

October 29, 2023

REVIEW OF THE SAN JUAN HEADWATERS PROJECT

I. OBJECTIVE

This report is intended to provide the San Juan Water Conservancy District's Board an assessment of the current status of the San Juan Headwaters Project (Project) from a perspective of how to proceed with investigations, design, initiation of construction, and on to eventual construction completion and first fill. The Project as envisioned is an 11,000 AF dam and reservoir located in the Dry Gulch draw just southeast of Pagosa Springs, CO, with spillway, outlet works and intake system at or adjacent to the existing Park Ditch intake on the San Juan River.

The assessment involved reviewing 27 existing documents and reports (the list is provided in appendix A). In addition, an evaluation of potential funding sources was also conducted.

II. FINDINGS

A. Status of Design

There has been quality work performed to date examining various options for storage, size and locations. This work compared various storage options at several sites in conjunction with pumping and other delivery systems. There has been limited work performed with site-specific information and data, i.e. no land surveys, borrow and foundation exploration, etc. Two drill holes were completed in 1990, however, no dam site geologic interpretation was available. (Ref. App. A. item No. 13). Some engineering study information is available regarding the San Juan River intake, including potential delivery systems to the reservoir. (Ref App. A item No. 1). The documents available are at a level which has allowed reasonable comparisons with that of other sites.

Site review of the dam and reservoir area revealed what is apparently a decent location. There is an existing pond in the vicinity which holds water beyond the operation periods of the Park Ditch. Little in the way of rock outcroppings were observed in the immediate vicinity of the dam indicating fairly easy foundation excavation, excluding water control. An existing material processing pit on the upper right side was being restored and the owner believes it is played out. Materials were processed (crushed and graded without washing) on site which have been used locally, apparently meeting Colorado Department of Transportation road base specifications. (Ref. App. A Item No. 27)

Little detailed work exists on the potential delivery system, including any adjustments or improvement to the existing Park Ditch intake structure.

B. Status of Real Estate

There are two major components remaining for acquisition of land/easements.

1. Around 70 acres of National Forest Service (NFS) land upstream in the reservoir: This has been previously addressed by Western Land Group Inc. (Ref. App. A item No. 16). Their work provided an excellent road map to acquisition. It will have to comply with National Environmental Protection Act (NEPA). It is suggested that NFS be a participating agency rather than the lead agency in that process since their role has little to do with the planned river

diversion work, delivery line and the dam construction. Also, this effort does not need to be on the Project schedule critical path since inundation of this area would only occur well after the dam topped out and sometime after first fill was initiated.

2. Land acquisition and/or easements will be required for the delivery system from the river intake to the reservoir. The installation of a new delivery line or improvement of the existing Park Ditch will be required to be part of the overall NEPA process.

Note there is no cost discussion provided herein for real estate since that work is beyond the scope of this effort. However, there clearly will be costs associated with the planned land swap with NFS and obtaining real estate or easements for the delivery line in addition to a NEPA practitioner cost.

C. Status of NEPA and State Historical Preservation Office (SHPO) Compliance

There have been several environmental and cultural resource assessments performed at the dam and reservoir site. (Ref. App. A item Nos. 4, 6, 11, 20, 21). There are noteworthy recommendations within these reports as to suggested follow-up work to be performed. Documents suggested to be included in future solicitations are so noted in the list provided in the Appendix.

It is important to note that the age of previous related work is critical as to relevance and updating requirements, i.e. to avoid duplicative future efforts. This was highlighted during a meeting with United States Corps of Engineers (COE) officials regarding the NEPA process.

D. Cost Estimate

The quantum discussed herein is based upon previous work performed by Harris Water Engineering, Davis Engineering, MWH. (Ref. App. A item Nos. 5, 19, 23). Construction cost estimating for this Project is beyond the scope of this effort. Some discussion of the estimated amounts within the referenced reports is included to provide the District a perspective on appropriate reliability in using the values.

Cost estimates provided by designers and estimators normally start as a base estimate of what a construction contractor will estimate to win the award of the construction contract. These estimates are developed using a variety of methods which vary from generic historical prices from like work to detailed time, equipment and materials estimates marked up with field and office overhead and profit estimates and contingencies similar to what a construction contractor would use.

Mark-ups are then applied to those costs to account for various expected added costs. Terminology used for these markups vary, depending on the estimator and their institutional or corporate practices. The industry has made attempts at standardizing these terms, however, that has always been problematic. Based on review of the Project documents, there has not been any consistent historical use of markups terminology and their values. These are described in more detail below.

For the purposes of this report and to provide the District Board with what could be considered ranges of design and construction time vs. funding requirements, the following is being used.

The construction costs included within the '17 Loan application is used. (Ref. App. A item No. 5). An attempt was made to determine if the best estimate contained adequate mark-ups and while unclear, it is felt the base price, if accurate, contains a reasonable mark-up. An oversimplified approach is used here to allow for cost escalation over time from the 2017 estimate. (Ref. App. B).

Estimated Escalated Construction Cost = \$ 75,100,000

This value includes the dam structure and the delivery system (i.e. Field Cost). This value includes various percentage markups of what some term design contingencies (items unknown until investigations and more detail is known) and construction contingencies (items such as changed conditions, quantity overruns, added work, assumed weather delays, etc.). It also includes a markup value of 10% for “Overhead and misc.”.

It is assumed, although unclear, that non-construction costs (i.e. design, geological and materials investigations, surveying, legal, environmental compliance, other permitting, project management, design during construction, construction monitoring, etc.) were included in the 2017 estimate and as such are included in the Estimated Escalated Construction Cost.

Note that concerns exist regarding the markups used as well as some of the assumptions made regarding the cost estimate, however they are considered the best available data. Only adjustments to the markups used as described below are included in the cost loading shown, as well as the escalation adjustment. Assumptions were based on experience and judgement and were used in the cost loading summarized in Appendix D.

At the current status of this Project, non-construction contract costs are typically applied to estimated construction costs using percentages. This is the approach used herein. For planning purposes, it is recommended this be done conservatively with the understanding flux will occur as designs and associated construction estimates are updated. Such construction cost estimates need to be included in the scope of the design contractor. Each phase of design, are considered milestones and are usually 10%, 30%, 60%, 90% and final design and with each should include an update of the estimated construction cost. The State Engineers Office will join in this effort (not including cost estimating) and require review and acceptance during this process.

Early contractor involvement in such a design process can be expected to improve the quality of the construction cost estimate, as well as the quality of the plans and specifications. However, depending upon the overall procurement strategy used by the District, early contractor involvement may not be available or recommended. Other strategies can be employed to strengthen the design and estimating process, but are beyond the scope of this effort.

Operation, maintenance, and replacement costs, as well as field monitoring and designer monitoring the structures performance during first filling, are not included in the above discussion, however, will be costs to be reckoned with eventually. Also, it should be noted that some of the grant applications require some of these costs be estimated as part of the application process.

III. OPTIONS TO PROCEED

A. Funding Sources

Effort was made to investigate potential funding avenues. This was only partially completed due to the amount of effort and time available, however, the results are presented in matrix form in a manner intended to allow a compare and contrast of the perceived availability. Note some of these are fairly new and dynamic as the agencies organize and develop the programs. (Ref App C with associated footnotes).

There seem to be several Federal programs which this Project could qualify to compete for, which include: Small Storage, Planning and Project Design, Disadvantage Communities, Natural Resource Conservation Service (NRCS), etc. Some may also allow combining items.

There also appear to be some opportunities for phasing the Project, such as the reservoir supply (standalone supply siphon pipe, replacement of Park Ditch with pipe and turnouts, or improvement of existing Park Ditch) or the river intake (new intake adjacent to the existing, or improve and replace existing intake). NEPA compliance for such a phased approach will require consultation with all participating agencies to determine if a phase can be assessed in pieces with subsequent full Project NEPA.

It appears some of the previous work may be appropriate to be utilized for the grant applications either by referencing or paraphrasing information and findings.

Each grant pre-application requirement requires analysis to determine if gaps exist which would require additional work be performed prior to applying. Each type of grant application appears to have unique goals and submittal requirements.

B. Design – Construction Procurement Options

This section describes, in general terms, various processes available, subject to legal review. The District's needs (schedule, available funding, risk tolerance, technical capability) need to be taken into account to determine which method is appropriate.

1. Design-Bid-Build

This is the traditional process where after design is completed and accepted by the State Engineer's Office (SEO), a solicitation is advertised and the lowest responsible responsive bidder is awarded the construction contract.

2. Design with Early Contractor Involvement

This process is sometimes referred to as CM/CG, Construction Management/General Contractor or CMAR, Construction Management at Risk. It seems to be gaining acceptance, primarily in the transportation construction industry and notably several recent water storage projects have also utilized this process. The construction contractor's expertise is used during the design phase utilizing a professional services type contract, and later a construction price is negotiated to begin construction using the same construction contractor. The advantages can be substantial in that using the contractor's expertise to adjust the design to save time and money and provide constant updates to the cost estimate and schedule. Arguably, this process can be the most expeditious. However, should lengthy delays in the design or permitting process occur, it can be difficult to maintain key personnel as well as the budget.

There are many issues associated with using a "Design – Build" method of procuring a dam project such as this which can be summarized as highly risky because of the many opportunities for time extensions due to NEPA, lands, funding, SEO reviews, etc. Therefore, it will not be discussed further in this document.

Due to the unique features of this Project (ie. the dam structure) each one of these contracting scenarios should utilize some type of pre-qualification from a two-step process or complete best value procurement. If the risks are determined to be minimal, a low bid type process could be used. Legal advice is critical to this determination.

Each variation/combination of procurement approaches has an effect or potential effect on the owner's cost and/or schedule and thus should be carefully planned. A detailed risk-based analysis can and should be performed to determine the most appropriate procurement and design/construction contracting combination and sequencing to starting the project considering its current status.

Draft Request for Proposal (RFP) and designer specifications can be provided at the District's request for the various options.

It is highly recommended that a "negotiated best value" contract be used to procure the design contractor. It is important to utilize an experienced geotechnical designer with extensive experience in earth retaining structures and dams. Experience with hydraulic structures experience should also be stressed.

In any case, it is recommended the District will need a Program Manager and/or Construction Manager to coordinate, manage, schedule, and run the entire program.

Regardless, advancing this Project requires some design effort. Upon achieving enough funding, a design should be implemented using a Best Value approach.

C. Real Estate

It is suggested, hiring a firm such as Western Land Inc. or other qualified company, to work through the NFS land swap process timed to be in parallel with the design and NEPA efforts.

Acquisition of rights-of-way for the delivery system needs to be done in tandem with the design and could be made a part of the designer's scope, but this needs further evaluation.

D. Permitting

1. NEPA/SHPO

As mentioned above, having the features designed to somewhere near the 30% level would be a logical starting point to begin work by a third party NEPA contractor to work with the action agency.

Draft sample specifications for such work can be provided should the District request.

2. Other Permits

A partial list of expected permits necessary for construction is currently a "work in progress" and can be provided should the District request. Several permits should be made part of the construction contractor's work, others part of the design contractor's responsibility and some may fall with the District's realm. Responsibilities for obtaining these should be included in the appropriate contracts for the appropriate contractor. Many should be part of the scope of the design contractor's work to resolve responsibility for obtaining them and providing such in the construction specifications if deemed appropriate for the

construction contractor to obtain. Long lead time permits such as the permanent power installation should be addressed as soon as the capacity of the equipment is determined.

E. Cost and Schedule

As alluded to above, the Project schedule will likely be driven by available funding vs. cost. In order to provide the District a perspective of what might be possible, presented is a graphical depiction (Appendix E), showing various scenarios of funding availability and associated design/NEPA efforts. Note these are very much driven by available funding and each one is based upon review of the existing documentation, site observations, and this consultant's experience regarding the degree of difficulty for construction. Please note that the NEPA compliance is a variable out of my area of expertise, however, after discussions with COE staff, the time to complete, based upon reasonably good quality of work performed should be one to two years. The outcome of such is not guaranteed to be favorable to starting construction. There always is the possibility of an outcome which is not in alignment with the preferred alternative, which would require substantial re-evaluation of the Project. There also are potential for contesting during the process and various resulting outcomes which could affect the Project. It is recommended that the design be phased just ahead of initiating the NEPA process in order to understand and be able to evaluate the full potential of Project design and construction impacts and to minimize the risk of potential delays.

The table shown in Appendix D indicates, for the District's perspective, three scenarios which are based on experience and judgement that could be performed using the cost data.

IV. SUMMARY

To move the Project forward funding must be obtained and at a rate where it can support the needs over several years. The primary cost driver is construction of the facilities. While the Project can be phased over time to account for a slow funding rate, the most cost efficient means is to have enough funding to allow the construction contractor(s) flexibility to phase the work to minimize their time. This also avoids costly feature interface issues between phases. The selection of the design and construction contracting methods should be carefully weighed to meet the needs of the District considering the available funding, minimizing risks to the District, and scheduling needs to provide the community with a functioning Project.

Documents suggested to be included in future solicitations are so noted in the list provided in Appendix A.

The following are provided to summarize activities and items to consider in moving the Project forward.

- A. There are numerous recommendations made in the previous Project studies, included in the various environmental and archeological studies, as well as some in the Wilson Water Group Study (Ref App. A item Nos. 4, 6, 9, 11, 16, 21) suggesting future items to study or coordinate. These should be reviewed and included as appropriate in future efforts.
- B. Analyze and pursue the opportunities, some of which may be short lived, which exist for funding.
- C. Maximize the potential for success if a funding avenue is selected; carefully analyze the submission requirements to determine if there are data gaps from previous studies. If they exist, pursue assistance in providing the necessary information in a timely manner.

- D. During analysis of potential funding opportunities, consider phasing the Project.
- E. Move forward with a design as the next effort if and when the District gauges support and when funding is made available.
- F. When considering soliciting design and construction, carefully analyze the various contracting methods available to determine which ones best fit the District's needs.
- G. When initiating NEPA/SHPO process, call together all of the participating agencies. Timing for this should be near the phase when soliciting a design contractor. Hiring a NEPA practitioner should follow the design process and initiated after achieving the approximate 10% design milestone in order to allow close coordination.
- H. Develop an overall Project schedule to identify all components and their interrelationships when funding becomes available.

The following are listed as immediate suggested next steps:

These steps are aimed at moving the Project from its current status toward a construction start. A construction start will involve numerous individually identifiable steps and related future decisions which will be required. Based on the complexity and technical nature of the process, the initial goal for this Project would be to obtain funding to contract with a Program Management firm experienced in water resources projects, including dam construction. The Program Management firm should be charged with guiding the Project by developing an overall Project schedule which will identify all assumed steps, including estimated costs and budgets. The initial efforts should focus on the work and costs necessary to initiate design to include site surveys, geotechnical exploration and materials testing, hydrology, intake and delivery systems, etc. The following are listed as suggested initial steps to begin this process:

- A. Work with the Grant writer and potential funding source expert personnel to select appropriate grant(s) to determine an optimum target source with enough funding to procure Program Management assistance.
 - 1. Determine what gaps in existing data/studies need to be filled in order to successfully compete for the grant.
 - 2. Procure technical assistance to fill the required data gaps.
- B. Draft Statement of Work for Program Management assistance, stressing starting design as a priority.
- C. Perform a cost estimate for the Program Management assistance.
- D. Solicit potential Program Management firms to determine appropriate qualified firms and negotiate/compete for the contract award.

V. APPENDICES

- A. List of documents reviewed.
- B. Cost Escalation calculation
- C. Potential Funding Matrix with associated footnotes
- D. Design and construction funding and construction schedule scenarios
- E. Partial list of permits required – WORK IN PROGRESS

APPENDIX A

LIST OF DOCUMENTS REVIEWED

1. Alternative Reservoir Site Evaluation by Harris Water Engineering, 10/12/89
2. Preliminary Engineering Study of Water Supply Alternatives for Pagosa Area Water and Sanitation District, by Davis Engineering and Harris Water Engineering, July 2001 DRAFT
3. SJWCD Water Rights Tabulation, updated 3/6/23
4. Summary Report: The 2007-2009 Cultural Resources Survey Conducted for the San Juan River Headwaters Project, Archuleta County, Colorado, LAC report 2007-37a, by Steven Fuller, 11/21/17.
5. Dry Gulch Water Storage Project Loan Feasibility Study For CWCB 2017 Loan Application
 - a. Attachment 1, SJWCD Water Court Decree for the Project, for Case 04CW85AW
 - b. Attachment 2, Maps of Land to be exchanged and purchased and private road easement to be purchased
 - c. Attachment 3, Land Appraisal by Ace Appraisal, 1/23/17
 - d. Attachment 4, Maps of Dry Gulch Dam and Reservoir Basin and Pipeline Alinement from Headgate to the Reservoir
 - e. Attachment 5, SJWCD Bylaws
 - f. Attachment 6, SJWCD audited financial statements, 2014,15, and 16
 - g. Attachment 7, SJWCD detailed financial plan
 - h. Attachment 8,.SJWCD Resolution
6. A Preliminary Environmental Overview by Rhea Environmental Consulting, 10/1/17
7. Park Ditch Grant Power Point presentation, 2023
8. PAWSD SJWCD Joint Meeting - 3 Way agreement Power point presentation, date unclear
9. San Juan Water Supply and Demand Analysis by Wilson Water Group, 7/29/2022
10. San Juan Water Supply and Demand Analysis Power Point Presentation, 8/9/22
11. Proposed Additional Biological Studies for the Dry Gulch Area, 2008
12. Partial list of items to obtain CWCB Loan 2007
13. Drill log memo to files by Cecil Tackett, 12/4/90
14. Dry Gulch Reservoir Frequently Asked Questions, 9/4/08
15. Letter from Harris Water Engineering to NFS Ranger, re: Dry Gulch Reservoir, 11/2/07
16. Dry Gulch Reservoir Land Exchange Communications Plan, by Western Land Group, 10/31/16

17. Letter from NFS to SJWCD, re: Land Swap items needed, 2/13/13
18. Memorandum by Harris Water Engineering re: Dam Crest Elevation, 4/7/09
19. Letter from Harris Water Engineering re: updated cost estimate, 7/14/14
20. Letter from Harris Water Engineering re: Environmental Accommodations Cost for 6,300 Acre-Foot Reservoir, 7/21/10
21. Environmental Baseline Site Assessment Proposed Dry Gulch Project, by Ecosphere Environmental Services and Aquahab Inc., October 2007
22. Geology and soil map by Ecoshpere 10/07
23. Dry Gulch Reservoir and San Juan River Diversion Projects Conceptual Level Opinion of Probable Construction Cost for Raw Water Supply Facilities, by MWH, 9/08
24. MWH 2008 Dam details discussion
25. MWH 2008 Dam drawing
26. MWH 2008 geology map
27. Processed materials from plant near reservoir with soil characteristics and lab test results by Trautner Geotech, supplied by PAWSB, 8/7/23 email

ITEMS RECOMMENDED TO BE INCLUDED IN FUTURE DESIGN SOLICITATIONS ARE: No. 5, 13, 18, 19, 22, 23, 24, 25, 26

ITEMS RECOMMENDED TO BE INCLUDED IN FUTURE NEPA PRACTICIONER SOLICITATIONS ARE: 4, 6, 11, 17, 20, 21



Future Value Calcuator With Inflation

Future Value With Inflation

Particulars	:	Amount
Present Value	:	\$61,000,000
Time Period (Years)	:	5.5
Estimated Rate of Inflation during Inflation Period	:	3.85%
At the mentioned Inflation Rate You Will Need After 5.5 Years	:	\$75,071,239.29
Deflated Value of Money In Given Time Period	:	\$14,071,239.29

Inflation Adjusted Return Calculator

Single Deposit

Particulars	Amount
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Appendix B

IR less food and energy

[Bureau of Labor Stati](#)

2017	1st half	2nd half	Avg
18	2.1	2.2	2.15
19	2.1	2.3	2.2
20	1.8	1.6	1.7
21	2.6	4.5	3.55
22	6.2	6.1	6.15
23	5.4		5.4

Avg for 5-1/2 yrs = 3.8455

61M\$ INCLUDES 20-25%CONTINGENCY 10% overhead and misc costs

Appendix C - Rev. 10/13/2023

FOOTNOTES (Not in any order, refer to spreadsheet for context):

1/ Ref BIL spend plan by BOR for FY '22 and '23, of Dec. '22, pdf doc and separate FY '23 spend plan pdf docs. These list projects funded. Will provide upon request.

2/ Unsure, but I believe WaterSMART uses several authorizations under the Secure Water Act, section 9504? Also, I believe this is related to BOR's Small-Scale Water Efficiency Projects (SWEP)? see <https://www.usbr.gov/drought/legislation/section9504a.html>

3/ Needs assessment of stakeholder support, water market analysis, Feas level detail cost est see RM FAC 09-01, econ. Analysis of alternatives, how to meet non-fed \$share, full OM&R capab., other?

4/ Flood Control Act of 1944 (P.L. 78-534) and the provisions of the Watershed Protection and Flood Prevention Act of 1954 (P.L. 83- 566), as amended.

5/ Infrastructure Investment and Jobs Act Title IX – Western Water Infrastructure, section 40903 for FY 24 (Pub. L. 117-58), as amended.

6/ There is a manual to guide this process - RM CMP TRMR-127, expires 1/13/24. The Manual's purpose is to determine if a small surface water and/or groundwater storage feasibility study report meets the requirements of a small surface water and groundwater storage feasibility study.

7/ Highly dependent upon minimum grant application requirements, ie. existing docs. May lack engineering, econ. (B/C ratio), enviro., financial (ability to pay) analysis, etc.

8/ Reclamation must receive enough information to determine that sufficient non-Federal funding is available to cover the non-Federal share of project costs if the project moves to construction, as well as all necessary project OM&R costs. A financial capability analysis consistent with RM D&S, Title XVI Financial Capability Determination Process (WTR 11-02) or equivalent (e.g., ability to pay analysis compliant with RM D&S PEC 11-01) must be completed prior to obligating funds. At this time, Reclamation is not reducing cost-share requirement for disadvantaged communities.

9/ Ref. WaterSMART Planning and Project Design for Fiscal Year (FY) 2023 and FY 2024 - Opportunity No. R23AS00109. Pdf available upon request.

10/ Grant opportunity no. R23AS00109, pdf copy available upon request

11/ Grant opportunity no. R24AS00007, pdf copy available upon request

12/ Up to \$500,000 for projects to be completed within two years; up to \$2 million for projects to be completed within three years; and up to \$5 million for large projects to be completed within three years.

13 / NRCS Natl. Watershed prog. Manual 500: 500.3A. (1) (ii) Furthering the conservation, development, utilization & Disposal of water.

14/ Under "Project Purposes", Section 500.3.B (ii) 2nd Bullet: would have to satisfy this: Project measures for watershed protection include land treatment practices installed by land users to conserve and develop any of the following: Soil- Water quality and quantity - Woodland - Fish and wildlife habitats - energy - Recreation and scenic resource

15/ DON'T KNOW IF VALID: Possibly could be combined with a WaterSMART project. (from conversation with BOR contact)

16/ Econ. Analysis must follow P&G guides - see pdf page 11/188.

17/ May have reduction of Fed funds for "future" capacity portion of the structure. Fed \$ only avail. As loan for future cap.

18/ Attempt could be made to justify some engineering and construction funding under Ag supply provisions of 500.42

19/ Require an OM&R agreement and "Real Property Acquisition Assurance" (could be an issue with NFS property)

20/ Primary purpose of which is to provide domestic water supplies to communities or households that do not have reliable access to domestic water supplies

21/ As per BOR webinar, "disadvantage" is being defined by the White House CEQ. This shows Archuleta Co. as being predominantly disadvantaged. Area excluded on West side of hiway to Williams Crk.

22/ As per BOR contact, policy for implementation is due out this fall

23/ As per BOR contact, 2/3 to 3/4 of funding will go to Colo River users

24/ See pdf p5/6 of 5/2/23 addendum to BORs BIL FY '23 spending plan

25/ Three categories of WaterSMART Grants are offered through separate funding opportunities: Water and Energy Efficiency Grants; Small-Scale Water Efficiency Projects; and Water Marketing Strategy Grants.

26/ Applicants for Small-Scale projects may request up to \$100,000 in Federal funding, with a non-Federal cost-share of 50% or more of total project costs, for projects with total project costs no more than \$225,000. This funding opportunity includes simplified criteria and a streamlined application to ensure the process works for smaller entities. Mr. Josh German at 303-445-2839 or send an email to jgerman@usbr.gov.

27/ As directed by the SJWCD DRC, the consultant will draft a "Plan for Developing the Application" for the Boards consideration.

28/ Application limit = 20 pps., attachment limit = 125 pps. Need SF 424 with application.

29/ A document exists which provides guidance for Grant preparation for WaterSMART. Pdf copy avail. Upon request.

30/ Consider breaking off Park Ditch as a "rehab" and/or combine with new or replacement siphon to reduce seepage loss as well as becoming the improved reservoir supply. Consider including upgrading the intake.

31/ Grant opportunity No. R24AS00010, pdf avail. upon request. Also, email from A. Olah.

32/ Examples exist of successful submittals by others

33/ Per verbal discussions with BOR reps, they will work with potential applicants on what qualifies as an “eligible” Feasibility study. The Feasibility study must be determined “eligible” by BOR prior to applying under a NOFO. BOR will accept a study at any time to review and comment, usually 180 days.

34/ Grant application can be for funding a phased aspect or element of the overall project; however the Feasibility Report (which must be pre-accepted) needs to cover the entire Project. If the design (or partial design) is funded through a grant program by Reclamation, piece meal the remaining design is not allowed.

35/ Reclamation would likely be lead agency on NEPA if funded under Small Storage Program, but that would be decided at a later date after conferring with other Federal agencies involved, (ie. the standard practice).

36/ Refer to “Status of WaterSMART Program Funding Opportunities” matrix revised 8/14/23. Pdf copy available upon request.

37/ Existing CWCB loan and/or new loans may affect a CWCB Water Plan Grant. Need to consult with Finance (ie. Kirk Russell). Grant and loan requests can be packaged together. CWCB personnel will assist application process with pre-submittal reviews. Some opportunities more related to water quality are available through Colo. Water Resources and Power Development Authority, have to be on a prequalified list, contact = Jim Griffith. All projects funded thru this are good for 5 years

38/ Web site avail. for reference on water related grants including BOR and Colorado sponsored plans.
[Water Funding Opportunity Navigator - Google Drive](#)

39/ Water storage projects are currently considered “multi-beneficial” by the State (Staff interpretation).

??? = Further investigation is needed.

FUNDING OPPORTUNITY ANALYSIS - Appendix C

	CWCB 38/	Southwest WCD 38/	NRCS	RECLAMATION 38/					
	Colorado Water Plan Grant 37/	WRSF?	PL 83-566 13/	Bipartisan Infrastructure Law - BIL 117-58, Sect. 40901 and 40903 (Small Storage) 6/ 15/	IRA 50231 (Disadvantaged Communities) 20/ 21/	IRA 50233 (Drought Mitigation)	Planning and Project Design 10/ 29/ 33/	Drought Resiliency 11/ 33/	Small-Scale Water Efficiency Projects 26/ 30/ 33/
DRAFT rev 10/13/2023 For footnotes see accompanying file in word.									
Relative estimated degree of work to accomplish min. application reqmts. 7/	>\$100k reqs. Feas. Study - CWCB staff willing to perform prelim. Reviews 39/	Similar to CWCB	Need economic analysis 14/ 16/ 19/	Needs: xwalk to TRMR 3.B.(3)(b) see 3/	22/	????	28/	???	??
Estimated range of time to determine acceptance (once application is prepared) 27/	4-6mos or 6-9mos depending on complexity - includes CWCB contract review/establishment process	4mos - Nov 17 for Jan. consideration for approval	Varies from year to year	~ 8- 1/2 mos allows for 45 days of added re-work or missing info.	22/	????	10 to 12 mos from submission deadline	10 to 12 mos from submission deadline	????
Program Funding Limits:	Total \$1M in SW basin	Depends on year; announced annually	Yes, but FY 23 unknown	yes, tot BOR = \$100M (20M for 23, 80 for after)	\$550M Total Program	\$4B thru '26 23/	\$35M 36/	???	???
Individual Project Funding limit amts	\$1M ??	Limit over 5 yrs is \$100k	??? 12/	less of \$30M or 25%	Up to 10M compl. w/in 3yrs 22/ 36/	????	Up to \$400K if can compl. In 3 yrs.	12/	???
Expiration date for funding	2-3 yrs after approved	Usually 1 to 3 yrs.	???	2026	2031	????	??	9/30/24??	???
Non-Fed/State Cost Share Req'd	25%, exceptions to 10% have been achieved	Similar to CWCB	0 Fed funds for planning & engr., const. likely 50% ("up to" 50%) 17/ 18/	Yes, Fed. Share up to 25% or \$30M whichever is less, see 8/	5% cost share w/possible waiver. 22/ 36/	????	25 -50% - Allows cost share reduction request. 9/	50% or greater	???
Potential uses of \$	Planning, design, construction. (CO Water Plan Related)	SW BIP	Construction	Design, construction 34/	Plan, design or construction	Planning, ???	Plan & Design	Plan and design	Plan, design, construction ??
Expiration date for application	Approx. 1 mo. Prior to quarterly round table mtg.	??	??	1 just issued. 31/ 1 more Grant App. In fall of '24. Grant apps. must be an "eligible" Feas. Study prior to applying. 33/	??? 22/	????	10/27/2023 and 5/2/2023	10/31/2023	??
Level of competition (Low, Med, High)	Now: low to med.	Depends on year	??	High	??? 22/	????	High??	??	High??
Level of NEPA compliance reqd for application	None, if no Federal \$	None	Appears current status may be adequate	None, but . . . See p.7/15 of trmr and 38/	??? 22/	????	Min	Min	??
Relative chance for success (low/med/high)	Med. To high	High	Medium???	Medium if phased	med to high on 20/ and 21/	????	High??	Med??	Med for Park Ditch?
Legisl. Authority	State Water Plan	CRS 37 47-101	4/	5/	BIL 117-169, section 50231	BIL 117-169, section 50233	2/	2/	2/
Agency Contact:	Laura Spann, Kirk Russell (Chief Finance CWCB)	Steve Wolf, Mo Rock	Blongshia "B" Cha	West. Colo AO contact, Casey Smith, Mike Benning SLC, Austin Olah Denver Policy, Lee Traynham SLC	Assumed to be same as Small Storage	Assumed to be same as Small Storage	Assumed to be same as Small Storage	Sheri Looper slooper@usbr.gov	???

APPENDIX D – PROJECT COST LOADED SCHEDULE SCENARIOS

	2024	2025	2026	2027	2028	2029	2030	2031
Fast Track Scenario	\$622,000	\$5,800,000	\$24,400,000	\$24,100,000	\$20,200,000	1 st fill monitoring and OM&R		
Intermediate Track	\$868,900	\$2,600,000	\$3,200,000	\$3,900,000	\$22,700,000	\$22,700,000	\$19,100,000	1 st fill monitoring and OM&R
Conservative Track	\$280,000	\$820,000	\$2,500,000	\$3,500,000	\$3,500,000	\$22,700,000	\$22,700,000	\$19,100,000

All \$ from 2017 and are taken to 2023 prices using a simplified escalation method. The values are at 2023 prices. The schedule is based upon the author's experience and judgement. For the Conservative Track, 1st fill monitoring and OM&R costs begin in the later part of 2031