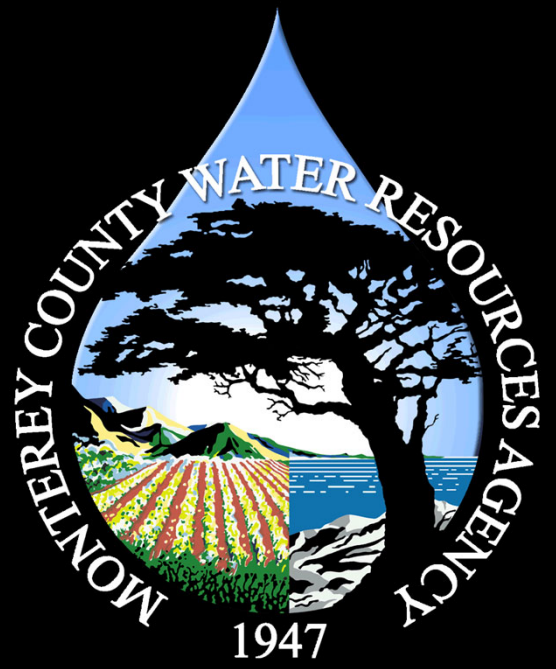

MONTEREY COUNTY WATER RESOURCES AGENCY
1947

Monterey County Water Resources Agency

September 19, 2019 Joint Board Workshop

San Antonio and Nacimiento Dams: Projects and Funding Options

Welcome!

- Introductions
  - Brent Buche, General Manager
  - Fabricio Chombo, Finance Manager
  - Kari Wagner, Wallace Group
  - Wenjie Fu and Valerie Merklin, David Taussig & Associates

Background

- April 26, 2019 Workshop
- 4 Questions
  1. One funding request or multiple?
  2. What type of funding to seek?
  3. How to get info out to voters?
  4. Concerns with the effort to get funding passed based on questions 1 & 2?

Background (cont'd)

	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
Q1. One Funding Request or Multiple?	Funding should be seeked with one allocation, which may require different funding mechanisms, such as assessment for dams and county-wide fees for HCP. Approach should be carefully planned with specific project descriptions and grouping projects with similar purpose. Agency should hire consultant to survey electorate to determine what projects should be funded and cull any projects which are not deemed a priority. Advantage of this approach is the one allocation will prevent voter fatigue. Disadvantage is that if rejected, all will fail; hence, the need for careful planning and outreach.	It'd be difficult to get all items onto one single funding request; therefore, multiple request may be more appropriate. Funding types should be grouped by like activities, O&M for reservoirs should be one package, Special Tax should be seeked where appropriate. Agency should bundle as much as possible to avoid voter fatigue. Agency should also coordinate with GSA to avoid overlap.	Agency should determine what are its immediate needs. Deferred O&M at the dams should be separated. Should some of these projects by funded by GSP? Or, should Agency explore a JPA approach to build credibility? If JPA is an option, Agency should explore sale of assets for transition funding until JPA is formed. Agency should also explore charging fees to fund some of its projects.	Agency should seek multiple funding types for ongoing maintenance of dams, deferred maintenance and general daily operations. Once costs have been broken out, Agency needs to determine the best approach to secure voter approval.	Agency should package costs into one or two packages. Agency should prioritize projects and include top priority in package 1. Reason for only two packages is to prevent voter fatigue of multiple requests, it will allow voters to identify projects and allow the agency to bundle like items. Agency should consider the possibility that voter will reject all items if bundled into one or two packages.	Agency should seek multiple funding mechanisms and explore JPA County-Wide options.
Q2. What types of Fundings to seek?	Agency should explore all funding types, it should seek grants for the development of HCP, studies, and one-time projects. County-wide special tax for environmental projects. Fees based on transactions with the caveat that those will be unpredictable, but they can be based on crop values, fertilizer sales, extraction fees, carbon tax, and regulatory fees. Last, agency should explore taxes and assessments with sunset provisions.	Agency should explore multiple funding types, it should seek water usage fees and work closely with GSA, also if working with GSA can Agency/GSA explore a sales tax/special tax revenue stream? Special Assessments which should be spread evenly over parcels, Agency should seek water usage fees and drive towards efficient water usage, adopt tiered rates as well as ways to increase water efficiency. A concern of these fees is that they are not a stable revenue source as water usage will change over time. COLA should be automatically applied to fees.	Agency should explore multiple funding types; fees, assessments, and special taxes. Fees can include, fines, enforcement/trespass fees, and extraction fees. Assessments for dam repairs from a public safety concern standpoint and benefit clearly identified to avoid disputes. Agency should also explore assessments for existing repairs, future unanticipated repairs and depreciation of dams. There should be a suite of projects and seek funding for these. Agency should also perform a short-term analysis of needs and priorities. Is it viable to have ONE special tax to fund all projects?	Agency should explore multiple funding types such as fees, special taxes, and assessments. Agency should breakdown what funding vehicle can be used for each category. Can an extraction fee be used for O&M? Dam deferred maintenance should be its own separate funding. Ongoing maintenance should be funded through a maintenance fee. All approaches should be fair and equitable, and increases should be included for future years.	Agency should consider multiple funding types including private funding, leasing assets (land), and private funding for renewable energy sources. Assessments should be seeked for environment component and Agency should work with GSA to avoid duplication of efforts.	The approach will be difficult, but Agency should involve ALL stake holders. Agency should explore multiple funding types, such as grant funding for one-time projects, assessments for existing needs and future operational requirements. Water extraction fees should be considered. Private funding should also be seeked. Can SLOCO pay for O&M of the dams.

Background (cont'd)

- Common themes from groups
  - Concern with "voter fatigue"
  - Coordination with GSA necessary
  - Multiple funding types should be evaluated:
    - Grants
      - Agency continually evaluates grant opportunities.
    - Water Extraction Fees
      - Infrastructure currently not in place to implement
      - Agency considering what would be needed
    - Private Funding
      - Agency exploring how to set up and implement
    - Special Tax
    - Assessments

Background (cont'd)

- Since April 26, 2019 workshop
  - – May 20, 2019, met with MoCo Elections
    - Special Tax costs higher than Assessment, average is $6-$8 per voter (est. 105K registered voters).
    - Voter precinct boundaries may need to be redrawn, increases costs to a possible $25 per voter
    - Deadlines for a March 2019 election.
    - A stand-alone election may triple costs.

Background (cont'd)

- Since April 26, 2019 workshop
  - Early June 2019
  - Internally reviewed list of projects
  - 2 phase approach
    - Phase 1, fund deferred maintenance in all zones as well as HCP
    - Phase 2, fund ongoing activities through Special Taxes and Fees
  - Reviewed list of projects in Phase 1 and determined reservoir deferred maintenance had deadline (2024) and benefit zone was already set up.

Background (cont'd)

Projects not included in this process:

- Interlake Tunnel w/Spillway Modification
  - Cost estimate at $143,901,076 (includes $10M DWR Grant and $17M Fish Screen Grant)
  - Estimated annual (30Y) debt service $10,857,155
  - $10,857,155/418,785 ac
  - Estimated annual cost per acre = $ 25.93
- Habitat Conservation Plan
  - Deemed to have general benefit not special
  - $4.5M over three years
- Projects not directly related to dams or outside Zone 2C
  - CSIP, Pajaro, etc.
- Identified GSA Projects

Background (cont'd)

- Since April 26, 2019 workshop
  - Mid-June 2019
    - Reached out to 3 consultants to assist in this process;
      - Larsen Wurzel & Associates, Inc.
      - Hansford Economic Consulting
      - Wallace Group

Background (cont'd)

- Since April 26, 2019 workshop
  - July – Now
    - Focused on deferred dam maintenance and SA chute.
    - Hired Wallace Group who subcontracted with David Taussig & Associate to assist with process.
    - Validated project costs.
    - Reviewed potential funding mechanisms and timelines.

Background (cont'd)

PROGRAMS

	FUND											
	111	112	NEW	116	116 $$$	121	122	124	127	131	134	TOTAL
	General	Pajaro	Environmental Countywide	Dams	Dams high cost	Soledad storm	Reclamation Ditch	San Lorenzo Creek	Moro Cojo Slough	CSIP	SRDF Ops	
Annually	$450,000	$600,000	$1,950,000	$1,510,000	$0	$75,000	$30,000	$70,000	$0	$310,000	$0	$4,995,000

PROJECTS

	FUND												over 30 yrs
	111	112	NEW	116	116 $$$	121	122	124	127	131	134	TOTAL	annual payment
	General	Pajaro	Environmental Countywide	Dams	Dams high cost	Soledad storm	Reclamation Ditch	San Lorenzo Creek	Moro Cojo Slough	CSIP	SRDF Ops		
Year 1	$1,840,000	$800,000	$1,600,000	$1,307,000	$0	$0	$50,000	$0	$250,000	$680,000	$0	$6,527,000	$650,000
Year 2	$50,000	$600,000	$1,500,000	$837,000	$5,350,000	$0	$0	$0	$250,000	$10,770,000	$3,000,000	$22,357,000	$1,200,000
Year 3	$0	$600,000	$1,500,000	$1,832,000	$40,000,000	$0	$0	$0	$0	$3,980,000	$3,000,000	$50,912,000	$2,740,000
Total	$1,890,000	$2,000,000	$4,600,000	$3,976,000	$45,350,000	$0	$50,000	$0	$500,000	$15,430,000	$6,000,000	$79,796,000	$4,590,000
debt service payment	$102,249	$108,200	$248,860	$215,102	$2,453,435	$0	$2,705	$0	$27,050	$834,763	$324,600	$4,316,964	

Current Project List

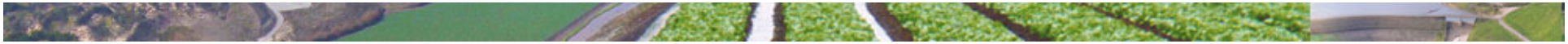
- Deferred Maintenance
  - Planning and Administration
    - MCWRA Staff time, environmental, preliminary engineering, permitting
    - Up to 30% of Construction Costs
  - Design
    - Consultant engineering, inspection, construction administration, engineering services during construction
    - Up to 35% of Construction Costs
  - Construction
  - Project Contingency
    - Up to 30%
  - Environmental Monitoring Contingency
    - Depends of lake level during construction
    - Up to 75% of Construction Costs
  - Pumping Contingency
    - Depends of lake level during construction
    - $30,000/week
- Recommend Adding 5% for Inflation

Current Project List – Nacimiento Phase I

#	Project Name	Total Project Costs	#	Project Name	Total Project Costs
1	Nacimiento Drive Road Repair	$3,536,000	7	Geologic Review and Minor Improvements of Slope Above Power House: Phase I (FERC Part 12D Requirements)	$160,000
2	Replacement of 3 Low-level Outlets	$880,000	8	Spillway Investigation (FERC Part 12D Requirements)	$2,325,000
3	Repair and Modify Low-level Valve 6 - Flow Control Energy Dissipating Outlet	$3,547,500	9	Spillway Plunge Pool Erosion and Boil Prevention: Phase I (FERC Part 12D Requirements)	$12,900,000
4	Bridge over Spillway Maintenance	$195,000	10	Seismic Stability for Embankment (FERC Part 12D Requirements)	$1,352,000
5	Bradley and Camp Roberts Warning System	$520,000	11	Security Plan Requirements (lights/cameras)	$41,600
6	Hydraulic Intake Valve Actuators (3)	$1,067,000	12	Misc. Projects	$1,248,000
				Total	**$27,772,100**

Current Project List – Nacimiento Phase II

#	Project Name	Total Project Costs
7a	Slope Stability Above Power House: Phase II	$10,400,00
8a	Spillway Repairs (Depends on Investigation)	$25,800,00
9a	Downstream Boils: Phase II	$12,900,000
Total		**$49,100,000**
Phase I and Phase II Total		**$76,872,100**
Recommend adding 5% for Inflation		



Current Project List San Antonio

#	Project Name	Total Project Costs	#	Project Name	Total Project Costs
1	Install Intake Bulkhead Gate	$224,250	10	BFV Hydraulic Upgrade	$520,000
2	Install Hatch in 84" Penstock	$329,000	11	Horizontal Drain Repair	$416,000
3	Install Intake Structure Trash Racks	$561,125	12	Closed Circuit TV in Valve Chamber	$81,250
4	Replace Air Release Valves (8)	$156,000	13	Replace Boat Barrier Buoy Line and Spillway Log Boom	$416,000
5	Low Level Discharge Valve Maintenance	$149,500	14	Road Pavement Repair	$520,000
6	Interior and Exterior Paint of Penstock Piping	$2,827,500	15	Toe Drain Repair	$208,000
7	Update Dam Stability Analysis	$127,075	16	Sidehill Drain	$520,000
8	Potential Failure Mode Analysis	$127,075	17	Staff Gauge Improvements	$56,875
9	New Piezometers (5)	$1,456,000			
				Total	**$8,695,650**
18	Chute Major Repair/Replacement				$60,000,000
				Grand Total	**$68,695,650**
Recommend adding 5% for Inflation					

Background (cont'd)

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY — GAVIN NEWSOM, Governor

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

RECEIVED
APR 19 2019
BY:

APR 12 2019

Ms. Shauna Lorance, P.E., Interim General Manager
Monterey County Water Resources Agency
Post Office Box 930
Salinas, California 93902-0930

San Antonio Dam, No. 1008-2
Monterey County

Dear Ms. Lorance:

This is in reply to Monterey County Water Resources Agency's (MCWRA) letter dated May 23, 2018, submitting the Spillway Condition Assessment Report prepared by GEI Consultants, Inc (GEI) for San Antonio Dam. This report was prepared in response to our letter dated May 12, 2017, requiring a condition assessment of the spillway.

In the report, GEI identifies significant foundation and structural deficiencies that could greatly compromise spillway performance during high flow events. Based on our independent evaluation, we agree with the spillway deficiencies identified by GEI and their conclusion that the spillway is in poor condition and unsafe for use under high flow conditions. Therefore, a major rehabilitation or full replacement of the spillway will be needed to ensure the safe performance of the spillway under significant flows up to the maximum design outflow.

By July 1, 2019, please submit a plan and schedule to resolve the spillway deficiencies for our review and approval. Every effort must be made to restore the full function of the spillway by November 1, 2024. In the interim, short-term risk reduction measures need to be implemented and associated maintenance repairs completed by November 1, 2019.

In their Report, GEI includes re
could strategica use as interi
we suggest for consid ation in

1. Perform remedial concre
   to floor and wall joints; a
2. Commence a pilot progr
   longitudinal and transve
   condition of the underdra

In addition, it is important that M
dam's spillway, document any
necessary maintenance items t
during the winter flood season.

Ms. Lorance
APR 12 2019
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Because of the known spillway deficiencies at San Antonio Dam, the Division of Safety of Dams' condition assessment for the dam has been changed from "Satisfactory" to "Fair." Definitions of condition assessments are on our website at www.water.ca.gov/damsafety.

If you have any questions or need additional information, you may contact Design Engineer John Diefenthal at (916) 227-4638 or Project Engineer Wallace Lam at (916) 227-4626.

Sincerely,

Sharon K. Tapia, Chief
Division of Safety of Dams

By July 1, 2019, please submit a plan and schedule to resolve the spillway deficiencies for our review and approval. Every effort must be made to restore the full function of the spillway by November 1, 2024. In the interim, short-term risk reduction measures need to be implemented and associated maintenance repairs completed by November 1, 2019.

San Antonio Emergency Repair

- DSOD letter states fully functional by Nov. 1, 2024
  - Options:
    - Replacement estimated at $60M includes:
      - $36M Construction
      - $9M Planning, permitting, design, etc.
      - $15M Contingency
    - Repair
    - Neither (DSOD would have to agree)
      - Rest of facility needs to be fully functional
      - Would not be able to store winter flows

Current Project List (cont'd)

- Deferred Maintenance

	Phase I		Phase II		Total	
	Low	High	Low	High	Low	High
Nacimiento	$27,772,100		$49,100,000		$76,872,100	
San Antonio	$8,695,650		$60,000,000		$68,695,650	
Total	$36,467,750		$109,100,000		$145,567,750	
5% Inflation	$1,823,400		$5,455,000		$7,278,400	
Total Bond	$38,291,150		$114,555,000		$152,846,150	
Funding Expenses	$400,000	$3,000,000	$400,000	$3,000,000	$400,000	$3,000,000
Fixed Cost Issuance, Reserve Requirement	$200,000	$3,829,000	$200,000	$11,456,000	$200,000	$15,285,000
Annual Payment (5%, 30 yr)	$2,529,900	$2,935,100	$7,491,000	$8,392,400	$9,981,900	$11,132,300
Cost per acre (418,785 acres)	**$6.04**	**$7.01**	**$17.89**	**$20.04**	**$23.84**	**$26.58**

Current Project List (cont'd)

- On-going Operation and Maintenance at Nacimiento and San Antonio
  - $1,500,000 annually
  - Estimated Annual Cost Per Acre: $3.58
- Operational Reserves
  - Used for unexpected maintenance projects
  - Reduce the potential for future funding needs
  - $1,500,000 over 5 years
  - Estimated Annual Cost Per Acre: $0.72

Funding Options

- Assessment District
- Parcel Tax
- Community Facilities District ("CFD") Special Tax
- Other funding mechanisms which could offset the funding obligations from the three above are being explored by Agency staff.
  - Grants
  - Private Funding
  - SLO County/Water Conservation District maintenance contribution on San Antonio

Special Assessment District (Typical)

A Special Assessment District links the cost of public improvements to the landowners who specifically benefit from those improvements. An agency must separate the general benefits from the special benefits conferred on a parcel.

PROS	CONS
Lower voter threshold of 50% (landowner ballots are weighted)	More complexity • Different special district must be set up for each category of infrastructure or service • Benefit allocation can be difficult to prove
Administrative costs typically lower than a Special Tax	More difficult to fund services
Most-likely quickest schedule to funding	

Special Assessment District (Agency)

PROS	CONS
Categories are already set up via existing Zone 2C Assessment District	Regarding the 50% voter threshold: The Agency Act has more stringent protest language. Section 24.1(f) requires that the BOS submit an assessment to the voters at a general or special election if 25% or more of the number of registered voters, or 25% or more of the land area within the zone protests.
Administrative costs typically lower than a Special Tax	More difficult to fund services
Most-likely quickest schedule to funding	If initial Protest Hearing receives more than 25% protest, will require additional ballot process. Will increase cost and schedule.
Lowest cost for voting processing	

Proposed Schedule:

- 8 to 12 months

Parcel Tax (Typical)

A Parcel Tax levies a uniform amount on each parcel in the designated area.
Can be a flat rate or based on acreage.

PROS	CONS
May fund any public service or infrastructure	Requires two-thirds (2/3) registered voters approval threshold
More uniform so easier to explain to voters	Typically may not issue bonds, unless language includes for parcel tax in perpetuity, which is not common. Bond counsel does not prefer parcel tax.
Does not need to be held during general election	Election Costs may triple.

Parcel Tax (Agency)

PROS	CONS
May fund any public service or infrastructure	Two-thirds (2/3) registered voters approval threshold may be difficult to obtain
More uniform so easier to explain to voters	Typically may not issue bonds, unless language includes for parcel tax in perpetuity, which is not common. Bond counsel does not prefer parcel tax.
Does not need to be held during general election	High cost for voting processing

Proposed Schedule:

- 12 to 15 months

Community Facilities District (CFD) Special Tax (Typical)

A CFD can finance public facility infrastructure as well as certain types of services through the imposition of a Special Tax (explicitly not ad valorem), solely on those properties within the CFD boundaries.

PROS	CONS
Flexibility – ability to fund wide variety of infrastructure and services	Requires two-thirds (2/3) registered voters approval threshold
May issue tax-exempt bonds that are non-recourse to Issuer (secured by the land, results in better bond pricing)	Requires reserve fund (typically 7%-10% of bond amount) and revenue-to-debt service ratio (typically 110%)
Rates may escalate	Cost inefficient at bond sizes of $3 million or less
Strongest enforcement mechanism (ability to lien supercedes all other forms of debt)	

Community Facilities District (CFD) Special Tax (Agency)

PROS	CONS
Flexibility – ability to fund wide variety of infrastructure and services	Two-thirds (2/3) registered voters approval threshold may be difficult to achieve
May issue tax-exempt bonds that are non-recourse to Issuer	Requires reserve fund (typically 7%-10% of bond amount) and revenue-to-debt service ratio (typically 110%)
Rates may escalate	Cost inefficient at bond sizes of $3 million or less
Strongest enforcement mechanism (ability to lien supercedes all other forms of debt)	High cost for voting processing

Proposed Schedule:

- 12 to 15 months

Comparison – Overview

	ASSESSMENT DIST	PARCEL TAX	CFD
Voter Threshold	50%*	66.7%	66.7%
Legal Complexity	Medium	Low	Medium
Legal Flexibility	Low	Low	High
Infrastructure Financing	Public	Public	Public
Services Financing	Limited	Public	Public
Enforcement Mechanism	Property Tax Assessment	Property Tax Assessment	Property Tax Lien
Schedule Duration	8-12 months	12-15 months	12-15 months
Estimated Election/Ballot Costs	Low	High	High

Comparison – Financial Factors

	ASSESSMENT DIST	PARCEL TAX	CFD
Payment	Property Tax Line-Item	Property Tax Line-Item	Property Tax Line-Item
Securitization	Tax-Exempt Bonds	N/A	Tax-Exempt Bonds
Market Demand	Low	N/A	High
Cost of Issuance	Medium-High	N/A	High
Administrative Costs	Medium	Low	Medium
Key Metric for Bond Sizing	Value-to-Lien Ratio	N/A	Value-to-Lien Ratio
Bond Sizing	Low-Medium	N/A	High

Comparison – Strengths

ASSESSMENT DISTRICT	PARCEL TAX	CFD
*50% voter threshold can be easier to achieve. Lowest vote processing costs Administrative costs are typically lower due to cost efficiencies of administering multiple Assessment Districts simultaneously.	Ability to fund any public service or infrastructure. Simpler and more uniform structure is easier to explain to voters. Does not need to be based on benefit, may benefit property owners outside district.	Ability to fund any service or infrastructure. Strongest enforcement mechanism (ability to lien supercedes all other forms of debt). Does not need to be based on benefit, may benefit property owners outside district.

Comparison - Challenges

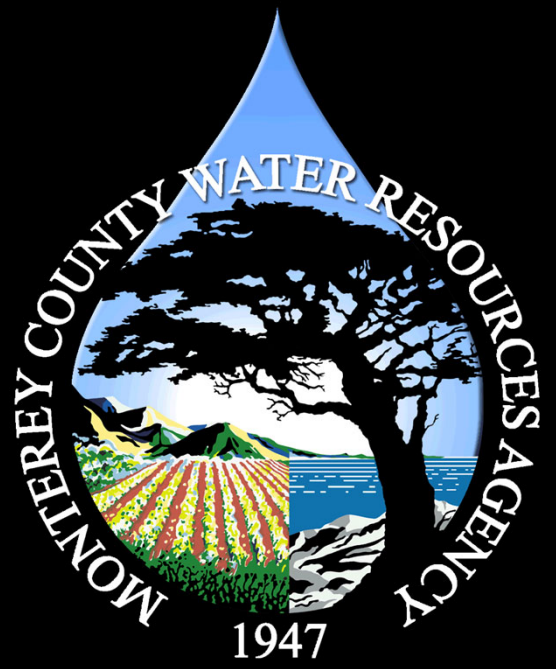
ASSESSMENT DISTRICT	PARCEL TAX	CFD
Less flexibility on the use of funds. Higher possibility of legal challenge.	2/3 voting threshold can be more difficult to achieve. Vote must take place on an established election date or at a special election. Earliest ballot to take place in March during Primaries If using Zone 2C boundaries, will need to set up a new precinct.	2/3 voting threshold can be more difficult to achieve. Cost inefficient at bond sizes of $3 million or less.

Group Breakout

- What funding option should be pursued immediately?
- Given WRA's other obligations, ILT, GSA, deferred maintenance, how do we proceed with funding requests? One request or multiple?
- Should other projects be included?
  - Would ILT be contingent upon deferred maintenance passing?

Next Steps

- Summarize findings from breakout session
- Report to the BOD/BOS to receive final direction on funding mechanism


MONTEREY COUNTY WATER RESOURCES AGENCY
1947

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Monterey County Water Resources Agency

Nacimiento Dam - Deferred Maintenance Projects

#	Project Name	Planning/ Administration[1]	Design[2]	Construction[3]	Subtotal	Project Contingency[4]	Environmental Monitoring Contingency[5]	Pumping Contingency[6]	Total	Project Description/Notes
1	Nacimiento Drive Road Repair	$ 425,000	$ 595,000	$ 1,700,000	$ 2,720,000	$ 816,000	--	--	$ 3,536,000	Remove and replace 2 miles of road. Includes 13 survey monuments.
2	Replacement of 3 Low-level Outlets	$ 40,000	$ 60,000	$ 400,000	$ 500,000	$ 50,000	$ 300,000	$ 30,000	$ 880,000	Contractor to install, MCWRA to purchase valves and provide, consultant to prepare bid package for contractor, no env req'd, no permits, consultant to provide install oversight, MCWRA staff time for Project management, timing of construction will result in additional monitoring costs and potentially pumping costs.
3	Repair and Modify Low-level Valve 6 - Flow Control Energy Dissipating Outlet	$ 675,000	--	$ 1,500,000	$ 2,175,000	$ 217,500	$ 1,125,000	$ 30,000	$ 3,547,500	No Design or ESDC required, project is already funded, will require permitting with RWQCB, Fish & Wildlife, FERC, DSOD.
4	Bridge over Spillway Maintenance	$ 15,000	$ 35,000	$ 100,000	$ 150,000	$ 45,000	--	--	$ 195,000	Need engineer to inspect and provide report, need costs for contractor to repair, no env. required, no permits, swallow habitat (timing issues with contractor).
5	Bradley and Camp Roberts Warning System	$ 37,500	$ 112,500	$ 250,000	$ 400,000	$ 120,000	--	--	$ 520,000	CDF to allow a tower that would be connected to dam (pressure transducers). We also need to add Camp Roberts.
6	Hydraulic Intake Valve Actuators (3)	$ 63,750	$ 63,750	$ 425,000	$ 552,500	$ 165,750	$ 318,750	$ 30,000	$ 1,067,000	MCWRA will purchase actuators, plus additional materials. Will require dive team for installation.
7	Geologic Review and Minor Improvements of Slope Above Power House: Phase I (FERC Part 12D Requirements)	$ 25,000	$ 35,000	$ 100,000	$ 160,000	--	--	--	$ 160,000	Study is being conducted right now. If the slope repairs are too much, may need to look at alternative routing to get to the hydro plant. Break point of $5,000,000. Consultants report will be available by the first of the year so we will have better numbers for the Engineer's Report.
8	Spillway Investigation (FERC Part 12D Requirements)	$ 75,000	--	$ 1,500,000	$ 1,575,000	--	$ 750,000	--	$ 2,325,000	In the fall MCWRA will be drilling holes.
9	Spillway Plunge Pool Erosion and Boil Prevention: Phase I (FERC Part 12D Requirements)	$ 1,250,000	$ 1,750,000	$ 5,000,000	$ 8,000,000	$ 2,400,000	$ 2,500,000	--	$ 12,900,000	AECOM on board, will give a report with alternatives around the first of the year for the Engineer's Report. Will require Env and permitting
10	Seismic Stability for Embankment (FERC Part 12D Requirements)	$ 162,500	$ 227,500	$ 650,000	$ 1,040,000	$ 312,000	--	--	$ 1,352,000	If the dam land is liquefiable, would result in a very large project. Not going to account for this at this time.
11	Security Plan Requirements (lights/cameras)	$ 5,000	$ 7,000	$ 20,000	$ 32,000	$ 9,600	--	--	$ 41,600	
12	Misc. Projects	$ 150,000	$ 210,000	$ 600,000	$ 960,000	$ 288,000	--	--	$ 1,248,000	
				Phase I Subtotal	**$ 18,264,500**	**$ 4,423,850**	**$ 4,993,750**	**$ 90,000**	**$ 27,772,100**	
7a	Slope Stability Above Power House: Phase II	$ 1,250,000	$ 1,750,000	$ 5,000,000	$ 8,000,000	$ 2,400,000	--	--	$ 10,400,000	
8a	Spillway Repairs (Depends on Investigation)	$ 2,500,000	$ 3,500,000	$ 10,000,000	$ 16,000,000	$ 4,800,000	$ 5,000,000	--	$ 25,800,000	
9a	Downstream Boils: Phase II	$ 1,250,000	$ 1,750,000	$ 5,000,000	$ 8,000,000	$ 2,400,000	$ 2,500,000	--	$ 12,900,000	
Phase II Subtotal					**$ 32,000,000**	**$ 9,600,000**	**$ 7,500,000**	**$ -**	**$ 49,100,000**	
Grand Total					**$ 50,264,500**	**$ 14,023,850**	**$ 12,493,750**	**$ 90,000**	**$ 76,872,100**	

1 Planning/Administration: Includes MCWRA staff time, environmental, preliminary engineering, permitting. Up to 30% of construction.
2 Design: Includes consultant engineering, inspection, construction administration, and engineering services during construction. Up to 35% of construction.
3 Construction: Includes construction costs, including parts purchasing
4 Project Contingency: All project costs are preliminary. Up to 30% contingency has been provided for planning, administration, design, and construction for unknowns.
5 Environmental Monitoring Contingency: Provides a contingency for environmental monitoring during construction depending on lake level. Up to 75% of construction costs.
6 Pumping Contingency: Provides a contingency for pumping during construction depending on lake level. $30,000/week

Subject to Revision
09/19/2019

DRAFT

Monterey County Water Resources Agency

San Antonio Dam - Deferred Maintenance Projects

#	Project Name	Planning/ Administration[1]	Design[2]	Construction[3]	Subtotal	Project Contingency[4]	Environmental Monitoring Contingency[5]	Pumping Contingency[6]	Total	Project Description/Notes
1	Install Intake Bulkhead Gate	$ 22,500	$ -	$ 150,000	$ 172,500	$ 51,750	--	--	$ 224,250	Includes 2 dives, remove and replace, fabrication. No Env. Monitoring, MCWRA to do the project planning and oversight.
2	Install Hatch in 84" Penstock	$ 30,000	$ -	$ 200,000	$ 230,000	$ 69,000	--	$ 30,000	$ 329,000	Design being done.
3	Install Intake Structure Trash Racks	$ 41,250	$ -	$ 275,000	$ 316,250	$ 94,875	--	$ 150,000	$ 561,125	3 trash racks, installed underwater
4	Replace Air Release Valves (8)	$ 12,000	$ 28,000	$ 80,000	$ 120,000	$ 36,000	--	--	$ 156,000	
5	Low Level Discharge Valve Maintenance	$ 15,000	$ 100,000	$ -	$ 115,000	$ 34,500	--	--	$ 149,500	Need a full inspection and service.
6	Interior and Exterior Paint of Penstock Piping	$ 150,000	$ 525,000	$ 1,500,000	$ 2,175,000	$ 652,500	--	--	$ 2,827,500	Consultant to prepare specification
7	Update Dam Stability Analysis	$ 12,750	$ 85,000	$ -	$ 97,750	$ 29,325	--	--	$ 127,075	This is for a study only, no repairs. Repair costs are not included in estimate, no field exploration. If inner lake tunnel moves project, this project may go away
8	Potential Failure Mode Analysis	$ 12,750	$ 85,000	$ -	$ 97,750	$ 29,325	--	--	$ 127,075	This is for a study only, no repairs. Repair costs are not included in estimate, no field exploration. If inner lake tunnel
9	New Piezometers (5)	$ 175,000	$ 245,000	$ 700,000	$ 1,120,000	$ 336,000	--	--	$ 1,456,000	GEI provided an estimate of $90k per hole. If inner lake tunnel moves project, this project may go away. DSOD fee required
10	BFV Hydraulic Upgrade	$ 62,500	$ 87,500	$ 250,000	$ 400,000	$ 120,000	--	--	$ 520,000	96" BFV, would require fabrication, engineering. DSOD fee required.
11	Horizontal Drain Repair	$ 50,000	$ 70,000	$ 200,000	$ 320,000	$ 96,000	--	--	$ 416,000	125 feet long, 12" drain, slip lining, existing AC coated Corrugated metal pipe (CMP). New exit, 8" PVC well casing with slots for drain
12	Closed Circuit TV in Valve Chamber	$ 12,500	$ -	$ 50,000	$ 62,500	$ 18,750	--	--	$ 81,250	
13	Replace Boat Barrier Buoy Line and Spillway Log Boom	$ 50,000	$ 70,000	$ 200,000	$ 320,000	$ 96,000	--	--	$ 416,000	Replace 1,700 ft
14	Road Pavement Repair	$ 62,500	$ 87,500	$ 250,000	$ 400,000	$ 120,000	--	--	$ 520,000	Internal roads inside the gate, chip seal (1.5 miles, 20 ft wide) plus 0.75 miles of Vista Road crack repairs, minor repairs, chip
15	Toe Drain Repair	$ 25,000	$ 35,000	$ 100,000	$ 160,000	$ 48,000	--	--	$ 208,000	
16	Sidehill Drain	$ 62,500	$ 87,500	$ 250,000	$ 400,000	$ 120,000	--	--	$ 520,000	
17	Staff Gauge Improvements	$ 8,750	$ -	$ 35,000	$ 43,750	$ 13,125	--	--	$ 56,875	
				Phase I Subtotal	**$ 6,550,500**	**$ 1,965,150**	**$ -**	**$ 180,000**	**$ 8,695,650**	
18	Chute Major Repair/Replacement (MCWRA Cost Estimate)	$ 9,000,000		$ 36,000,000	$ 45,000,000	$ 15,000,000	--	--	$ 60,000,000	
				Phase II Subtotal	**$ 45,000,000**	**$ 15,000,000**	**$ -**	**$ -**	**$ 60,000,000**	
				Grand Total	**$ 51,550,500**	**$ 16,965,150**	**$ -**	**$ 180,000**	**$ 68,695,650**	

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Subject to Revision
09/20/2019