 2022 Planned Expenditures:	\$ 25,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 59,093
Project Balance	\$ 907	Additional Funding Required	\$ 24,093

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Monitoring				\$ 20,000		\$ 20,000
Staff Time				\$ 5,000		\$ 5,000
						\$ -
						\$ -
TOTAL	\$ -	\$ -	\$ -	\$ 25,000	\$ -	\$ 25,000

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

Funding Comments:

2018

CAPITAL IMPROVEMENT PLAN Program:

FERC

Project Number: 06092H
 Project Name: FERC: C37.7 Geomorphology Evaluation
 Project Category: Regulatory Requirements
 Priority: 1 PM: Deason Board Approval:

Project Description:

Mandatory requirement of the FERC license. The objective of this monitoring effort is to monitor representative stream channel areas for comparison to the ecological resource objectives to help determine if ecological resource objectives are achievable and being met, as specified in the El Dorado Hydroelectric Project No. 184 Adaptive Management Program.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Section 7 of the Settlement Agreement, USFS 4(e) conditions 37, and SWRCB Water Quality Certification condition 13.

Project Financial Summary:

Funded to Date:	\$ 104,276	Expenditures through end of year:	\$ 102,367
Spent to Date:	\$ 102,367	2018 - 2022 Planned Expenditures:	\$ 95,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 197,367
Project Balance	\$ 1,909	Additional Funding Required	\$ 93,091

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Monitoring		\$ 20,000		\$ 65,000		\$ 85,000
Staff time				\$ 10,000		\$ 10,000
				.		\$ -
						\$ -
TOTAL	\$ -	\$ 20,000	\$ -	\$ 75,000	\$ -	\$ 95,000

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

Funding Comments: Includes post-project monitoring in 2019 for Oyster Creek Stabilization Plan 06019H and Caples Spillway Channel Stabilization Plan 06076H

2018

CAPITAL IMPROVEMENT PLAN Program:

FERC

Project Number: 06096H
 Project Name: FERC: C55 Heritage Resources
 Project Category: Regulatory Requirements
 Priority: 1 PM: Deason Board Approval:

Project Description:

Mandatory requirement of the FERC license. Funding is necessary to complete and implement the Heritage Properties Management Plan (HPMP). The HPMP provides management protocols and mitigation measures for the ongoing protection of archaeological resources located within the FERC boundary.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license and USFS 4(e) conditions 55 and 56.

Project Financial Summary:			
Funded to Date:	\$ 279,580	Expenditures through end of year:	\$ 213,344
Spent to Date:	\$ 208,344	2018 - 2022 Planned Expenditures:	\$ 50,000
Cash flow through end of year:	\$ 5,000	Total Project Estimate:	\$ 263,344
Project Balance	\$ 66,236	Additional Funding Required	\$ -

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Reporting	\$45,000	*	*	*	*	\$ 45,000
Staff Time	\$ 5,000					\$ 5,000
						\$ -
						\$ -
TOTAL	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000

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

Funding Comments: Funding is needed in 2018 to conduct an evaluation of the historic rock walls that are located along the El Dorado Canal.

Project Number: 06097H
Project Name: FERC: C59 Facility Management Plan
Project Category: Regulatory Requirements

Priority: 1 **PM:** Gibson **Board Approval:**

Project Description:

Required by the License Settlement Agreement, and the USFS 4(e) Condition 59: Within 1 year of license issuance, the licensee shall file with FERC a Facility Management Plan that is approved by the FS. The licensee shall implement the plan upon approval. Every 5 years, the licensee shall prepare a 5-year plan that will identify the maintenance, reconstruction, and removal needs for Project facilities within the FERC boundary and located on Forest Service property. The plan was approved by the USFS and filed with FERC. Items remaining to be evaluated include: buildings at Spillway 20A boathouse; the winch house at the surge chamber, and the water tank shed. The next plan update is scheduled for 2017. Future costs are subject to change based on the scope of the new plan. The plan includes items to be completed after Camp 2 bridge was finished in 2016. Access can now be made to potentially remove buildings in the vicinity of spillway 20, paint or restrain remaining buildings, clear brush and trees by Camp 2 house.

Basis for Priority:

Project is required by Project 184 license and is on-going.

Project Financial Summary:			
Funded to Date:	\$ 70,000	Expenditures through end of year:	\$ 43,714
Spent to Date:	\$ 43,714	2018 - 2022 Planned Expenditures:	\$ 15,000
Cash flow through end of year:		Total Project Estimate:	\$ 58,714
Project Balance	\$ 26,286	Additional Funding Required	\$ -

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning					\$ 15,000	\$ 15,000
Design						\$ -
Construction						\$ -
						\$ -
TOTAL	\$ -	\$ -	\$ -	\$ -	\$ 15,000	\$ 15,000

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

Funding Comments:

Project Number: 06098H
Project Name: FERC: C46 thru C49 Recreation Resource Management
Project Category: Regulatory Requirements
Priority: 1 **PM:** Hawkins **Board Approval:**

Project Description:

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

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

Basis for Priority:

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

Project Financial Summary:

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

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

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

Funding Comments:

Project Number: 07003H
Project Name: FERC: C37.9 Water Quality
Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:**

Project Description:

Mandatory requirement of the FERC license. Funding is necessary to implement the water quality monitoring program at Project No. 184 reservoirs and stream reaches. The data collected from this monitoring effort will be used to characterize water quality under current project operations and help determine if applicable water quality objectives/criteria are being met and whether designated beneficial uses are protected.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Section 7 of the Settlement Agreement, USFS 4(e) conditions 37, and SWRCB Water Quality Certification condition 13.

Project Financial Summary:

Funded to Date:	\$ 472,000	Expenditures through end of year:	\$ 468,453
Spent to Date:	\$ 466,453	2018 - 2022 Planned Expenditures:	\$ 240,000
Cash flow through end of year:	\$ 2,000	Total Project Estimate:	\$ 708,453
Project Balance	\$ 3,547	Additional Funding Required	\$ 236,453

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Monitoring	\$ 40,000		\$ 40,000		\$ 40,000	\$ 120,000
Lab analysis	\$ 25,000		\$ 25,000		\$ 25,000	\$ 75,000
Staff time	\$ 15,000		\$ 15,000		\$ 15,000	\$ 45,000
						\$ -
						\$ -
TOTAL	\$ 80,000	\$ -	\$ 80,000	\$ -	\$ 80,000	\$ 240,000

Funding Sources	Percentage	2018	Amount
Water FCCs	53%		\$40,520
Water Rates	47%		\$35,933
			\$0
Total	100%		\$76,453

Funding Comments: Future monitoring dependent on agency review of first five years monitoring results (2008, 2010, 2012, 2014, and 2016). Staff is currently consulting with the FS, SWRCB, and ERC to reduce or eliminate monitoring for parameters and/or at sites that are not affected by Project operations.

Project Number: 07005H
Project Name: FERC: C51.3 RM Echo Trailhead
Project Category: Regulatory Requirements

Priority: 1 **PM:** Hawkins **Board Approval:**

Project Description:

Required by the FERC License, Settlement Agreement, and the USFS 4(e) Condition 51.3, which requires the District to provide funding for the following activities at Echo Lakes Trailhead:

- a. Toilet pumping.
- b. Trash removal/litter pick-up within the site.

Funding under this CIP is required to pay the costs for toilet pumping and capitalized labor for operations staff to clean up litter within the site.

Basis for Priority:

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

Project Financial Summary:			
Funded to Date:	\$ 30,000	Expenditures through end of year:	\$ 19,298
Spent to Date:	\$ 17,798	2018 - 2022 Planned Expenditures:	\$ 40,000
Cash flow through end of year:	\$ 1,500	Total Project Estimate:	\$ 59,298
Project Balance	\$ 10,702	Additional Funding Required	\$ 29,298

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Services	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$ 25,000
Staff time	\$ 3,000	\$ 3,000	\$ 3,000	\$ 3,000	\$ 3,000	\$ 15,000
						\$ -
						\$ -
TOTAL	\$ 8,000	\$ 8,000	\$ 8,000	\$ 8,000	\$ 8,000	\$ 40,000

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

Funding Comments:

Project Number: 07006H
Project Name: FERC: C51.5 and C51.7 RM USFS Payments
Project Category: Regulatory Requirements
Priority: 1 **PM:** Hawkins **Board Approval:**

Project Description:

Required by the FERC License, Settlement Agreement, and USFS 4(e) Condition 51, which, in part, requires the District to provide funding for the following activities:

5. Special Use Administration Funding: The licensee shall annually pay, by October 1, the amount of \$4,800 (year 2002 cost basis) to provide for performing monitoring and permit compliance assurance for the campground concessionaire special use permits at Caples Lake Campground and Silver Lake East Campground. The costs shall be escalated based on the U.S. Gross Domestic Product – Implicit Price Deflator (GDP-IDP).

7. Dispersed Area Patrol Funding on Lands Affected by the Project: The licensee shall annually pay, by October 1, \$25,000 (year 2002 cost basis). The cost shall be escalated based on the U.S. Gross Domestic Product – Implicit Price Deflator (GDP-IDP). These funds are to provide for patrol and operation of non-concessionaire developed and dispersed recreation facilities, as well as trails and other locations utilized by visitors to the Project, within and adjacent to the Project boundary. The licensee shall annually provide a boat and operator at least twice each season (time to be determined by mutual agreement between the licensee and the FS) on Caples Lake and Silver Lake to share with the FS in policing the shoreline along Silver Lake and Caples Lake, and to clean up litter.

Funding under this CIP is required to pay the annual fees to the USFS for special use administration and dispersed area patrol on USFS lands affected by the Project and for capitalized labor to patrol the shoreline and clean up litter at Silver Lake and Caples Lake.

Basis for Priority:

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

Project Financial Summary:			
Funded to Date:	\$ 408,029	Expenditures through end of year:	\$ 455,517
Spent to Date:	\$ 407,146	2018 - 2022 Planned Expenditures:	\$ 266,190
Cash flow through end of year:	\$ 48,371	Total Project Estimate:	\$ 721,707
Project Balance	\$ (47,488)	Additional Funding Required	\$ 313,678

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Fees	\$46,371	\$47,762	\$49,195	\$50,671	\$52,191	\$ 246,190
Staff time	\$ 4,000	\$ 4,000	\$ 4,000	\$ 4,000	\$ 4,000	\$ 20,000
						\$ -
						\$ -
TOTAL	\$ 50,371	\$ 51,762	\$ 53,195	\$ 54,671	\$ 56,191	\$ 266,190

Funding Sources	Percentage	2018	Amount
Water FCCs	53%		\$51,865
Water Rates	47%		\$45,994
			\$0
Total	100%		\$97,859

Funding Comments:

2018

CAPITAL IMPROVEMENT PLAN Program:

FERC

Project Number: 07010H
Project Name: FERC: C15 Pesticide Use
Project Category: Regulatory Requirements

Priority: 1 PM: Gibson Board Approval:

Project Description:

Mandatory requirement of the FERC license. Funding is requested to implement the integrated pest management plan (IPMP). The IPMP addresses pesticide use at EID facilities within the jurisdiction of the EI Dorado National Forest (ENF) and Lake Tahoe Basin Management Unit (LTBMU).

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license and USFS 4(e) condition 15.

Table with 4 columns: Category, Amount, Description, Amount. Rows include: Funded to Date (\$693,000), Expenditures through end of year (\$625,619), Spent to Date (\$625,619), 2018 - 2022 Planned Expenditures (\$360,000), Cash flow through end of year, Total Project Estimate (\$985,619), Project Balance (\$67,381), Additional Funding Required (\$292,619).

Table with 7 columns: Description of Work, 2018, 2019, 2020, 2021, 2022, Total. Rows include: Implementation (\$70,000), Equipment / Supplies (\$10,000), and a TOTAL row (\$80,000).

Table with 4 columns: Funding Sources, Percentage, 2018, Amount. Rows include: Water FCCs (53%, \$6,688), Water Rates (47%, \$5,931), and a Total row (100%, \$12,619).

Funding Comments: Need to update the plan in 2018 which is anticipated to cost approximately \$10k

2018

CAPITAL IMPROVEMENT PLAN Program:

FERC

Project Number: 07011H
 Project Name: FERC: C38 Adaptive Management Program
 Project Category: Regulatory Requirements
 Priority: 1 PM: Deason Board Approval:

Project Description:

Mandatory requirement of the FERC license. Funding is for staff time to implement the adaptive management program (Condition 38) of the FERC license. This program requires coordination with the Ecological Resources Committee (ERC), implementation of the resource monitoring program, and evaluation of monitoring results to determine if resource objectives are achievable and being met.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Section 14 of the Settlement Agreement, and USFS 4(e) condition 38.

Project Financial Summary:

Funded to Date:	\$ 587,000	Expenditures through end of year:	\$ 568,523
Spent to Date:	\$ 548,523	2018 - 2022 Planned Expenditures:	\$ 250,000
Cash flow through end of year:	\$ 20,000	Total Project Estimate:	\$ 818,523
Project Balance	\$ 18,477	Additional Funding Required	\$ 231,523

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Implementation	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$ 250,000
						\$ -
						\$ -
						\$ -
TOTAL	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 250,000

Funding Sources	Percentage	2018	Amount
Water FCCs	53%		\$16,707
Water Rates	47%		\$14,816
			\$0
Total	100%		\$31,523

Funding Comments:

Project Number: 07030H
Project Name: FERC: C57 Transportation System Management Plan
Project Category: Regulatory Requirements
Priority: 1 **PM:** Gibson **Board Approval:**

Project Description:

Condition 57 states within 1 year of license issuance, the licensee shall file with FERC a transportation system management plan that is approved by the FS for roads on or affecting National Forest System lands. The plan was prepared and approved and established the level of licensee responsibility for project-related roads. Also included in this CIP is the Trails Maintenance Plan. The next plan update is in 2017 in consultation with the Forest Service. Future costs are subject to change based on the scope of the new plan. Camp 1 culvert work is planned to be completed in 2017.

Basis for Priority:

Project is required by Project 184 license and is on-going.

Project Financial Summary:			
Funded to Date:	\$ 80,000	Expenditures through end of year:	\$ 41,855
Spent to Date:	\$ 41,855	2018 - 2022 Planned Expenditures:	\$ 25,000
Cash flow through end of year:		Total Project Estimate:	\$ 66,855
Project Balance	\$ 38,145	Additional Funding Required	\$ -

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 25,000
						\$ -
TOTAL	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 25,000

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

Funding Comments:

Project Number: 08025H
Project Name: FERC C44 Noxious Weed Monitoring
Project Category: Regulatory Requirements
Priority: 1 **PM:** Deason **Board Approval:**

Project Description:

Mandatory requirement of the FERC license. Funding is requested to implement the noxious weed plan for the prevention and control of noxious weeds at Project No. 184 facilities. The plan was amended in 2012 to reduce annual monitoring requirements to conduct annual surveys only at areas where high priority noxious weeds are known to occur and at areas where ground disturbance occurred during the previous year. The amended plan also specifies that the entire project area only needs to be surveyed every 5 years. This amendment significantly reduced the scope and cost associated with this requirement.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Section 8 of the Settlement Agreement, and USFS 4(e) condition 44.

Project Financial Summary:

Funded to Date:	\$ 225,342	Expenditures through end of year:	\$ 213,749
Spent to Date:	\$ 204,749	2018 - 2022 Planned Expenditures:	\$ 100,000
Cash flow through end of year:	\$ 9,000	Total Project Estimate:	\$ 313,749
Project Balance	\$ 11,593	Additional Funding Required	\$ 88,407

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Implementation	\$15,000	\$15,000	\$15,000	\$30,000	\$15,000	\$ 90,000
Reporting	\$ 2,000	\$ 2,000	\$ 2,000	\$ 2,000	\$ 2,000	\$ 10,000
						\$ -
						\$ -
TOTAL	\$ 17,000	\$ 17,000	\$ 17,000	\$ 32,000	\$ 17,000	\$ 100,000

Funding Sources	Percentage	2018	Amount
Water FCCs	53%		\$2,866
Water Rates	47%		\$2,541
			\$0
Total	100%		\$5,407

Funding Comments: The monitoring plan requires the entire project area be surveyed every five years - this survey is scheduled to be conducted in 2021.

Project Number: 10007
Project Name: FERC C51.1 and 51.2 RM Caples Auxiliary Dam and Boat Launch
Project Category: Regulatory Requirements
Priority: 1 **PM:** Hawkins **Board Approval:**

Project Description:

Required by the FERC License, Settlement Agreement, and the USFS 4(e) Condition 51, which, in part, requires the District to provide funding for the following activities:

1. The licensee shall be responsible for one-half the of the following maintenance at the Caples Lake Auxiliary Dam Parking Area: a) routine cleaning, repair, and maintenance of all constructed features, b) toilet pumping, c) trash removal/litter pick up at the site, d) maintenance of the signboards, and e) vegetation management.
2. The licensee shall be responsible for operating and maintaining the boat launching ramp, associated parking lot, and other public facilities constructed at this site for the term of the license. The licensee shall also be responsible for maintenance of signboards. The USFS shall be responsible for maintaining the information on those signboards to USFS standards.

Funding under this CIP is required to pay for services, capitalized labor, and materials necessary for operations and maintenance activities at the Caples Lake Auxiliary Dam parking area and at the Caples Lake Boat Launch.

Basis for Priority:

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

Project Financial Summary:			
Funded to Date:	\$ 182,000	Expenditures through end of year:	\$ 168,639
Spent to Date:	\$ 163,639	2018 - 2022 Planned Expenditures:	\$ 200,000
Cash flow through end of year:	\$ 5,000	Total Project Estimate:	\$ 368,639
Project Balance	\$ 13,361	Additional Funding Required	\$ 186,639

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Services	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$ 125,000
Staff time	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 50,000
Materials	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 25,000
						\$ -
TOTAL	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 200,000

Funding Sources	Percentage	2018	Amount
Water FCCs	53%		\$14,119
Water Rates	47%		\$12,520
			\$0
Total	100%		\$26,639

Funding Comments:

Project Number: 15016
Project Name: FERC: C50.2 Caples Lake Campground Re-Construction
Project Category: Regulatory Requirements
Priority: 1 **PM:** Wilson **Board Approval:**

Project Description:

Required by the License Settlement Agreement and the USFS 4(e) Conditions 50.2, the District must reconstruct the paved surfaces, toilets, and water system at the 36-unit USFS Caples Lake Campground, including upgrade of this facility to meet the current FS design standards and the USDA Forest Service Region 5 accessibility standards requirements of the Americans with Disabilities Act (ADA). The construction schedule shows that improvements to the Caples Lake Campground and the Caples Lake Dam Parking Project occurring at the same time to realize cost savings due to the close proximity, similarity of the work to be completed, and construction efficiencies. Project funding represents the cost estimates agreed upon by USFS and EID in the Dangermond Report for the campground improvements and have been adjusted to reflect 2017 dollars (\$1,900,000) and estimated staff time. Design for the campground re-construction will take place in 2017 and anticipated construction in 2018.

Basis for Priority:

This project is required to comply with the FERC License Condition No. 50.2 and USFS 4(e) Condition requirements. The District is requesting FERC and FS approval of a time extension to October 18, 2019 to allow additional time to complete consultation with the FS, complete environmental review, obtain the necessary permits, and construct the improvements.

Project Financial Summary:

Funded to Date:	\$ 529,380	Expenditures through end of year:	\$ 73,472
Spent to Date:	\$ 73,472	2018 - 2022 Planned Expenditures:	\$ 2,100,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 2,173,472
Project Balance	\$ 455,908	Additional Funding Required	\$ 1,644,092

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction (Campground)	\$ 1,900,000					\$ 1,900,000
Construction (Water System)	\$ 200,000					\$ 200,000
TOTAL	\$ 2,100,000	\$ -	\$ -	\$ -	\$ -	\$ 2,100,000

Funding Sources	Percentage	2018	Amount
Water FCCs	53%		\$871,369
Water Rates	47%		\$772,723
			\$0
Total	100%		\$1,644,092

Funding Comments: Project funding represents the cost estimates agreed upon by USFS and EID in the Dangermond Report for the campground improvements and have been adjusted to reflect 2015 dollars and staff time.

Project Number: 16028
Project Name: Mill Creek Diversion Structure
Project Category: Reliability & Service Level Improvements
Priority: 1 **PM:** Mutschler **Board Approval:**

Project Description:

The Mill Creek Diversion is part of the Federal Energy Regulatory Commission (FERC) Project 184. The structure is no longer in use because the segment of the El Dorado Canal that traversed Mill Creek was replaced by the Mill-Bull Tunnel in 2003. At the time of relicensing in 2006, the District had anticipated re-establishing the diversion at this location and therefore Mill Creek was included in several resource monitoring plans required by the FERC license. However, in 2012, the District successfully relocated this water right for diversion at Folsom Reservoir through a Warren Act contract with the U.S. Bureau of Reclamation. Since that time, the District has sought variances from FERC to discontinue resource monitoring on this stream because the diversion is no longer in use. Most of the facilities associated with the diversion were removed during the restoration of the canal bench. The remaining components of the diversion structure are limited to a steel-reinforced concrete structure approximately 17 feet long by 1.5 feet wide with a maximum height of approximately 3 feet. The U.S. Forest Service (USFS) has directed the District to remove the remaining structure because it is located on USFS lands and FERC has directed the District to request removal of the diversion as a project feature included in the FERC license. This project was reviewed by FERC during a 2015 project inspection and will be subject to review at the next inspection scheduled for 2020. The District is planning to remove the structure in 2018 or 2019 depending on when all necessary regulatory authorizations are received.

Basis for Priority:

EID would not be in compliance with the the requirements of the FERC License.

Project Financial Summary:

Funded to Date:	\$ 50,000	Expenditures through end of year:	\$ 19,807
Spent to Date:	\$ 19,807	2018 - 2022 Planned Expenditures:	\$ 310,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 329,807
Project Balance	\$ 30,193	Additional Funding Required	\$ 279,807

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design	\$ 60,000					\$ 60,000
Construction		\$ 250,000				\$ 250,000
						\$ -
TOTAL	\$ 60,000	\$ 250,000	\$ -	\$ -	\$ -	\$ 310,000

Funding Sources	Percentage	2018	Amount
Water Rates	47%		\$14,009
Water FCCs	53%		\$15,798
			\$0
Total	100%		\$29,807

Funding Comments:

Water Projects

Project Number: 11032
Project Name: Main Ditch - Forebay to Reservoir 1
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Eden-Bishop **Board Approval:**

Project Description:

The Upper Main Ditch is approximately three miles long and conveys a maximum of 15,080 acre-feet of raw water annually at a maximum rate of 40 cubic feet per second from Forebay Reservoir to the Reservoir 1 Water Treatment Plant. Because the Main Ditch is an unlined earthen canal, a portion of the flow up to 1,800 acre-feet per year on average, is lost to seepage and evapotranspiration. This water could be made available for drinking water or power generation. Piping the Upper Main Ditch provides: improved supply reliability; elimination of contamination potential; reduced operations and maintenance costs; water rights protection from unreasonable use claims; reduction in Folsom Reservoir pumping costs in the long term; and on an interim basis, increased hydroelectric revenues. The District has received \$568,000 in grant funding from the El Dorado County Water Agency (EDCWA) that has been used to conduct environmental, wetlands, and cultural resources studies, surveys and design work. Additional grant funding from EDCWA has been applied for for final design and EIR preparation in the amount of \$251,500. The Department of Water Resources and Reclamation have both committed \$1 M grants for construction of the project. Final design, right of way acquisition and preparation of an environmental impact report are currently underway. The project cost estimate is based on 60% design and includes a 20% construction contingency. Construction is planned to begin Fall 2018. Total project cost is in the range of \$9.6 M - \$10.4 M depending on the alignment chosen. Estimated annual expenditures are reduced to account for grants and Carson Creek conservation charges.

Basis for Priority:

Improves water quality, conserves water supply, protects health and safety of customer and the public and reduces operations costs.

Project Financial Summary:

Funded to Date:	\$ 1,956,056	Expenditures through end of year:	\$ 1,592,214
Spent to Date:	\$ 1,292,214	2018 - 2022 Planned Expenditures:	\$ 5,250,000
Cash flow through end of year:	\$ 300,000	Total Project Estimate:	\$ 10,442,214
Project Balance	\$ 363,842	Additional Funding Required	\$ 4,886,158

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Design/Environmental	\$250,000	\$175,000	\$175,000			\$ 600,000
Construction Costs	\$500,000	\$4,100,000	\$3,600,000			\$ 8,200,000
Easement Acquisition	\$50,000					\$ 50,000
Subtotal	\$800,000	\$4,275,000	\$3,775,000			\$ 8,850,000
Grant offsets	\$300,000	\$1,700,000	\$1,600,000			\$ 3,600,000
NET TOTAL	\$ 500,000	\$ 2,575,000	\$ 2,175,000	\$ -	\$ -	\$ 5,250,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$136,158
			\$0
			\$0
Total	100%		\$136,158

Funding Comments: The project replaces an existing facility, therefore is funded by water rates. Estimated annual capital expenditures have been reduced by grant funding from El Dorado County Water Agency, Department of Water Resources and US Bureau of Reclamation and Carson Creek conservation charge in the amount of approximately \$3.6 M.

Project Number: 11040
Project Name: Ditch Water Rights SCADA Upgrades
Project Category: Reliability & Service Level Improvements
Priority: 3 **PM:** Strahan **Board Approval:**

Project Description:

In August 2010, the District and USBR executed a Warren Act Contract for the Rediversion of the Ditch Water Rights. A requirement of that contract is to report diversions at several gaging stations to the USBR on a regular basis. In order to provide accurate and reliable diversion data, the gage stations known as S42, W5, and W4 require upgrading to automation. The automation upgrades consist of installation of telemetry equipment and SCADA. Each station is estimated to cost \$5,000 to \$10,000 each to install.

Basis for Priority:

Since the Warren Act has been signed, the District is required to report to the USBR. Upgrading the SCADA at the gage stations will provide reliable and accurate reporting.

Project Financial Summary:			
Funded to Date:	\$ 40,000	Expenditures through end of year:	\$ 35,420
Spent to Date:	\$ 35,420	2018 - 2022 Planned Expenditures:	\$ 5,000
Cash flow through end of year:		Total Project Estimate:	\$ 40,420
Project Balance	\$ 4,580	Additional Funding Required	\$ 420

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction	\$ 5,000					\$ 5,000
						\$ -
TOTAL	\$ 5,000	\$ -	\$ -	\$ -	\$ -	\$ 5,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$420
			\$0
			\$0
Total	100%		\$420

Funding Comments:

Project Number: 13013
Project Name: Tank 7 In-Conduit Hydro
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Eden-Bishop **Board Approval:**

Project Description:

The Tank 7 In-conduit Hydroelectric Project consists of a 484 kW hydroelectric station on the Pleasant Oak Main where pressure is currently dissipated through a pressure reducing station. Annual generation is estimated to be 1,765,000 kilowatt-hours. Construction is 60% complete and the hydroelectric station is anticipated to be commissioned in early 2018. The PG&E Interconnection Agreement has been executed and final payment made.

Basis for Priority:

The project was evaluated over a 30-year planning horizon with 3% debt financing. The expected payback period is 17 years and the net present value is estimated to be \$1,590,000. The financial analysis is based on PG&E's Renewable Energy Self-Generation Bill Credit Transfer (RES-BCT) program, that will provide a bill credit for the generation portion of the District's PG&E utility bills at Reservoir 7 and the Folsom Raw Water Pump Station site. RES-BCT allows a Local Government with one or more eligible renewable generating facilities to export energy to the grid and receive generation credits that can be used to offset electricity charges at one or more other locations.

Project Financial Summary:			
Funded to Date:	\$ 3,289,816	Expenditures through end of year:	\$ 2,933,014
Spent to Date:	\$ 1,433,014	2018 - 2022 Planned Expenditures:	\$ 350,000
Cash flow through end of year:	\$ 1,500,000	Total Project Estimate:	\$ 3,283,014
Project Balance	\$ 356,802	Additional Funding Required	\$ -

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Engineering and construction admin.	\$ 30,000					\$ 30,000
PG&E Interconnection						\$ -
Construction	\$ 320,000					\$ 320,000
TOTAL	\$ 350,000	\$ -	\$ -	\$ -	\$ -	\$ 350,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$0
Water FCCs			\$0
			\$0
Total	100%		\$0

Funding Comments: This project will generate bill offsets for the Tank 7 site and the Folsom Lake Raw Water Pump Station and therefore should be funded with water rates.

Project Number: 14027
Project Name: PLC Replacement
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Strahan **Board Approval:**

Project Description:

The project involves replacing 8 antiquated and end of life cycle Tesco PLC control panels / radio units. The current units are controllers and radio units. Replacing these units fixes two issues at once. The new PLCs will have a separate modern radio, greatly stabilizing the network and control system. Additionally this also includes the removal of one Tesco repeater site (Res12) and two master Tesco PLCs (Res1 & Res A). Some of these sites are dependent on each other for proper control and radio communication. This interdependency makes it infeasible to replace these sites one at a time. This must be a coordinated effort requiring labor beyond our current staffing levels.

The following sites need to be replaced: Gold Hill Intertie, Dolomite, Union Mine PS, Pollock Pines, Sportsman's PS, Moose Hall Res, Res 2. (3) of these sites can be replaced with a smaller and less expensive control panel - Pollock Pines, Res A (incorporate into the current CL), Res 2 (remote I/O). The remaining (5) sites will need full control panels. These Tesco units are long past life cycle replacement by about 10 to 15 years.

Basis for Priority:

These units are transmitting on an illegal frequency under the FCC's new regulations, as of 2013, and are not capable of being modified to meet compliance. EID has been notified by the FCC to modify all of our licensed frequency to meet narrow banding requirements. The replacement of these units will bring our radio system into compliance and stabilize a fragile water distribution control system. In addition to the great risk of interrupted service to our customers, EID is needlessly spending a lot of resources (Mechanics, Operators, Electrician, & Control Technicians) in an attempt to keep this system running. New parts have not been available for this technology for years. Technical support is not available and the operating software is not supported.

Project Financial Summary:			
Funded to Date:	\$ 196,862	Expenditures through end of year:	\$ 188,354
Spent to Date:	\$ 138,354	2018 - 2022 Planned Expenditures:	\$ 45,000
Cash flow through end of year:	\$ 50,000	Total Project Estimate:	\$ 233,354
Project Balance	\$ 8,508	Additional Funding Required	\$ 36,492

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Design & PM						\$ -
Construction	\$ 45,000					\$ 45,000
						\$ -
						\$ -
TOTAL	\$ 45,000	\$ -	\$ -	\$ -	\$ -	\$ 45,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$36,492
			\$0
			\$0
Total	100%		\$36,492

Funding Comments:

Project Number: 15009
Project Name: Sly Park Intertie Improvements
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Eden-Bishop **Board Approval:**

Project Description:

The Sly Park Intertie is a key component of supply reliability in times of drought and during emergencies. It provides water delivery flexibility between Sly Park and Forebay supplies. The Intertie includes approximately 3.4 miles of 22"/30" steel waterline built under emergency conditions just after the 1976-77 drought. The unlined pipeline has corroded significantly, resulting in periodic leaks and is currently out of service. The Sly Park Intertie Improvements were identified as a supply reliability project in the 2013 Integrated Water Resources Master Plan. Previous engineering reports from the mid 1990's and in 2006 explored the possibility of rehabilitating the pipeline with a non-structural liner. The 2006 Basis of Design Report (BODR) concluded that even with 13-30% wall thickness loss, the pipeline had adequate strength for a non-structural lining option. An updated BODR is currently being prepared that includes a new condition assessment; analysis of changed operations that could reduce pumping head up to 180 feet by pumping water from Reservoir A to Reservoir 1 during annual Forebay outages; a rehabilitation methodology versus complete replacement alternatives analysis; and a financial analysis. The ability to move water between Reservoir 1 and Reservoir A will also allow for a long overdue inspection of the 60 year old Camino Conduit between Sly Park Reservoir and Reservoir A and provide a longer window for scheduled Reservoir A WTP maintenance. Estimated project cost of \$15 M is based on a hybrid lining/replacement combination presented in the December 2016 Draft Evaluation of Rehabilitation Alternatives Technical Memorandum. The technical memorandum also identifies \$4.4 M for a new pump station at Reservoir A that would pump water to Reservoir 1 during the Forebay outage. The feasibility of this project element has not been fully investigated to date and therefore is not included in the planning horizon of this CIP. Cost estimates are based on a 10% design level of confidence and include a 30% construction contingency. Typical contingencies for 10% design level cost estimates range between 30% and 100%. The contingency used for this cost estimate is at the low end of the range and higher actual costs are likely.

Basis for Priority:

Lining the pipeline will slow corrosion and extend its life, ensuring water supply flexibility/reliability between the two major gravity supply sources that provide two thirds of the District's water supply.

Project Financial Summary:

Funded to Date:	\$ 556,052	Expenditures through end of year:	\$ 382,323
Spent to Date:	\$ 312,323	2018 - 2022 Planned Expenditures:	\$ 14,700,000
Cash flow through end of year:	\$ 70,000	Total Project Estimate:	\$ 15,082,323
Project Balance	\$ 173,729	Additional Funding Required	\$ 14,526,271

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Engineering	\$50,000	\$ 300,000	\$ 300,000	\$ 50,000	\$ 50,000	\$ 750,000
Environmental		\$ 200,000	\$ 200,000	\$ 75,000	\$ 25,000	\$ 500,000
Condition Assessment	\$350,000					\$ 350,000
Right of Way		\$ 50,000	\$ 50,000			\$ 100,000
Construction Management/Inspection				\$ 500,000	\$ 500,000	\$ 1,000,000
Construction				\$ 6,000,000	\$ 6,000,000	\$ 12,000,000

TOTAL	\$ 400,000	\$ 550,000	\$ 550,000	\$ 6,625,000	\$ 6,575,000	\$ 14,700,000
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Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$226,271
			\$0
Total	100%		\$226,271

Funding Comments: The project extends the life of the facility and restores the intended design capacity, therefore is funded by water rates.

Project Number: 15024
Project Name: Folsom Raw Water Pump Station Improvements
Project Category: Reliability & Service Level Improvements
Priority: 1 **PM:** Money **Board Approval:**

Project Description:

The 2013 Integrated Water Resources Master Plan recommends construction of a new Folsom Raw Water Pump Station (FLRWPS) to improve the reliability of this water supply source for El Dorado Hills. The existing raw water C-side intake pumps were designed as a temporary facility in anticipation of a new raw water pump station with a temperature control device (TCD). The original TCD is no longer being contemplated and the temporary C-Side pumps have completely failed as designed. The A-side intake pumps are at the end of their useful life and the B-side pumps have several years of useful life remaining. The raw water pump station needs to be upgraded to provide for reliability and long-term operational needs. A concept evaluation was completed in December of 2015 that considered alternatives for a permanent, efficient, and cost effective replacement to meet the 26 MGD firm capacity. The evaluation recommends a new facility with multiple submersible pumps on the inclined slope pumping directly to the EDHWTP at an estimated project cost of \$20 M. This estimate is based on a conceptual level of confidence and includes a 30% construction contingency. Typical contingencies for conceptual level cost estimates range between 30% and 100%. The contingency used for this cost estimate is at the low end of the range and higher actual costs are likely. Preparation of a Basis of Design Report began in April 2017 that is further developing the project, considering phasing, and refining project cost estimates by phase. Final design and environmental review will follow the BODR in late 2017 with the first phase of construction planned to begin Fall 2018. It is anticipated Phase 1 project costs will be in the range of \$14 M with Phase 2 improvements occurring beyond the 2018/2022 CIP planning horizon.

Basis for Priority:

The critical nature of this pump station, age and poor condition of pumps, number of repeated pump failures, difficulty obtaining and high cost of repair parts for 1958 vintage A-side booster pumps is the basis for Priority 1 ranking. This project is needed to maintain service and meet demand for public health and safety purposes.

Project Financial Summary:

Funded to Date:	\$ 1,230,808	Expenditures through end of year:	\$ 499,518
Spent to Date:	\$ 199,518	2018 - 2022 Planned Expenditures:	\$ 13,510,000
Cash flow through end of year:	\$ 300,000	Total Project Estimate:	\$ 14,009,518
Project Balance	\$ 731,290	Additional Funding Required	\$ 12,778,710

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Design/Environmental	\$ 800,000	\$ 10,000	\$ 10,000			\$ 820,000
Construction management	\$ 140,000	\$ 450,000	\$ 100,000			\$ 690,000
Construction Costs	\$ 500,000	\$ 8,500,000	\$ 3,000,000			\$ 12,000,000
Grant Offset						\$ -
TOTAL	\$ 1,440,000	\$ 8,960,000	\$ 3,110,000	\$ -	\$ -	\$ 13,510,000

Funding Sources	Percentage	2018	Amount
Water Rates	66%		\$467,749
Water FCCs	34%		\$240,961
Total	100%		\$708,710

Funding Comments: The existing pump station has capacity for 17,446 edus. Currently there are 11,446 edus connected with 6000 edus of remaining capacity. Therefore the replacement project should be funded with 66% water rates (11,446/17,446) and 34% water FCC (6,000/17,446).

Project Number: 15025
Project Name: American River Bridge Pipeline
Project Category: Reliability & Service Level Improvements
Priority: 1 **PM:** Brink **Board Approval:** 04/10/17

Project Description:

Caltrans is replacing the existing Highway 49 bridge over the South Fork of the American River in Coloma/Lotus. The District has an existing waterline on the bridge and road approaches that is impacted by the proposed project. Approximately 3,550 feet of 6-inch and 8-inch waterline is impacted by the Caltrans Project and require relocation at the District's costs since located in the Caltrans right-of-way.

The relocation of the waterline is being performed by a contractor retained by Caltrans. On April 10, 2017, based on bids received by Caltrans, the Board approved funding for the construction of the project. The project is in active construction and scheduled for completion in 2018.

Basis for Priority:

The District has a waterline in the Caltrans right-of-way that will be impacted by their proposed project. The District must pay associated relocation costs. The Board previously approved a Utility Agreement with Caltrans for this work.

Project Financial Summary:

Funded to Date:	\$ 1,652,082	Expenditures through end of year:	\$ 1,393,707
Spent to Date:	\$ 1,393,707	2018 - 2022 Planned Expenditures:	\$ 75,000
Cash flow through end of year:		Total Project Estimate:	\$ 1,468,707
Project Balance	\$ 258,375	Additional Funding Required	\$ -

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction	\$ 75,000					\$ 75,000
						\$ -
TOTAL	\$ 75,000	\$ -	\$ -	\$ -	\$ -	\$ 75,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$0
			\$0
			\$0
Total	100%		\$0

Funding Comments:

Project Number: 16005
Project Name: Diamond Springs Parkway / Hwy 49 Improvements
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Eden-Bishop **Board Approval:**

Project Description:

As part of the County's planned Diamond Springs Parkway project, the County plans to make improvements to Hwy 49 in Diamond Springs that will impact existing waterlines. All of the impacted waterlines are located within existing senior easements and therefore the County is required to perform the relocations at their costs. Due to limited hydraulic capacity of some of the existing water lines, the District plans to increase the size (from 8" to 12") as part of the project. The District will be responsible for the incremental cost of the upsizing. It is anticipated a project specific reimbursement agreement between the County and the District will be brought to the Board in late 2017 or early 2018. The County anticipates construction to commence in late 2018.

Basis for Priority:

All of the impacted waterlines are in existing senior easements, and must be relocated at the County's costs. However, based on hydraulic modeling, the District desires to increase the size of these facilities as part of the project and will be responsible for the increased cost. This work would be considered Priority 2.

Project Financial Summary:

Funded to Date:	\$ 25,000	Expenditures through end of year:	\$ 20,724
Spent to Date:	\$ 15,724	2018 - 2022 Planned Expenditures:	\$ 147,500
Cash flow through end of year:	\$ 5,000	Total Project Estimate:	\$ 168,224
Project Balance	\$ 4,276	Additional Funding Required	\$ 143,224

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Engineering	\$ 7,500					\$ 7,500
Inspection	\$ 15,000					\$ 15,000
Construction	\$ 110,000					\$ 110,000
Water Modeling	\$ 15,000					\$ 15,000
TOTAL	\$ 147,500	\$ -	\$ -	\$ -	\$ -	\$ 147,500

Funding Sources	Percentage	2018	Amount
Water Rates	0%		\$0
Water FCC's	100%		\$143,224
Total	100%		\$143,224

Funding Comments: Expenditures are estimates based on a draft County reimbursement agreement. The District share will only pay for upsizing of existing facilities with underlying senior easement rights.

Project Number: 16016
Project Name: DOT Construction Projects - Water
Project Category: State/County Road Projects

Priority: 1 **PM:** Wilson **Board Approval:**

Project Description:

At Board direction, staff has streamlined contracting procedures with the El Dorado County Department of Transportation (DOT) and City of Placerville for joint projects. EID has many water and sewer lines in roads maintained by the El Dorado County Department of Transportation (DOT). From time to time, DOT initiates a road project where either the EID water, wastewater, or recycled waterlines need to be relocated or upgraded, which presents opportunities to join forces with DOT in the project by simultaneously upgrading and/or relocating our facilities. On August 10, 2015 the Board reauthorized the Master Reimbursement Agreement which is utilized for such projects. The agreement is good for five years.

This CIP is intended for staff coordination with DOT throughout the year and for minor projects. This CIP will also be used to fund minor water related relocations performed by the County under the Agreement. Larger utility relocation projects will have a specific CIP that identifies all the work associated with that project.

Basis for Priority:

Projects are required by law, regulation, contract, agreement or license. This includes projects required to meet requirements imposed by federal, State, or local governments. This also includes relocation of District facilities located in the public right-of-way as necessitated by County road improvements.

Project Financial Summary:

Funded to Date:	\$ 47,777	Expenditures through end of year:	\$ 23,204
Spent to Date:	\$ 23,204	2018 - 2022 Planned Expenditures:	\$ 125,000
Cash flow through end of year:		Total Project Estimate:	\$ 148,204
Project Balance	\$ 24,573	Additional Funding Required	\$ 100,427

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$ 125,000
Construction Costs						\$ -
						\$ -
TOTAL	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 125,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$427
			\$0
			\$0
Total	100%		\$427

Funding Comments: Typically work involves replacement or relocation of existing facilities. However, funding split will be further evaluated for each project.

Project Number: 16039
Project Name: City of Placerville - Western Placerville Interchange Project
Project Category: Reliability & Service Level Improvements
Priority: 1 **PM:** Wilson **Board Approval:**

Project Description:

The City of Placerville plans to construct a new off ramp on east bound Highway 50 at Ray Lawyer Drive. The project is known as the "Western Placerville Interchange Phase 2". The project will require rerouting portions of Forni Road to make way for the off ramp. The District has existing waterlines in Forni Road that will be impacted by the project and require relocation at District cost since in the public right of way. Based on preliminary information from the City, approximately 1,800 feet of 12-inch waterline may be impacted.

As the District has done with many similar projects with the County, the District retained the City's consultant to design the waterline relocation. The relocation work would be performed by a contractor retained by the City. The Board approved a reimbursement agreement with the City in 2017. The City intends to start construction in the fall of 2018.

Basis for Priority:

The District has facilities that are in the public right of way that will be impacted by the planned projects. The relocation must be done at the District's cost to make way for the City's project.

Project Financial Summary:

Funded to Date:	\$ 107,000	Expenditures through end of year:	\$ 24,121
Spent to Date:	\$ 14,121	2018 - 2022 Planned Expenditures:	\$ 800,000
Cash flow through end of year:	\$ 10,000	Total Project Estimate:	\$ 824,121
Project Balance	\$ 82,879	Additional Funding Required	\$ 717,121

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction	\$ 400,000	\$ 400,000				\$ 800,000
						\$ -
TOTAL	\$ 400,000	\$ 400,000	\$ -	\$ -	\$ -	\$ 800,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$317,121
			\$0
			\$0
Total	100%		\$317,121

Funding Comments: Relocation of existing waterlines.

Project Number: 16048
Project Name: Outingdale Water Intake Replacement
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Wilson **Board Approval:**

Project Description:

The community of Outingdale is a satellite community, with only one source of water for public health and safety purposes. The source is the existing river intake which consists of a slotted well screen and flexible hose laid across the river bottom. During low river flow conditions, the intake screen experiences insufficient water cover and often vortexes and air binds the suction lift pumps. During the recent drought the river levels were sufficiently low to completely expose the intake screen and totally prevent the pumping or delivery of any water to the community. All water instead had to be delivered to Outingdale by utilizing a bulk haul water tanker truck to bring water from elsewhere within the District's distribution system. New facilities will include 1) a horizontal lateral intake screen within a gravel infiltration gallery in the river bed, (similar to a Ranney Collector Well style infiltration gallery) and 2) a packaged in-ground pump station with two submersible pumps with a capacity of 100 gpm each.

Installation of the facilities will involve minor piping to tie-in the new submersible pump station discharge piping to the existing pump station discharge piping, and abandonment of the old suction lift style centrifugal pumps. Electrical power and control will be run to the new package pump station. The proposed project, with revised horizontal lateral intake well screen will allow continued pumping via the in-ground infiltration gallery despite drought induced low river levels which may occur during drought and significantly improve the reliability of the water supply year round.

Basis for Priority:

Project will improve reliability of the Outingdale infrastructure and supply. The project was awarded Prop 84 implementation grant funding of \$160,000 in 2016.

Project Financial Summary:

Funded to Date:	\$ 26,500	Expenditures through end of year:	\$ 8,033
Spent to Date:	\$ 3,033	2018 - 2022 Planned Expenditures:	\$ 140,000
Cash flow through end of year:	\$ 5,000	Total Project Estimate:	\$ 300,000
Project Balance	\$ 18,467	Additional Funding Required	\$ 121,533

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design	\$ 50,000					\$ 50,000
Construction	\$ 50,000	\$ 200,000				\$ 250,000
Subtotal	\$ 100,000	\$ 200,000	\$ -	\$ -	\$ -	\$ 300,000
Grant Offset		\$ 160,000				\$ 160,000
NET TOTAL	\$ 100,000	\$ 40,000	\$ -	\$ -	\$ -	\$ 140,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$81,533
			\$0
			\$0
Total	100%		\$81,533

Funding Comments: Preliminary costs estimated at \$250,000. Annual expenditures reflect cost offset by Prop 84 grant (\$160,000).

Project Number: 17035
Project Name: Green Valley Bridge Relocation
Project Category: State/County Road Projects
Priority: 1 **PM:** Wilson **Board Approval:**

Project Description:

El Dorado County plans to construct two new bridges on Green Valley Road one at Mound Springs Creek and one at Indian Creek. The District has existing waterlines and two pressure reducing stations (Green Valley PRS #1 and Greenstone PRS #1) in Green Valley Road that will be impacted by the project and require relocation at District cost since in the public right of way. Based on preliminary information from the County, approximately 900 feet of 8 and 12-inch waterline may be impacted. The relocation work needs to be completed in front of the County's project next year as the District is potentially in conflict with the new bridge abutments. The District has pre-purchased all necessary pressure reducing valves, isolation valves, fittings, and enclosure for the relocation of both pressure reducing stations.

Basis for Priority:

The District has facilities that are in the public right of way that will be impacted by the planned projects. The relocation must be done at the District's cost to make way for the County's project.

Project Financial Summary:

Funded to Date:	\$ 50,000	Expenditures through end of year:	\$ 34,625
Spent to Date:	\$ 14,625	2018 - 2022 Planned Expenditures:	\$ 325,000
Cash flow through end of year:	\$ 20,000	Total Project Estimate:	\$ 359,625
Project Balance	\$ 15,375	Additional Funding Required	\$ 309,625

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Design	\$ 25,000					\$ 25,000
Construction	\$ 300,000					\$ 300,000
TOTAL	\$ 325,000	\$ -	\$ -	\$ -	\$ -	\$ 325,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$309,625
Total	100%		\$309,625

Funding Comments: Relocation of existing facilities.

2018

CAPITAL IMPROVEMENT PLAN Program:

Water

Project Number: **PLANNED**
 Project Name: **Construction Storage Facility**
 Project Category: **Reliability & Service Level Improvements**
 Priority: **3** PM: **Strahan** Board Approval:

Project Description:

Build construction storage facility in EID upper yard to house material and equipment for increased security and protection from elements.

Basis for Priority:

Improve efficiency

Project Financial Summary:

Funded to Date:	\$ -	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 230,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 230,000
Project Balance	\$ -	Additional Funding Required	\$ 230,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design	\$ 30,000					\$ 30,000
Construction		\$ 200,000				\$ 200,000
						\$ -
TOTAL	\$ 30,000	\$ 200,000	\$ -	\$ -	\$ -	\$ 230,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$30,000
			\$0
			\$0
Total	100%		\$30,000

Funding Comments:

2018

CAPITAL IMPROVEMENT PLAN Program:**Water**

Project Number: PLANNED
Project Name: Folsom - EDH Water Treatment Plant Improvements Program
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Wilson **Board Approval:**

Project Description:

This program consists of targeted process, control and facility improvements from the Folsom Lake Intake to and including the El Dorado Hills Water Treatment Plant. Several improvements have been identified to insure regulatory compliance, increased service reliability, reduced maintenance expenditures and extended facility life. Individual improvements may change and/or be replaced with other more critical improvements as priorities are set and projects developed. Cost estimates are at the conceptual level of confidence. As projects are better defined, individual project numbers will be established. This also includes facility improvement funding available for any unplanned assets that have failed or been found to have reached their service life and need to be replaced throughout the distribution system or treatment plant.

Basis for Priority:

Replacement and improvements to inefficient processes, obsolete controls and substandard facilities will support regulatory compliance, improvement service reliability and reduce maintenance costs. This program is required to protect and preserve the health and safety of customers and the public.

Project Financial Summary:

Funded to Date:		Expenditures through end of year:	\$ -
Spent to Date:		2018 - 2022 Planned Expenditures:	\$ 725,000
Cash flow through end of year:		Total Project Estimate:	\$ 725,000
Project Balance	\$ -	Additional Funding Required	\$ 725,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Plant Assessment/Facility Master Plan	\$ 325,000					\$ 325,000
Facility Improvements		\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 400,000
TOTAL	\$ 325,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 725,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$325,000
			\$0
			\$0
Total	100%		\$325,000

Funding Comments: The project replaces existing facilities, therefore is funded by water rates.

2018

CAPITAL IMPROVEMENT PLAN Program:

Water

Project Number: PLANNED
Project Name: Pressure Reducing Station Rehabilitation and Replacement Program
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Strahan **Board Approval:**

Project Description:

The District has numerous pressure reducing stations throughout the service area to keep line pressures within acceptable ranges as it travels from Pollock Pines down to El Dorado Hills. This program is to identify specific stations to rehabilitate, replace or upgrade to maintain service reliability throughout the District. Loss of pressure control or valve failure can result in extensive water line damage or complete failure. Program management expenditures identified include prioritizing and designing each PRS replacement. Actual PRS replacement costs for each individual station will be brought to the Board for specific approval.

Basis for Priority:

Existing stations are incurring increasing maintenance costs and reduced service reliability due to age and degradation.

Project Financial Summary:

Funded to Date:	\$ 134,933	Expenditures through end of year:	\$ 86,402
Spent to Date:	\$ 56,385	2018 - 2022 Planned Expenditures:	\$ 2,280,000
Cash flow through end of year:	\$ 30,017	Total Project Estimate:	\$ 2,366,402
Project Balance	\$ 48,531	Additional Funding Required	\$ 2,231,469

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
MHPRS PN17024	\$150,000	\$150,000				\$ 300,000
EDM1 PRS5 PN17016	\$10,000					\$ 10,000
GVPRS2 PN17014	\$40,000					\$ 40,000
LVPRS1 PN17015	\$40,000					\$ 40,000
EDM2 PRS6 PN16002	\$70,000					\$ 70,000
POM PRS #4 PN 17038	\$25,000					\$ 25,000
DSM PRS22 Control		\$60,000				\$ 60,000
Francisco PRS1		\$60,000				\$ 60,000
EDH PRS3		\$50,000				\$ 50,000
EDM1 PRS13 RES 6			\$60,000	\$550,000		\$ 610,000
RES2-6 Inlet From MH			\$50,000		\$650,000	\$ 700,000
Greenstone Tank PRS			\$75,000			\$ 75,000
Arrowbee PRS1					\$65,000	\$ 65,000
EDM2 PRS5					\$100,000	\$ 100,000
PVS PRS1					\$75,000	\$ 75,000
HEP PRS1						\$ -
TOTAL	\$ 335,000	\$ 320,000	\$ 185,000	\$ 550,000	\$ 890,000	\$ 2,280,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$286,469
Total	100%		\$286,469

Funding Comments: Projects involve upgrade of existing facilities and no planned increase in capacity, therefore funding is 100% water rates.

Project Number: PLANNED
Project Name: Pump Station Rehabilitation and Replacement Program
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Wilson **Board Approval:**

Project Description:

The District has numerous distribution pump stations throughout the water service area that operate to increase pressures to customers at higher elevations. This is an annual program to replace, rehabilitate or upgrade pump stations that have reached the end of their service life. Engineering and O&M staff identify and prioritize pump stations in need of upgrades to ensure reliable supply of the necessary pressure and flow to their respective service areas, and to comply with fire flow requirements and incorporate emergency standby power where needed. Replacement components include pumps, hydropneumatic tanks, electrical control, valves, yard piping, SCADA equipment, and buildings to accommodate equipment.

Basis for Priority:

Potential interruption to service throughout the District in the event of failures and continued use of expiring equipment that may pose a threat to the health and safety of customers, employees, and the public.

Project Financial Summary:			
Funded to Date:	\$ 50,000	Expenditures through end of year:	\$ 25,685
Spent to Date:	\$ 5,685	2018 - 2022 Planned Expenditures:	\$ 1,250,000
Cash flow through end of year:	\$ 20,000	Total Project Estimate:	\$ 1,275,685
Project Balance	\$ 24,315	Additional Funding Required	\$ 1,225,685

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Design	\$ 50,000			\$ 75,000	\$ 75,000	\$ 200,000
Crestview PN17011		\$ 200,000				\$ 200,000
Strawberry Raw Water/Treatment	\$ 350,000					\$ 350,000
Ridgeview					\$ 250,000	\$ 250,000
Oak Ridge					\$ 250,000	\$ 250,000
Monte Vista						\$ -
Quartz						\$ -
Swansboro						\$ -
Upper Rancho Del Sol						\$ -
TOTAL	\$ 400,000	\$ 200,000	\$ -	\$ 75,000	\$ 575,000	\$ 1,250,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$375,685
			\$0
Total	100%		\$375,685

Funding Comments: Work involves planning the upgrade of existing facilities for reliability of service and does not increase capacity.

Project Number: PLANNED
Project Name: Reservoir 1 Water Treatment Plant Improvements Program
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Wilson **Board Approval:**

Project Description:

This program consists of targeted process, control and facility improvements at the Reservoir 1 Water Treatment Plant. This also includes any improvements to the Strawberry Water Treatment Plant facility as determined by life cycled assets or regulatory requirements. Several improvements have been identified to insure regulatory compliance, increased service reliability, reduced maintenance expenditures and extended facility life. Individual improvements may change and/or be replaced with other more critical improvements as priorities are set and projects developed. Cost estimates are at the conceptual level of confidence. As projects are better defined, individual project numbers will be established. This also includes facility improvement funding available for any unplanned assets that have failed or been found to have reached their service life and need to be replaced throughout the distribution system or treatment plant.

Basis for Priority:

Replacement and improvements to inefficient processes, obsolete controls and substandard facilities will support regulatory compliance, improvement service reliability and reduce maintenance costs. This program is required to protect and preserve the health and safety of customers and the public.

Project Financial Summary:

Funded to Date:	\$ 15,000	Expenditures through end of year:	\$ 12,520
Spent to Date:	\$ 12,520	2018 - 2022 Planned Expenditures:	\$ 905,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 917,520
Project Balance	\$ 2,480	Additional Funding Required	\$ 902,520

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Plant Assessment/Facility Master Plan	\$ 325,000					\$ 325,000
Backwash Pump Station PN15035		\$ 180,000				\$ 180,000
Facility Improvements		\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 400,000
TOTAL	\$ 325,000	\$ 280,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 905,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$322,520
			\$0
			\$0
Total	100%		\$322,520

Funding Comments: The project replaces existing facilities, therefore is funded by water rates.

2018

CAPITAL IMPROVEMENT PLAN Program:

Water

Project Number: PLANNED
Project Name: Sly Park - Reservoir A Water Treatment Plant Improvements Program
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Wilson **Board Approval:**

Project Description:

This program consists of targeted process, control and facility improvements from the Sly Park Reservoir intake to and including the Reservoir A Water Treatment Plant. This also includes any improvements to the Outingdale Water Treatment Plant facility as determined by life cycled assets or regulatory requirements. Several improvements have been identified to insure regulatory compliance, increased service reliability, reduced maintenance expenditures and extended facility life. Individual improvements may change and/or be replaced with other more critical improvements as priorities are set and projects developed. Cost estimates are at the conceptual level of confidence. As projects are better defined, individual project numbers will be established. This also includes facility improvement funding available for any unplanned assets that have failed or been found to have reached their service life and need to be replaced throughout the distribution system or treatment plant.

Basis for Priority:

Replacement and improvements to inefficient processes, obsolete controls and substandard facilities will support regulatory compliance, improvement service reliability and reduce maintenance costs. This program is required to protect and preserve the health and safety of customers and the public.

Project Financial Summary:

Funded to Date:	\$ 459,600	Expenditures through end of year:	\$ 349,600
Spent to Date:	\$ 144,458	2018 - 2022 Planned Expenditures:	\$ 1,025,000
Cash flow through end of year:	\$ 205,142	Total Project Estimate:	\$ 1,374,600
Project Balance	\$ 110,000	Additional Funding Required	\$ 915,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Plant Assessment/Facility Master Plan		\$ 325,000				\$ 325,000
Access Road Restoration			\$ 300,000			\$ 300,000
Facility Improvements	\$ 100,000	\$ 100,000		\$ 100,000	\$ 100,000	\$ 400,000
TOTAL	\$ 100,000	\$ 425,000	\$ 300,000	\$ 100,000	\$ 100,000	\$ 1,025,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$0
			\$0
			\$0
Total	100%		\$0

Funding Comments: The project replaces existing facilities, therefore is funded by water rates.

2018

CAPITAL IMPROVEMENT PLAN Program:

Water

Project Number: PLANNED
Project Name: Storage Replacement & Rehabilitation Program
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Wilson **Board Approval:**

Project Description:

This program consists of targeted replacement and rehabilitation of drinking water storage tanks and reservoirs within the distribution system. The District operates 36 steel storage tanks, ranging in age from 5 to 55 years of age, most of which were constructed in the last 15 years as part of the District line and cover program. Additionally, the District operates 7 floating cover drinking water reservoirs ranging in age from 24 to 31 years of age. This program is to identify specific tanks and reservoirs to rehabilitate, replace, or upgrade to maintain service reliability throughout the District. Program management expenditures identified include prioritizing and designing each tank and reservoir improvement project. Actual replacement costs for each individual tank and reservoir will be brought to the Board for specific approval.

Basis for Priority:

Life cycle replacement of District assets due to age and degradation.

Project Financial Summary:			
Funded to Date:	\$ 1,527,555	Expenditures through end of year:	\$ 759,498
Spent to Date:	\$ 243,812	2018 - 2022 Planned Expenditures:	\$ 6,800,000
Cash flow through end of year:	\$ 515,686	Total Project Estimate:	\$ 7,559,498
Project Balance	\$ 768,057	Additional Funding Required	\$ 6,031,943

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Design		\$ 200,000	\$ 100,000	\$ 100,000		\$ 400,000
Lower Outingdale PN13015	\$ 600,000					\$ 600,000
Reservoir 3 PN14003	\$ 800,000					\$ 800,000
Swansboro PN17012	\$ 350,000					\$ 350,000
Reservoir 1 Cover And CT			\$ 500,000			\$ 500,000
Greenstone (Abandonment)			\$ 150,000			\$ 150,000
Reservoir 6				\$ 2,500,000		\$ 2,500,000
Ridgeview					\$ 1,500,000	\$ 1,500,000
Dolomite						\$ -
TOTAL	\$ 1,750,000	\$ 200,000	\$ 750,000	\$ 2,600,000	\$ 1,500,000	\$ 6,800,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$981,943
Total	100%		\$981,943

Funding Comments: Project involves storage capacity to meet current regulations only, with no planned increase in potable water delivery capacity, therefore funding is 100% water rates.

Project Number: PLANNED
Project Name: Waterline Replacement Program
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Wilson **Board Approval:**

Project Description:

This program consists of targeted replacement of leaking waterlines including formerly private lines within the District. Replacing leaking and substandard waterlines in the distribution system will reduce the potential for contamination of the drinking water supply, increase reliability, reduce maintenance expenditures, and decrease losses. Pipeline projects are prioritized with Operations and Engineering staff based on frequency of leaks and costs of repairs. These estimates and project locations are subject to change as the projects are better defined.

Basis for Priority:

Continuous line breaks affect water quality and supply reliability to customers and increase maintenance costs. This project is required to protect and preserve the health and safety of customers and the public.

Project Financial Summary:

Funded to Date:	\$ 3,833,470	Expenditures through end of year:	\$ 2,285,574
Spent to Date:	\$ 855,378	2018 - 2022 Planned Expenditures:	\$ 2,840,000
Cash flow through end of year:	\$ 1,430,196	Total Project Estimate:	\$ 5,125,574
Project Balance	\$ 1,547,896	Additional Funding Required	\$ 1,292,104

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Design	\$ 50,000	\$ 100,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 300,000
Polaris Street PN15029	\$ 250,000					\$ 250,000
Gilmore Road PN15030	\$ 500,000					\$ 500,000
Forest Road PN17031	\$ 140,000					\$ 140,000
Union Ridge PN17032		\$ 200,000				\$ 200,000
Salmon Falls PN15031						\$ -
Construction (Various)		\$ 250,000	\$ 500,000	\$ 350,000	\$ 350,000	\$ 1,450,000
TOTAL	\$ 940,000	\$ 550,000	\$ 550,000	\$ 400,000	\$ 400,000	\$ 2,840,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$0
			\$0
			\$0
Total	100%		\$0

Funding Comments: Project involves storage capacity to meet current regulations only, with no planned increase in potable water delivery capacity, therefore funding is 100% water rates.

Wastewater Projects

Project Number: 12021
Project Name: Wastewater SCADA System Reliability Program
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Mutschler **Board Approval:**

Project Description:

This project will replace (19) PLC/RTUs and add the required monitoring equipment (instrumentation) at the following lift stations: Arlette, Bar J, Bass Lake Village, Buckeye, Deer Park, Diamond Industrial, Indian Creek, Marina Hills, Motherlode, North Uplands, Oakridge, Rancho Ponderosa, Starbuck, Summit 2, Summit 5, Summit View 1, Thunderhead, Waterford 8, Waterford 9. This list is subject to change pending lift station(s) that may be upgraded separately under a different CIP.

In 2013 and 2014 staff went through an extensive process to define a standardized PLC system setup for all lift stations. Two PLCs were installed in late 2013 and 2014 by staff to wring out the process for planning future installations. 2017-2018 will see a significant catch up effort to address deferred upgrades of existing out-of-date PLCs used extensively for process control in the collection systems. The existing PLCs are now about 30 years old and 10 years beyond their expected useful life. Additionally, these PLCs only provide 10-20% of the monitoring capabilities compared to current standard PLC's (3 to 5 monitoring points versus 30) meaning these facilities have no ability to report pump failures or incrementally report on wet well levels before reaching the high water limit. Also, they can go up to 24 hours before alerting of a communications or control issue, while current standard PLCs will alert within 5 minutes (a 288% increase in time to detect issues proactively). Locating replacement parts and technical support for the old PLCs is nearly impossible.

This project also includes professional services funding to design the electrical and mechanical elements for installation and integration of the PLCs into the facilities and outside construction to install the new PLC systems.

Basis for Priority:

End of Life cycle replacement for PLCs / radios controlling wastewater collections. These units are 10 years beyond end of life (15 years in some cases) and require above normal maintenance attention. The District struggles with finding parts and keeping these units in service. The SCADA Group highly recommends immediate replacement to significantly reduce the risks of sanitary sewer overflows (SSO).

Project Financial Summary:

Funded to Date:	\$ 258,022	Expenditures through end of year:	\$ 199,678
Spent to Date:	\$ 199,678	2018 - 2022 Planned Expenditures:	\$ 1,800,000
Cash flow through end of year:		Total Project Estimate:	\$ 1,999,678
Project Balance	\$ 58,344	Additional Funding Required	\$ 1,741,656

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Design	\$ 200,000					\$ 200,000
Installation	\$ 400,000	\$ 600,000	\$ 600,000			\$ 1,600,000
						\$ -
TOTAL	\$ 600,000	\$ 600,000	\$ 600,000	\$ -	\$ -	\$ 1,800,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		\$541,656
			\$0
			\$0
Total	100%		\$541,656

Funding Comments:

Project Number: 14038
Project Name: EDHWWTP WAS DAFT
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Money **Board Approval:**

Project Description:

The waste-activated-sludge diffused-air-floatation-thickener (WAS DAFT) located at the El Dorado Hills Wastewater Treatment Plant (EDHWWTP) has reached the end of its useful life. The WAS DAFT is utilized as a sludge thickener before sludge is pumped to the anaerobic digester.

HydroScience Engineers, Inc. was contracted in mid-2017 to develop plans and specifications to replace the existing WAS DAFT gear box and back pressure valve assembly. It is intended that this plan set will be bid in late 2017 and constructed in 2018.

Basis for Priority:

Project Financial Summary:			
Funded to Date:	\$ 50,000	Expenditures through end of year:	\$ 50,000
Spent to Date:	\$ 5,200	2018 - 2022 Planned Expenditures:	\$ 100,000
Cash flow through end of year:	\$ 44,800	Total Project Estimate:	\$ 150,000
Project Balance	\$ (0)	Additional Funding Required	\$ 100,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction	\$ 100,000					\$ 100,000
TOTAL	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	65%		\$65,000
Wastewater FCCs	35%		\$35,000
			\$0
Total	100%		\$100,000

Funding Comments:

Project Number: 15036
Project Name: Silva Valley/EI Dorado Hills
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Eden-Bishop **Board Approval:**

Project Description:

The 2013 Wastewater Facility Master Plan (WWMP) identified 2,100 feet of the 18"/21" sewerline along Silva Valley Road and 4,500 feet of 18" sewerline between Silva Valley Rd and the EDH Wastewater Treatment Plant as needing to be replaced by 2018. In order to further refine the extent and timing of improvements required, flow monitoring and survey work to determine manhole invert and ground elevations was completed under Project 14001 and 14002 in 2014. Flow monitoring and survey data has been incorporated into the District collection system model to determine remaining pipeline capacity. The current capacity analysis indicates the peak wet weather flow rate in 12,000 feet of pipeline exceeds design capacity and of that 4,700 feet is in a surcharged condition, i.e. water backing up into manholes. Additional wet weather flow data has been collected to calibrate the model further. Overall project cost is estimated to be upwards of \$6 M. Preparation of a Basis of Design Report (BODR) will begin in 2018 that will further develop the project considering wet weather flow data. The BODR will address project phasing, and provide more refined project cost estimates by phase. Because project development is conceptual at this time, construction expenditures are not shown within this CIP planning horizon but are expected to be in the range of \$6 M. The 2018 expenditures are for a BODR only.

Basis for Priority:

The collection system model identified these gravity sewerlines as having capacity limitations. If the capacity limitations are not corrected, sanitary sewer overflows could occur and future connections to the collection system will be limited.

Project Financial Summary:

Funded to Date:	\$ 50,000	Expenditures through end of year:	\$ 14,820
Spent to Date:	\$ 9,820	2018 - 2022 Planned Expenditures:	\$ 100,000
Cash flow through end of year:	\$ 5,000	Total Project Estimate:	\$ 114,820
Project Balance	\$ 35,180	Additional Funding Required	\$ 64,820

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design/Env/CM	\$ 100,000					\$ 100,000
Construction						\$ -
						\$ -
TOTAL	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000

Funding Sources	Percentage	2018	Amount
Wastewater FCCs	66%		\$42,781
Wastewater Rates	34%		\$22,039
			\$0
Total	100%		\$64,820

Funding Comments:

The project corrects an existing capacity limitation and provides capacity for new wastewater customers, therefore is funded with a combination of wastewater rates and FCCs.

Project Number: 16007
Project Name: Waterford 7 Lift Station Rehabilitation
Project Category: Reliability & Service Level Improvements
Priority: 1 **PM:** Money **Board Approval:**

Project Description:

Based on a condition assessment performed by engineering and operations this lift station, which was constructed in 1988 and serves 188 EDU's, has reached the end of its useful life. The lift station is a high priority site scheduled for rehabilitation.

The project is under construction. New pumps and controls are required, along with associated piping, flow meters and odor control system. Based on condition assessments, it is assumed the existing fiberglass wet well can be rehabilitated and reused. After a new roof is installed and the building trim painted, the existing building will be reused to house the electrical controls. The site will be repaved and a new fence will be installed around the perimeter.

Basis for Priority:

The lift station will continue to degrade increasing the risk of potential failures in the future which could result in hazards to the public and regulatory fines. OSHA compliance issues for workplace safety.

Project Financial Summary:			
Funded to Date:	\$ 1,261,282	Expenditures through end of year:	\$ 975,707
Spent to Date:	\$ 175,707	2018 - 2022 Planned Expenditures:	\$ 282,380
Cash flow through end of year:	\$ 800,000	Total Project Estimate:	\$ 1,258,087
Project Balance	\$ 285,575	Additional Funding Required	\$ -

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design/CM	\$ 20,000					\$ 20,000
Construction	\$ 262,380					\$ 262,380
						\$ -
TOTAL	\$ 282,380	\$ -	\$ -	\$ -	\$ -	\$ 282,380

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		\$0
			\$0
			\$0
Total	100%		\$0

Funding Comments: No expansion, just serving existing customers

Project Number: 16008
Project Name: South Pointe Lift Station Rehabilitation
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Money **Board Approval:**

Project Description:

Based on a condition assessment performed by engineering and operations this lift station, which was constructed in 1990 and serves over 65 EDU's, has reached the end of its useful life. This lift station has experienced a SSO in the recent past. This lift station electrical system is classified as an arc flash Category 3.

New pumps and controls are required, along with associated piping, flow meters and odor controls. Based on condition assessments, it is assumed the existing fiberglass wet well can be rehabilitated and reused. After a new roof is installed and the building trim painted, the existing building will be reused to house the controls. A new fence will be installed around the perimeter. The lift station is located in the public right of way with no formal easement. As part of the project, the District will obtain a formal encroachment agreement for the lift station from the County. The design is currently underway and staff anticipates will be ready to bid by late 2017. Construction is scheduled for 2018/2019.

Basis for Priority:

The lift station will continue to degrade increasing the risk of potential failures in the future which could result in hazards to the public and regulatory fines.

Project Financial Summary:			
Funded to Date:	\$ 155,537	Expenditures through end of year:	\$ 155,537
Spent to Date:	\$ 129,342	2018 - 2022 Planned Expenditures:	\$ 1,280,000
Cash flow through end of year:	\$ 26,195	Total Project Estimate:	\$ 1,435,537
Project Balance	\$ (0)	Additional Funding Required	\$ 1,280,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design/CM/Inspection		\$ 180,000				\$ 180,000
Construction		\$ 500,000	\$ 600,000			\$ 1,100,000
						\$ -
TOTAL	\$ -	\$ 680,000	\$ 600,000	\$ -	\$ -	\$ 1,280,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		\$0
			\$0
			\$0
Total	100%		\$0

Funding Comments: Project replaces an existing lift station for current customers.

Project Number: 16017
Project Name: DOT Construction Projects - Wastewater
Project Category: State/County Road Projects
Priority: 1 **PM:** Wilson **Board Approval:**

Project Description:

The Board has directed staff to streamline contracting procedures with the El Dorado County Department of Transportation (DOT) for the two agencies' joint projects. EID has many water and sewer lines in roads maintained by the DOT. From time to time, DOT initiates a road project where either EID water or wastewater need to be relocated or upgraded, which presents opportunities to join forces with DOT in the project by simultaneously upgrading and/or relocating our facilities. On August 10, 2015 the Board reauthorized the Master Reimbursement Agreement which is utilized for such projects. The agreement is valid for five years.

This CIP is intended for staff coordination with DOT throughout the year and for minor projects. This CIP will also be used to fund minor wastewater related relocations performed by the County under the Agreement. Larger utility relocation projects will have a specific CIP that identifies all the work associated with that project.

Basis for Priority:

Projects are required by law, regulation, contract, agreement or license. This includes projects required to meet requirements imposed by federal, State, or local governments. This also includes relocation of District facilities located in the public right-of-way as necessitated by County road improvements.

Project Financial Summary:

Funded to Date:	\$ 49,728	Expenditures through end of year:	\$ 18,979
Spent to Date:	\$ 18,979	2018 - 2022 Planned Expenditures:	\$ 125,000
Cash flow through end of year:		Total Project Estimate:	\$ 143,979
Project Balance	\$ 30,749	Additional Funding Required	\$ 94,251

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						\$ -
Design/Inspection	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$ 125,000
Construction Costs						\$ -
						\$ -
TOTAL	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 125,000

Funding Sources	Percentage	0	Amount
Wastewater Rates	100%		\$0
			\$0
			\$0
Total	100%		\$0

Funding Comments: Funding is 100% rates. Typically work involves replacement or relocation of existing facilities. However, funding split will be further evaluated for each project.

Project Number: 16025
Project Name: Town Center Force Main Replacement
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Money **Board Approval:**

Project Description:

This project has been identified as "high priority" due to two recent pipeline failures including a category 1 SSO failure in March 2016 and a category 3 SSO failure in April 2016. The objective of this project is to reduce the potential of sanitary sewer overflows caused by pipe failures. The eight-inch force main runs from the Town Center lift station for 2.6 miles until it ties into the Mother Lode force main at the E Dorado "Y" located two miles west of El Dorado along Mother Lode Drive. The pipe was constructed in 1981 and serves approximately 167 accounts. The pipe is asbestos cement (AC) pipe which is the same material used in the Mother Lode force main. Like the Mother Lode force main, this pipeline is failing due to the AC pipe's low corrosion resistance from the hydrogen sulfides in the pipeline. Staff recommends that the remaining 12,885-foot 8-inch AC force main be replaced.

The remaining pipeline recommended for replacement has been divided into three sections. The first phase was bid in 2017. The second and third phases are expected to be constructed in years 2020 and 2023 respectively. More planning is needed to determine if the project will be deferred until the next bond issuance or phased.

Basis for Priority:

If the pipe is not replaced, subsequent sewer spills may occur. If sewer spills occur, the District may be subject to regulatory fines.

Project Financial Summary:

Funded to Date:	\$ 1,763,564	Expenditures through end of year:	\$ 1,227,142
Spent to Date:	\$ 177,142	2018 - 2022 Planned Expenditures:	\$ 1,915,000
Cash flow through end of year:	\$ 1,050,000	Total Project Estimate:	\$ 3,142,142
Project Balance	\$ 536,422	Additional Funding Required	\$ 1,378,578

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design/CM	\$ 15,000		\$ 200,000			\$ 215,000
Construction	\$ 250,000		\$ 1,450,000			\$ 1,700,000
						\$ -
TOTAL	\$ 265,000	\$ -	\$ 1,650,000	\$ -	\$ -	\$ 1,915,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		\$0
			\$0
			\$0
Total	100%		\$0

Funding Comments:

Project Number: 16026
Project Name: Wastewater Generator Program
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Money **Board Approval:**

Project Description:

The District currently has 45 permanently located (stationary) generators within the wastewater collections system. Thirteen are larger than 200 Kw and are emergency standby power at the wastewater and water treatment plants as well as pumping stations. Some of the sewer lift stations also have either diesel or propane generators for emergency power. This program is to replace the failing and aging assets to ensure reliable service and safe operations at our facilities.

Basis for Priority:

Replace failing assets to ensure operation of collection system lift stations.

Project Financial Summary:

Funded to Date:	\$ 50,000	Expenditures through end of year:	\$ 28,654
Spent to Date:	\$ 28,654	2018 - 2022 Planned Expenditures:	\$ 200,000
Cash flow through end of year:		Total Project Estimate:	\$ 228,654
Project Balance	\$ 21,346	Additional Funding Required	\$ 178,654

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction		\$100,000		\$100,000		\$ 200,000
						\$ -
TOTAL	\$ -	\$ 100,000	\$ -	\$ 100,000	\$ -	\$ 200,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		\$0
			\$0
			\$0
Total	100%		\$0

Funding Comments: Project replaces existing assets to ensure reliability in collection system.

Project Number: 16030
Project Name: Solar Assessment and Design
Project Category: Regulatory Requirements
Priority: 2 **PM:** Money **Board Approval:**

Project Description:

At the October 13, 2015 Board meeting, the Board directed staff to investigate power mitigation projects. Three projects were initially identified, in-conduit hydro for Tank 3 and Tank 7, and the addition of a solar field. Out of this investigation, in-conduit hydro at Tank 7 and the addition of a new solar field are the most viable. Project number 13013 is assigned to The Tank 7 project, while the solar field expansion is now project 16030.

At the September 11, 2017 Board meeting, the Board approved staff to move forward with a Basis of Design Report (BODR) to identify any available tariffs and/or grants available to the District, develop a system advisory model (SAM) to facilitate the evaluation for renewable energy facilities proposed for the District including solar and onsite battery storage, evaluate the costs of interconnection fees with PG&E at each proposed site, and refine project cost estimates based on 30% design level plans and specifications.

Following completion of the BODR staff will return to the board with recommendations for additional renewable energy facilities and will request additional funding to complete the design of these facilities. Construction costs will be heavily dependent on the recommendations of the BODR and if the recommended facilities are owned and financed by the District or by a third party. Therefore, construction cost are not shown at this time.

Basis for Priority:

Provide increased revenues and/or reduced costs.

Project Financial Summary:

Funded to Date:	\$ 149,518	Expenditures through end of year:	\$ 112,805
Spent to Date:	\$ 33,191	2018 - 2022 Planned Expenditures:	\$ 170,000
Cash flow through end of year:	\$ 79,614	Total Project Estimate:	\$ 282,805
Project Balance	\$ 36,713	Additional Funding Required	\$ 133,287

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning	\$ 20,000					\$ 20,000
Design	\$ 150,000					\$ 150,000
Construction		*	*	*	*	\$ -
						\$ -
TOTAL	\$ 170,000	\$ -	\$ -	\$ -	\$ -	\$ 170,000

Funding Sources	Percentage	2018	Amount
Water Rates	50%		\$66,644
Water FCCs	50%		\$66,644
			\$0
Total	100%		\$133,287

Funding Comments: Estimated construction costs are for two 1MW owner operated facilities

Project Number: 16040
Project Name: Business Park 3 Lift Station Replacement
Project Category: Reliability & Service Level Improvements
Priority: 1 **PM:** Brink **Board Approval:**

Project Description:

Based on assessments performed by Engineering and Operations, the Business Park 3 lift station is a priority site for replacement. The Business Park 3 Lift Station was constructed in 1983, serves about 140 EDUs, and has reached the end of its useful life. The site receives gravity flows from within the El Dorado Hills business park. The pumps are original and have had many repairs. The steel wet well, discharge piping and pump rails have severe corrosion. The existing original generator and controls are now obsolete. Complete replacement of the site is required.

Lennar's next phase of their planned Carson Creek development (Unit 2) requires a new lift station. Based on the planned location of that lift station and local topography, the Business Park 3 lift station can be abandoned and the associated sewer flows diverted to the new the new Carson Creek Unit 2 lift station. On January 23, 2017 the Board approved a cost sharing agreement for the new lift station, similar to what was done for the successful Carson Creek 1 Lift Station that was recently completed. The District will share design and construction costs based on needed capacity.

On August 14, 2017, the Board approved the award for a construction contract for the new Carson Creek 2 lift station. In accordance with the Agreement, Lennar as deposited \$2,540,154 into an escrow account to fund their portion of the project costs. Construction started in September 2017 and is scheduled to commence through 2018.

Basis for Priority:

The Board approved the construction contract on August 14, 2017. Per the Cost Sharing Agreement with Lennar, the District is to construct the lift station that will serve their development.

Project Financial Summary:

Funded to Date:	\$ 3,181,964	Expenditures through end of year:	\$ 351,738
Spent to Date:	\$ 151,738	2018 - 2022 Planned Expenditures:	\$ 570,000
Cash flow through end of year:	\$ 200,000	Total Project Estimate:	\$ 921,738
Project Balance	\$ 2,830,226	Additional Funding Required	\$ -

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction	\$ 2,900,000	\$ 120,000				\$ 3,020,000
Developer Funding	\$ (2,400,000)	\$ (50,000)				\$ (2,450,000)
						\$ -
TOTAL	\$ 500,000	\$ 70,000	\$ -	\$ -	\$ -	\$ 570,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		\$0
			\$0
Total	100%		\$0

Funding Comments: Funding includes \$2,540,154 that was deposited by Lennar in an Escrow Account. Some of that funding covers reimbursement for charges incurred in 2017. The balance to be funded by the District.

Project Number: 17020
Project Name: Wastewater Collection System Pipeline Replacement
Project Category: Reliability & Service Level Improvements
Priority: 1 **PM:** Money **Board Approval:**

Project Description:

The District has two large collection systems, El Dorado Hills and Deer Creek Collection Systems. These systems are served by a series of lift stations, force mains, and gravity mains that convey wastewater to the El Dorado Hills Wastewater Treatment Plant and the Deer Creek Wastewater Treatment Plant. Together, the plants serve approximately 22,000 connections. The systems are regulated under the State Water Resources Control Board General Waste Discharge Requirements Order No. 2006-003-DWQ adopted in May 2006 and the amendment to the Monitoring and Reporting Program of the SSR WDR, Order No. WQ 2013-0058-EXEC. The District has approximately 2,334,612 linear feet of pipeline (force main 312,877 and gravity sewer 2,021,735). Fifty-two percent of the pipeline is PVC, 26% asbestos cement, 8% is vitreous clay, 1% is ductile iron and 13% has not been delineated. Life of PVC piping is estimated at 100 years, but some sections of vitreous clay pipe and asbestos cement pipe is failing. This project begins to meet the needs of pipeline replacement with the current funding capabilities. The top projects for pipe repair are as follows:

1. Brookline Circle EDH 250' 13 root intrusions vitreous clay
2. Brookline Circle EDH 341' 23 root intrusions vitreous clay
3. Tam O Shanter Dr EDH 145.5' 9 root intrusions vitreous clay
4. Brookline Drive EDH 281' 10 root intrusions vitreous clay
5. Shasta Circle EDH 175' 26 root intrusions vitreous clay
6. Francisco Drive EDH 391' 13 defects, roots, holes, visible gaskets
7. Francisco Drive EDH 36' 9 roots, holes, visible gaskets, crushed pipe asbestos cement
8. Francisco Drive EDH 260' crushed pipe, visible gaskets (5) asbestos cement
9. Mesa Verda Drive EDH 275' 8 root intrusions asbestos cement
10. Yellowstone Court EDH 242' 10 root intrusions, 2 root at service, vitreous clay
11. Shasta Circle EDH 350' 32 root intrusions, full circle cracks, vitreous clay
12. Yellowstone Lane EDH 407' 10 root intrusions, cracks, vitreous clay
13. Yellowstone Lane EDH 390' 23 root intrusions, 3 root at services, full circle cracks, crack at joint
14. Yellowstone Lane EDH 300' 24 root intrusions, 2 root at services
15. Yellowstone Lane EDH 311' 49 root intrusions, cracks
16. Waterman Court EDH 301' 27 root intrusions
17. Governor Drive EDH 307' 18 root intrusions and off-sets
18. Stanford Lane EDH 421' 6 root intrusions
19. Toronto Road DC 412' 8 root intrusions, holes
20. Country Club Dr DC 499', 16 full circle cracks

Basis for Priority:

Maintain credibility with the regulators and public for infrastructure maintenance by having a proactive pipeline replacement program. One significant spill to waters of the state could cost the District \$10 per gallon in fines.

Project Financial Summary:

Funded to Date:	\$ 168,440	Expenditures through end of year:	\$ 95,148
Spent to Date:	\$ 5,148	2018 - 2022 Planned Expenditures:	\$ 2,525,000
Cash flow through end of year:	\$ 90,000	Total Project Estimate:	\$ 2,620,148
Project Balance	\$ 73,292	Additional Funding Required	\$ 2,451,708

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design	\$ 25,000					\$ 25,000
Construction	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 2,500,000
TOTAL	\$ 525,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 2,525,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		\$451,708
Total	100%		\$451,708

Funding Comments:

Project Number: 17021
Project Name: Fall Protection at Lift Stations
Project Category: Regulatory Requirements

Priority: 3 **PM:** Money **Board Approval:**

Project Description:

OSHA recommends the use of engineering or work practice controls to manage or eliminate hazards to the greatest extent possible. This project will improve the fall hazard at ten lift station wetwells. The suggested system will be designed by a structural engineer and will consist of permanent barricading around the wetwells. Thirty-one lift stations have been identified for improving the fall protection. The ten most critical lift stations that would benefit the most from enhanced fall protection in order of priority are as follows:

1. Promontory 2 – 25’ deep, raised lid deck causing tripping hazard
2. Marina 1 – 18’ deep high flows small raised deck and piping create tripping hazards
3. NYCLS – 19.5’ deep, very wide opening, raised deck creating tripping hazard
4. Prom 1 -18’ deep raised lid deck causing tripping hazard
5. Prom 3 – 28’ deep raised lid deck causing tripping hazard
6. St Andrews – 16’ deep, multiple openings and piping create trip hazards, possible pinch point hazards
7. Town Center – 10’ deep, wide opening serviced frequently due to rags and grease
8. ED Lift – 15’ deep, multiple openings raised deck
9. Highland Hills – 15’ deep, limited access to the opening against the building pinch points
10. Shingle Springs – 12’ deep, raised deck serviced frequently

Basis for Priority:

Improve fall restraint for health and safety

Project Financial Summary:			
Funded to Date:	\$ 50,000	Expenditures through end of year:	\$ 50,000
Spent to Date:	\$ 2,274	2018 - 2022 Planned Expenditures:	\$ 165,000
Cash flow through end of year:	\$ 47,726	Total Project Estimate:	\$ 215,000
Project Balance	\$ (0)	Additional Funding Required	\$ 165,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Design/CM	\$ 15,000					\$ 15,000
Construction	\$ 50,000	\$ 100,000				\$ 150,000
						\$ -
TOTAL	\$ 65,000	\$ 100,000	\$ -	\$ -	\$ -	\$ 165,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		\$65,000
Total	100%		\$65,000

Funding Comments:

Project Number: 17023
Project Name: Rancho Ponderosa LS Relocation/Abandonment
Project Category: Reliability & Service Level Improvements
Priority: 1 **PM:** Money **Board Approval:**

Project Description:

The existing Rancho Ponderosa Wastewater Lift Station was constructed without securing a viable property easement to access and service the lift station. Additionally, the existing site is constrained is difficult to access with maintenance equipment. The lift station currently serves 16 EDU's. Access to the site currently requires the use of an adjacent property owner's gated driveway that services their personal residence.

Recently the District was required to negotiate continued access to the site which requires that the District pay the property owner \$200/month for access and that the station be relocated prior to December 31, 2018.

This project will evaluate relocating the lift station or bypassing the station with a gravity sewerline. Engineered plans and specifications and a construction contract will then be developed for the selected alternative.

Basis for Priority:

Project Financial Summary:

Funded to Date:	\$ 50,000	Expenditures through end of year:	\$ 1,972
Spent to Date:	\$ 1,972	2018 - 2022 Planned Expenditures:	\$ 450,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 451,972
Project Balance	\$ 48,028	Additional Funding Required	\$ 401,972

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design	\$ 80,000					\$ 80,000
Construction		\$ 370,000				\$ 370,000
						\$ -
TOTAL	\$ 80,000	\$ 370,000	\$ -	\$ -	\$ -	\$ 450,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		\$31,972
			\$0
			\$0
Total	100%		\$31,972

Funding Comments:

Project Number: 17033
Project Name: DCWWTP Process Control Design
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Money **Board Approval:**

Project Description:

This project's scope is a complete evaluation of Deer Creek's SCADA system. The intention is to identify the areas that require improvements and create a design to correct these deficiencies. This automation design will focus on reliability, regulatory compliance, operating efficiency and power consumption reporting.

Basis for Priority:

Deer Creek's automation system consists of end of life control systems that suffers from incomplete control solutions and reliability issues. Deer Creek's Operational staff has identified multiple automation issues that impact the level of labor required to operate the system and stay in compliance. Additionally, there are no current tools which provide Operations feedback on how plant tuning parameters can affect one of the District's biggest costs of operation, power.

Project Financial Summary:

Funded to Date:	\$ 50,000	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 250,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 250,000
Project Balance	\$ 50,000	Additional Funding Required	\$ 200,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning	\$ 75,000					\$ 75,000
Design		\$ 175,000				\$ 175,000
Construction						\$ -
						\$ -
TOTAL	\$ 75,000	\$ 175,000	\$ -	\$ -	\$ -	\$ 250,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		\$25,000
			\$0
			\$0
Total	100%		\$25,000

Funding Comments:

Project Number: 17034
Project Name: Wastewater Collections Facility Relocation
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Wells **Board Approval:**

Project Description:

The corporation yard used to support the sewer collection crew will be moved from Bass Lake to El Dorado Hills Wastewater Treatment Plant if all permits and approvals are obtained. The District contracted all lab services at a cost savings of approximately \$500,000 annually leaving a building available on the EDH WWTP site. This building will be modified for crew use. Vehicle parking for the collections fleet, bins for materials storage, and a building for construction storage will be part of the design at the plant.

The property is under contract at this time.

Project Financial Summary:			
Funded to Date:	\$ 65,000	Expenditures through end of year:	\$ 90,000
Spent to Date:	\$ 15,000	2018 - 2022 Planned Expenditures:	\$ -
Cash flow through end of year:	\$ 75,000	Total Project Estimate:	\$ 90,000
Project Balance	\$ (25,000)	Additional Funding Required	\$ 25,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning	\$ 20,000					\$ 20,000
Design	\$ 80,000					\$ 80,000
Construction	\$ 825,000					\$ 825,000
Proceeds from Bass Lake Sale	\$ (925,000)					\$ (925,000)
TOTAL	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Funding Sources	Percentage	2018	Amount
Wastewater rates	100%		\$25,000
			\$0
			\$0
Total	100%		\$25,000

Funding Comments:

Project Number: PLANNED
Project Name: 2018 Wastewater Equipment Replacement Program
Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Money **Board Approval:**

Project Description:

This is an annual program to replace equipment and facilities used in the wastewater system that have failed or reached end of useful life. Funding will be used to replace pumps, valves, and other equipment that, with replacement, extend the life of the asset. Below is a list of items in need of repair/replacement for the EDHWWTP, DCWWTP, CHWWTP, and Collections Systems: pumps and valves

EDHWWTP

Secondary pump

DCWWTP

Plant drain pump #2 VFD and replace VFD on pump #1
 Add second WAS pump
 MCC replacement for the US Filter

CHWWTP

Tail water return rehabilitation / automation
 Bar screen replacement
 Infiltration Study

EDH Collections

Schedule 80 discharge pipe replacement North Uplands LS
 Upsize the pumps at North Uplands LS for needed existing capacity
 Replace two 140 Hp pumps at St. Andrews
 Replace at leaset 10 manholes on Silva Valley Parkway

DC Collections

Schedule 80 discharge pipe replacement at Bass Lake Village, Pioneer Place, Arlette, and Courtside Manor
 Upsize the pumps at Pioneer Place for needed existing capacity
 Replace two manholes in Cameron Park near local creek

Basis for Priority:

Project purpose is to maintain existing assets and prolong their useful service life and reliability.

Project Financial Summary:			
Funded to Date:	\$ 50,000	Expenditures through end of year:	\$ 13,687
Spent to Date:	\$ 13,687	2018 - 2022 Planned Expenditures:	\$ 1,000,000
Cash flow through end of year:		Total Project Estimate:	\$ 1,013,687
Project Balance	\$ 36,313	Additional Funding Required	\$ 963,687

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 1,000,000
						\$ -
TOTAL	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 1,000,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	70%		\$114,581
Wastewater FCCs	30%		\$49,106
Total	100%		\$163,687

Funding Comments: Funding split based on available plant capacity

2018

CAPITAL IMPROVEMENT PLAN Program:

Wastewater

Project Number: **PLANNED**
 Project Name: **2018 Wastewater Facility Replacement Program**
 Project Category: **Reliability & Service Level Improvements**
 Priority: **2** PM: **Money** Board Approval:

Project Description:

This is a program to replace equipment and facilities used in the wastewater system that have failed or reached end of useful life. Funding will be used for wastewater facility rehabilitation such as mechanical or building improvements that will extend the life of an asset. Examples include roof and fencing replacements at various wastewater lift stations and general building improvements or modifications. Odor control improvements at EDHWWTP will also be evaluated due to continuing odor complaints.

Basis for Priority:

Project purpose is to maintain existing assets and prolong their useful service life and reliability.

Project Financial Summary:

Funded to Date:	\$ -	Expenditures through end of year:	
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 1,125,000
Cash flow through end of year:		Total Project Estimate:	\$ 1,125,000
Project Balance	\$ -	Additional Funding Required	\$ 1,125,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction	\$ 625,000	\$ 125,000	\$ 125,000	\$ 125,000	\$ 125,000	\$ 1,125,000
						\$ -
TOTAL	\$ 625,000	\$ 125,000	\$ 125,000	\$ 125,000	\$ 125,000	\$ 1,125,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		\$625,000
Total	100%		\$625,000

Funding Comments:

Project Number: PLANNED
Project Name: Business Park 1 Odor Control
Project Category: Regulatory Requirements
Priority: 2 **PM:** Money **Board Approval:**

Project Description:

The District has received odor complaints from near-by residences and businesses that surround the EDHWWTP. The Business Park 1 Lift Station is located adjacent to Carson Creek and 0.4 miles southwest of the EDHWWTP. Maintenance staff has reported increased occurrences of hydrogen sulfide (H2S) gas at the lift station and now believe that this may be contributing to odor complaints in the area.

This project would evaluate the source of the H2S gas and evaluate process modification including the addition of odor treatment equipment.

Basis for Priority:

Project Financial Summary:

Funded to Date:	\$ -	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 120,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 120,000
Project Balance	\$ -	Additional Funding Required	\$ 120,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design	\$ 20,000					\$ 20,000
Construction	\$ 100,000					\$ 100,000
						\$ -
TOTAL	\$ 120,000	\$ -	\$ -	\$ -	\$ -	\$ 120,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		\$120,000
			\$0
			\$0
Total	100%		\$120,000

Funding Comments:

Project Number: Planned
Project Name: Deer Creek Main Circuit Breaker
Project Category: Reliability & Service Level Improvements
Priority: 1 **PM:** Mutschler **Board Approval:**

Project Description:

Electrical Code now requires that incident energy (or electrical arc hazard potential) be calculated and posted on every piece of 3 phase equipment. EID has performed those calculations on the Deer Creek WWTP and the results at the main circuit breakers were so high, that it virtually prohibits the ability to maintain the automatic transfer switch and main circuit breaker. This problem is critical to the operation of the facility as failures in the transfer switch or main circuit breaker could render the plant completely off-line until temporary power can be arranged and tied into the buss. Even if all safety precautions are taken, working on this piece of equipment would still be very hazardous to maintenance personnel.

The purpose of this project is research and present methods and steps toward reducing the arc flash hazard and improve maintenance access to the critical main breaker and backup power components.

Basis for Priority:

Failures in the transfer switch or main circuit breaker could render the plant completely off-line until temporary power can be arranged and tied into the buss.

Project Financial Summary:

Funded to Date:	\$ -	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 1,200,000
Cash flow through end of year:		Total Project Estimate:	\$ 1,200,000
Project Balance	\$ -	Additional Funding Required	\$ 1,200,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design	\$ 100,000					\$ 100,000
Construction	\$ 200,000	\$ 900,000				\$ 1,100,000
						\$ -
TOTAL	\$ 300,000	\$ 900,000	\$ -	\$ -	\$ -	\$ 1,200,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		\$300,000
			\$0
			\$0
Total	100%		\$300,000

Funding Comments:

Project Number: PLANNED
Project Name: Ridgeview 10 Elimination
Project Category: Reliability & Service Level Improvements
Priority: 3 **PM:** Money **Board Approval:**

Project Description:

In August 2017, the Promontory Open Space Multi-Use Trail Ph.1 project was completed by a private developer. Part of the scope of that project was the construction of a gravity sewer between two adjacent sewer sheds owned and operated by the District. This gravity connection eliminated the need for the Ridgeview 10 Sewer Lift Station which is now bypassed with gravity sewer flow.

This project will provide abandonment services for the Ridgeview 10 Lift Station including the removal of the existing building, wet well, pumps, and appurtenances, abandonment of existing utilities servicing the site, resolution of any environmental concerns, and final sale or disposal of the parcel.

Basis for Priority:

Project Financial Summary:

Funded to Date:	\$ -	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 100,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 100,000
Project Balance	\$ -	Additional Funding Required	\$ 100,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction		\$ 100,000				\$ 100,000
						\$ -
TOTAL	\$ -	\$ 100,000	\$ -	\$ -	\$ -	\$ 100,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		\$0
			\$0
			\$0
Total	100%		\$0

Funding Comments:

Project Number: PLANNED
Project Name: Strolling Hills Pipeline Improvements
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Money **Board Approval:**

Project Description:

The Motherlode Force Main transitions to gravity flow before it enters Strolling Hills Road and continues downhill toward the Deer Creek Wastewater Treatment Plant. Several services are connected directly to the 12-inch PVC pipe that conveys flows along this segment. During large storm events and elevated flows the District has received complaints regarding off gassing of the 12-inch line through plumbing fixtures within private residences likely due to air entrained within the system. This project will attempt to mitigate air entrained within the system by either adding additional hydraulic capacity or adding air jumpers from adjacent manholes.

Basis for Priority:

Project Financial Summary:

Funded to Date:	\$ -	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 150,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 150,000
Project Balance	\$ -	Additional Funding Required	\$ 150,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design	\$ 50,000					\$ 50,000
Construction	\$ 100,000					\$ 100,000
						\$ -
TOTAL	\$ 150,000	\$ -	\$ -	\$ -	\$ -	\$ 150,000

Funding Sources	Percentage	2018	Amount
	100%		\$150,000
			\$0
			\$0
Total	100%		\$150,000

Funding Comments:

Project Number: PLANNED
Project Name: Wastewater Communication Upgrade
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Mutschler **Board Approval:**

Project Description:

This project will first look at determining the communication feasibility at each wastewater pump station and then determine the priority of replacing the obsolete PLC/RTUs and add the required monitoring equipment (instrumentation) at the lift stations.

In 2013 and 2014 staff went through an extensive process to define a standardized PLC system setup for all lift stations. Two PLCs were installed in late 2013 and 2014 by staff to wring out the process for planning future installations. 2017-2018 will see a significant catch up effort to address deferred upgrades of existing out-of-date PLCs used extensively for process control in the collection systems. The existing PLCs are now about 30 years old and 10 years beyond their expected useful life. Additionally, these PLCs only provide 10-20% of the monitoring capabilities compared to current standard PLC's (3 to 5 monitoring points versus 30) meaning these facilities have no ability to report pump failures or incrementally report on wet well levels before reaching the high water limit. Also, they can go up to 24 hours before alerting of a communications or control issue, while current standard PLCs will alert within 5 minutes (a 288% increase in time to detect issues proactively). Locating replacement parts and technical support for the old PLCs is nearly impossible.

This project also includes professional services funding to design the electrical and mechanical elements for installation and integration of the PLCs into the facilities and outside construction to install the new PLC systems.

Basis for Priority:

End of Life cycle replacement for PLCs / radios controlling wastewater collections. These units are 10 years beyond end of life (15 years in some cases) and require above normal maintenance attention. The District struggles with finding parts and keeping these units in service. The SCADA Group highly recommends immediate replacement to significantly reduce the risks of sanitary sewer overflows (SSO).

Project Financial Summary:

Funded to Date:	\$ -	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 1,500,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 1,500,000
Project Balance	\$ -	Additional Funding Required	\$ 1,500,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning	\$ 250,000					\$ 250,000
Design		\$ 250,000				\$ 250,000
Construction			\$ 500,000	\$ 500,000		\$ 1,000,000
						\$ -
TOTAL	\$ 250,000	\$ 250,000	\$ 500,000	\$ 500,000	\$ -	\$ 1,500,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		\$250,000
			\$0
			\$0
Total	100%		\$250,000

Funding Comments:

Project Number: PLANNED
Project Name: Wastewater Lift Station Upgrade Program
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Money **Board Approval:**

Project Description:

This program combines future lift station upgrades into a single CIP to plan anticipated expenditures. There are several locations that are being or have been investigated. Those locations include: El Dorado Lift Station, Thunderhead Lift Station, and Summit 3 Lift Station. This program will continue to evaluate all facilities for future work.

The Thunderhead Lift Station is located in the Diamond Springs area. Staff anticipates the lift station will require a complete redesign within the next five years. This lift station would be designed to handle all flows from its collection area and the Motherlode Lift Station collection area. This would allow the elimination of the Motherlode Lift Station under a separate program. Design is anticipated to cost \$80,000 in 2019 with construction costs estimated at \$600,000 in 2020. These costs are not reflected in the project financial summary because a timeline has not been determined for this project. The Motherlode elimination costs are not included in this estimate.

The El Dorado Lift Station (EDLS) is the main pumping facility for the Mother Lode (eastern area) of the District to the DCWWTP via the Mother Lode force main. The EDLS is a critical District facility located in the town of El Dorado and currently serves 2534 EDUs. The facility was constructed in 1975 and is in need of major repairs to the majority of the key components to increase reliability and facilitate operations. A basis of design report was completed in 2015 and staff anticipates a full design in 2021 with construction in 2022/2023. Design is budgeted for \$300,000 and construction is estimated at \$3,200,000.

The Summit 3 Lift Station will continue to be evaluated as budget allows.

Basis for Priority:

This project provides replacement of failing components at this critical facility; thereby providing safe, reliable collection system assets.

Project Financial Summary:

Funded to Date:	\$ 345,591	Expenditures through end of year:	\$ 322,970
Spent to Date:	\$ 322,970	2018 - 2022 Planned Expenditures:	\$ 2,480,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 2,802,970
Project Balance	\$ 22,621	Additional Funding Required	\$ 2,457,379

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design		\$ 80,000		\$ 300,000		\$ 380,000
Construction			\$ 600,000		\$ 1,500,000	\$ 2,100,000
TOTAL	\$ -	\$ 80,000	\$ 600,000	\$ 300,000	\$ 1,500,000	\$ 2,480,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	65%		\$0
Wastewater FCC	35%		\$0
Total	100%		\$0

Funding Comments: funding split based on plant capacity

Recycled Water Projects

Project Number: 17030
Project Name: DC Discharge Management
Project Category: Regulatory Requirements

Priority: 3 **PM:** Money **Board Approval:**

Project Description:

The State Water Resources Control Board, Division of Water Rights approved a Temporary Change Petition filed by the District allowing the reduction of treated wastewater discharges from the Deer Creek Wastewater Treatment Plant into Deer Creek in 2014 and 2015. The additional supply was used to meet recycled water demands, thus reducing the amount of potable water supplementation. Staff had difficulty modifying and managing the reduced flows into Deer Creek. Adjusting and monitoring the discharge flow rate had to be managed by staff manually, creating overtime and fatigue. The plant has a storage tank for influent flows, and plant water supply pumps. All three of these systems could be managed/modified to allow for the automatic calculation and throttling of discharge based on legal obligations from the Division of Water Rights. Automation of permit requirements helps assure the District meets the stringent requirements for the discharge and assures regulators that the fish are being protected. The estimated expenditures listed are estimates at this time; no design has been completed.

Basis for Priority:

Water Right acquisition requires optimization and automation to dial in discharge flow rates based on fish population needs along Deer Creek.

Project Financial Summary:

Funded to Date:	\$ 15,000	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 115,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 115,000
Project Balance	\$ 15,000	Additional Funding Required	\$ 100,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning	\$ 5,000					\$ 5,000
Design		\$ 10,000				\$ 10,000
Construction			\$ 100,000			\$ 100,000
						\$ -
TOTAL	\$ 5,000	\$ 10,000	\$ 100,000	\$ -	\$ -	\$ 115,000

Funding Sources	Percentage	2018	Amount
Recycled Water Rates	100%		\$0
			\$0
			\$0
Total	100%		\$0

Funding Comments:

Project Number: PLANNED
Project Name: Recycled Water SCADA Remote Control
Project Category: Reliability & Service Level Improvements
Priority: 3 **PM:** Strahan **Board Approval:**

Project Description:

Add remote set point and statistical ability to the Recycled Water SCADA System. This project involves programming of the automation controllers and the SCADA screens.

Basis for Priority:

Automation would eliminate the need for a site visit for routine operational changes. The current system has the hardware in place, but lacks the programming to make remote set point changes and to provide statistical information. The statistical information is typically used for maintenance and troubleshooting reports.

Project Financial Summary:

Funded to Date:	\$ -	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 45,000
Cash flow through end of year:		Total Project Estimate:	\$ 45,000
Project Balance	\$ -	Additional Funding Required	\$ 45,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Design						\$ -
Construction						\$ -
Programming	\$ 45,000					\$ 45,000
						\$ -
TOTAL	\$ 45,000	\$ -	\$ -	\$ -	\$ -	\$ 45,000

Funding Sources	Percentage	2018	Amount
Recycled Water Rates	100%		\$45,000
			\$0
			\$0
Total	100%		\$45,000

Funding Comments: Funding for the core process control network upgrade was previously in the 2012 SCADA System Reliability Program CIP.

Hydroelectric Projects

Project Number: 14024
Project Name: Flume 44 Canal Conversion
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Mutschler **Board Approval:**

Project Description:

Flume 44 is 476 feet in length and last replaced in 1948. The wooden flume consists of one ground level and three elevated flume segments with a maximum height of 34 feet traversing a large existing landslide. The flume has been relined with plywood in 1997 and 2002. Extensive repairs were made to the flume by District crews between 2002 and 2004. In 2014 a comprehensive inspection and physical testing of the asset was conducted showing that the structural members were in degraded condition. As a result, additional repairs were performed on the asset to allow for the continued operations until a complete phased replacement of the flume can be performed. The project includes installing box culverts on 1,614 feet of canal, widen the bench to provide construction and maintenance access, stabilize the active landslide which the elevated flume traverses, and replace the degraded elevated timber flume with a mechanically stabilized earth bench with a box culvert canal.

Basis for Priority:

The flume will continue to deteriorate potentially causing flume failures that would result in significant impacts to the public, Highway 50, and the South Fork of the American River. Additionally, water supply would be out of service for an extended period to make emergency repairs resulting in interruption of the reliable delivery of water for consumptive use and hydroelectric power generation.

Project Financial Summary:

Funded to Date:	\$ 884,072	Expenditures through end of year:	\$ 1,001,239
Spent to Date:	\$ 701,239	2018 - 2022 Planned Expenditures:	\$ 8,900,000
Cash flow through end of year:	\$ 300,000	Total Project Estimate:	\$ 9,901,239
Project Balance	\$ (117,167)	Additional Funding Required	\$ 9,017,167

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction Costs	\$4,650,000	\$3,800,000				\$ 8,450,000
Warranty/FERC QCIP	\$ 250,000	\$125,000	\$75,000			\$ 450,000
TOTAL	\$ 4,900,000	\$ 3,925,000	\$ 75,000	\$ -	\$ -	\$ 8,900,000

Funding Sources	Percentage	2018	Amount
Water FCCs	53%		\$2,659,098
Water Rates	47%		\$2,358,068
			\$0
Total	100%		\$5,017,167

Funding Comments:

Project Number: 14041
Project Name: Project 184 SCADA System Hardware Replacement
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Strahan **Board Approval:**

Project Description:

This project is to replace end of life cycle SCADA Hardware, specifically the Moscad L RTUs and level/flow measurement equipment. Replacement sites are: Alarms 3, 5,12, 14, 18, 20, 22, 23 Spills 10, 20A, 20, 23, 27, 32, 37, 42, 44, 47C, Echo Lake, Silver Lake, Pyramid Creek, Forebay, EDPH, Caples Lake. This system has served the district well and is no longer supported. This CIP would slowly replace the existing system over multiple years:

- 2017- Complete design of Diversion and (15) monitoring sites
- 2018 – Construction for the monitoring sites and Diversion. Design for the remaining spillway sites.
- 2019- Construction for spill ways sites and any monitoring sites that were not in 2018’s budget
- 2020 - Construction for spill ways sites
- 2021 – Powerhouse design
- 2022 – Power house construction

Basis for Priority:

This equipment is at the end of its life cycle and warrants replacement to retain the reliability of the system. Additionally new replacement parts are not available due to obsolescence. This system cannot be support on a modern computer.

Project Financial Summary:

Funded to Date:	\$ 150,775	Expenditures through end of year:	\$ 150,663
Spent to Date:	\$ 68,663	2018 - 2022 Planned Expenditures:	\$ 1,473,000
Cash flow through end of year:	\$ 82,000	Total Project Estimate:	\$ 1,623,663
Project Balance	\$ 112	Additional Funding Required	\$ 1,472,888

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Spillway Design	\$ 50,000					\$ 50,000
Construction Monitoring	\$ 298,000					\$ 298,000
Construction Diversion	\$ 90,000					\$ 90,000
Construction Spillways		\$ 300,000	\$ 300,000			\$ 600,000
PH Design				\$ 85,000		\$ 85,000
PH Construction					\$ 350,000	\$ 350,000
TOTAL	\$ 438,000	\$ 300,000	\$ 300,000	\$ 85,000	\$ 350,000	\$ 1,473,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$437,888
			\$0
			\$0
Total	100%		\$437,888

Funding Comments:

Project Number: 16022
Project Name: Flume 38-40 Canal Conversion
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Mutschler **Board Approval:**

Project Description:

In 2014, an inspection of the flumes listed in Table 1 found severe degradation of the wooden flume structures that could result in failure. As a result of the inspection, interim repairs were made to Flumes 39/40 to maintain the safe operation of the flumes until a full replacement can occur.

The proposed project includes localized improvements to canal and conversion of wooden flume structures to box culvert canal structures supported on Mechanically Stabilized Earth (MSE) walls. Project components include all-weather Aggregate Base Rock (AB) surface improvements to Camp X Road, a new canal crossing at the siphon, canal bench AB improvements, conversion of Flumes 38 and 39/40 to canal with a new MSE bench, repair of the landslide at the L-Wall (immediately downstream of 39/40), canal replacement, canal crossing at Road R71, and AB improvements to Road R71 to eliminate helicopter use and provide construction and maintenance access. Construction is estimated to occur in 2020. Current construction cost estimates are based on a 50% design level plans. The cost estimate will be refined as the project design becomes finalized.

Basis for Priority:

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

Project Financial Summary:

Funded to Date:	\$ 559,052	Expenditures through end of year:	\$ 696,539
Spent to Date:	\$ 496,539	2018 - 2022 Planned Expenditures:	\$ 7,200,000
Cash flow through end of year:	\$ 200,000	Total Project Estimate:	\$ 7,896,539
Project Balance	\$ (137,487)	Additional Funding Required	\$ 7,337,487

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design	\$ 100,000					\$ 100,000
Construction				\$ 6,800,000	\$ 100,000	\$ 6,900,000
Warranty/FERC QCIP				\$ 100,000	\$ 100,000	\$ 200,000
TOTAL	\$ 100,000	\$ -	\$ -	\$ 6,900,000	\$ 200,000	\$ 7,200,000

Funding Sources	Percentage	2018	Amount
Water Rates	47%		\$111,619
Water FCCs	53%		\$125,868
			\$0
Total	100%		\$237,487

Funding Comments:

Project Number: 16044
Project Name: Pacific Tunnel Portal Rehab
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Mutschler **Board Approval:**

Project Description:

The Pacific Tunnel was constructed in 1929 and is approximately 300 feet in length. The upstream and downstream tunnel portals were replaced in 2003 and constructed of untreated timber, which are now in degraded condition and must be replaced with new timber or permanent steel reinforced shotcrete portals. The tunnel between the portals is unlined and comprised of soft relatively volcanic rock that has eroded below the high water line. To prevent continued erosion of the tunnel and prevent failure, a new steel reinforced shotcrete liner and invert slab must be installed to stop further erosion of the tunnel invert and walls. The geotechnical assessment and design for the project have not been started so the construction costs shown in this CIP is an estimate based on construction costs for the Esmeralda Tunnel. Construction cost estimates will be refined upon completion of the geotechnical assessment and design.

Basis for Priority:

The Pacific Tunnel portals, interior side walls, and invert will continue to degrade that will result in the ultimate collapse of the tunnel if not addressed. Failure of the tunnel would cause interruption of Project 184 water deliveries that provides one-third of the District's water supply and hydroelectric power generation for an extended period in order to make emergency repairs.

Project Financial Summary:

Funded to Date:	\$ 50,000	Expenditures through end of year:	\$ 29,943
Spent to Date:	\$ 29,943	2018 - 2022 Planned Expenditures:	\$ 2,017,500
Cash flow through end of year:		Total Project Estimate:	\$ 2,047,443
Project Balance	\$ 20,057	Additional Funding Required	\$ 1,997,443

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning	\$ 65,000					\$ 65,000
Design		\$ 160,000				\$ 160,000
Construction			\$ 1,667,500	\$ 25,000		\$ 1,692,500
FERC/QCIP			\$ 75,000	\$ 25,000		\$ 100,000
TOTAL	\$ 65,000	\$ 160,000	\$ 1,742,500	\$ 50,000	\$ -	\$ 2,017,500

Funding Sources	Percentage	2018	Amount
Water Rates	47%		\$21,123
Water FCCs	53%		\$23,820
			\$0
Total	100%		\$44,943

Funding Comments:

Project Number: 16046
Project Name: Powerhouse Roof
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Kessler **Board Approval:**

Project Description:

The El Dorado Powerhouse roof has been maintained over the past 30 + years by applying an overlay membrane/coating onto previous ones. The roof is leaking and could benefit from drainage improvements. It is unknown if there is any structural damage until the roof covering is removed. The project is to assess the scope of roof repairs to the extent possible without compromising the roofing, to develop a work plan for replacing the roof cover, and to ultimately remove the existing layers of roof covering and replace with a new system. Investigation and development of plans for replacing the roof cover with contingencies for structural repairs if needed are planned for early 2018. The roof covering would also be replaced in 2018.

Basis for Priority:

Maintain existing assets.

Project Financial Summary:

Funded to Date:	\$ 50,000	Expenditures through end of year:	\$ 3,993
Spent to Date:	\$ 3,993	2018 - 2022 Planned Expenditures:	\$ 225,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 228,993
Project Balance	\$ 46,007	Additional Funding Required	\$ 178,993

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning	\$ 25,000					\$ 25,000
Design						\$ -
Construction	\$ 200,000					\$ 200,000
						\$ -
TOTAL	\$ 225,000	\$ -	\$ -	\$ -	\$ -	\$ 225,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$178,993
Water FCCs	0%		\$0
			\$0
Total	100%		\$178,993

Funding Comments:

Project Number: 17003
Project Name: HM / Canal Failure DS at Flume 10
Project Category: Reliability & Service Level Improvements
Priority: 1 **PM:** Noel **Board Approval:**

Project Description:

During the storm events of 2017, a significant amount of runoff resulted in soil and rock failure and damaged drainage above Flume 10. A debris slide (mud slide) flowed into the canal downstream of Flume 10 resulting in complete blockage of the canal. The canal breach eroded the canal bench which provides confinement for the canal liner and the liner broke resulting in a complete breach and loss of flow. The breach scoured a channel to the South Fork of the American River and initially destroyed approximately 60 feet of canal. Over the course of days, a total of 390 lineal feet of canal was distressed and over-stressed from undrained soil pressure and debris slide material rendering the system unusable. The failure is on a portion of canal and bench directly downstream from Flume 10 and is located south of Highway 50 near White Hall, CA.

Access to Flume 10 (new Bridge & Road) will include the construction of one canal crossing (bridge) using reinforced box culvert near Ditch Camp 1, excavation of 1,760 cubic yards of earth and rock to prepare a stable base for MSE, and 400 square feet of Tensar Sierrascape wall construction. 250 lineal feet of drainage and 60,000 square feet of all-weather fabric-reinforced aggregate base rock road surface will be constructed. MSE would progress in 18" lifts with each lift including a heavy geotextile geogrid attached the MSE wall facing. The permanent access is designed to achieve a required Factor of Safety of 1.5 for stability in the area integral to support the facility. Flume 10 failure repairs will include excavation of 5,000 cubic yards of earth and rock to prepare a stable base for MSE, and 1,200 square feet of Tensar Sierrascape wall construction. 950 lineal feet of drainage and 2,300 square feet of all-weather fabric-reinforced aggregate base rock road surface will be constructed. MSE would progress in 18" lifts with each lift including a heavy geotextile geogrid attached the MSE wall facing.

Basis for Priority:

The El Dorado Canal (Canal) is a linear water conveyance system that consists of several miles of canals, flumes, siphons, and tunnels and is part of FERC Project 184 that provides both hydroelectric power generation and approximately 1/3 of the Districts consumptive water supply. Damage to any part of the Canal may severely reduce or prevent the ability to convey water from the South Fork of the American River and several tributaries to Forebay Reservoir.

Project Financial Summary:

Funded to Date:	\$ 9,355,343	Expenditures through end of year:	\$ 8,712,072
Spent to Date:	\$ 4,712,072	2018 - 2022 Planned Expenditures:	\$ 500,000
Cash flow through end of year:	\$ 4,000,000	Total Project Estimate:	\$ 9,212,072
Project Balance	\$ 643,271	Additional Funding Required	\$ -

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction	\$ 300,000					\$ 300,000
Warranty/FERC QCIP	\$ 200,000					\$ 200,000
TOTAL	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ 500,000

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

Funding Comments:

Project Number: 17004
Project Name: HM at Flume 5
Project Category: Reliability & Service Level Improvements
Priority: 1 **PM:** Noel **Board Approval:**

Project Description:

During the storm events of 2017, a significant amount of runoff resulted in soil and rock failure above Flume 5. A soil and rock failure came to rest on the uphill side of Flume 5 over-stressing the wooden flume. The slope failure scoured the hillside and destabilized the supporting flume over a length of approximately 80 feet. Additionally, a tension crack appeared in the bench adjacent to the flume over a length of 250 feet that destabilized the flume foundations. These failures rendered the system unusable. Flume 5 is located south of Highway 50 near Kyburz, CA.

Basis for Priority:

The El Dorado Canal (Canal) is a linear water conveyance system that consists of several miles of canals, flumes, siphons, and tunnels and is part of FERC Project 184 that provides both hydroelectric power generation and approximately 1/3 of the Districts consumptive water supply. Damage to any part of the Canal may severely reduce or prevent the ability to convey water from the South Fork of the American River and several tributaries to Forebay Reservoir.

Project Financial Summary:

Funded to Date:	\$ 3,044,560	Expenditures through end of year:	\$ 1,238,174
Spent to Date:	\$ 238,174	2018 - 2022 Planned Expenditures:	\$ 50,000
Cash flow through end of year:	\$ 1,000,000	Total Project Estimate:	\$ 1,288,174
Project Balance	\$ 1,806,386	Additional Funding Required	\$ -

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction						\$ -
Warranty/FERC QCIP	\$ 50,000					\$ 50,000
TOTAL	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000

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

Funding Comments:

Project Number: 17009
Project Name: HM at Flume 9
Project Category: Reliability & Service Level Improvements
Priority: 1 **PM:** Noel **Board Approval:**

Project Description:

During the storm events of 2017, a significant amount of runoff resulted in soil and rock failure above Flume 9. The soil and rock failure is contained in an engineered rock fall system of cable-net mesh (cable-mesh drapery) and rock anchors that is now over-stressed. The failure is on a slope above a pre-cast concrete flume (Flume 9) operated by El Dorado Irrigation District (District). Flume 9 is located on property owned the District. The project site is located south of Highway 50 near White Hall, CA. The landslide threatens Flume 9 and operation of FERC Project 184.

Flume 9 slope failure repair will include scaling and rock fall system repair of 2,000 square feet of slope, excavation of 200 cubic yards of earth and rock to prepare a stable base for MSE, and 720 square feet of Ultrablock wall construction. 80 lineal feet of subdrain will be constructed at the back of the excavation to provide drainage for the engineered fill and geogrid. MSE would progress in 18" lifts with each lift including a heavy geotextile geogrid attached intermittently the Ultrablock wall. The permanent repair is designed to achieve a required Factor of Safety of 1.5 for stability in the area integral to support the facility.

Basis for Priority:

The El Dorado Canal (Canal) is a linear water conveyance system that consists of several miles of canals, flumes, siphons, and tunnels and is part of FERC Project 184 that provides both hydroelectric power generation and approximately 1/3 of the Districts consumptive water supply. Damage to any part of the Canal may severely reduce or prevent the ability to convey water from the South Fork of the American River and several tributaries to Forebay Reservoir.

Project Financial Summary:

Funded to Date:	\$ 987,030	Expenditures through end of year:	\$ 1,535,536
Spent to Date:	\$ 35,536	2018 - 2022 Planned Expenditures:	\$ 50,000
Cash flow through end of year:	\$ 1,500,000	Total Project Estimate:	\$ 1,585,536
Project Balance	\$ (548,506)	Additional Funding Required	\$ 598,506

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction						\$ -
Warranty/FERC QCIP	\$ 50,000					\$ 50,000
TOTAL	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000

Funding Sources	Percentage	2018	Amount
Water Rates	47%		\$281,298
Water FCCs	53%		\$317,208
			\$0
Total	100%		\$598,506

Funding Comments:

Project Number: 17013H
Project Name: Forebay Dam Upgrades
Project Category: Regulatory Requirements

Priority: 1 **PM:** Kessler **Board Approval:** 08/14/17

Project Description:

Construction is underway. The Board in its August 14, 2017 meeting, authorized funding of \$25,155,336, award of a \$19,147,500 construction contract to Shimmick, and other associated contracts and contingency. Staff expects FERC to issue full authorization to construct before spring 2018 when construction is scheduled to resume following a winter 2017/2018 shutdown. Construction is planned through December 15, 2019.

Basis for Priority:

- Public safety is to be maintained and DSOD/FERC have issued a dam safety mandate. The Project is required to achieve the following:
- Safety: Protect life and property below the dam and meet dam safety regulatory mandates of DSOD and FERC
 - Reliability: Protect and improve drinking water reliability for the District's customers
 - Financial: Protect District ratepayers from the cost of required repairs by optimizing hydroelectric generation and minimizing capital costs

Project Financial Summary:

Funded to Date:	\$ 25,155,336	Expenditures through end of year:	\$ 3,500,000
Spent to Date:	\$ 94,574	2018 - 2022 Planned Expenditures:	\$ 21,655,336
Cash flow through end of year:		Total Project Estimate:	\$ 25,155,336
Project Balance	\$ 25,060,762	Additional Funding Required	\$ -

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction	\$ 14,000,000	\$ 7,000,000	\$ 655,336			\$ 21,655,336
						\$ -
TOTAL	\$ 14,000,000	\$ 7,000,000	\$ 655,336	\$ -	\$ -	\$ 21,655,336

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

Funding Comments:

Project Number: 17025
Project Name: Flume 45 Abutment Replacement
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Mutschler **Board Approval:**

Project Description:

This section of Flume 45 is an elevated wood flume approximately 100 feet in length and last replaced in 1945, which was constructed to span a section of the historic rock bench that had previously failed. In 2014 the District crews made interim repairs to ensure the continued safe operation. The replacement of this entire flume is scheduled to occur during the scheduled canal outage in the future. This project will only address the abutment section. Construction cost estimates will be revised upon completion of the geotechnical assessment and design.

Basis for Priority:

The flume will continue to deteriorate potentially causing flume failures that would result in significant impacts to the public, Highway 50, and the South Fork of the American River. Additionally, water supply would be out of service for an extended period to make emergency repairs resulting in interruption of the reliable delivery of water for consumptive use and hydroelectric power generation.

Project Financial Summary:

Funded to Date:	\$ 50,000	Expenditures through end of year:	\$ 71
Spent to Date:	\$ 71	2018 - 2022 Planned Expenditures:	\$ 1,255,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 1,255,071
Project Balance	\$ 49,929	Additional Funding Required	\$ 1,205,071

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning			\$ 45,000			\$ 45,000
Geo/Design			\$ 50,000	\$ 100,000		\$ 150,000
Construction					\$ 1,000,000	\$ 1,000,000
QCIP					\$ 60,000	\$ 60,000
TOTAL	\$ -	\$ -	\$ 95,000	\$ 100,000	\$ 1,060,000	\$ 1,255,000

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

Funding Comments:

Project Number: 17026
Project Name: Flume 47C Replacement
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Mutschler **Board Approval:**

Project Description:

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

Basis for Priority:

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

Project Financial Summary:

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

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

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

Funding Comments:

Project Number: 17027
Project Name: Spill 3 Cribwall
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Mutschler **Board Approval:**

Project Description:

Spillway No. 3 is located on the south side of the American River above the USFS 30-Mile Tract subdivision. Spillway No. 3 is no longer used due to the presence of erosive soils in the spillway channel. The spillway structure and canal bench at this location is supported by an earth fill bench and degraded timber cribwall, which was identified for replacement during a recent comprehensive inspection of all flumes and spillways in the Project 184 conveyance between Kyburz and Forebay Reservoir. Funding shown is for preliminary design and studies to develop repair method and costs.

Basis for Priority:

The flumes will continue to deteriorate potentially causing flume failures that may result in significant impacts to the public, Highway 50, and the South Fork of the American River. Additionally, 1/3 of the District's water supply would be out of service for an extended period to make emergency repairs resulting in possible interruption of the reliable delivery of water for consumptive use and hydroelectric power generation.

Project Financial Summary:

Funded to Date:	\$ 50,000	Expenditures through end of year:	\$ 71
Spent to Date:	\$ 71	2018 - 2022 Planned Expenditures:	\$ 182,500
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 182,571
Project Balance	\$ 49,929	Additional Funding Required	\$ 132,571

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning	\$ 76,500					\$ 76,500
Design	\$ 106,000					\$ 106,000
Construction						\$ -
Warranty-FERC QCIP						\$ -
TOTAL	\$ 182,500	\$ -	\$ -	\$ -	\$ -	\$ 182,500

Funding Sources	Percentage	2018	Amount
Water Rates	47%		\$62,308
Water FCCs	53%		\$70,263
			\$0
Total	100%		\$132,571

Funding Comments:

Project Number: 17041
Project Name: Flume 30 Replacement
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Mutschler **Board Approval:**

Project Description:

Flume 30 is approximately 350 feet in length and last replaced by PG&E in the early 1990's. Abutment stability measures were implemented during the outage of 2011 to ensure the continued integrity of the entire flume. In 2015, visual inspections and core samples of the wooden structural timbers were collected and analyzed. The findings of the inspection show that when the flume was replaced in the 1990's undersized structural timber was used. This condition is compounded today by the degradation of the sills over the last 25 years that have resulted in overstressing of the wood flume support structure. In 2015, District crews added additional posts and sills and installed additional supports to the cantilevered ends of each sill end to stabilize the flume to ensure safe operation of the asset until a complete replacement can occur. The project will need to ensure that the trail to the diversion structure on Bull Creek is maintained, the Bull Creek diversion and weir need to be rebuilt, the rock wall abutment will need to be reconstructed and the flume converted to concrete. Due to the location of this flume, all materials and supplies will need to be brought in by helicopter. The geotechnical assessment and design for the project have not been started so the construction costs are not shown in this CIP. Construction cost estimates will be refined to the CIP upon completion of the geotechnical assessment and design.

Basis for Priority:

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

Project Financial Summary:

Funded to Date:	\$ -	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 8,900,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 8,900,000
Project Balance	\$ -	Additional Funding Required	\$ 8,900,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning/Env	\$ 100,000					\$ 100,000
Geo/Design	\$ 200,000	\$ 350,000				\$ 550,000
Construction			\$ 8,250,000			\$ 8,250,000
Warranty/QCIP						\$ -
TOTAL	\$ 300,000	\$ 350,000	\$ 8,250,000	\$ -	\$ -	\$ 8,900,000

Funding Sources	Percentage	2018	Amount
Water Rates	47%		\$141,000
Water FCCs	53%		\$159,000
			\$0
Total	100%		\$300,000

Funding Comments:

Project Number: PLANNED
Project Name: Annual Canal and Flume Program
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Gibson **Board Approval:**

Project Description:

Canals and flumes are assessed annually by District staff to assess and prioritize needed improvements that will be implemented during the annual Canal outage. These improvements are needed to extend the service life of the asset and maintain system reliability. Improvements to the degraded canal and flume sections include materials, concrete, shotcrete, helicopter support, equipment, and District crew labor. Canal, flume, and spillway improvements are necessary in order to maintain reliability of the water supply. Annual system improvements will be determined by Hydro Operations each spring for implementation to be achieved during the scheduled Canal outage.

Basis for Priority:

These are projects that provide measurable progress toward achieving the District's goals, but over which the District has a moderate level of control as to when they should be performed.

Project Financial Summary:

Funded to Date:	\$ 446,566	Expenditures through end of year:	\$ 446,566
Spent to Date:	\$ 82,572	2018 - 2022 Planned Expenditures:	\$ 2,500,000
Cash flow through end of year:	\$ 363,994	Total Project Estimate:	\$ 2,946,566
Project Balance	\$ 363,994	Additional Funding Required	\$ 2,136,006

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 2,500,000
						\$ -
TOTAL	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 2,500,000

Funding Sources	Percentage	2018	Amount
Water Rates	47%		\$63,923
Water FCCs	53%		\$72,083
			\$0
Total	100%		\$136,006

Funding Comments:

Project Number: PLANNED
Project Name: Diversion Gaging Measurement and Reporting Requirements
Project Category: Regulatory Requirements
Priority: 1 **PM:** Wilson **Board Approval:**

Project Description:

Senate Bill 88 mandated new diversion reporting and measurement requirements for all surface water rights holders within California who divert more than 10 acre-feet per year. SB 88 has a phased effective date between January 2017 and January 2018 depending on size of diversion. The District participated in an ACWA task force in an attempt to eliminate or modify these new requirements, but the law still passed and is now phasing into effect. Staff has initially evaluated the District's water right portfolio and determined many of the facilities currently comply with the new regulation, but some of the smaller diversion facilities for the smaller water rights will require modification to add measurement and/or SCADA communication. The existing budget is an estimate subject to revision as the evaluation is completed and the specific needs of each facility and total number of facilities are finalized.

Basis for Priority:

If the District does not comply with this requirement, there would be unacceptable risk to the security of the District's water rights including civil liability up to \$500 per day pursuant to Water Code Section 1846.

Project Financial Summary:			
Funded to Date:	\$ -	Expenditures through end of year:	\$ 20,000
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 150,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 170,000
Project Balance	\$ -	Additional Funding Required	\$ 170,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Design and installation		\$ 25,000	\$ 25,000	\$ -	\$ -	\$ 50,000
Staff time	\$ 35,000	\$ 35,000				\$ 70,000
Permitting	\$ 15,000	\$ 15,000				\$ 30,000
						\$ -
TOTAL	\$ 50,000	\$ 75,000	\$ 25,000	\$ -	\$ -	\$ 150,000

Funding Sources	Percentage	2018	Amount
			\$0
Water Rates	100%		\$50,000
			\$0
Total	100%		\$50,000

Funding Comments:

Project Number: PLANNED
Project Name: Flume 46A Canal Conversion
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Mutschler **Board Approval:**

Project Description:

Flume 46A is an elevated fiberglass lined wood flume, approximately 144 feet in length, and constructed by PG&E in 1966. The substructure lumber is under sized at 8 x 6 feet instead of 8 x 8 feet. This work is scheduled to occur towards the end of this 5-year horizon. Construction costs will be refined once design is complete.

Basis for Priority:

The flume will continue to deteriorate potentially causing flume failures that would result in significant impacts to the public, Highway 50, and the South Fork of the American River. Additionally, water supply would be out of service for an extended period to make emergency repairs resulting in interruption of the reliable delivery of water for consumptive use and hydroelectric power generation.

Project Financial Summary:

Funded to Date:	\$ -	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 200,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 200,000
Project Balance	\$ -	Additional Funding Required	\$ 200,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning/Enviro			\$ -		\$ 85,000	\$ 85,000
Geo/Design					\$ 115,000	\$ 115,000
Construction						\$ -
FERC QCIP						\$ -
TOTAL	\$ -	\$ -	\$ -	\$ -	\$ 200,000	\$ 200,000

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

Funding Comments:

Project Number: PLANNED
Project Name: Flume 48 Replacement/Tunnel option
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Mutschler **Board Approval:**

Project Description:

Flume 48 was originally constructed of wood in 1876 and supported by an un-mortared, hand-stacked rock bench located north of Highway 50 near Camp 5. In 1948, the wooden flume was completely replaced. District crews have been performing extensive maintenance work of the asset to extend the service life of the critically degraded structure until the full replacement can occur. The District will begin evaluating two replacement alternatives for this degraded flume. Alternative 1 is to stabilize the hand-stacked rock bench utilizing stabilization measures developed and employed at Flume 41 and the degraded wood flume would be replaced with steel reinforced precast flume. Alternative 2 would be to construct a 500 foot tunnel between Flume 48 and Highway 50 and abandon approximately 700 feet of canal and 448 feet of elevated wood flume. Option 2, if feasible, could result in significantly lower construction costs but would require acquisition of two parcels and a FERC boundary adjustment. Design and construction costs are unknown at this time, and will be updated in 2018 after further alternatives analysis. Construction planned to be deferred until the next bond issuance.

Basis for Priority:

The flumes will continue to deteriorate potentially causing flume failures that may result in significant impacts to the public, Highway 50, and the South Fork of the American River. Additionally, 1/3 of the District's water supply would be out of service for an extended period to make emergency repairs resulting in possible interruption of the reliable delivery of water for consumptive use and hydroelectric power generation.

Project Financial Summary:

Funded to Date:	\$ -	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 300,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 300,000
Project Balance	\$ -	Additional Funding Required	\$ 300,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning	\$ 100,000					\$ 100,000
Design		\$ 200,000	*	*		\$ 200,000
Construction					*	\$ -
Warranty-FERC QCIP						\$ -
TOTAL	\$ 100,000	\$ 200,000	\$ -	\$ -	\$ -	\$ 300,000

Funding Sources	Percentage	2018	Amount
Water Rates	47%		\$47,000
Water FCCs	53%		\$53,000
			\$0
Total	100%		\$100,000

Funding Comments:

Project Number: PLANNED
Project Name: Hydro Facility Replacement Program
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Gibson **Board Approval:**

Project Description:

This is a program to replace equipment and facilities used in the hydro system that have failed or reached end of useful life. Funding will be used for hydro facilities rehabilitation such as road and building improvements that will extend the life of the asset.

Basis for Priority:

Project purpose is to maintain existing assets and prolong their useful service life and reliability.

Project Financial Summary:

Funded to Date:	\$ -	Expenditures through end of year:	
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 500,000
Cash flow through end of year:		Total Project Estimate:	\$ 500,000
Project Balance	\$ -	Additional Funding Required	\$ 500,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 500,000
						\$ -
TOTAL	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 500,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$100,000
Total	100%		\$100,000

Funding Comments:

2018

CAPITAL IMPROVEMENT PLAN Program:

Hydroelectric

Project Number: PLANNED
Project Name: Lake Aloha Dam Repairs
Project Category: Regulatory Requirements

Priority: 1 **PM:** Kessler **Board Approval:**

Project Description:

Necessary repairs for Lake Aloha Dams include the reinforcement of the outlet gate tower (as required by CA Division of Safety of Dams), sealing the upstream face of the Main and Auxiliary Dams, and repairing eroded areas at the base of several auxiliary dams on the reservoir side. The design for the outlet tower reinforcement has been modified to a simpler repair method resulting in savings in design and construction costs. Construction is planned for fall 2018.

This project continues the work of the previously approved and funded PN 04002H.

Basis for Priority:

Non-compliance with FERC and DSOD dam safety regulations.

Project Financial Summary:

Funded to Date:		Expenditures through end of year:	
Spent to Date:		2018 - 2022 Planned Expenditures:	\$ 200,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 200,000
Project Balance	\$ -	Additional Funding Required	\$ 200,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning	\$ 10,000					\$ 10,000
Design	\$ 10,000					\$ 10,000
Construction	\$ 180,000					\$ 180,000
						\$ -
TOTAL	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ 200,000

Funding Sources	Percentage	2018	Amount
Water FCCs	53%		\$106,000
Water Rates	47%		\$94,000
			\$0
Total	100%		\$200,000

Funding Comments:

Project Number: PLANNED
Project Name: Penstock Stabilization and Repair
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Kessler **Board Approval:**

Project Description:

Water is provided from Forebay Reservoir to the El Dorado Powerhouse through a 60-inch diameter penstock for power generation. FERC regulations and our standard operating procedures require the penstock to be inspected and assessed at regular intervals. This project was approved in 2015 to perform a large scale assessment of the penstock and determine if any upgrades or replacements need to be made for continued reliability. The condition assessment continued into 2017 and identified the following needed improvements. The cost of these improvements are preliminary at this time.

- 1) Improving access to support conducting O&M and capital improvements safely
- 2) Relining the interior of the surge tank and the buried section between the penstock tunnel and surge tank at welded joints where the original lining was applied in the field
- 3) Performing drainage improvements to the high-pressure penstock section where a channel continues to erode including around some of the anchor blocks
- 4) Stabilizing the bench d/s of the penstock tunnel section where significant rockfall and landslide potential exists
- 5) Improving the anchoring of the surge tank to meet seismic loading; Work planned for 2018 and 2019 includes improving access, and developing plans and specifications and conducting environmental review/permitting for accomplishing items 1 - 5 above. The repair costs

Basis for Priority:

The project is to maintain penstock safety and service reliability. The ability for the District to receive \$5 million - \$10 million annually in power generation revenues depends on the availability of the penstock. The penstock is one of the highest pressure and oldest in the United States.

Project Financial Summary:

Funded to Date:		Expenditures through end of year:	\$ -
Spent to Date:		2018 - 2022 Planned Expenditures:	\$ 420,000
Cash flow through end of year:		Total Project Estimate:	\$ 420,000
Project Balance	\$ -	Additional Funding Required	\$ 420,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning	\$ 30,000					\$ 30,000
Design	\$ 80,000		\$ 60,000			\$ 140,000
Construction		\$ 100,000	\$ 150,000			\$ 250,000
						\$ -
TOTAL	\$ 110,000	\$ 100,000	\$ 210,000	\$ -	\$ -	\$ 420,000

Funding Sources	Percentage	2018	Amount
Water rates	100%		\$110,000
			\$0
			\$0
Total	100%		\$110,000

Funding Comments:

Project Number: PLANNED
Project Name: Silver Lake Dam Replacement
Project Category: Regulatory Requirements

Priority: 1 **PM:** Kessler **Board Approval:**

Project Description:

The long-term reliability of the dam came into question in the spring of 2015 when a sink hole was discovered. In response, DSOD restricted the reservoir level, and the District conducted emergency repairs and a corresponding geotechnical investigation. The likely cause of the sink hole was the creation of voids in the dam as a result of rotting interior logs that have been encapsulated as fill and were part of the original rock and soil filled timber crib structure constructed in 1876. Other evidence of voids occurring within the fill of the dam is uneven crest settlement and shifting locations of leakage discharge. In addition, the upstream gunite face of Silver Lake Dam is at the end of its useful life and no longer reliable. Repairs have been employed since the late 1990's to stem leakage and extend the life of the 50-year old gunite. However, the gunite continues to thin, crack and crumble making repairs increasingly less durable and sustainable. Unforeseeable periods of leakage have also caused delayed filling or early drawdown of the reservoir resulting in loss of water supply and power generation. The leakage through the dam has to be controlled to acceptable rates in order to prevent creation of more voids in the dam as caused by soil particle migration (piping).

The District has evaluated rehabilitation/replacement alternatives to remediate the three major defects (upstream face, interior fill, spillway capacity). The alternatives analysis was submitted to FERC and DSOD in fall 2016, and District staff met with their representatives in January 2017. FERC and DSOD agreed with the District's preliminary findings that the most effective, reliable and least cost alternative is to replace the dam. The project will need to undergo a progression of design and environmental activities over the next several years beginning in 2018 with preparing a Basis of Design Memorandum, conducting a geotechnical investigation to establish foundation conditions, and performing initial environmental review and permitting. As these steps evolve and refine the project, the District will be able to estimate the construction cost with greater accuracy.

This project continues the work of the previously approved and funded PN 06017H.

Basis for Priority:

Compliance with FERC and DSOD dam safety program requirements.

Project Financial Summary:

Funded to Date:		Expenditures through end of year:	\$ -
Spent to Date:		2018 - 2022 Planned Expenditures:	\$ 1,350,000
Cash flow through end of year:		Total Project Estimate:	\$ 1,350,000
Project Balance	\$ -	Additional Funding Required	\$ 1,350,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning	\$150,000	\$150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 750,000
Design		\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 600,000
Construction					*	\$ -
TOTAL	\$ 150,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 1,350,000

Funding Sources	Percentage	2018	Amount
Water FCCs	53%		\$79,500
Water Rates	47%		\$70,500
Total	100%		\$150,000

Funding Comments: Preliminary construction cost estimate not included in 5 year planning horizon. Construction is assumed to take place beyond 5-years but may be accelerated based on further analysis and regulatory feedback.

Project Number: PLANNED
Project Name: Weber Dam Access
Project Category: Reliability & Service Level Improvements
Priority: 1 **PM:** Money **Board Approval:**

Project Description:

District staff routinely inspect Weber dam and the communication device located at the top of the dam. Currently staff must climb up steep terrain and over slippery rock to get to the top of the right and left abutments of the dam. The current access route is difficult during dry weather conditions and can be hazardous during wet weather conditions. An injury has occurred in the past when staff was trying to access the left abutment. This project is needed to provide safe access to staff that routinely access the dam. The project will include better trail access and stairways leading to the top of the dam. The design is expected to be completed in 2017 with construction by District crews in 2018. The cost estimates are preliminary as the geotechnical and design work is not yet underway.

Basis for Priority:

This project is needed to improve the safe access for staff to inspect and maintain the facility.

Project Financial Summary:

Funded to Date:	\$ -	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 150,000
Cash flow through end of year:		Total Project Estimate:	\$ 150,000
Project Balance	\$ -	Additional Funding Required	\$ 150,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction	\$ 150,000					\$ 150,000
						\$ -
TOTAL	\$ 150,000	\$ -	\$ -	\$ -	\$ -	\$ 150,000

Funding Sources	Percentage	2018	Amount
Water Rates	47%		\$70,500
Water FCCs	53%		\$79,500
			\$0
Total	100%		\$150,000

Funding Comments:

Recreation Projects

Project Number: PLANNED
Project Name: Recreation Facility Replacement Program
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Hawkins **Board Approval:**

Project Description:

This is a program to replace equipment used at District-owned recreation facilities that have failed or reached end of useful life. Funding will be used for recreation facilities rehabilitation such as road and building improvements that will extend the life of the asset. Need to make numerous repairs to the roadways within SPRA, reroute and repair work on trail system, upgrade HVAC in gatehouse, upgrade SPRA water system, increase ADA facilities and continue to expand the forest management program.

Basis for Priority:

Project purpose is to maintain existing assets and prolong their useful service life and reliability.

Project Financial Summary:			
Funded to Date:	\$ -	Expenditures through end of year:	
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 150,000
Cash flow through end of year:		Total Project Estimate:	\$ 150,000
Project Balance	\$ -	Additional Funding Required	\$ 150,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction	\$ 50,000		\$ 50,000		\$ 50,000	\$ 150,000
						\$ -
TOTAL	\$ 50,000	\$ -	\$ 50,000	\$ -	\$ 50,000	\$ 150,000

Funding Sources	Percentage	2018	Amount
Property Tax	100%		\$50,000
Total	100%		\$50,000

Funding Comments:

Project Number: PLANNED
Project Name: Sly Park Recreation Area Facility Improvements
Project Category: Master Planning
Priority: 2 **PM:** Hawkins **Board Approval:**

Project Description:

The scope of this project will be to analyze and implement park improvements as described in the Sly Park Master Plan. The addition of these new facilities will generate more income, enhance the level of environment protection, improve water quality, provide facilities that enhance the visitors experience and increase the level of safety for park visitors and EID employees. These projects would include but would not be limited too; 1) Repositioning the SPRA entrance gatehouse to increase the distance between the gate and CR E-16, thus reducing traffic back ups on E-16 and the potential for traffic accidents. 2) Expanding the number of day use facilities, improving and enlarging existing day use facilities and improving and enlarging the associated parking areas. This expansion/improvement would help reduce the need to close the park during periods of high use, resulting in increased revenue. These improvements would also reduce camper/day user conflict and would provide a means potentially reduce the impact to the MET accessed day use areas. Day Use access to SPRA was restricted for one (1) to three (3) hours every Sat & Sun, from 5/27/17-9/3/2017 due to reaching facility capacity thresholds. 3) Improved campsite parking spur deliniation and campground roadways to reduce soil compaction and improve stormwater runoff control and capture to reduce erosion and improve water quality. Currently, many of the day use areas and campgrounds in SPRA have minimal or zero storm water management systems in place. By clearly deliniating parking areas and improving roadways with culverts and oil separators, storm water could be directed and contaminates captured before ientering Jenkinson Lake. Clearly defined parking areas will also reduce the amount of soil compaction which will lead to increased revegetation through out SPRA, thus improving water quality.

Basis for Priority:

Continued increased risk to the environment and water quality, health and safety risk for SPRA visitors and EID staff, revenue generation and increased customer satisfaction.

Project Financial Summary:			
Funded to Date:	\$ -	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 250,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 250,000
Project Balance	\$ -	Additional Funding Required	\$ 250,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning	\$ 50,000					\$ 50,000
Design		\$ 50,000				\$ 50,000
Construction		\$ 50,000	\$ 100,000			\$ 150,000
						\$ -
TOTAL	\$ 50,000	\$ 100,000	\$ 100,000	\$ -	\$ -	\$ 250,000

Funding Sources	Percentage	2018	Amount
Property Tax	100%		\$50,000
			\$0
			\$0
Total	100%		\$50,000

Funding Comments:

General District Projects

Project Number: 06004G
Project Name: SMUD / EI Dorado Agreement Water Rights
Project Category: Regulatory Requirements

Priority: 1 **PM:** Poulsen **Board Approval:** 10/24/16

Project Description:

The Sacramento Municipal Utility District and EI Dorado County interests, including EID, signed an agreement in 2005 that allows for the use of SMUD's UARP reservoirs for county water storage. The agreement did not include water rights. The transfer of City of Sacramento's or related water rights is the most logical source and application has been made to the SWRCB for that change. The SMUD/EI Dorado Agreement provides EID with 30,000 acre feet of storage annually up to 2030. Thereafter, 40,000 acre feet of storage annually is provided. Additionally the agreement allows for the banking of up to 15,000 acre feet for drought carryover storage in dry year conditions.

EID is a party to a 2007 cost share agreement with the EI Dorado Water and Power Authority (EDWPA) to pursue the water rights for the SMUD/EI Dorado Agreement. EID's share under that agreement is approximately 36%, with EI Dorado County and EI Dorado County contributing approximately 32% each. For its fiscal year 2015-16, EDWPA has budgeted \$937,500 in member-agency contributions, putting EID's share through June 2016 at approximately \$337,500 including capitalized labor. Any costs associated with one-time acquisition of up to 15,000 acre-feet of drought storage are not included in this request, although efforts to do so are ongoing, because of the uncertain timing and cost of such an acquisition.

Basis for Priority:

The District's 2015 Urban Water Management Plan, its 2013 Water Resources Master Plan, and several Water Supply Assessments completed in 2013 all identify this project as a source of water supply to serve the District's long-term needs. Categorized as Priority 1, required by agreement.

Project Financial Summary:

Funded to Date:	\$ 2,880,187	Expenditures through end of year:	\$ 2,770,697
Spent to Date:	\$ 2,770,697	2018 - 2022 Planned Expenditures:	\$ 300,000
Cash flow through end of year:		Total Project Estimate:	\$ 3,070,697
Project Balance	\$ 109,490	Additional Funding Required	\$ 190,510

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning	\$300,000					\$ 300,000
Design						\$ -
Construction						\$ -
15,000 af acquisition						\$ -
TOTAL	\$ 300,000	\$ -	\$ -	\$ -	\$ -	\$ 300,000

Funding Sources	Percentage	2018	Amount
Water FCCs	100%		\$190,510
			\$0
			\$0
Total	100%		\$190,510

Funding Comments:

Project Number: 16003
Project Name: Permit 21112 Change in Point of Diversion
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Poulsen **Board Approval:**

Project Description:

In 2013, the District adopted the Integrated Water Resources Master Plan which calls for construction of facilities to divert water at the White Rock Penstock, convey the raw water to a new treatment plant in the Western Region, and transmit the treated water. This project is to prepare feasibility studies required to finalize locations and alignments, refine design criteria and sizing, identify land requirements, and update costs estimates. The water to be diverted will be a combination of 1) supplies obtained by the El Dorado Water and Power Authority and made available under the El Dorado-SMUD Cooperation Agreement, and 2) Permit 21112. To take all or any portion of Permit 21112 water upstream, EID must successfully petition the State Water Resources Control Board (SWRCB) for permit changes to add points of diversion and redirection. The SWRCB Change Petition process encompasses preparation of the Petition (including preliminary engineering, hydrologic, and biological analyses, mapping, legal review, and preliminary meetings with SWRCB staff, California Department of Fish & Wildlife staff, and other stakeholders); California Environmental Quality Act compliance; prosecution of the Petition; evidentiary hearings before the SWRCB if any protests are unresolved; and potentially administrative appeals and litigation. The planned annual expenditures reflect a timeline of Petition preparation in 2016 and 2017, CEQA compliance and Petition prosecution in 2017 and 2018, and Petition prosecution and SWRCB hearing in 2018. Any post-hearing proceedings would require additional funding. Following completion of feasibility studies additional engineering will include pre-design, design and environmental studies for construction and construction of the facilities.

Basis for Priority:

This project provides measurable progress toward achieving the District's goals, meeting demands of increased growth within the District's service area, expansion of services made necessary by new development, and increases water supply and reliability. The Change Petition process can take many years, particularly if it requires a hearing before the SWRCB. Although construction of White Rock diversion facilities will not commence for some time, it is prudent to begin this regulatory approval process well in advance of construction.

Project Financial Summary:

Funded to Date:	\$ 50,000	Expenditures through end of year:	\$ 2,865
Spent to Date:	\$ 2,865	2018 - 2022 Planned Expenditures:	\$ 275,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 277,865
Project Balance	\$ 47,135	Additional Funding Required	\$ 227,865

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Petition Prep						\$ -
CEQA/Environmental	\$ 150,000					\$ 150,000
Petition Prosecution		\$ 100,000				\$ 100,000
SWRCB Hearing		\$ 100,000				\$ 100,000
Subtotal	\$ 150,000	\$ 200,000	\$ -	\$ -	\$ -	\$ 350,000
EDCWA funding	\$ 75,000					\$ 75,000
TOTAL	\$ 75,000	\$ 200,000	\$ -	\$ -	\$ -	\$ 275,000

Funding Sources	Percentage	2018	Amount
Water FCCs	100%		\$27,865
Total	100%		\$27,865

Funding Comments: The District has requested cost share funding assistance from EDCWA

Project Number: 16027
Project Name: Network Switch Upgrade (3560)
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Eberhard **Board Approval:**

Project Description:

Replaces about 50% of the District's current local area network switch equipment, which has reached end-of-life and is no longer supported by the manufacturer.

Basis for Priority:

Manufacturer is no longer providing technical support or security patches for this equipment. This switch equipment to be replaced provides network connectivity to about half of the District's employee workstations, IP phones, printers, physical security systems, and assorted other equipment.

Project Financial Summary:			
Funded to Date:	\$ 352,000	Expenditures through end of year:	\$ 26,600
Spent to Date:	\$ 173,400	2018 - 2022 Planned Expenditures:	\$ 152,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 178,600
Project Balance	\$ 178,600	Additional Funding Required	\$ -

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						\$ -
Design						\$ -
Construction	\$ 178,600					\$ 178,600
						\$ -
TOTAL	\$ 178,600	\$ -	\$ -	\$ -	\$ -	\$ 178,600

Funding Sources	Percentage	2018	Amount
Water Rates	60%		\$0
Wastewater Rates	40%		\$0
			\$0
Total	100%		\$0

Funding Comments:

Project Number: 16037
Project Name: SCADA Configuration & Alarm Response
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Strahan **Board Approval:**

Project Description:

This project is to replace the current unsupported call out software, SCADAalarm. In addition, this project will be used to correct and replace SCADA graphics and configurations at the HMI level, since they are closely related to the alarm call out software configuration. This will allow the current system to be more user friendly and to more accurately represent the processes they control. The current visualization of the SCADA system is maintenance intensive and is not intuitive to the end user. This can lend itself to operational error and increased operation and reporting time. This also includes additional SCADA licensing to ensure alarm and data access to remote users.

Basis for Priority:

The current alarm software, SCADAalarm is obsolete and unsupported. SCADAalarm has known "bugs" that have caused notification service interruptions, and put the District at risk for regulatory violations District-wide. This software is key to providing reliable service to our ratepayers. Additionally, this software regularly requires staff attention and overtime for corrective maintenance.

Project Financial Summary:

Funded to Date:	\$ 30,000	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 45,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 45,000
Project Balance	\$ 30,000	Additional Funding Required	\$ 15,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Programming	\$ 45,000	\$ -				\$ 45,000
						\$ -
						\$ -
						\$ -
TOTAL	\$ 45,000	\$ -	\$ -	\$ -	\$ -	\$ 45,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	40%		\$6,000
Water Rates	60%		\$9,000
			\$0
Total	100%		\$15,000

Project Number: 17001
Project Name: AMR and Small Meter Replacement
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Downey **Board Approval:**

Project Description:

Implementation - This project replaces old, inaccurate, or broken meters and adds automated meter read capability to new and existing meters. The project is MISSION REQUIRED because it provides for replacement of inaccurate and non-working meters and enables all meters to be read in time for billing. The LIABILITY/RISK to the District if this project is not implemented includes increased likelihood of employee injury, increased labor expenses for manually reading the meters and inputting manual data into the computer system, and loss of customer confidence due to inaccurate and estimated reads. REGULATORY: Continued implementation of meter replacement and AMR technology keeps the District in compliance with the CUWCC's MOU BMP# 4. SAFETY/SECURITY: This project reduces employee exposure to injury. As of September 8, 2017 there are 25,790 meters that are equipped with radio read devices. Project funding for implementation should allow the District to install approximately 300 radio read meters per year.

C8R91 - In addition to information listed in implementation, this would allow us to upgrade 383 meters in Cycle 8 Route 91 located in Cameron Park. With 543 meters total, this is the largest route left in the District that is not read with the vehicle routes. Average time to read with hand held device is 1 minute per read or nine hours. Average time for read with vehicle and laptop is .07 minutes per read or 38 minutes freeing up over 50 work hours per year for other maintenance duties. This area can be upgraded with just a register and meter transceiver unit saving approximately 1/3 of the cost for complete meter replacement. this allow over 10% of Cameron Park meters to be read via vehicle route.

Basis for Priority:

Hiring of additional personnel, collection of inaccurate data, reduced customer satisfaction, increased likelihood of employee injuries, and non-compliance with BMP #4

Project Financial Summary:

Funded to Date:	\$ 200,000	Expenditures through end of year:	\$ 199,952
Spent to Date:	\$ 46,639	2018 - 2022 Planned Expenditures:	\$ 600,000
Cash flow through end of year:	\$ 153,313	Total Project Estimate:	\$ 799,952
Project Balance	\$ 48	Additional Funding Required	\$ 599,952

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Implementation	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$ 500,000
C8R91	\$100,000					\$ 100,000
						\$ -
						\$ -
TOTAL	\$ 200,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 600,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$199,952
			\$0
Total	100%		\$199,952

Funding Comments:

Project Number: 17018
Project Name: SCADA Software Efficiency Program
Project Category: Reliability & Service Level Improvements
Priority: 3 **PM:** Strahan **Board Approval:**

Project Description:

Maintain and improve the reliability and performance of the current SCADA infrastructure used to manage automated process control through identifying areas that needlessly consume staff time and workflow.

Rolling improvement program

Basis for Priority:

Continue to develop efficiencies in automatic reports, development templates, operational notification and organizing software programs.

Project Financial Summary:			
Funded to Date:	\$ 9,684	Expenditures through end of year:	\$ 9,684
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 225,000
Cash flow through end of year:	\$ 9,684	Total Project Estimate:	\$ 234,684
Project Balance	\$ -	Additional Funding Required	\$ 225,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Consultant Services	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 125,000
Software Purchases	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 100,000
						\$ -
						\$ -
TOTAL	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 225,000

Funding Sources	Percentage	2018	Amount
Water Rates	60%		\$27,000
Wastewater Rates	40%		\$18,000
			\$0
Total	100%		\$45,000

Funding Comments:

Project Number: PLANNED
Project Name: 2018 Vehicle Replacement
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Warden **Board Approval:**

Project Description:

The following vehicle replacements are planned for 2018 - 2022:

2018: 1-1 1/2 ton service truck with crane, 1-1 ton extended cab 4X4 pickup, 5 Yard Combination jet/vacuum sewer cleaner "Vac-Con"

2019: 1-John Deere excavator, 1-1/2 ton 4X4 pickup, 1-1 1/2 ton service truck with crane, 1- 4X4 SUV

2020: 1-1/2 ton 4X4 pickup, 1- 1 ton 4X4 service truck,

2021: 3-1/2 ton 4X4 pickups, 2- 4X4 SUV's, 1- 1 ton 4X4 service truck, 1- 7 yard used dump truck chassis

2022: 2-used 6-7 yard dump trucks, 2- 1/2 ton 4X4 pickup, 1- 4X4 SUV, 1- 1 ton service truck

The planned expenditures are listed below.

Enhances District assets through life-cycle replacement of existing vehicles.

Project Financial Summary:			
Funded to Date:	\$ 425,000	Expenditures through end of year:	\$ 93,504
Spent to Date:	\$ 93,504	2018 - 2022 Planned Expenditures:	\$ 1,764,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 1,857,504
Project Balance	\$ 331,496	Additional Funding Required	\$ 1,432,504

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Vehicles	\$ 622,000	\$ 304,000	\$ 97,000	\$ 331,000	\$ 410,000	\$ 1,764,000
						\$ -
						\$ -
						\$ -
TOTAL	\$ 622,000	\$ 304,000	\$ 97,000	\$ 331,000	\$ 410,000	\$ 1,764,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$290,504
			\$0
			\$0
Total	100%		\$290,504

Funding Comments:

Project Number: PLANNED
Project Name: Cyber Security Improvements
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Eberhard **Board Approval:**

Project Description:

This project will enhance and implement technology, plans, policies, and procedures identified by the 2011 Enterprise Security Assessment Report and required to ensure the ongoing cyber security of District data and IT assets.

No priority actions currently planned for 2018.

Basis for Priority:

If this project is not approved the District may not be able to effectively safeguard information against unauthorized use, disclosure, modification, damage, or loss. These projects address elevating concerns from government agencies to adequately protect utility information technology assets from cyber attack.

Project Financial Summary:			
Funded to Date:	\$ -	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 600,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 600,000
Project Balance	\$ -	Additional Funding Required	\$ 600,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Prevention Measures		\$250,000				\$ 250,000
Detection Measures			\$120,000			\$ 120,000
Response Measures				\$230,000		\$ 230,000
						\$ -
TOTAL	\$ -	\$ 250,000	\$ 120,000	\$ 230,000	\$ -	\$ 600,000

Funding Sources	Percentage	2018	Amount
Water Rates	60%		\$0
Wastewater Rates	40%		\$0
			\$0
Total	100%		\$0

Funding Comments: Funding carried over from prior year in CIP with the same name.

Project Number: PLANNED
Project Name: Hansen 7 Software Replacement
Project Category: Reliability & Service Level Improvements
Priority: 3 **PM:** Ranstrom **Board Approval:**

Project Description:

Project replaces the antiquated Hansen 7 utility management database software with modern Infor Public Sector software configured to support current and evolving regulatory and operational requirements. Project substantially improves daily utility operations management and decision making through integration to several key software platforms and retiring a myriad of workarounds used daily by District employees to perform routine job functions including asset management, maintenance management, customer service, records management, materials management, and fleet management. The workarounds are largely stand-alone, causing duplicate sets of data to be maintained in multiple places and leading to widespread inefficiency, plus confusion and potentially poor decisions when using data where the quality is poor or inconsistent.

Basis for Priority:

Hansen 7 has seen no new feature development since 2003 and no longer supports current and evolving regulatory and operational requirements. Modern software will improve the speed and accuracy of critical business processes used to perform operations, customer service, billing, regulatory reporting, and other key functions of the District.

Project Financial Summary:

Funded to Date:	\$ -	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 625,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 625,000
Project Balance	\$ -	Additional Funding Required	\$ 625,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Needs Assessment / Master Plan		\$ 125,000				\$ 125,000
Maintenance Management Upgrade			\$ 500,000			\$ 500,000
Customer Service & Billing System Upgrade						\$ -
TOTAL	\$ -	\$ 125,000	\$ 500,000	\$ -	\$ -	\$ 625,000

Funding Sources	Percentage	2018	Amount
Water Rates	60%		\$0
Wastewater Rates	40%		\$0
Total	100%		\$0

Funding Comments: Funding carried over from prior year CIP named Enterprise Software Application Improvements.

Project Number: PLANNED
Project Name: IT Network and Communications Reliability Program
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Eberhard **Board Approval:**

Project Description:

This ongoing project maintains the reliability and performance of the District's networks and shared communications systems required to conduct daily District business by replacing end-of-life or over-utilized equipment and systems, including network switches and routers, phone systems, email systems, and specialized resources enabling communications and collaboration.

Major actions in 2018 include:

- Replace end of life network switches that provide connectivity for hundreds of devices in numerous District facilities,
- Replace end of life network routers that interconnect all of the District's facilities
- Replace end-of-life audio/visual equipment in Board Room and Sly Park Conference Room.

Basis for Priority:

Maintain the reliability and performance of the current business IT network used to perform operations, customer service, billing, financial management, regulatory reporting, security, and other critical and essential functions of the district.

Project Financial Summary:

Funded to Date:	\$ -	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 857,000
Cash flow through end of year:		Total Project Estimate:	\$ 857,000
Project Balance	\$ -	Additional Funding Required	\$ 857,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Core and wide area networking	\$ 120,000	\$ 400,000				\$ 520,000
Local area and access networking	\$ 212,000		\$ 10,000			\$ 222,000
Communications and collaboration systems	\$ 50,000			\$ 20,000	\$ 45,000	\$ 115,000
TOTAL	\$ 382,000	\$ 400,000	\$ 10,000	\$ 20,000	\$ 45,000	\$ 857,000

Funding Sources	Percentage	2018	Amount
Water Rates	60%		\$229,200
Wastewater Rates	40%		\$152,800
			\$0
Total	100%		\$382,000

Funding Comments: Funding carried over from prior year in CIP, previously part of the Business IT Infrastructure Reliability Program.

Project Number: PLANNED
Project Name: Mobile GIS and MMS
Project Category: Reliability & Service Level Improvements
Priority: 3 **PM:** Wolf **Board Approval:**

Project Description:

Project implements modern mobile GIS and Maintenance Management System (MMS) access capabilities for field workers using handheld mobile devices and Esri ArcGIS software configured to support current and evolving regulatory and operational requirements. Project substantially improves efficiency of daily utility operations tasks and decision making through integration to several key software platforms and retiring cumbersome processes and aged technology used daily by District employees to perform routine job functions including service requests, maintenance management, and customer service.

Basis for Priority:

Existing solution uses laptop devices mounted in vehicles and requires constant network connectivity to function - which is neither practical nor feasible. These limitations cause duplicate sets of data to be maintained in multiple places and lead to widespread inefficiency, plus confusion and potentially poor decisions when using data where the quality is poor or inconsistent. Modern mobile devices and software apps will improve the speed and accuracy of critical business processes performed routinely by District employees working in the field.

Project Financial Summary:			
Funded to Date:	\$ -	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 115,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 115,000
Project Balance	\$ -	Additional Funding Required	\$ 115,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Staff time	\$ 30,000					\$ 30,000
Professional Services	\$ 50,000					\$ 50,000
Equipment	\$ 35,000					\$ 35,000
						\$ -
TOTAL	\$ 115,000	\$ -	\$ -	\$ -	\$ -	\$ 115,000

Funding Sources	Percentage	2018	Amount
Water Rates	60%		\$69,000
Wastewater Rates	40%		\$46,000
			\$0
Total	100%		\$115,000

Funding Comments: Funding carried over from prior year in CIP, previously part of the Enterprise GIS Program.

2018

CAPITAL IMPROVEMENT PLAN Program:

General District

Project Number: **PLANNED**
 Project Name: **Radio Telemetry and Network Replacement Program**
 Project Category: **Reliability & Service Level Improvements**
 Priority: **2** PM: **Strahan** Board Approval:

Project Description:

Life cycle replacement of our private radio SCADA network components.
 Rolling improvement program

Basis for Priority:

Many of our radios in service are past their service life and are slowly failing. This CIP would allow replacement of older telemetry (generally around 15 years old or more) and any related hardware such as antennas, antenna cable, lighting protectors, etc.

Project Financial Summary:			
Funded to Date:	\$ -	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 90,000
Cash flow through end of year:		Total Project Estimate:	\$ 90,000
Project Balance	\$ -	Additional Funding Required	\$ 90,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Hardware	\$ 35,000	\$ 35,000	\$ 10,000	\$ 10,000		\$ 90,000
						\$ -
						\$ -
						\$ -
TOTAL	\$ 35,000	\$ 35,000	\$ 10,000	\$ 10,000	\$ -	\$ 90,000

Funding Sources	Percentage	2018	Amount
Water Rates	60%		\$21,000
Wastewater Rates	40%		\$14,000
			\$0
Total	100%		\$35,000

Funding Comments:

2018

CAPITAL IMPROVEMENT PLAN Program:

General District

Project Number: **PLANNED**
Project Name: **SCADA Master Plan Implementation**
Project Category: **Reliability & Service Level Improvements**
Priority: **2** **PM:** **Strahan** **Board Approval:**

Project Description:

This CIP is to develop SCADA standards and a detailed CIP plan as recommended by our hired consultant. Please refer to the SCADA Master Plan.

Basis for Priority:

There is the potential for "wasted work" and great operational inefficiencies amounting to the hundreds of thousands of dollars or more by moving forward on SCADA development without a written plan or standard.

Project Financial Summary:

Funded to Date:	\$ -	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 450,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 450,000
Project Balance	\$ -	Additional Funding Required	\$ 450,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Develop Standards	\$ 200,000	\$ 200,000				\$ 400,000
Develop Detailed CIP Plan						\$ -
Develop KPIs						\$ -
Automatic Reports Generation	\$ 50,000					\$ 50,000
						\$ -
						\$ -
TOTAL	\$ 250,000	\$ 200,000	\$ -	\$ -	\$ -	\$ 450,000

Funding Sources	Percentage	2018	Amount
Water Rates	60%		\$150,000
Wastewater Rates	40%		\$100,000
			\$0
Total	100%		\$250,000

Funding Comments: The project replaces existing facilities, therefore is funded by water rates.

Project Number: PLANNED
Project Name: Security Equipment Reliability Program
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Kilburg **Board Approval:**

Project Description:

Integrated security systems have been protecting the District's critical infrastructure and key resources since 2006, providing alarm verification through real-time CCTV system viewing of alarm events. Integrated security systems provide timely detection and law enforcement response elements that mitigate theft, vandalism, trespassing, other potentially serious malevolent incidents, and provide an important emergency response capability consistent with the District's Water Vulnerability Assessment, Emergency Operations and Department Emergency Actions Plans as required by the Federal Safe Drinking Water Act, Title IV - Drinking Water Security and Safety.

Basis for Priority:

Maintain integrated security system operational performance, and provide a real-time emergency response assessment tool.

Project Financial Summary:

Funded to Date:	\$ -	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 60,000
Cash flow through end of year:	\$ -	Total Project Estimate:	\$ 60,000
Project Balance	\$ -	Additional Funding Required	\$ 60,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Study/Planning						\$ -
Design						\$ -
Construction	\$ 60,000					\$ 60,000
						\$ -
TOTAL	\$ 60,000	\$ -	\$ -	\$ -	\$ -	\$ 60,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		\$60,000
			\$0
			\$0
Total	100%		\$60,000

Funding Comments:

Project Number: PLANNED
Project Name: Shared IT Computing Reliability Program
Project Category: Reliability & Service Level Improvements
Priority: 2 **PM:** Proctor **Board Approval:**

Project Description:

This ongoing project maintains the reliability and performance of the shared computing environments required to conduct daily District business by replacing end-of-life or over-utilized equipment and systems, including host, data storage and backup systems, and specialized resources to manage the unique requirements of the computing environment.

Major actions in 2018 include:

- Conclude project starting in late 2017 to replace end-of-life data center blade servers and data storage systems that host the District's essential database applications.

Basis for Priority:

Maintain the reliability and performance of the current shared computing environment used to perform operations, customer service, billing, financial management, regulatory reporting, security, and other critical and essential functions of the district. End-of-life equipment means it is no longer supported by the manufacturer and presents a significantly heightened risk of failure or security compromise.

Project Financial Summary:

Funded to Date:	\$ -	Expenditures through end of year:	\$ -
Spent to Date:	\$ -	2018 - 2022 Planned Expenditures:	\$ 945,000
Cash flow through end of year:		Total Project Estimate:	\$ 945,000
Project Balance	\$ -	Additional Funding Required	\$ 945,000

Description of Work	Estimated Annual Expenditures					Total
	2018	2019	2020	2021	2022	
Data center & cloud computing	\$ 250,000	\$ 200,000				\$ 450,000
Distributed computing				\$ 45,000	\$ 450,000	\$ 495,000
TOTAL	\$ 250,000	\$ 200,000	\$ -	\$ 45,000	\$ 450,000	\$ 945,000

Funding Sources	Percentage	2018	Amount
Water Rates	60%		\$150,000
Wastewater Rates	40%		\$100,000
			\$0
Total	100%		\$250,000

Funding Comments: Funding carried over from prior year in CIP, previously part of the Business IT Infrastructure Reliability Program.



2018 – 2022 DRAFT

CAPITAL IMPROVEMENT PLAN

El Dorado Irrigation District
October 23, 2017

Summary



- Annual budget development – Draft CIP developed and presented in a workshop September/October each year
- Adopted by Board by November prior to operating budget



Completed/Ongoing Projects

Completed Projects

- Storm repair work
 - Flumes 5, 45A
 - Powerhouse Road slide
- Reservoir A WTP chemical containment
- American River Bridge waterline replacement
- Penstock assessment
- Bridlewood lift station rehab
- FERC C40 gaging stations
- Promontory 1 lift station odor control
- Camp 5 repaving

Projects under construction

- Storm damage – Flume 9 and 10
- Forebay dam remediation
- Polaris/Gilmore waterline replacement
- Tank 7 in-conduit hydro
- Waterford 7 lift station rehabilitation
- Town Center forcemain replacement
- Carson Creek 2 lift station
- Reservoir 3 tank rehabilitation

Other Ongoing Projects

- Main ditch piping
- Flume 44 replacement
- Folsom Lake raw water pump station
- Solar assessment and design
- Sly Park Intertie
- FERC license requirements
- IT Network and computing reliability

Storm damage



2017
\$12M capital outlay



Forebay Dam remediation 2017-2019 \$25M



Tank 7 in-conduit hydro



2017-2018
\$2.8M



American River Bridge waterline replacement



2017
\$1.5M



Waterford 7 lift station

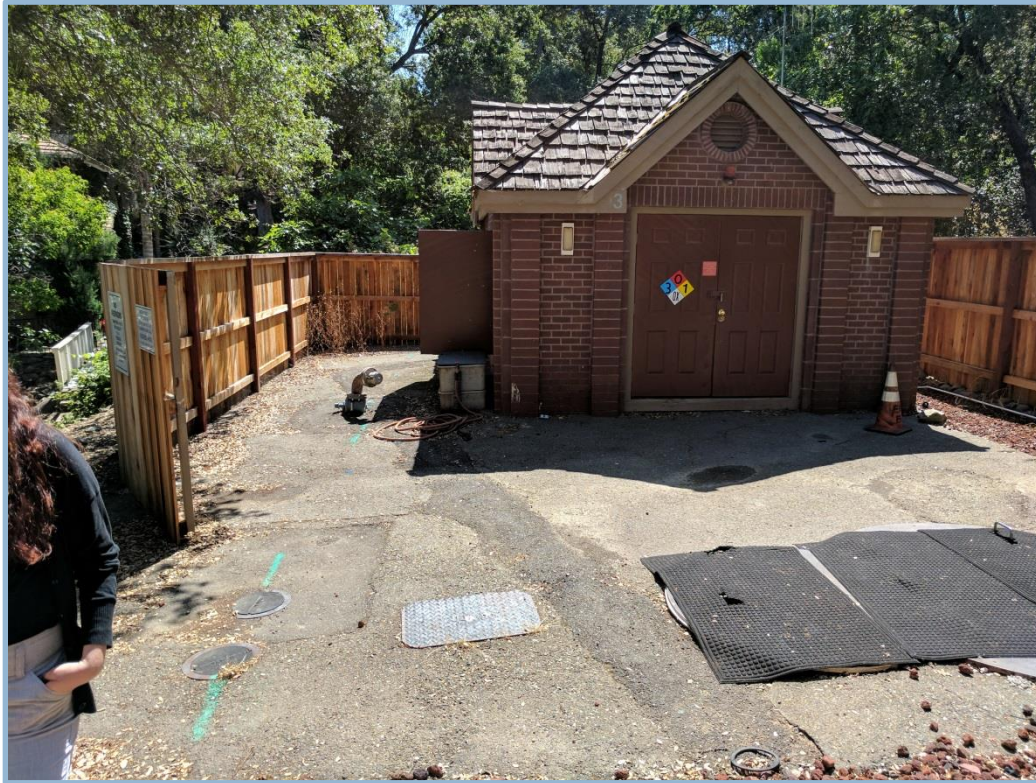
2017

\$1.1M

Town Center forcemain replacement

2017

\$1.5M



2017 CIP Expenditures

	2017 Adopted Plan	Unplanned	2017 Total
Planned	\$27.4M	--	--
Estimated Actual	\$19M	\$12M	\$31M



2018-2022 CIP

Prioritization

- Priority 1
 - ▣ a) Health/safety; b) regulatory mandates; c) under construction
- Priority 2
 - ▣ a) Reliability/replacement; b) increased revenue; c) increased growth
- Priority 3
 - ▣ a) Improves efficiency; b) level of service; c) community benefit
- Assign category to identify project purpose
 - ▣ a, b, c
- Assign additional level to rank similar projects
 - ▣ 1, 2, 3

Overall draft 2018-2022 CIP

- 2016 bond issuance (\$49 million)
 - Forebay dam remediation
 - Flume replacement
 - Main Ditch piping
 - Esmeralda tunnel
- Projected 2021 bond issuance (~\$50 million)
 - EDH raw water pump station
 - Silver Lake dam replacement
 - Flumes
 - Sly Park Intertie
- Remainder of projects funded “pay-go”
 - Estimated \$8-\$10M per year average

Overall draft 2018-2022 CIP

- Plan Development
 - ▣ Staff updates project worksheets and funding estimates
 - ▣ Overall target of \$150 million
 - ▣ Initial CIP totaled \$160 million
 - ▣ Deferred projects, reduced scope
 - ▣ Draft 2018-2022 - \$143 million

CIP Comparison

(in millions)

	2016	2017	2018	2019	2020	2021	2022	Totals
2016-2020 CIP	23.1	30.4	29.4	21.4	20.0			124.3
2017-2021 CIP		26.5	36.4	25.8	17.5	22.7		128.7
2018-2022 CIP (Draft)			39.7	38.3	26.7	21.8	16.6	143.1

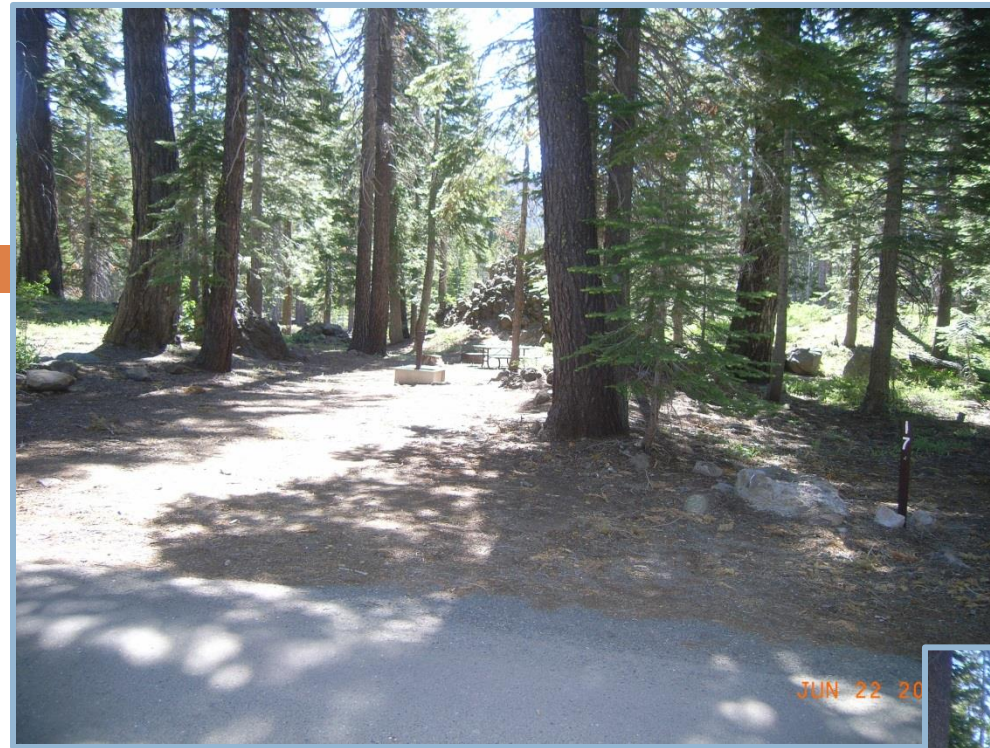


El Dorado Irrigation District

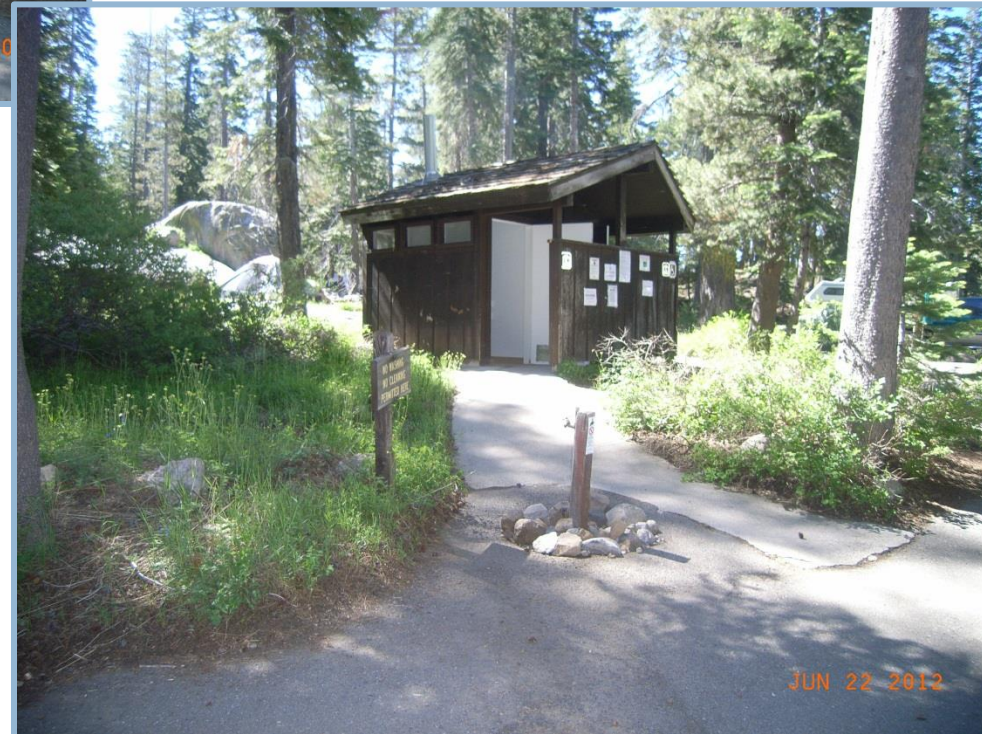
2018-2022 CAPITAL IMPROVEMENT PLAN DRAFT

	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2022 PLANNED	FIVE-YEAR PLAN TOTAL
FERC	\$2,789,371	\$3,066,762	\$848,195	\$619,671	\$491,191	\$7,815,190
Water	\$8,017,500	\$14,825,000	\$7,845,000	\$10,575,000	\$10,265,000	\$51,527,500
Wastewater	\$4,432,380	\$4,275,000	\$4,800,000	\$1,750,000	\$2,350,000	\$17,607,380
Recycled Water	\$50,000	\$10,000	\$100,000	\$0	\$0	\$160,000
Hydroelectric	\$21,732,500	\$14,204,500	\$12,027,836	\$8,035,000	\$2,360,000	\$58,359,836
Recreation	\$100,000	\$100,000	\$150,000	\$0	\$50,000	\$400,000
General District	\$2,632,600	\$1,859,000	\$882,000	\$781,000	\$1,050,000	\$7,204,600
TOTAL	\$39,754,351	\$38,340,262	\$26,653,031	\$21,760,671	\$16,566,191	\$143,074,506

2018
Caples Lake
Campground
Improvements
\$2.1M

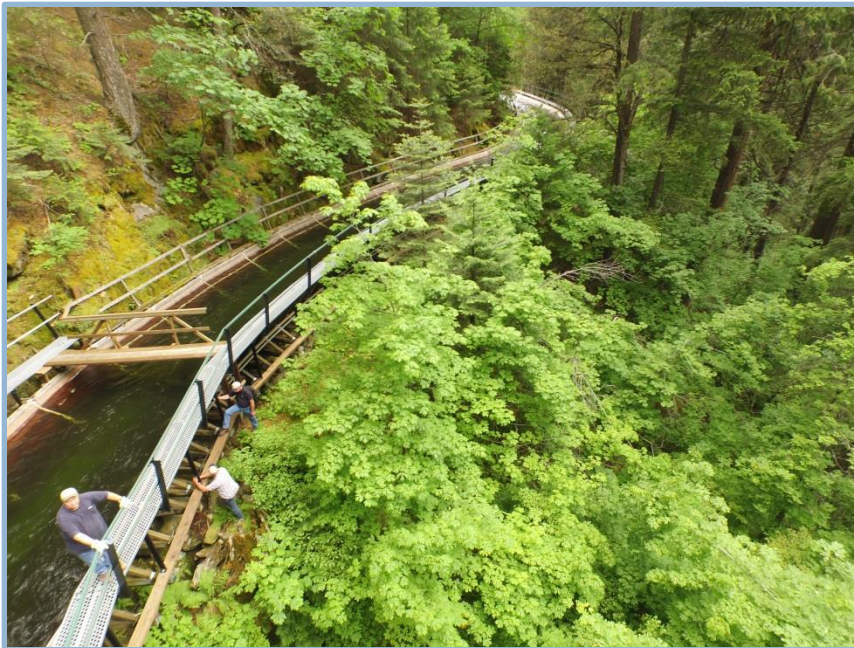


2019
Silver Lake
Campground
Improvements
\$2.7M





2018-2019
Flume 44
replacement
\$8.9M



2019
Flume 30
replacement
\$8.9M



2019
Flume 47C
replacement
\$1.6M

2021
Flume 38-40
replacement
\$7.2M

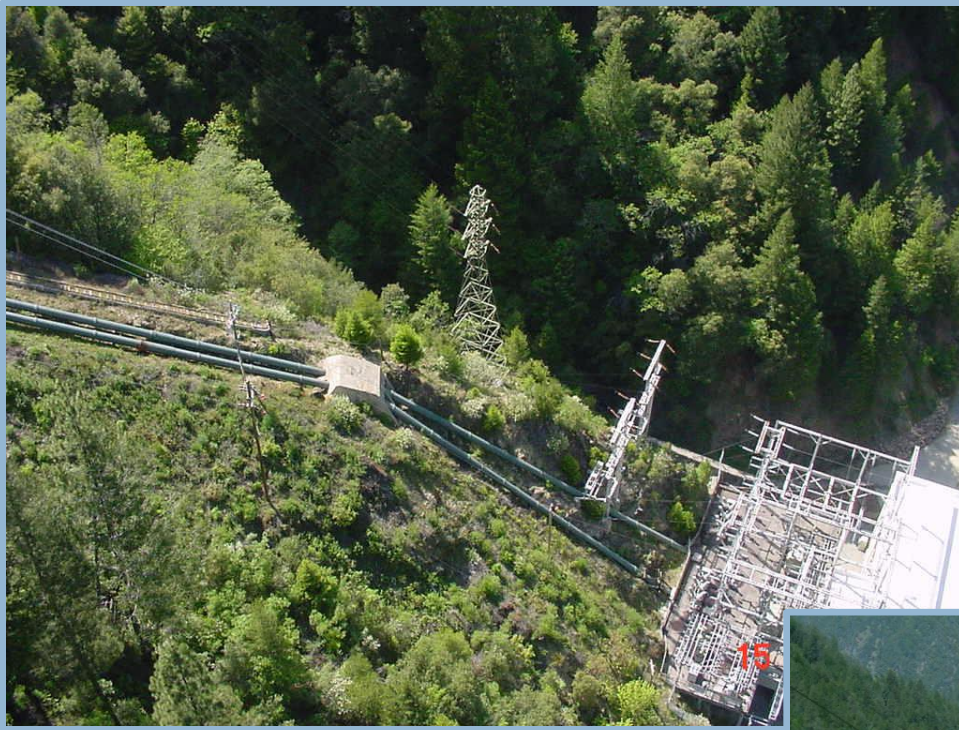


>2022
Flume 48 replacement

Penstock Stabilization

2018-2022

\$420,000





2018-2019

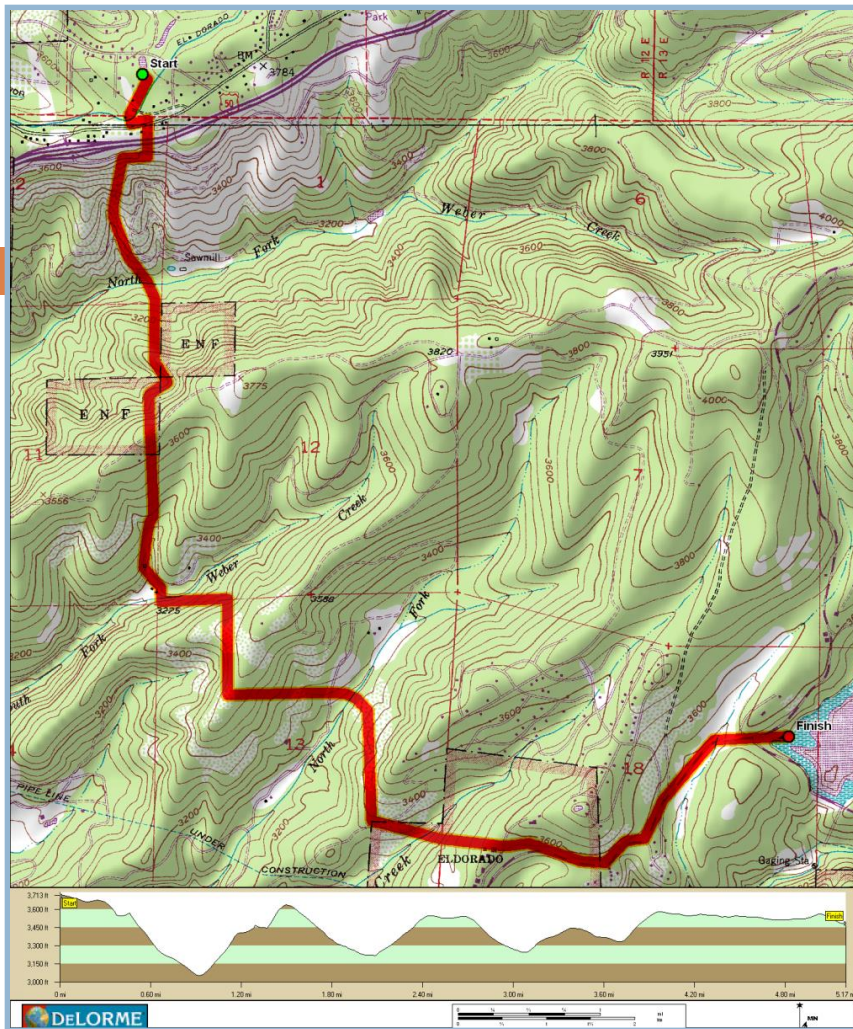
Main Ditch piping
\$5.3M (grant offsets)



2018-2020

EDH raw water
pump station
\$13.5M

Sly Park Intertie



2018-2022

\$14.7M



Storage tank program



- Outingdale
- Swansboro
- Tank 3
- Reservoir 1 WTP
- Tank 6
- Ridgeview

\$6.8M over 5 years



Wastewater lift station upgrades

- South Point LS
- El Dorado LS
- Thunderhead LS
- Summit 3 LS

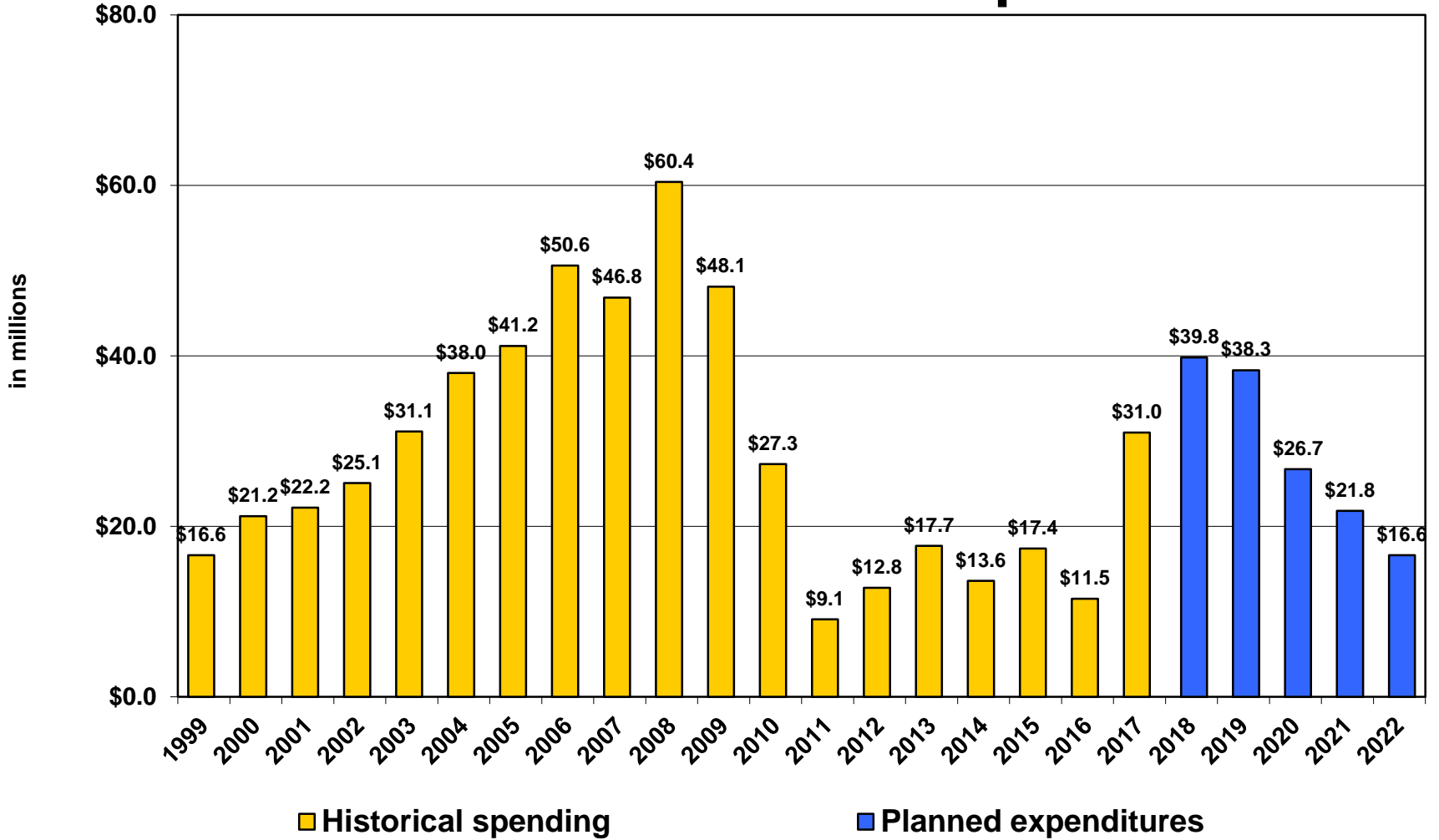


\$2.5M over 5 years

General District projects

- SMUD/El Dorado agreement
- Permit 21112 water rights
- Vehicle replacement
- Shared IT computing reliability
- IT Network/Communications reliability
- SCADA Master Plan implementation
- Cyber security improvements
- AMR program

Historical and Planned CIP Expenditures



Overall draft 2018-2022 CIP

- Draft CIP meets financial objectives
 - ▣ \$143M planned over 5 years
 - ▣ Large projects funded with two bond issues
 - ▣ Leaves \$8-\$10M per year for pay-go projects
- Outstanding debt after 2021 bond issuance estimated to be \$335 million

Questions



EL DORADO IRRIGATION DISTRICT

Subject: FEMA, OES and Project 184 property insurance update.

Previous Board Actions

February 13, 2017 – Board adopted Resolution No. 2017-007 declaring an emergency under the Public Contract Code and Public Resources Code as a result of recent and ongoing storm activities. The Board has continued to ratify the emergency at subsequent meetings to maintain the emergency declaration.

March 27, 2017 – Board adopted Resolution No. 2017-009 authorizing the General Manager, Finance Director, or Accounting Manager to sign appropriate forms for purposes of obtaining financial assistance effective for all open and future disaster up to three years following date of approval.

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

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

Summary of Issue

At a previous Board meeting, the Board requested an update on claims made on behalf of the District to the Federal Emergency Management Agency (“FEMA”), the State Office of Emergency Services (“OES”) and the District’s Project 184 property insurance carrier, Liberty Mutual (“Insurer”), related to the three federal disaster declarations for storm events this past winter.

Staff Analysis/Evaluation

Staff, consultants and contractors continue to work on many of the 51 separate storm related work tasks that have been documented since January 7, 2017. Work on many of the tasks began almost immediately following the occurrence while others were delayed. Many have been completed but work continues on the others.

Following the formal federal disaster declarations, staff began the FEMA processes to file for relief in addition to continuing the District’s efforts to recover from the District’s Insurer.

The following is the District’s best assumption, as of October 14, 2017, of recovery amounts from the Insurer and from FEMA/OES. As of the 14th, it is estimated that the 51 tasks will cost approximately \$18.6 million to complete. Some of the tasks, such as the hazard mitigation and canal failure downstream of Flume 10 will have coverage by the insurance with some of the costs covered by FEMA/OES including the insurance deductible.

Insurer

The total amount that can be recovered for earth movement is \$10 million which includes coverage for business interruption losses, less a 15 to 30 day waiting period, and damages to the flumes and canals, less a \$1.0 million deductible. The District has received to date \$2.25 million

for recovery of power generation losses and \$1.5 million for damages to the flumes and canals (\$2.5 million less the deductible). The District expects to recover the remaining \$6.25 million of coverage for damages once the covered tasks are completed, final documents are finished and information is submitted and accepted by the insurer. Receipt of funds is expected in 2018.

FEMA/OES

Of the \$18.6 million in identified tasks, approximately \$6.7 million is potentially available for reimbursement from FEMA and \$1.7 million from OES. Of these amounts, about \$1.3 million and \$0.4 million are estimated, at this time, to be deemed ineligible by FEMA and OES respectfully. Currently staff is expecting to receive about \$25,000 in 2017 from both agencies and is hopeful to receive \$6.0 million in 2018 and the balance of \$0.67 million in 2019.

Total recoveries from insurance and FEMA/OES will therefore be estimated at about \$16.7 million at this time.

	<u>Insurance</u>	<u>FEMA</u>	<u>OES</u>
2017	\$3.75 million	\$0.02 million	\$0.01 million
2018	6.25 million	4.83 million	1.21 million
2019		0.54 million	0.13 million

Expenditures

A breakdown of the \$18.6 million in expenditures for the 51 tasks is estimated to be comprised of about \$13.7 million in capital outlay expenditures extending the useful life of assets or, in many cases, completely replacing them. There is about \$4.9 million in potential expenditures related to repairs of District assets.

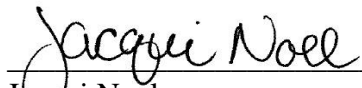
	<u>Capital Outlay</u>	<u>Operating</u>	<u>Total</u>
2017	\$12.0 million	\$3.0 million	\$15.0 million
2018	1.7 million	1.9 million	3.6 million

Recap

Expenditures (estimated)		\$18.6 million
Proceeds-		
Insurance	\$10.0 million	
FEMA/OES	<u>6.7 million</u>	<u>16.7 million</u>
Net District paid		\$ 1.9 million

Board Decision/Options


None – Information only



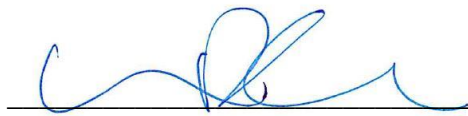
Jacquie Noel
Risk Analyst




Brian Mueller
Engineering Director



Mark Price
Finance Director



Brian D. Poulsen, Jr.
General Counsel

 for

Jim Abercrombie
General Manager

FEMA, OES and Project 184 Property Insurance Update

El Dorado Irrigation District
October 23, 2017

REVIEW

Between January 3, 2017 and February 28, 2017 EID suffered 51 storm related incidents

The estimated total of these incidents is \$18.6 million as of October 13, 2017

Insurance coverage

▶ Policy limit

- \$10 million total
 - Business interruption losses
 - 15–30 day waiting period
 - Damages to flumes and canals
 - \$10 million total reduced by
 - Business interruption recoveries
 - \$1 million deductible

FEMA/OES recoveries

- ▶ FEMA
 - 75.00% of allowable expenditures on incidents after insurance recoveries
- ▶ OES
 - 18.75% of allowable expenditures on incidents after insurance recoveries
- ▶ District
 - 6.25% of allowable expenditures on incidents plus all unallowed expenditures

Expenditures

Year	Capital Outlay	Operating Repairs	Total
2017	\$12.0 million	\$3.0 million	\$15.0 million
2018	1.7 million	1.9 million	3.6 milion
	\$13.7 million	\$4.9 million	\$18.6 million

Anticipated recoveries

Year	Insurance	FEMA	OES	Total
2017	\$3.75 million ⁽¹⁾	\$0.02 million	\$0.01 million	\$ 3.78 million
2018	6.25 million	4.83 million	1.21 million	12.26 million
2019		0.54 million	0.13 million	0.67 million
	\$10.00 million	\$5.39 million	\$1.35 million	\$16.71 million

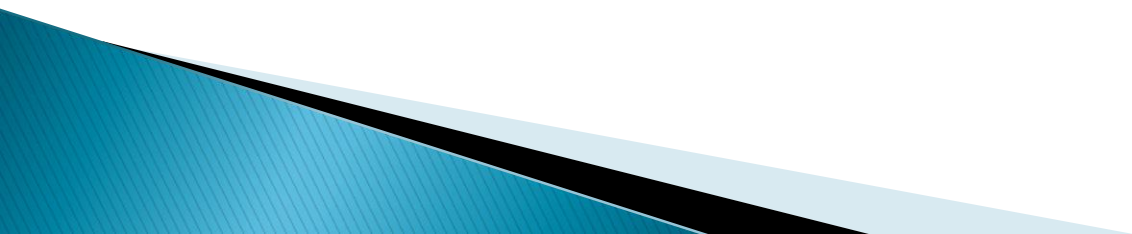
(1) Business interruption loss recovery of \$2.25 million

Recap

Expenditures (estimated)		\$18.60 million
Proceeds-		
Insurance-Business income	\$2.25 million	
Damages	7.75 million	
FEMA/OES	<u>6.70 million</u>	<u>16.70 million</u>
Net District paid		\$ 1.90 million

Questions?





EL DORADO IRRIGATION DISTRICT

Subject: Administrative Regulation 3075: Responding to Public Records Act Requests.

Previous Board Actions

September 11, 2017 – The Board adopted Board Policy 3075 regarding Public Records Act requests, and directed staff to present the draft Administrative Regulation 3075 Responding to Records Act Requests during a subsequent meeting in October 2017.

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

BP 3075 states the District shall respond to requests for public records in accordance with the California Public Records Act (CPRA), Government Code section 6250 et seq, and the case law interpreting the CPRA. The Board Policy also states that the Office of General Counsel shall be responsible for overseeing and responding to such requests pursuant to the CPRA and that the General Manager and General Counsel shall adopt and oversee administrative regulations to carry out the purposes of this Policy.

Summary of Issue

The CPRA establishes a basic rule requiring public disclosure of any record created or maintained by a public agency that relates to the public agency's business. The General Manager and General Counsel have developed an administrative regulation to implement the Board's newly adopted Board Policy 3075 regarding District responses to Public Record Act requests. Prior to its formal adoption, the General Manager and General Counsel seek feedback from the Board on this administrative regulation.

Staff Analysis/Evaluation

Under the CPRA, every "public record" must be disclosed upon request unless a statutory exception applies. The CPRA defines "public record" to include "any writing containing information relating to the conduct of the public's business prepared, owned, used, or retained by any state or local agency regardless of physical form or characteristics."

In March of 2017, the California Supreme Court issued an important decision regarding the types of records that may be considered public records subject to possible public disclosure under the CPRA. (*City of San Jose v. Superior Court* (2017) 2 Cal.5th 608.) The *City of San Jose* case involved a CPRA request for disclosure of public records contained on the private voicemails, e-mails, and text messages of the mayor and ten city council members of the City of San Jose. Despite such records being contained on personal accounts or personal devices, the Court ruled that when a city employee or officer uses a personal account to communicate about the conduct of public business, those writings may be considered public records subject to disclosure under the CPRA. The Court clarified that to qualify as a public record under the CPRA, at a minimum, "a writing must relate in some substantive way to the conduct of the public's business." Thus, communications that are "primarily personal," containing no more than "incidental mentions" of agency business, generally will not constitute public records.

The District is a public agency subject to the CPRA and therefore, the *City of San Jose* decision is binding precedent on the District regarding the scope of the CPRA. This means that if the District receives a CPRA request that seeks public records contained on the personal accounts or personal devices of a District employee or officer, the District has a legal obligation to ensure that a reasonable search is conducted for records that may be responsive to that request.

In the *City of San Jose* decision, the Court made it clear that public agencies may develop their own internal policies for conducting searches in response to a CPRA request, and that an agency may reasonably rely on employees to search their own personal files, accounts, and devices for responsive material.

On September 11, 2017, during a noticed public hearing, the Board adopted Board Policy 3075 regarding Public Records Act requests (attached hereto as Attachment A). That Board Policy requires District employees and officers to avoid sending or receiving written communication that relates to the conduct of the District's business on private electronic accounts. The Board policy also directs the General Manager and General Counsel to adopt an administrative regulation to implement the Board Policy.

The General Manager and General Counsel have prepared a draft administrative regulation intended to help them implement Board Policy 3075 (attached hereto as Attachment B). The General Manager and General Counsel seek Board feedback on this proposed administrative regulation, prior to its formal adoption. In addition, the General Counsel has prepared a draft declaration form to further help implement the Board Policy 3075 and the proposed administrative regulation, to document searches conducted by District employees or officers of their personal accounts and devices. The draft declaration form is attached hereto as Attachment C.

Board Decision/Options

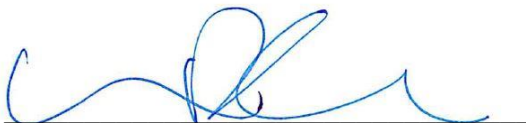
None – information only.

Supporting Documents Attached

Attachment A: Board Policy 3075: Public Records Act Requests

Attachment B: Draft Administrative Regulation 3075

Attachment C: Draft Declaration Regarding Search of Personal Accounts or Devices



Brian D. Poulsen, Jr.
General Counsel

 for

Jim Abercrombie
General Manager

BP 3075 Public Records Act Requests

Adopted: September 11, 2017

The District shall respond to requests for public records in accordance with the California Public Records Act (CPRA), Government Code section 6250 et seq, and the case law interpreting the CPRA. The Office of General Counsel shall be responsible for overseeing and responding to such requests pursuant to the CPRA.

By law, written records sent, received, or stored in a personal electronic account (such as a personal e-mail account) or on a personal device (such as a personal computer, smartphone, or tablet) of a District employee or officer may be considered “public records” subject to disclosure under the CPRA, if, at a minimum, they relate in some substantive way to the conduct of the District’s business. Communications that are primarily personal and contain no more than incidental mentions of District business, generally will not be considered public records.

District employees and officers shall use their District accounts for communications that relate to District business. District employees and officers shall avoid using private electronic accounts when conducting such communications. The General Manager and General Counsel shall adopt and oversee administrative regulations to carry out the purposes of this Policy.

District employees and officers shall forward emails that relate to the District’s business received on private accounts to their respective eid.org accounts for appropriate District retention. Employees and officers that communicate on social media about District business shall adhere to the administrative regulation adopted hereunder when responding to public record requests.



AR 3075 Responding to Public Records Act Requests

Approved:

Revised:

AR 3075.1 Purpose

This administrative regulation seeks to establish uniform procedures for responding to requests for public records made pursuant to the California Public Records Act (CPRA), Government Code section 6250 et seq.

AR 3075.2 Employee and Officer Training

To ensure that District employees and officers have a sufficient understanding of what constitutes a “public record” under the CPRA, the District will arrange for each District employee and officer to receive training regarding responding to requests for public records under the CPRA. Within ninety (90) days of employment or swearing in as a District officer, all officers and employees will receive training regarding the CPRA and this training shall include training regarding the standards for distinguishing between “public” records and “private” records. (See *City of San Jose v. Superior Court* (2017) 2 Cal.5th 608).

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AR 3075.32 Procedures For Responding To All CPRA Requests

The District’s Office of the General Counsel shall be responsible for responding to CPRA requests. The General Counsel shall designate a person in charge of receiving requests, conducting searches for public records, and responding to such requests. In performing these duties, the District shall adhere to the following procedural steps:

1. The General Counsel, or his/her designee, shall assign a unique tracking number to the request, based on the year received and in a sequential format for each request (e.g. “2017-001 CPRA”).



-
2. The General Counsel, or his/her designee, shall identify custodians of the records that respond, or potentially respond, to the relevant request and provide a copy of the request to the identified custodians.
 3. The custodians shall conduct a reasonable search for records that respond, or potentially respond, to the request.
 4. The General Counsel, or his/her designee, shall determine, generally within 10 days from receipt of the request, whether the request seeks disclosable public records in the District's possession and promptly notify the person making the request of the determination. In "unusual circumstances," as defined under Government Code section 6253, the General Counsel, or his/her designee, may extend the time limit for such a determination by up to 14 days, by providing written notice to the person making the request of the extension and the reasons for the extension.
 - 4.5. When dispatching the determination described in AR 3075.3(4) above, and if it is determined that the request seeks disclosable records, the General Counsel, or his/her designee, shall either provide the records that respond to the request if available at that time, or state the estimated date and time when the records will be made available.
 - 5.6. The General Counsel, or his/her designee, shall compile potentially responsive records and determine whether such records, or portions of records, should be withheld or redacted consistent with the CPRA.
 - 6.7. The General Counsel, or his/her designee, shall promptly provide all responsive public records, not otherwise exempt from disclosure, to the requester, in accordance with the CPRA.
 - 7.8. The District shall retain a copy of records produced in response to the request, either in hard-copy or electronic form, consistent with the District's records retention policy.
 - 8.9. The General Counsel, or his/her designee, shall maintain an index of CPRA requests, identifying tracking number, requester name, date request received, and date responsive records were provided.

AR 3075.43 Additional Procedures For Responding To CPRA Requests Regarding Personal Accounts Or Devices

If a Public Records Act request seeks records sent or received on an electronic personal account or personal electronic device of a District employee or officer (*see City of San*



Jose v. Superior Court (2017) 2 Cal.5th 608), the District shall adhere to the following additional procedural steps:

1. The General Counsel, or his/her designee, shall provide a copy of the request to the District employee(s) or officer(s) described in the request.
2. The General Counsel, or his/her designee, shall advise the District employee(s) or officer(s) who is the subject of the request, as necessary or appropriate, regarding exemptions under the CPRA and what constitutes a “public record” subject to disclosure under the CPRA. Because the General Counsel is the attorney for the District and not any individual officer or employee, the General Counsel, at his/her discretion, may hire a special outside counsel to advise any individual officer or employee who is the subject of the request. Alternatively, an officer or employee that is a member of the District’s Board of Directors, may seek the advice of independent counsel, and seek reimbursement for the costs associated there with, subject to approval of the Board.
3. The District employee(s) or officer(s) who is the subject of the request shall, within ten (10) calendar days of the District’s receipt of the request, -perform a reasonable search of his/her personal accounts (such as a personal e-mail account or social media account) and/or personal devices (such as a personal computer or phone) for any written records, including e-mail communications or text messages, that substantively relate to District business and are responsive to the CPRA request.
4. To protect the privacy of its officers and employees, the District shall not search the private accounts or devices of any District employee or officer, unless requested in writing by that employee or officer.
5. District employee(s) or officer(s) shall document their search methodologies, criteria, and terms, when conducting searches on their own private accounts and devices.
6. District employees and officers shall provide all potentially responsive public records (written records that relate in some substantive way to District business and are not primarily personal) to the Office of General Counsel, and shall complete and sign a declaration, on a standard declaration form that is prepared by the Office of the General Counsel, attesting that the employee or officer completed a reasonable search of his/her accounts and devices and provided all potentially responsive public records to the District. The declaration shall be a public record. Whenever an employee or officer withholds a potentially responsive record based on a determination that it is either not a public record, or not responsive to the request, the employee or officer shall describe, in the declaration required herein,



additional facts sufficient to show that the withheld records are not public records, and are instead, personal materials.

7. Once the Office of the General Counsel has received public records from an employee or officer, the General Counsel, or his/her designee, shall determine whether any of the records, or portions thereof, should be withheld or redacted consistent with the CPRA.
- ~~8. As necessary or appropriate, the General Counsel or his/her designee, may request that the District employee(s) or officer(s), subject to a request, complete and submit an affidavit to the District's Office of General Counsel describing additional facts to show that withheld records are not public records subject to disclosure under the CPRA.~~
- 9.8. _____ Complete any remaining procedural steps for CPRA requests, as listed above in AR 3075.3.



**CALIFORNIA PUBLIC RECORDS ACT FORM – DECLARATION REGARDING SEARCH OF
PERSONAL ACCOUNTS OR DEVICES**

Use of Form: This form will be used by an El Dorado Irrigation District (District) employee or officer to document any search they conduct of their personal electronic account(s) or personal electronic device(s) in response to a request received by the District pursuant to the California Public Records Act (CPRA), Government Code section 6250 et seq., for public records contained on personal accounts or devices.

“Public Record” vs. Personal Communication: A District employee or officer should consider a communication contained on a personal electronic account or personal electronic device to be a “public record” that may be subject to disclosure under the CPRA if the communication substantively relates to the District’s business. In contrast, a communication that is primarily personal and contains no more than incidental mention of District business should be considered a private communication that is not subject to disclosure under the CPRA. (See *City of San Jose v. Superior Court* (2017) 2 Cal.5th 608.)

FORM – TO BE COMPLETED BY DISTRICT EMPLOYEE OR OFFICER
WHOM CONDUCTED THE SEARCH

I, _____ (name), declare that the following facts are within my personal knowledge:

1. I am _____ (position/title) for the El Dorado Irrigation District (District).
2. On _____ (date), _____ (name) of the District’s Office of General Counsel contacted me regarding a request received by the District for public records contained on personal electronic accounts or personal electronic devices, and provided me with a copy of the request.
3. A copy of the request is attached to this form.
4. I have reviewed the request for public records, attached hereto.
5. I have reviewed this form, including the paragraph explaining the difference between “public records” and personal communications.



5-6. I have received training regarding what constitutes a “public record” under the CPRA and that training included training regarding the standard for distinguishing between a “private” record and a “public” record.

6-7. After reviewing the attached public records request, as well as this form, and as informed by my training regarding the CPRA, on _____ (date), I conducted a search of my personal e-mail accounts and personal electronic devices for any ~~records communications~~ substantively related to the District’s business that may be responsive to the public records act request.

7-8. The search I conducted of my personal e-mail accounts and personal electronic devices consisted of the following steps: (describe search conducted)

8-9. On _____ (date), I provided copies of any potentially responsive ~~records communications~~ that I determined were substantively related to the District’s business to _____ (name) in the District’s Office of General Counsel.

10. Any potentially responsive ~~record communications~~ that I did not produce to the Office of General Counsel from my personal e-mail accounts or personal electronic devices were withheld by me based on my determination that those communications were primarily personal in nature. If requested, I will submit an affidavit to the District’s Office of the General Counsel. The following describing facts sufficient to show that the withheld records are not public records, and are instead, personal materials:

9-11. _____

10-12. (Reserved for additional facts, as applicable):



I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed this ____ day of _____, 20__, at _____ (location), California.

(Signature)

ADMINISTRATIVE REGULATION
3075 RESPONDING TO PUBLIC
RECORDS ACT REQUESTS

El Dorado Irrigation District October 23, 2017

Previous Board Action

- ▣ September 11, 2017 – The Board adopted Board Policy 3075 regarding Public Records Act requests, and directed staff to present the draft Administrative Regulation 3075 Responding to Records Act Requests during a subsequent meeting in October 2017.

Board Policies, Administrative Regulations, and Board Authority

- ▣ BP 3075 states the District shall respond to requests for public records in accordance with the California Public Records Act (CPRA), Government Code section 6250 et seq, and the case law interpreting the CPRA.
- ▣ The Board Policy also states that the Office of General Counsel shall be responsible for overseeing and responding to such requests pursuant to the CPRA and that the General Manager and General Counsel shall adopt and oversee administrative regulations to carry out the purposes of this Policy.

Summary of Issue

- ▣ The General Manager and General Counsel have developed an administrative regulation to implement the Board's newly adopted Board Policy 3075 regarding District responses to Public Record Act requests. Prior to its formal adoption, the General Manager and General Counsel seek feedback from the Board on this administrative regulation.

Staff Analysis/Evaluation

- ▣ Under the CPRA, every “public record” must be disclosed upon request unless a statutory exception applies.
- ▣ The CPRA defines “public record” to include “any writing containing information relating to the conduct of the public's business prepared, owned, used, or retained by any state or local agency regardless of physical form or characteristics.”

Staff Analysis/Evaluation

- ▣ In the *City of San Jose* decision, the Court suggested that public agencies develop internal policies for conducting searches in response to a CPRA request.
- ▣ An agency may reasonably rely on employees to search their own personal files, accounts, and devices for responsive material.

Staff Analysis/Evaluation

- ▣ General Manager and General Counsel have revised the draft administrative regulation intended to help them implement Board Policy 3075 in response to comments received during the Board's consideration of this item on September 11, 2018.
 - Added training requirement
 - Revised language in AR and declaration to address "black box" concern
 - Added language to address Board-Member-as-Boss
 - Other minor language changes

Staff Analysis/Evaluation

- ▣ General Manager and General Counsel seek Board and public feedback on this proposed administrative regulation, prior to its formal adoption.

Board Decision/Option

None – information only.

QUESTIONS?

EL DORADO IRRIGATION DISTRICT

Subject: Consideration to waive the attorney-client privilege and publicly disclose confidential memoranda prepared by the District's former General Counsel regarding Proposition 218 compliance.

Previous Board Action

None

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

Board Policy 2030 sets forth the role of the General Counsel. This policy identifies the General Counsel as the attorney for the District and specifies that the General Counsel shall be responsible for among other things, providing high-quality, cost-efficient legal services to the District; ensuring full compliance with applicable laws and regulations in all District activities; proactive counseling and representing the District, the Board, the General Manager and the departments in transactions and events involving District interests; and representing the District in litigation.

Board Policy 11010 requires the District to adopt rates and charges in compliance with Article XIII D Section 6 of the California Constitution (Proposition 218).

Summary of Issue

Director Raffety has requested that the Board consider whether or not to release confidential memoranda prepared by former General Counsel, Tom Cumpston, regarding Proposition 218 and case law interpreting that law. Staff recommend against disclosing these memoranda.

Staff Analysis/Evaluation

On August 28, 2017, Director Prada presented an agenda item in which he alleged that the District's water and wastewater rates are inconsistent with his understanding of Proposition 218 and subsequent case law. During the discussion of that item, both Director Prada and General Manager Jim Abercrombie made reference to certain memoranda prepared by former General Counsel, Tom Cumpston, regarding the District's compliance with Proposition 218 and subsequent case law. Current General Counsel explained that the referenced-memoranda were confidential under the attorney-client privilege, and that waiving the privilege would require a majority vote of the Board.

On September 11, 2017, during a regular Board meeting, Director Raffety asked that staff place an agenda item on the October 23, 2017 Board meeting to discuss whether or not to release the confidential memoranda prepared by former General Counsel Tom Cumpston.

General Counsel, Brian Poulsen, recommends against waiving the attorney-client privilege of the three memoranda at issue. The memoranda were prepared for the sole purpose of providing the Board of Directors with legal advice regarding the District's adherence to the requirements of Proposition 218, in response to allegations to the contrary and/or in light of case-law developments. The disclosure of legal advice, whether intentional or inadvertent, can have unintended consequences. For example, numerous Federal cases have held that the disclosure of communications covered by the attorney-client privilege resulted in a waiver of all related

communications regarding the same subject matter, known as “subject matter waiver.” (See e.g. *Verizon Cal. Inc. v. Ronald A. Katz Tech. Licensing, L.P.*, 266 F. Supp. 2d 1144, 1148-49 (C.D. Cal. 2003) (holding that in an infringement case, a waiver of the attorney-client privilege waived privilege as to all communications involving the subject matter). For these reasons, General Counsel recommends that the Board maintain the confidentiality of the memoranda at issue.

Consistent with the responsibilities outlined in Board policy 2030, General Counsel will provide the Board with additional analysis on Proposition 218 and its implementing case-law, as further developments, such as new appellate decisions, occur. Presently, there are several cases working their way through the judiciary in which water rates are alleged to be inconsistent with Proposition 218. It is likely that there will be additional appellate authority on this issue in the coming months.

Board Decision/Options

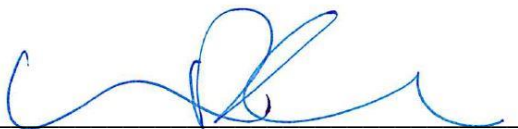
Option 1: Waive the attorney-client privilege and publicly disclose confidential memoranda prepared by the District’s former General Counsel regarding Proposition 218 compliance.

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

Option 3: Take no action.

Staff/General Manager’s Recommendation

Option 3



Brian Poulsen
General Counsel

 for

Jim Abercrombie
General Manager

EL DORADO IRRIGATION DISTRICT

Subject: Consideration to award a contract to CDW Government, Inc. (CDW-G) in the not-to-exceed amount of \$393,000 and Dell in the not-to-exceed amount of \$144,000 for the replacement of data center computer equipment; and authorize project funding of \$550,000 for the Data Center Computer Replacement Project, Project Number 17043.01.

Previous Board Action

August 24, 2009 – Board approved the virtual desktop computer implementation project.

December 12, 2011- Board approved the data center computer upgrade project.

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

BP 3060 and AR 3061.04 require Board approval for all purchases over \$50,000.

AR 3061.07 allows procurement of goods or services when the pricing and terms have been previously established by another public entity.

Summary of Issues

Substantial components of the District’s current data center computer cluster – the modern equivalent of the mainframe – have reached the end of their useful life and require replacement. The cluster computing infrastructure is distributed between two geographically separated data centers to provide disaster recovery and business continuity protections, and has been highly integrated to maximize reliability, resource utilization, and maintenance efficiency. The cluster is essential to every aspect of District business, including customer service, operations, maintenance, engineering, procurement, accounting, and utility billing. The cluster currently hosts nearly 200 virtualized servers and another 250 virtual personal computers (PCs) – collectively comprising about 80% of all District computing resources.

Staff Analysis/Evaluation

The computer cluster is one of the District’s most critical information technology (IT) assets and affects aspects of every job function within the District. The cluster is integral to District operations and hosts scores of virtual computer systems that must remain reliable and performing optimally. Over 85% of District staff report that they depend upon IT to perform a large percentage of their job duties with accuracy and speed.

The existing computer cluster is comprised of many integrated pieces of equipment and system software, including seventeen server blades, four backplane chassis, three storage area network switches, and four data storage systems distributed across two geographically distant data centers for data protection and to provide a limited degree of business continuity in the event of a disaster. Virtualization software enables the existing computing infrastructure to be dynamically shared to maximize resource utilization while also providing increased flexibility, reliability, security, and maintainability. Meeting these demands however, has stretched the existing cluster to the limits of its capabilities. Though proven very reliable, the majority of equipment comprising the cluster has reached the end of its useful life and can no longer adapt to meet current and future needs.

Most of the equipment targeted for replacement will lose manufacturer support in 2018, and has been in service for six to ten years– which makes it quite old by current technology standards. The replacement of this obsolete and end-of-life computer cluster equipment is the basis for this request.

Risks of deferring replacement

Partial or complete computer cluster downtime due to equipment or component failure is a risk. All existing servers are running at or near their maximum memory capacities during normal use, with no option to further increase physical memory. Operating a computer cluster in an overloaded condition means resources are not available to take over if a component fails, creating longer recovery times when problems occur and increasing the risk of a small component failure triggering a chain of events that leads to widespread or total system failure.

Equipment age is also a risk. Due to the rapid pace of technology advances, computer equipment is generally obsolete after five years. As a result, the electronic parts contained within them and the manufacturer’s technical support programs are designed to last approximately the same lifespan. Not only does operating a computer beyond its useful life significantly increase the risk of equipment failure and unplanned outage, deferring equipment replacement compounds the risk by leaving critical components of the District’s computing environment without technical support services, security vulnerability mitigations, and, in some cases, spare parts. If any of the unsupported equipment or operating system software was to fail or become unavailable for any reason, the best case scenario is a minor financial impact due to a loss of productivity. However, the potential for significant disruption, or worse, is very real.

Lagging performance is a less dramatic but more chronic risk. The existing system currently experiences periods of slow performance during peak demand. With the high degree of shared resource use within the cluster, over-taxed server, memory, or network resources affect multiple virtual servers or PC workstations concurrently, causing several different databases or software applications to slow at the same time. Operating a computer in an overloaded condition decreases performance, which correlates to a loss of productivity for staff and processes the computer supports - meaning tasks take longer to complete, and processes may time-out or fail.

Proposed Solution

Staff recommends replacing the obsolete computer cluster components with new equipment configured to industry best practices for high availability, scalability, and security to ensure the ongoing reliability and performance of this critical IT resource. A thorough analysis was performed using the District’s actual computing demands to validate and fine tune the proposed design. The very scalable design staff has proposed is sized to meet current requirements, and ensures that various resources, including servers, memory, and storage can be added incrementally to meet demands if needed. The replacement equipment utilizes an open architecture for a lower initial investment while maintaining maximum flexibility for the future. Open architecture enables some existing equipment, including portions of the expensive data storage system, to remain in use until reaching the end of its service life.

The proposed solution provides the following benefits:

- 1) Increased processing power for superior performance. Significant technology advances have occurred in cluster computing since the existing platform was deployed. The new equipment has twelve servers to replace seventeen servers in the current cluster - yet is capable of doing much more with less. Despite containing fewer servers, this should offer clients significant improvements in software application performance and response times as the equipment goes online.

2) Sufficient resources to virtualize the few remaining and end-of-life physical desktop PCs used by Engineering staff. These high-performance PCs were necessary because the software application requirements were too demanding for the existing cluster.

3) Sufficient computing resources to meet 100% of the District's business continuity needs from the disaster recovery site (the existing cluster only meets 30%), while still providing additional capacity to meet future demands.

4) Improved management capabilities to minimize implementation efforts and ongoing support costs. Features of the existing virtualization software enables IT staff to migrate the virtualized servers and PCs onto the proposed equipment with nominal effort and minimal to no client disruption – allowing District IT staff to perform the proposed implementation while attending to their other normal duties.

5) The proposed equipment is designed to integrate tightly into the District's existing cluster management software suite and improves end-to-end solution visibility for more effective troubleshooting and problem resolution.

This project and the requested funds are identified in the Shared IT Computing Reliability Program in the currently adopted 2017-2021 CIP. Funding of \$550,000 is required to perform the proposed equipment replacement. Of that total, \$393,000 is required to purchase the following equipment from CDW-G. CDW-G is a leading multi-brand technology solutions provider to government and education organizations in the United States and Canada:

- 6 host servers for virtualized servers: \$213,000
- 2 virtualized PC storage nodes: \$90,000
- Network equipment upgrades: \$90,000

Additionally, funding of \$144,000 is required to purchase the following equipment from Dell, which includes resources to address Engineering software applications. Dell is one of the largest technology companies in the world and known for its ability to manufacture individual PCs configured to customer specifications:

- 6 host servers for virtualized PCs: \$144,000

The remaining funds are required for incidental materials to complete installation tasks, including cabling, minor materials, and contingency. The project would be funded by water rates 60% and wastewater rates 40%.

The proposed equipment purchase piggybacks competitively negotiated contracts solicited and awarded by another public agency to ensure the lowest costs have been attained, while also reducing staff time and effort related to procurement. The piggyback contracts that will be used are the National Joint Powers Alliance (NJPA) and the National Association of State Procurement Officials (NASPO) agreements. Both are national public service agencies providing cooperative purchasing solutions for Government and Education entities through a collaborative effort of public agencies across the United States with the specific purpose of reducing procurement costs by leveraging group volume.

Board Decisions/ Options

Option 1: Award a contract to CDW-G in the not-to-exceed amount of \$393,000 and Dell in the not-to-exceed amount of \$144,000 for the replacement of data center computer equipment; and authorize project funding of \$550,000 for the Data Center Computer Replacement Project, Project Number 17043.01

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

Option 3: Take no action.

Staff / General Manager Recommendation

Option 1

Support Documents Attached

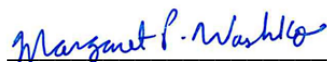
Attachment A: CDW-G quote #1

Attachment B: CDW-G quote #2 for network equipment

Attachment C: Dell quote



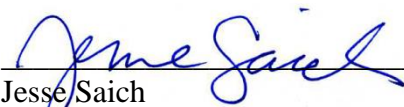
Tim Ranstrom
Information Technology Director



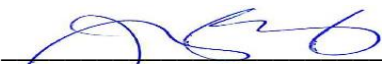
Margaret Washko
Operations Director



Brian Mueller
Engineering Director



Jesse Saich
Public Information Officer



Jose Perez
Human Resources Manager



Mark Price
Finance Director



Brian Poulsen
General Counsel



_____ for
Jim Abercrombie
General Manager

QUOTE CONFIRMATION



DEAR JAMES PROCTOR,

Thank you for considering CDW•G for your computing needs. The details of your quote are below. [Click here](#) to convert your quote to an order.

QUOTE #	QUOTE DATE	QUOTE REFERENCE	CUSTOMER #	GRAND TOTAL
JHLL823	10/6/2017	DATRIUM	8608998	\$302,477.96

IMPORTANT - PLEASE READ

Special Instructions: DATRIUM with 1 YEAR SUPPORT

QUOTE DETAILS				
ITEM	QTY	CDW#	UNIT PRICE	EXT. PRICE
AMS DATRIUM DVX NETSHELF 12BAY Mfg. Part#: D12X4 Contract: NJPA 100614#CDW Technology Catalog (100614#CDW)	2	4012778	\$39,104.00	\$78,208.00
DATRIUM DVX 2000 1U 2XE5-2680 128GB Mfg. Part#: CN2000-SYS-1 Contract: NJPA 100614#CDW Technology Catalog (100614#CDW)	6	4719353	\$13,138.60	\$78,831.60
DATRIUM DVX CN MEM UPG 32GB DIMMS Mfg. Part#: OPT-CN-RAM-128GB-1 Contract: NJPA 100614#CDW Technology Catalog (100614#CDW)	18	4701733	\$1,661.21	\$29,901.78
DATRIUM 1.92TB SSD W/SLED Mfg. Part#: OPT-CN-SSD-1920GB-1 Contract: NJPA 100614#CDW Technology Catalog (100614#CDW)	24	4822915	\$1,749.88	\$41,997.12
DATRIUM 2PT 10G NIC Mfg. Part#: OPT-CN-10G-NIC-S-1 Contract: NJPA 100614#CDW Technology Catalog (100614#CDW)	6	4822917	\$528.40	\$3,170.40
DATRIUM 10G SFP+ XCVR Mfg. Part#: OPT-CN-SFP-SR-1 Contract: NJPA 100614#CDW Technology Catalog (100614#CDW)	6	4822919	\$387.25	\$2,323.50
DATRIUM DVX HOST SINGLE HOST LIC Mfg. Part#: LIC-HOST-SW-1 Electronic distribution - NO MEDIA Contract: NJPA 100614#CDW Technology Catalog (100614#CDW)	12	4594848	\$2,870.40	\$34,444.80
Datrium Next Business Day Support - extended service agreement - 1 month - Mfg. Part#: SUP-D12X4-NBD-1MO UNSPSC: 81111812 Contract: NJPA 100614#CDW Technology Catalog (100614#CDW)	24	4344519	\$434.03	\$10,416.72
Datrium Next Business Day Support - extended service agreement - 1 month - Mfg. Part#: SUP-CN2000-NBD-1MO	72	4680357	\$53.38	\$3,843.36

QUOTE DETAILS (CONT.)

UNSPSC: 81111812

Contract: NJPA 100614#CDW Technology Catalog (100614#CDW)

PURCHASER BILLING INFO		SUBTOTAL	\$283,137.28
Billing Address: INFORMATION TECHNOLOGY EL DORADO IRRIGATION DISTRICT 2890 MOSQUITO RD BLDG P-6 PLACERVILLE, CA 95667-4761 Phone: (530) 642-4075 Payment Terms: Master Card		SHIPPING	\$0.00
		SALES TAX	\$19,340.68
		GRAND TOTAL	\$302,477.96
		DELIVER TO	
Shipping Address: EL DORADO IRRIGATION DISTRICT INFORMATION TECHNOLOGY 2890 MOSQUITO RD BLDG P-6 PLACERVILLE, CA 95667-4761 Phone: (530) 642-4075 Shipping Method: DROP SHIP-COMMON CARRIER			

Need Assistance? CDW•G SALES CONTACT INFORMATION



Jon Cacioppo

(877) 603-6330

joncac@cdwg.com

This quote is subject to CDW's Terms and Conditions of Sales and Service Projects at <http://www.cdwg.com/content/terms-conditions/product-sales.aspx>
 For more information, contact a CDW account manager

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QUOTE CONFIRMATION

DEAR GLENN EBERHARD,

Thank you for considering CDW•G for your computing needs. The details of your quote are below. [Click here](#) to convert your quote to an order.

QUOTE #	QUOTE DATE	QUOTE REFERENCE	CUSTOMER #	GRAND TOTAL
JHRL159	10/12/2017	CISCO N9K	8608998	\$89,943.52

QUOTE DETAILS				
ITEM	QTY	CDW#	UNIT PRICE	EXT. PRICE
Cisco Nexus 93180YC-EX - switch - 48 ports - rack-mountable Mfg. Part#: N9K-C93180YC-EX UNSPSC: 43222612 Contract: NJPA 100614#CDW Technology Catalog (100614#CDW)	3	4125651	\$14,756.43	\$44,269.29
Cisco 100GBASE-CR4 Passive Copper Cable - direct attach cable - 3.3 ft Mfg. Part#: QSFP-100G-CU1M= UNSPSC: 26121609 Contract: NJPA 100614#CDW Technology Catalog (100614#CDW)	2	4214899	\$212.61	\$425.22
Cisco Data Center Network Manager for Nexus 9300 - license Mfg. Part#: DCNM-LAN-N93-K9= UNSPSC: 43232804 Contract: NJPA 100614#CDW Technology Catalog (100614#CDW)	3	3387352	\$633.23	\$1,899.69
Cisco - SFP+ transceiver module - 10 GigE Mfg. Part#: SFP-10G-SR= UNSPSC: 43201553 Contract: NJPA 100614#CDW Technology Catalog (100614#CDW)	46	1658993	\$644.15	\$29,630.90
Cisco - SFP (mini-GBIC) transceiver module - GigE Mfg. Part#: GLC-SX-MMD= UNSPSC: 43201553 Contract: NJPA 100614#CDW Technology Catalog (100614#CDW)	20	2542673	\$343.18	\$6,863.60

PURCHASER BILLING INFO	SUBTOTAL	\$83,088.70
Billing Address: INFORMATION TECHNOLOGY EL DORADO IRRIGATION DISTRICT 2890 MOSQUITO RD BLDG P-6 PLACERVILLE, CA 95667-4761 Phone: (530) 642-4075 Payment Terms: Master Card	SHIPPING	\$0.00
	SALES TAX	\$6,854.82
	GRAND TOTAL	\$89,943.52
	DELIVER TO Shipping Address: EL DORADO IRRIGATION DISTRICT INFORMATION TECHNOLOGY 2890 MOSQUITO RD BLDG P-6 PLACERVILLE, CA 95667-4761 Phone: (530) 642-4075 Shipping Method: DROP SHIP-GROUND	
Please remit payments to: CDW Government 75 Remittance Drive Suite 1515 Chicago, IL 60675-1515		



Jon Cacioppo

|

(877) 603-6330

|

joncac@cdwg.com

This quote is subject to CDW's Terms and Conditions of Sales and Service Projects at <http://www.cdwg.com/content/terms-conditions/product-sales.aspx>
For more information, contact a CDW account manager

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Attachment C



A quote for your consideration!

Based on your business needs, we put the following quote together to help with your purchase decision. Please review your quote details below, then contact your sales rep when you're ready to place your order.

**Total: \$
143,788.50**

Quote number: 3000018421454.1	Quote date: Oct. 13, 2017	Quote expiration: Nov. 12, 2017	Solution ID: 8721934	Deal ID: 14887006
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Company name: EL DORADO IRRIGATION DISTRICT	Customer number: 8567915	Phone: (530) 642-4015
---	------------------------------------	---------------------------------

Sales rep information: Trent Eudey Trent_Eudey@DELL.com (800) 456-3355 Ext: 5133685	Billing Information: EL DORADO IRRIGATION DISTRICT 2890 MOSQUITO RD PLACERVILLE CA 95667-4761 US (530) 642-4015
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Pricing Summary

Item	Qty	Unit Price	Subtotal
PowerEdge R740XD - [amer_r740xd_12238]	3	\$23,589.69	\$70,769.07
PowerEdge R740XD - [amer_r740xd_12238] [1]	3	\$21,263.32	\$63,789.96
Subtotal:			\$134,559.03
Shipping:			\$0.00
Environmental Fees:			\$0.00
Non-Taxable Amount:			\$22,687.14
Taxable Amount:			\$111,871.89
Estimated Tax:			\$9,229.47
Total:			\$143,788.50

Special lease pricing may be available for qualified customers. Please contact your DFS Sales Representative for details.

Dear Customer,

Your Quote is detailed below; please review the quote for product and information accuracy. If you find errors or desire certain changes please contact me as soon as possible.

Regards,
Trent Eudey

Order this quote easily online through your [Premier page](#), or if you do not have Premier, using [Quote to Order](#)

Shipping Group 1

Shipping Contact: EID ACCTPAYABLE	Shipping phone: (530) 622-4812	Shipping via: Standard Ground	Shipping Address: CENTRAL RECEIVING BLDG P-6,2890 MOSQUITO RD PLACERVILLE CA 95667-4761 US
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SKU	Description	Qty	Unit Price	Subtotal
	PowerEdge R740XD - [amer_r740xd_12238]	3	\$23,589.69	\$70,769.07
	Estimated delivery date: Oct. 24 - 27, 2017			
	Contract No: WN03AGW			
	Customer Agreement No: MNWNC-108/7157034003			
210-AKZR	PowerEdge R740XD Server	3	-	-
329-BDKH	PowerEdge R740/R740XD Motherboard	3	-	-
461-AADZ	No Trusted Platform Module	3	-	-
321-BDHZ	Chassis with Up to 24 x 2.5 Hard Drives for 2CPU, GPU Capable Configuration	3	-	-
340-BLBE	PowerEdge R740XD Shipping	3	-	-
343-BBFU	PowerEdge R740 Shipping Material	3	-	-
338-BLME	Intel Xeon Gold 6132 2.6G, 14C/28T, 10.4GT/s 2UPI, 19M Cache, Turbo, HT (140W) DDR4-2666	3	-	-
374-BBNY	Intel Xeon Gold 6132 2.6G, 14C/28T, 10.4GT/s 2UPI, 19M Cache, Turbo, HT (140W) DDR4-2666	3	-	-
412-AAJK	Heatsink and Install Kit for GPU configuration	3	-	-
370-ADNU	2666MT/s RDIMMs	3	-	-
370-AAIP	Performance Optimized	3	-	-

780-BCDS	Unconfigured RAID	3	-	-
405-AAOE	PERC H730P+ RAID Controller, 2Gb NV Cache, Adapter, Low Profile	3	-	-
403-BBPJ	BOSS controller card + with 2 M.2 Sticks 120G (RAID 1),FH	3	-	-
619-ABVR	No Operating System	3	-	-
421-5736	No Media Required	3	-	-
385-BBKT	iDRAC9,Enterprise	3	-	-
528-BBSC	OpenManage Essentials, Server Configuration Management	3	-	-
379-BCQV	iDRAC Group Manager, Enabled	3	-	-
379-BCSF	iDRAC,factory Random Password	3	-	-
330-BBHH	Riser Config 4, 3x8, 4 x16 slots	3	-	-
555-BCKO	Intel X710 DP 10Gb DA/SFP+, + I350 DP 1Gb Ethernet, Network Daughter Card	3	-	-
384-BBPZ	6 Performance Fans forR740/740XD	3	-	-
450-ADWM	Dual, Hot-plug, Redundant Power Supply (1+1), 1100W	3	-	-
325-BCHU	PowerEdge 2U Standard Bezel	3	-	-
389-BTTO	PE R740XD Luggage Tag	3	-	-
350-BBJU	Quick Sync 2 (At-the-box mgmt)	3	-	-
750-AABF	Power Saving Dell Active Power Controller	3	-	-
800-BBDM	UEFI BIOS Boot Mode with GPT Partition	3	-	-
770-BBBR	ReadyRails Sliding Rails With Cable Management Arm	3	-	-
631-AACK	No Systems Documentation, No OpenManage DVD Kit	3	-	-
332-1286	US Order	3	-	-
973-2426	Declined Remote Consulting Service	3	-	-
813-6068	Dell Hardware Limited Warranty Plus On-Site Service	3	-	-
813-6112	ProSupport Plus: Next Business Day On-Site Service After Problem Diagnosis, 5 Years	3	-	-
813-6113	ProSupport Plus: 7x24 HW/SW Technical Support and Assistance, 5 Years	3	-	-
951-2015	Thank you for choosing Dell ProSupport Plus. For tech support, visit http://www.dell.com/contactdell	3	-	-

900-9997	On-Site Installation Declined	3	-	-
370-ADNF	32GB RDIMM, 2666MT/s, Dual Rank	48	-	-
400-ASFK	960GB SSD SATA Read Intensive 6Gbps 512n 2.5in Hot-plug Drive, S3520, 1 DWPD, 1750 TBW	9	-	-
540-BBHP	Intel X710 Dual Port 10Gb Direct Aattach, SFP+, Converged Network Adapter	3	-	-
489-BBCG	NVIDIA Tesla M10 GPU, Requires GRID 2.0 SW for VDI Function	3	-	-
450-AALV	NEMA 5-15P to C13 Wall Plug, 125 Volt, 15 AMP, 10 Feet (3m), Power Cord, North America	6	-	-
SKU	Description	Qty	Unit Price	Subtotal
	PowerEdge R740XD - [amer_r740xd_12238] [1]	3	\$21,263.32	\$63,789.96
	Estimated delivery date: Oct. 24 - 27, 2017			
	Contract No: WN03AGW			
	Customer Agreement No: MNWNC-108/7157034003			
210-AKZR	PowerEdge R740XD Server	3	-	-
329-BDKH	PowerEdge R740/R740XD Motherboard	3	-	-
461-AADZ	No Trusted Platform Module	3	-	-
321-BDHZ	Chassis with Up to 24 x 2.5 Hard Drives for 2CPU, GPU Capable Configuration	3	-	-
340-BLBE	PowerEdge R740XD Shipping	3	-	-
343-BBFU	PowerEdge R740 Shipping Material	3	-	-
338-BLME	Intel Xeon Gold 6132 2.6G, 14C/28T, 10.4GT/s 2UPI, 19M Cache, Turbo, HT (140W) DDR4-2666	3	-	-
374-BBNY	Intel Xeon Gold 6132 2.6G, 14C/28T, 10.4GT/s 2UPI, 19M Cache, Turbo, HT (140W) DDR4-2666	3	-	-
412-AAJK	Heatsink and Install Kit for GPU configuration	3	-	-
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370-AAIP	Performance Optimized	3	-	-
780-BCDS	Unconfigured RAID	3	-	-
405-AAOE	PERC H730P+ RAID Controller, 2Gb NV Cache, Adapter, Low Profile	3	-	-
403-BBPJ	BOSS controller card + with 2 M.2 Sticks 120G (RAID 1),FH	3	-	-

619-ABVR	No Operating System	3	-	-
421-5736	No Media Required	3	-	-
385-BBKT	iDRAC9,Enterprise	3	-	-
528-BBSC	OpenManage Essentials, Server Configuration Management	3	-	-
379-BCQV	iDRAC Group Manager, Enabled	3	-	-
379-BCSF	iDRAC,factory Random Password	3	-	-
330-BBHH	Riser Config 4, 3x8, 4 x16 slots	3	-	-
555-BCKO	Intel X710 DP 10Gb DA/SFP+, + I350 DP 1Gb Ethernet, Network Daughter Card	3	-	-
384-BBPZ	6 Performance Fans forR740/740XD	3	-	-
450-ADWM	Dual, Hot-plug, Redundant Power Supply (1+1), 1100W	3	-	-
325-BCHU	PowerEdge 2U Standard Bezel	3	-	-
389-BTTO	PE R740XD Luggage Tag	3	-	-
350-BBJU	Quick Sync 2 (At-the-box mgmt)	3	-	-
750-AABF	Power Saving Dell Active Power Controller	3	-	-
800-BBDM	UEFI BIOS Boot Mode with GPT Partition	3	-	-
770-BBBR	ReadyRails Sliding Rails With Cable Management Arm	3	-	-
631-AACK	No Systems Documentation, No OpenManage DVD Kit	3	-	-
332-1286	US Order	3	-	-
973-2426	Declined Remote Consulting Service	3	-	-
813-6068	Dell Hardware Limited Warranty Plus On-Site Service	3	-	-
813-6112	ProSupport Plus: Next Business Day On-Site Service After Problem Diagnosis, 5 Years	3	-	-
813-6113	ProSupport Plus: 7x24 HW/SW Technical Support and Assistance, 5 Years	3	-	-
951-2015	Thank you for choosing Dell ProSupport Plus. For tech support, visit http://www.dell.com/contactdell	3	-	-
900-9997	On-Site Installation Declined	3	-	-
370-ADNF	32GB RDIMM, 2666MT/s, Dual Rank	48	-	-
400-ASFK	960GB SSD SATA Read Intensive 6Gbps 512n 2.5in Hot-plug Drive, S3520, 1 DWPD, 1750 TBW	9	-	-

540-BBHP	Intel X710 Dual Port 10Gb Direct Aattach, SFP+, Converged Network Adapter	3	-	-	
450-AALV	NEMA 5-15P to C13 Wall Plug, 125 Volt, 15 AMP, 10 Feet (3m), Power Cord, North America	6	-	-	
				Subtotal:	\$134,559.03
				Shipping:	\$0.00
				Environmental Fees:	\$0.00
				Estimated Tax:	\$9,229.47
				Total:	\$143,788.50

Important Notes

Terms of Sale

Unless you have a separate written agreement that specifically applies to this order, your order will be subject to and governed by the following agreements, each of which are incorporated herein by reference and available in hardcopy from Dell at your request: Dell's Terms of Sale (www.dell.com/learn/us/en/uscorp1/terms-of-sale), which include a binding consumer arbitration provision and incorporate Dell's U.S. Return Policy (www.dell.com/returnpolicy) and Warranty (for [Consumer warranties](#) ; for [Commercial warranties](#)).

If this purchase includes services: in addition to the foregoing applicable terms, the terms of your service contract will apply ([Consumer](#); [Commercial](#)). If this purchase includes software: in addition to the foregoing applicable terms, your use of the software is subject to the license terms accompanying the software, and in the absence of such terms, then use of the Dell-branded application software is subject to the Dell End User License Agreement - Type A (www.dell.com/AEULA) and use of the Dell-branded system software is subject to the Dell End User License Agreement - Type S (www.dell.com/SEULA).

If your purchase is for Mozy, in addition to the foregoing applicable terms, your use of the Mozy service is subject to the terms and conditions located at <https://mozy.com/about/legal/terms>.

You acknowledge having read and agree to be bound by the foregoing applicable terms in their entirety. Any terms and conditions set forth in your purchase order or any other correspondence that are in addition to, inconsistent or in conflict with, the foregoing applicable online terms will be of no force or effect unless specifically agreed to in a writing signed by Dell that expressly references such terms.

Pricing, Taxes, and Additional Information

All product, pricing, and other information is valid for U.S. customers and U.S. addresses only, and is based on the latest information available and may be subject to change. Dell reserves the right to cancel quotes and orders arising from pricing or other errors. Please indicate any tax-exempt status on your PO, and fax your exemption certificate, including your Customer Number, to the Dell Tax Department at 800-433-9023. Please ensure that your tax-exemption certificate reflects the correct Dell entity name: **Dell Marketing L.P.**

Note: All tax quoted above is an estimate; final taxes will be listed on the invoice.

If you have any questions regarding tax please send an e-mail to Tax_Department@dell.com.

For certain products shipped to end-users in California, a State Environmental Fee will be applied to your invoice. Dell encourages customers to dispose of electronic equipment properly.

Data Center Computer Replacement Project

Action Item
CIP 17043.01

October 23, 2017



Previous Board Action

- August 24, 2009 – Approved the virtual desktop computer implementation project
- December 12, 2011- Approved the data center computer upgrade project
- October 24, 2016 – Adopted the 2017-2021 CIP, which included the Shared IT Reliability Program

Summary Of Issue

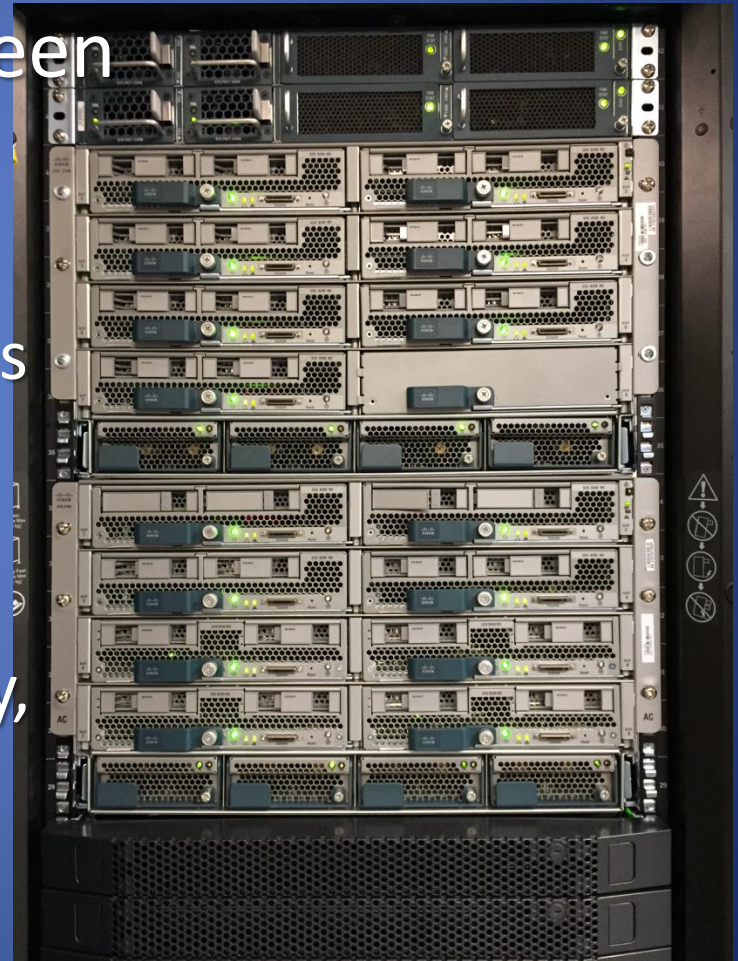
- The data center computer is essential to District operations
 - Modern equivalent to the mainframe
- Substantial components have reached the end of their useful life
- Most equipment targeted for replacement will lose manufacturer support in 2018

Background

- Data center computer is essential to every aspect of District business
 - Serves about 80% of all District computing resources
 - Hosts nearly 200 virtualized servers
 - Hosts about 250 virtual personal computers (PCs)
 - Cluster configuration to maximize reliability
 - One of the District's most critical information technology assets

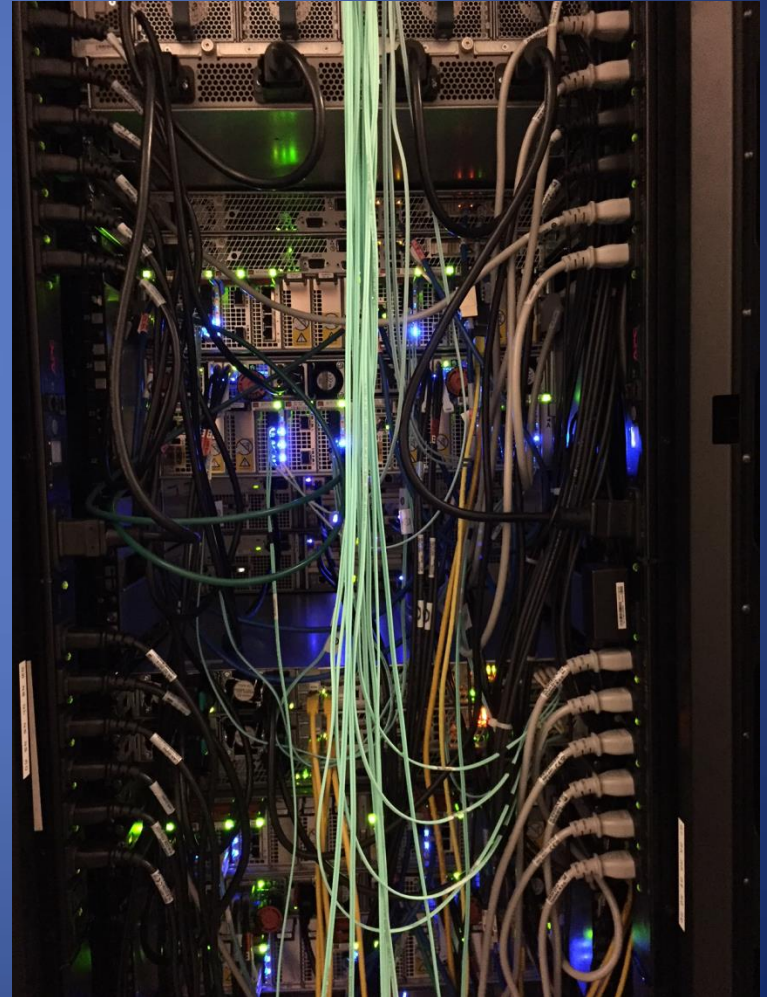
Existing System Detail

- Cluster is distributed between two data centers
 - Provides some disaster recovery failover protections
- Cluster is virtualized for dynamic sharing
 - Provides increased flexibility, reliability, security, and maintainability



Existing System Detail

- Cluster is comprised of many integrated parts
 - 17 server blades
 - 4 backplane chassis
 - 3 storage area network switches
 - 4 data storage systems



Existing System Concerns

- The cluster can no longer adapt to meet needs
- Most equipment has been in service 6-10 years
 - Quite old by current technology standards
- Host servers running at or near maximum capacities during normal use
 - No option to further increase physical memory
 - Some high-performance PCs necessary for demanding software application requirements
- Only offers 30% business continuity to disaster recovery site

Risks of Deferring Replacement

- Ongoing minor financial impact from loss of productivity
 - Cluster performance lags during peak demand
- Potential for significant disruption, or worse
 - Extended cluster downtime due to aging equipment or component failure
 - Increased security risk after manufacturer support ends

Proposed Design

- Implements an open architecture design
 - Uses best practices for high availability, scalability, and security
- Lower initial investment with maximum flexibility
 - Enables some existing equipment to remain in use, including the virtual server data storage system
 - Specific resources can be added if needed in the future
 - Design avoids single manufacturer “lock-in”
- Significant technology advances do more with less
 - Enables 12 servers to replace 17 servers
 - Sized on thorough analysis of District computing demands

Proposed Solution Benefits

- Superior software application performance
 - Clients should experience improved response times
 - Virtualize all demanding software applications
 - Allows end-of-life high-performance PC retirement
 - Provides additional capacity to meet future demands
- Ensures business continuity
 - Highly reliable equipment and design
 - Brings 100% business continuity to disaster recovery site
 - Virtualization allows server and PC migrations with minimal to no client disruption
- Increases support efficiency
 - Tightly integrates to existing IT management software suite

Cost Analysis

- Funding of \$550,000 is required for the project
- Funded from Shared IT Computing Reliability Program
 - Source 60% water rates and 40% wastewater rates
- Major costs
 - 6 host servers for virtualized servers \$213,000 CDW-G
 - 6 host servers for virtualized PCs \$144,000 Dell
 - 2 virtualized PC storage nodes \$90,000 CDW-G
 - Network equipment upgrades \$90,000 CDW-G
 - Incidental materials and contingency \$13,000

Procurement

- CDW-G equipment contract of \$393,000
 - CDW-G is a leading multi-brand technology solutions provider to US government organizations
- Dell equipment contract of \$144,000
 - Dell is one of the world's largest technology companies
 - Known for its ability to manufacture computers configured to customer specifications
- Purchases piggyback competitive contracts to ensure the lowest costs attained
 - National Joint Powers Alliance (NJPA) for CDW-G
 - National Association of State Procurement Officials (NASPO) for Dell

Board Decisions/Options

- Option 1: Award a contract to CDW-G in the not-to-exceed amount of \$393,000 and Dell in the not-to-exceed amount of \$144,000 for the replacement of data center computer equipment; and authorize project funding of \$550,000 for the Data Center Computer Replacement Project, Project Number 17043.01
- Option 2: Take other action as directed by the Board
- Option 3: Take no action

Staff/General Manager's Recommendation

- Option 1

Questions