Oregon
Kate Brown, Governor

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MEMORANDUM

TO: Water Resources Commission

FROM: Thomas M. Byler, Director

SUBJECT: Agenda Item C, May 11, 2017
Water Resources Commission Meeting

Feasibility Study Grants (Water Conservation, Reuse and Storage Grant Program) – Funding Recommendations

I. Introduction

The Feasibility Study Grants (Water Conservation, Reuse and Storage Grant Program) supports studies to evaluate the feasibility of water conservation, reuse and storage projects. This report describes the Application Review Team's evaluations, public comments received, responses to those comments, and Department recommendations for funding. The Commission will be asked to award funding for the third cycle of Feasibility Study Grants for the 2015-2017 biennium.

II. Background

The Feasibility Study Grants funding program was established by Senate Bill 1069 in 2008 to fund the qualifying costs of studies that evaluate the feasibility of developing water conservation, reuse or storage projects. Grants require a dollar-for-dollar match.

For the 2015-2017 biennium, the Department had approximately $2,773,716 available for Feasibility Study Grants. In November 2015, the Commission approved six grants in the amount of $497,185 for the first funding cycle of the biennium. In the second cycle, the Commission approved 17 grants in the amount of $1,269,215 in May 2016.

The third grant solicitation for the biennium was initiated on July 22, 2016 with an application deadline of October 4, 2016. The Department received nine complete applications. A total of $505,247 in grant funds was requested by eligible applications. Individual grant requests ranged from $30,000 to $93,935.

III. Grant Application Review Process

Funding recommendations are based on Application Review Team (ART) evaluations and Department review pursuant to Oregon Revised Statute 541.566 and Oregon Administrative Rule 690-600-0050. An ART was convened in January 2017 to evaluate the applications and provide funding recommendations to the Department. The ART consisted of a multi-agency team including representatives from the Oregon Department of Environmental Quality, Oregon

Department of Fish and Wildlife, Oregon Parks and Recreation Department, Oregon Department of Agriculture, Business Oregon, as well as technical experts from the Department.

The ART's recommendations were posted on the agency website for a 30-day public comment period that closed on March 27, 2017. The Department received six comments on four grant applications. See Attachment 1 for the public comments received

See Attachment 2 for evaluations of each application, summaries of the public comments received and the Department's responses to those comments.

IV. 2015-17 Grant Award Recommendations

Based on the ART recommendations, public comments, and Department review, the Department recommends eight of the nine applications for grant funding. Table 1 lists the proposed studies and funding recommendations.

Table 1. Summary of funding recommendations for 2015-017 second grant cycle

Study Name	*Project Type*	*Funding Request ($)*	*Funding Recommendation ($)*
Baker Reuse Feasibility Study	Reuse	$30,000	Recommended
Carlton Raw Water Storage Expansion Study	Storage	$60,000	Recommended
Ferry Creek Dam & Reservoir Analysis	Storage	$72,500	Recommended
Hood River Water Bank Feasibility Study	Conservation	$50,330	Recommended
John Day Feasibility Study for Wastewater Reuse	Reuse	$50,000	Recommended
Klamath Basin Feasibility Study to Identify Supplemental Storage	Storage	$65,680	Recommended
Milton-Freewater ASR Assessment	Storage	$42,297	Recommended
Understanding Meadow Storage Capacity in the Upper John Day Basin	Storage	$40,505	Recommended
Applegate Reservoir Capacity Restoration Project	Storage	$93,935	Not recommended

The Department recommends funding one conservation study, five storage studies, and two reuse studies. If approved by the Commission, Department staff will work with the grant recipients to develop grant agreements.

Based on the ART evaluations, the Department does not recommend one proposed study for funding at this time. This proposed study, the Applegate Reservoir Capacity Restoration Project, does not sufficiently address the storage-specific study requirements described in ORS 541.566(2)(a-e) and Oregon Administrative Rule 690-600-0050(2)(a-e). The requirements state that any storage project that (1) impounds surface water on a perennial stream, (2) diverts water from a stream supporting sensitive, threatened, or endangered fish, or (3) diverts more than 500

acre feet must address certain additional analyses as part of the study. This study meets all three of these triggers and therefore, by not adequately addressing the storage-specific study elements, the proposal does not demonstrate readiness for funding at this time. This applicant and other applicants not awarded grant in previous funding cycles may choose to revise and strengthen their proposed studies based on the feedback from the ART and Department and resubmit their application during a future funding cycle.

V. Summary

If approved, these funding recommendations will result in grant awards totaling $411,312 for the third cycle. This would bring the total Feasibility Study Grant awards to $2,154,354 this biennium, leaving $619,362 available for future funding cycles.

VI. Alternatives

The Commission may consider the following alternatives:

1. Adopt the staff funding recommendations contained in Table 1, Section IV of this report.
2. Adopt modified funding recommendations.
3. Direct the Department to further evaluate the applications and return with a revised funding proposal.

VII. Recommendation

The Director recommends Alternative 1, to adopt the staff funding recommendations, to fund eight applications for a total award of $411,312.

Attachments:

1. Public Comments Received on Applications
2. Study Evaluation Summaries and Responses to Public Comments

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WATERWATCH
PROTECTING NATURAL FLOWS IN OREGON RIVERS

Lisa Brown
WaterWatch of Oregon
213 SW Ash St., STE 208
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March 27, 2017

Grant Program Coordinator
725 Summer Street NE, Suite A
Salem, Oregon 97301

RE: Comments regarding City of Carlton SB 1069 funding request
Sent Via: email to fsgrants@wrd.state.or.us

Dear Grant Program Coordinator:

Thank you for the opportunity to comment on the City of Carlton's SB 1069 funding application. Although WaterWatch supports assistance to the City of Carlton to address its water supply situation, WaterWatch is concerned that the city's SB 1069 application does not conform to the grant program requirements; is incomplete and lacking in key instream components; will not result in appropriate consideration of water supply options; and will likely result in additional public money being spent that does not adequately move the city forward on its long term water supply issues. Because of these problems, WaterWatch does not support funding for the City of Carlton's SB 1069 grant application, as formulated, and requests that the Department seek a revision to the project before providing funds to the city.

Comments

1. The application does not adhere to the standards for SB 1069 grant applications, is incomplete and fails to incorporate factors regarding listed fish and bypass flows.

SB 1069 has a very clear threshold standard for storage projects. If a proposed storage project will impound surface water on a perennial stream, divert water from a stream that supports sensitive, threatened or endangered fish or divert more than 500 acre-feet of surface water annually, a grant may only be provided if the proposed study contains:

i. Analyses of by-pass, optimum peak, flushing and other ecological flows of the affected stream and the impact of the storage project on those flows;

ii. Comparative analyses of alternative means of supplying water water, including but not limited to the costs and benefits of conservation and efficiency alternatives and the extent to which long-term water supply needs may be met using those alternatives;
iii. Analyses of environmental harm or impacts from the proposed storage project;
iv. Evaluation of the need for and feasibility of using stored water to augment in-stream flows to conserve, maintain and enhance aquatic life, fish life and any other ecological values; and
v. For a proposed storage project that is for municipal use, analysis of local and regional water demand and the proposed storage project's relationship to existing and planned water supply projects.

These elements are critical to ensuring that the public interest in instream values and balanced water policy are addressed in publicly funded feasibility studies. The rules reiterate this standard in OAR 690-600-0020(4)(f), which is the "application requirement" section, making it clear, again, that for proposed storage projects that meet the trigger noted above, the listed studies must be part of the funded proposal. In other words, if these studies are not part of the proposal as outlined in the application, then the WRD cannot fund the proposal.

Carlton answered "Yes" to two of the questions that trigger the requirement to address these elements, yet then failed to do so. (Carlton Application, Question 16, pp. 13-14). To the extent Task 7 (p. 8) is intended to address these elements, it does not do so. Task 7 states that the city would analyze the by-pass, flushing, optimum peak and other ecological flows only if it decides to move forward with the project. However, SB 1069 (Question 16, Element (i)) requires that this analysis be included in the publicly funded feasibility study—not later if the project is pursued. Additionally, the related element (iv) does not seem to be addressed in the application.

Element (v), requiring analysis of the storage project's relationship to existing and planned water supply projects, is closely related to the required alternatives analysis which is addressed below.

We would also note that to the question whether the stream from which the diversion would occur supports sensitive, threatened or endangered species, Carlton both checks "Yes" and states that it does not know. (Carlton Application, p. 13). Carlton's claim that it does not know whether the stream supports listed fish is disconcerting. First, as required by rule, the city's Water Management and Conservation Plan (Final Draft, October 2014), details the listed fish that occur in the vicinity of Carlton's points of diversions. (P. 2-17). Second, the city has received the Oregon Department of Fish and Wildlife Service's advice regarding conditioning its permit application S-46505—which diverts water from Panther Creek—to maintain the persistence of listed fish pursuant to ORS 537.230(2)(c). (Advice dated February 24, 2012). That advice letter also details listed fish on Panther Creek (tributary to the North Yamhill River). Further, Carlton's Panther Creek diversion has been a topic of negotiations regarding efforts to roll back the

fish persistence standard and was even discussed during a Senate hearing in 2015—the fact that there are listed fish in the waterway is not in question.

Further, the city also failed to answer Question 17 (which also reflects requirements in SB 1069 and its implementing rules). The question posed is "whether or not the storage project would include provisions for using stored water to augment instream flows to conserve, maintain and enhance aquatic life, fish life or other ecological values." (Carlton Application, p. 14). The city does not answer this question, instead stating only that it would evaluate the storage requirements (including how much higher the dam would need to be raised) to augment stream flows. *The city does not state whether the storage project would include a provision to augment stream flows and thus the application is incomplete and cannot be evaluated using the required criteria.*

Finally, the Department's Recommendation for Funding for this project—which states that "[t]he proposal meets minimum requirements for all storage-specific study elements"—is incorrect. The application clearly fails to meet these standards and should have been rejected on this ground.

2. The application states that the city will do an alternatives analysis, but it does not appear the analysis would inform whether to proceed with the reservoir enlargement which is especially critical here.

The SB 1069 requirements for funding studies of new storage are designed to prompt a thoughtful analysis of whether storage is the best path forward or whether there are other ways to address any supply issues. As required, the city states it will do an alternatives analysis. However, it also states it would move to the second step on the reservoir enlargement (including a detailed evaluation of the project) if there are no "fatal flaws" (Carlton Application, p. 3), which do not include or incorporate the results of the alternative analysis (or of the closely related element (v) above). The "fatal flaws" that the city identifies pertain only to the geologic assessment and the availability of additional water storage rights only. (Carlton Application, p. 7 and 8, respectively).

Conducting an alternatives analysis that does not inform decisions about whether to proceed with the project is not true to the grant program requirements. Regarding whether to enlarge this particular reservoir, there are several reasons why the alternatives analysis should instead drive the water supply decisions:

a) The reservoir suffers from significant siltation due to its location in an extremely landslide prone watershed.

The reservoir that the city seeks to enlarge is a small reservoir on Panther Creek that is approximately 60% filled in with silt and mud from erosion and landslides. Its location indicates that this siltation will continue to occur into the future. Raising the dam will not solve the problem.

The ongoing significant siltation of city's Panther Creek reservoir is due to its location in an unstable, landslide prone watershed. The upstream Panther Creek watershed that feeds into the reservoir is extremely unstable and landslide prone, causing the reservoir to fill with significant amounts of sediment. In the summer of 2015, the local paper reported that "Carlton has enacted severe restrictions on water use this summer because of drought conditions coupled with problems with its reservoir on Panther Creek in the hills west of town. *City officials say the reservoir is about 60 percent blocked by silt and mud from slides, and needs to be dredged***.**"[1]

Deposits of sediments from landslides and debris flows into Carlton's Panther Creek Reservoir have been an ongoing problem, prompting extensive study of the watershed. In 1999, a "massive slide [ ] flowed into the Carlton Reservoir."[2] That landslide initiated as an earth flow half a mile from the reservoir and then "mobilized into a debris flow unloading 45,000 cubic meters of material in the reservoir," resulting in a 50% decrease in the reservoir's capacity."[3] Prompted by concerns over landslide impacts to the city's reservoir, extensive LiDAR (Light Detection and Ranging) elevation data has been collected for the watershed. (Reportedly, Panther Creek watershed is the most studied by LiDAR in all of Oregon.) As of 2010, a total of 153 landslides were mapped in the Panther Creek watershed, with 26 of those landslides considered active as of 2010.[4] For shallow-seated landslides, 35% of the watershed has been mapped in the "high susceptibility zone" and 49% in the "moderate susceptibility zone."[5] For deep-seated landslides, 38% of the watershed has been mapped in "high susceptibility zone," and 43% in the "moderate susceptibility zone."[6] The siltation problems with this reservoir are well studied and counsel against further development at the site.

To summarize, the location of Carlton's Panther Creek reservoir in a highly landslide prone watershed has led to chronic and ongoing loss of reservoir capacity and highlights the water supply problems with Carlton's continued reliance on Panther Creek. Perhaps studying the feasibility of dredging the reservoir as a short-term solution would be appropriate, however, Carlton's water supply issues cannot be solved by enlarging this precariously placed reservoir.

> b) The pipe from the reservoir to the city is approximately eight miles long, leaks nearly 40% of the water it attempts to transport, and the success of any repair strategy is in question.

As noted in the Department's Recommendation for Funding, the city's system water loss is 39.6%. The city's excessively high leak rate has been an ongoing problem, having been

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[1] Yamhill Valley News Register (8-25-2015) (emphasis added).
[2] "LiDAR-Based Landslide Inventory and Susceptibility Mapping, and Differential LiDAR Analysis for the Panther Creek Watershed, Coast Range, Oregon," (Spring 2011), Katherine A. Mickelson, a thesis submitted in partial fulfillment of the requirement of Master of Science in Geology, Portland State University (p. 1, internal citation omitted). (Available upon request).
[3] *Id.*, p. 1 (internal citations omitted).
[4] *Id.*, Abstract, p. *i.*
[5] *Id.*, Abstract, p. *ii.*
[6] *Id.*

identified at least as far back as 1996 in the city's Water Master Plan. (P. 3). An acceptable leak rate for municipal systems under Oregon standards is 15% or less, with an ultimate goal of 10% if feasible.[7]

Our understanding is that the driver for the city's high leak rate is the wooden pipe used to transport the water to the city from the very reservoir that the city seeks to enlarge (meaning presumably that if the leak rate is not reduced, then nearly 40% of the added storage volume would also be lost to leakage). The state should not be spending public money to study enlarging the reservoir while city leaks nearly 40% of the water diverted. If the city intends to continue to rely on this source, then fixing the pipe should be the priority not enlarging the reservoir. If the city cannot or does not intend to repair the wooden pipe, then spending public money towards enlarging the reservoir is certainly ill-advised.

3. Any additional public funding to address the city's water supply issues should be to assist the city in diversifying its water supply, not for enlarging the Panther Creek reservoir.

The city's Water Management and Conservation Plan (October 2014) concludes a discussion about the city's water supply by stating: "[o]ver time, the City's stored water may be insufficient to meet projected demands; *hence the need for alternative/redundant water supplies."* (P. 2-18 (emphasis added)).

As recommended in its Water Management and Conservation Plan, Carlton has secured alternative/redundant water supplies in order to not be solely dependent on Panther Creek:

- As part of the Yamhill Regional Water Authority, Carlton now jointly holds a permit on the Willamette River (permit S-54792 for 44.18 cfs);
- Carlton, McMinnville Water and Light, City of Dayton and City of Lafayette hold an additional 7.75 cfs for municipal use from the Willamette River under a transfer of a portion of a 1982 water right certificate previously held by Weyerhaeuser Company (T-12065, Final Order issued January 29, 2016).
- Carlton is working to improve its water supply intertie and related agreement with McMinnville Water and Light so that it can begin receiving water from McMinnville when its Panther Creek supply is inadequate.

These are positive developments not only because of the precarious location of the Panther Creek reservoir, but also because of the listed steelhead and other fish including coho that rely on the limited streamflows in Panther Creek. If the state spends additional public money to address the city's water supply issues,[8] that money should be spent on a

[7] OAR 690-086-0150(6)(a) (Water Management and Conservation Plan rules applicable to municipalities serving over 1000 people).

[8] The City of Carlton received $500,000 in public funding in 2015 from Oregon's Regional Solutions to address water system issues.

investigating the feasibility of projects in a robust alternatives analysis—or on studying the feasibility of different approaches to developing the diversified water permits and intertie that the city already has secured. For example, what are the options for routing and constructing the necessary infrastructure for the city to reliably access its Willamette River permits and/or its interties with the City of McMinnville?

In conclusion, WaterWatch supports efforts to help the City of Carlton address its water supply issues but does not support the city's SB 1069 application, as formulated, for the reasons stated above. Because the application does not meet the grant program requirements, the Department should deny this funding request and work with the city to amend the request to address the deficiencies above.

Thank you for the opportunity to comment.

Sincerely,

/s/ Lisa A. Brown

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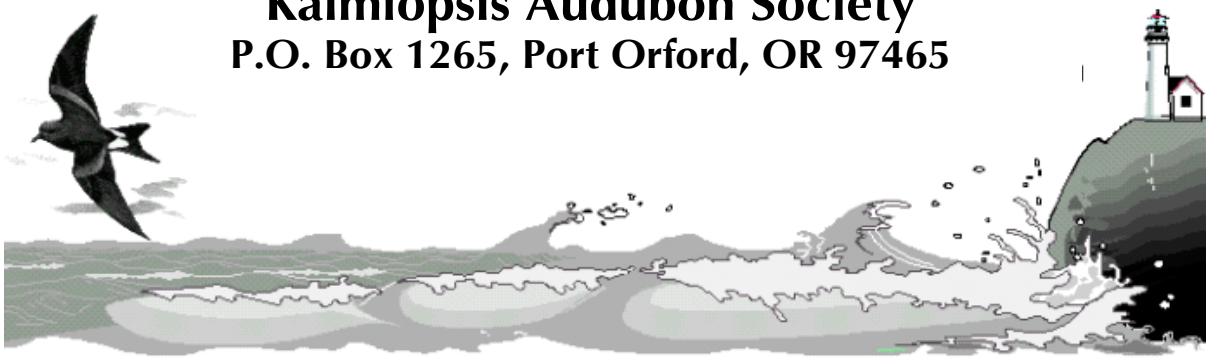
Lisa A. Brown

Kalmiopsis Audubon Society
P.O. Box 1265, Port Orford, OR 97465



March 27, 2017

Water Resources Department Grant Program
725 Summer Street NE, Suite A
Salem, OR 97301

Via email: fsgrants@wrd.state.or.us

Greetings:

I am writing on behalf of the Kalmiopsis Audubon Society. Our group has more than 300 members in Curry County (including in Brookings), who are concerned about conserving habitat for birds, fish, and wildlife.

We support the city of Brookings' application to OWRD for a study to consider the feasibility of rehabilitating Ferry Creek Dam, a currently unsafe dam located on Ferry Creek, a tributary to the Chetco River.

However, we'd like to encourage the applicant to integrate conservation concerns into its planning process from the outset.

The application posits two options: to refurbish the dam OR to restore the creek. We encourage the city to include robust analysis to consider restoring the lower creek as an integral part of dam rehabilitation.

The lower Chetco River and estuary has severely limited rearing habit for federally threatened SONCC coho salmon.

The lower portion of the tributary Ferry Creek has 4/10 mile of potential rearing habitat for threatened SONCC coho salmon that could be critically important for recovery. It could also provide possible benefit for hatchery-reared Chinook acclimated and returning to the creek. However these potential benefits are currently restricted because the stream currently has fish passage blockages. These impairments will likely need to be addressed in the dam permitting process.

It would be prudent to consider those challenges as restoration opportunities up front as part of the dam refurbishment project's cost and feasibility.

Conservation elements of the proposed dam refurbishment should include:

- periodic flows from the reservoir to benefit the ecosystem when the river levels are low and main-stem Chetco River temperatures are elevated
- outlet design so that water released from the reservoir will be cool
- removing fish passage blockages in Ferry Creek
- restoring rearing habitat for threatened SONCC coho salmon at the mouth of Ferry Creek and in the lower 4/10 mile of the stream channel

Also, though the proposal posits 2 options for consideration, it seems that the applicant will fully consider the feasibility only of dam refurbishment.

We encourage the applicant to also fully consider the costs and benefits of dam removal and creek restoration. The existing dam has not been used for many years, and the stream above the dam has a trout population that could be enhanced with dam removal. The return of year-round flow of a restored tributary creek could also provide benefits for the environment and for recreation, as well.

Only by fully considering the merits and costs of both options can the best decision be made.

We thank you for considering our comments on this proposal and how they might help to improve the outcome of this publically funded feasibility study.

Sincerely,

Ann Vileisis
President

ORCA: Oregon Coast Alliance
Protecting the Oregon Coast

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March 27, 2017

Water Resources Department
Grant Program Coordinator
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Via email: fsgrants@wrd.state.or.us

Dear Water Resources Department and Commission,

Oregon Coast Alliance (ORCA) is an Oregon nonprofit whose mission is to protect coastal natural resources and aid in community livability. ORCA writes today concerning the application by the City of Brookings, "Ferry Creek Dam and Reservoir Analysis," requesting $72,500 for a projected total cost of $145,000 for the feasibility study concerning the future of Ferry Creek Dam.

ORCA is in favor of WRD funding this application, as recent dam inspections of Ferry Creek Dam by WRD show it is now an unsafe structure. However, Brookings is proposing to focus the feasibility study on rehabilitating the dam as a backup and emergency drinking water source with possible future recreation amenities, though the City admits "the reservoir is not needed at this time for regular or continual use." (Application, page 4). It has not been regularly used for decades. Nevertheless, Brookings wants to rehabilitate the structure for a future possible, and likely unnecessary, use rather than restore Ferry Creek to health. Restoring Ferry Creek would also provide a much broader range of recreation opportunities.

The application contains only a one-line, dismissive mention of creek restoration: "The alternative course of action is to remove the dam and restore the creek." (Application, page 2). There is no mention of community support for dam removal and restoration, and no effort by Brookings to reach out to groups, users and residents whose interest in a healthy Chetco River would most likely create a strong voice for restoration of Ferry Creek. ORCA urges WRD to require, as a condition of funding, that this grant to Brookings include *equal* study and analysis of removal of the dam and restoration of Ferry Creek as the preferred alternative. Ferry Creek is an important tributary of the Chetco, which would provide clear, cold water to the river if the dam and reservoir were no longer present. With a focus on dam removal the lower-down problems on Ferry Creek, especially culverts and ditches that are complete salmon migration

blockages, would easily be included in a package for complete restoration. Analysis of complete restoration, including lower Ferry Creek, should be part of the dam removal alternative.

The reservoir is currently used by ODFW to rear juvenile salmon in a net pen. However, this activity is not of benefit to the wild salmon runs that used to, and would again, use lower Ferry Creek if they could. ODFW has a 2013 Conservation Plan for Fall Chinook salmon in the Rogue Management Unit, which includes the Chetco. Most of the alternatives preferred by the public and ODFW have a centerpiece of removing artificial habitat barriers (e.g., culverts and dams), focusing on habitat restoration, and managing hatchery fish to minimize the risk of genetic damage to wild salmon. (*Conservation Plan for Fall Chinook Salmon in the Rogue Species Management Unit*, January 2013. See pp. 126 et. seq).

Removal of Ferry Creek Dam and restoration of the creek, including the lower portions that are ditched and/or culverted, would best meet the preferred alternatives in this plan. The lower half-mile of Ferry Creek is low gradient, and could easily be restored as habitat for overwintering coho. This would also open habitat for Chinook, coho and steelhead spawning in this same region. Removal of the dam would provide much better water quality for salmon passage and other fish in the lower creek, as well as stabilizing flow throughout. (See *Public Draft SONCC Coho Salmon Recovery Plan*, Volume II, pp. 13-11 and 13-14).

ORCA urges the Commission, in funding this grant, to require Brookings to evaluate complete dam and lower Ferry Creek culvert/ditch removal, and restoration of Ferry Creek, as the preferred alternative, rather than simply dismiss the option entirely. Another alternative can focus entirely on using the reservoir for backup water supply, but this should not be the principal objective of the grant. ORCA notes the application discussion never mentions, much less explores, other backup water supply options on Ferry Creek that do *not* entail maintaining the dam. Public monies should not be spent merely for a feasibility analysis of one alternative, especially in the narrowest way that provides the least conservation promise.

Brookings should be required to provide public hearings and meetings about the needs of the Chetco and Ferry Creek to sustain the salmon habitat and water flow so important to the Brookings economy. To date, the principal public processes have principally concerned use of the reservoir for future potential and backup water supplies for Brookings. That should be one concern, but not the only one.

Sincerely,

/s/ Cameron La Follette

Cameron La Follette
Executive Director

March 27, 2017

Grant Program Coordinator
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fsgrant@wrd.state.or.us

Re: Comments and Objections, Water Conservation, Reuse, and Storage Feasibility Study Grant Application, Klamath Basin Feasibility Study to Identify Supplemental Storage

Dear Grant Program Coordinator,

WaterWatch of Oregon and Oregon Wild submit these comments outlining a number of significant concerns with the Water Conservation, Reuse, and Storage Feasibility Study Grant Application, Klamath Basin Feasibility Study to Identify Supplemental Storage submitted by Klamath Water Users Association and Landowner Entity. We believe there are both legal and natural resource capacity problems with the proposed water use for this project. We submit those comments here as "comments and objections."

1. This storage project application – which has been recommended for funding – does not comply with the underlying law.

We are concerned that this application does not comply with the underlying law on these grants. SB 1069 has a clear threshold standard for storage projects. If a proposed storage project will impound surface water on a perennial stream, divert water from a stream that supports sensitive, threatened or endangered fish or divert more than 500 acre-feet of surface water annually, a grant may only be provided if the proposed study contains:

> (a) Analyses of by-pass, optimum peak, flushing and other ecological flows of the affected stream and the impact of the storage project on those flows;
>
> (b) Comparative analyses of alternative means of supplying water, including but not limited to the costs and benefits of conservation and efficiency alternatives and the extent to which long-term water supply needs may be met using those alternatives;
>
> (c) Analyses of environmental harm or impacts from the proposed storage project;
>
> (d) Evaluation of the need for and feasibility of using stored water to augment in-stream flows to conserve, maintain and enhance aquatic life, fish life and any other ecological values; and

> (e) For a proposed storage project that is for municipal use, analysis of local and regional water demand and the proposed storage project's relationship to existing and planned water supply projects.

The rules reiterate this standard in OAR 690-600-0020(4)(f), which is the "application requirement" section, making it clear, again, that for proposed storage projects that meet the trigger noted above, the listed studies must be part of the funded proposal. In other words, if these studies are not part of the proposal as outlined in the application, then the OWRD cannot fund the proposal.

While this threshold for funding is clear both in the statute and the rules, and in the application for that matter, this application does not meet this standard.

Specifically, the study description fails to include the following components:

OAR 690-600-0020(4)(f)(A). "Analyses of by-pass, optimum peak, flushing and other ecological flows of the affected stream and the impact of the storage project on those flows."

In response to this requirement, the application states on p. 11:

> Analyses of by-pass/peak flows will be completed by following the guidelines as defined in the white paper "Peak and Ecological Flow; a Scientific Framework for Implementing Oregon HB 3369". This includes an evaluation of the Base Flow Functions, Biological Triggering Flows, and Channel Maintenance Flows.

This statement, and the rest of the application, does not indicate that the study will analyze *how the proposed storage project(s) will impact ecological flows*. However, the applicant goes on to state on p. 11 that the study will:

> Determine the "percent of flow" using the water availability from the flow analyses determined above. The "percent of flow" will be used to shape how much water may be diverted during the time period when water is available. This study will identify stream reaches that can provide storage capabilities while maintaining an 85% natural flow instream.

This statement seems to indicate that the study *will not conduct any analysis* of the impacts of the proposed storage project(s) on ecological flows, but instead will propose a blanket assumption that the maintenance of 85% natural flow instream is sufficient for all impacted aquatic functions of the stream, and forego the analysis required under OAR 690-600-0020(4)(f)(A).

OWRD's "Storage-Specific Study Requirements: Application Guidance" clearly states on p. 6: "OWRD requires that at a minimum, the application describes how the study will assess the impact of the storage project on bypass, optimum peak, and flushing flows."

Finally, the application identifies OWRD as the agency that will "coordinate" with other "qualified personnel" to provide a peak and ecological flow analysis, among other tasks. The appropriate agency for this is the Oregon Department of Fish and Wildlife, not OWRD. Moreover, the application acknowledges on p. 9 that it has failed to identify a "fisheries expert" among the "qualified personnel" for this highly technical work.

The application shows that the proposed study will not adequately address OAR 690-600-0020(4)(f)(A), and thus this project study has been improperly recommended for funding.

OAR 690-600-0020(4)(f)(B). "Comparative analyses of alternative means of supplying water, including but not limited to the costs and benefits of conservation and efficiency alternatives and the extent to which long-term water supply needs may be met using those alternatives."

In response to this requirement, the application states on p. 11:

> Comparative analyses of alternative means of supplying water will be completed by identifying current diversions and their rates. Actual water consumption will then be identified for the diverted uses. The difference between diverted water and consumptive use will identify the amount of water that can be conserved. The cost associated with improving the transmission and water application systems will then be estimated. The cost per acre*foot of water conserved will then be identified and compared to the storage alternatives.

This statement indicates that applicant has misunderstood the requirements of OAR 690-600-0020(4)(f)(B) and/or does not intend to adequately address the requirements in its study. Since the point of OAR 690-600-0020(4)(f)(B) is to evaluate whether long term water supply needs can be met with conservation and efficiency – *or other alternatives instead of the proposed storage project(s)* – applicant's plan to only examine potential conservation misses the mark in terms of what is required under OAR 690-600-0020(4)(f)(B).

OWRD's "Storage-Specific Study Requirements: Application Guidance" states on p. 7 regarding "Comparative Analyses of Alternative Means of Supplying Water":

> At a minimum, a study application must include:
>
> 1. A list of alternative means of supplying water to be compared. This is a list of other options for meeting water needs and must include any opportunities to reduce water use through water conservation or water use efficiency measures. In addition to water conservation and efficiency, alternatives could include, but are not limited to, optimizing the volume and timing of existing storage operations, or water reuse.

The applicant does not provide a list of any alternative means of supplying water, although it is implied that undefined conservation and efficiency measures are the alternative means of supply. It is clear from the application's attached letter from the U.S. Bureau of Reclamation that in 2011 the Bureau completed a report containing initial assessments of 36 potential storage projects within the Upper Klamath Basin. These 36 storage projects should be included in the required – but missing – list of alternative means of supplying water in this application.

In addition, the list of alternatives means of supplying water should include storage on the publicly-owned former lakebed of Lower Klamath National Wildlife Refuge (LKNWR). Only a portion of this refuge – the Area K lands of LKNWR – appear to be within the area of consideration for this study, although this specific alternative is not mentioned in the application. Most of LKNWR, which is adjacent to the Klamath River and connected by existing infrastructure, has enormous potential for the recovery of significant natural storage (as well as much-needed natural water filtration capacity and habitat) at low cost. Indeed prior to 2013, from time to time the Bureau and the U.S. Fish & Wildlife Service would enter into arrangements to divert excess off-season flows to LKNWR with the understanding that some portion of this water would be made available later in the year upon request for flow augmentation downstream. Given the recent history of active water storage and flow augmentation practices at LKNWR – and the fact that prior to agricultural development, this area naturally stored high winter and spring flows then released this stored water slowly throughout the rest of the year, providing natural augmentation of Klamath River flow – this

storage alternative must be included on the missing list of alternative means of supplying water in this application.

Any on-refuge alternatives should include full consideration of refuge purposes and habitat needs, but potentially could provide the greatest benefit for fish, wildlife, and water quality at the lowest cost of any water storage options in the Upper Klamath Basin.

Further, OWRD's "Storage-Specific Study Requirements: Application Guidance" states on p. 7 regarding "Comparative Analyses of Alternative Means of Supplying Water":

> At a minimum, a study application must include:
>
> 2. The methods the study will use to compare the alternative means of supplying water with the storage project being proposed. Identify specific areas of comparison. The comparative analyses must address, but are not limited to: degree to which the alternative can meet the water demand, the costs and benefits of the alternatives (e.g., environmental impact, cost, public benefits, etc.), and regulatory requirements (i.e. permits and regulatory approvals). The objective comparative analyses proposed can be qualitative, quantitative, or both.

The application does not appear to propose any methods of comparative analysis beyond the comparison of an estimate of "cost of water conserved" versus the cost of proposed storage. This clearly does not meet the minimum requirements as described by the OWRD.

The application shows that the proposed study will not adequately address OAR 690-600-0020(4)(f)(B), and thus this project study has been improperly recommended for funding.

2. This proposal would result in injury to the publicly held water rights of Lower Klamath National Wildlife Refuge.

The application relies heavily on the assumption that there is water available for storage in the Upper Klamath Basin during winter and spring months, in particular March 1st through May 31st. Applicant states on p. 4: "Stream flow data indicates that the Upper Klamath Basin typically experiences the highest flows in March, April and May."

The U.S. Bureau of Reclamation, through water management measures proposed its 2012 Klamath Project Biological Assessment and adopted under the 2013 Klamath Project Biological Opinion, specifically and unlawfully prohibited diversions to Lower Klamath National Wildlife Refuge between March 1st and May 31st. The Bureau's water budget also significantly impairs, reduces, or eliminates deliveries to LKNWR throughout most of the remainder of the year.

The LKNWR lands served by non-Klamath Project related water rights are associated with rights junior to Klamath Project rights, but for each of these rights (Claims 313, 314, 315, & 316 totaling approximately 113TAF), the designated time of use is January 1st to December 31st. This refuge is entitled to use Ady Canal from the Klamath River for delivery of its water supply.

There has been ample opportunity each year since 2013 for LKNWR to divert some or all of its rights to Klamath River water via the Klamath Project's Ady Canal when there has been no regulation of water rights under state law in the Klamath Basin. However, the Bureau's regular refusal to allow the U.S. Fish & Wildlife Service to use Ady Canal, which the Bureau controls, is a barrier to the Service diverting at least some water to Lower Klamath Refuge under its non-Klamath Project related water rights each year.

In fact, LKNWR received no water deliveries via the Ady Canal in 2014 and 2015 as a result of the Bureau's actions. Combined with drought, the Bureau's actions have resulted in Lower Klamath National Wildlife Refuge frequently going dry during the critical spring and fall migratory periods. Since 2012, tens of thousands of birds on these refuges have died for lack of water. When few wetland acres are available on these refuges due to lack of water, large numbers of waterfowl pack together during migration periods, leading to lethal disease outbreaks. Refuge staff estimated that some 20,000 birds perished this way in 2014. Similar conditions on these refuges sparked massive waterfowl die-offs in 2012 and 2013.

Given this history, it is unseemly that the Bureau would write a letter in support of a application which posits that Klamath River water is available during March, April, and May and public funding should be made available to explore water storage projects to capture this water to be controlled by private irrigation interests. To be blunt, this water storage proposal appears to be a grab on publicly held water rights largely made possible by the unlawful interference by the Bureau.

If there is water available in March, April, and May, the Bureau should make that water available to LKNWR, instead of attempting to help deliver this water to private interests. The Bureau has an affirmative obligation to deliver water to LKNWR when it is available. The *1995 Regional Solicitor's Opinion Re: Certain Legal Rights and Obligations Related to the U.S. Bureau of Reclamation, Klamath Project for Use in Preparation of the Klamath Project Operation Plan (KPOP)* states:

> Reclamation has an obligation to ensure that the refuges receive adequate water to fulfill the federal reserved water rights (i.e. the amount of water necessary to fulfill the primary purposes of the refuges) when in priority and when water is available.

The Bureau's refusal to allow use of the Ady Canal for delivery of Lower Klamath Refuge water rights is also a violation of the Sec 8. of the Reclamation Act of 1902, which states:

> Nothing in this Act shall be construed as affecting or intended to affect or to in any way interfere with the laws of any State or Territory relating to the control, appropriation, use, or distribution of water used in irrigation, or any vested right acquired thereunder, and the Secretary of the Interior, in carrying out the provisions of this Act, shall proceed in conformity with such laws, and nothing herein shall in any way affect any right of any State or of the Federal Government or of any landowner, appropriator, or user of water in, to, or from any interstate stream or the waters thereof: Provided, That the right to the use of water acquired under the provisions of this Act shall be appurtenant to the land irrigated, and beneficial use shall be the basis, the measure, and the limit of the right.

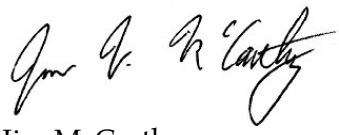
A new reservoir exploiting unlawful interference with LKNWR water rights would reduce or eliminate flows otherwise available to LKNWR, resulting in adverse impacts to native wildlife, waterfowl habitat, as well as water quality, and is not in the public interest.

The Bureau is currently under court order to produce a new water management plan under consultation in compliance with the federal Endangered Species Act. Hopefully, they will not include the unlawful and damaging provisions undermining refuge water rights from the 2012 plan under this new plan. However, funding this application would likely encourage the Bureau to continue to undermine LKNWR water rights and significantly and adversely impact waterfowl, habitat, and public lands at LKNWR. It is poor public policy to allocate public money for the study of a project that so clearly would violate state law and so significantly and

adversely impact waterfowl and public lands. Certainly this cannot have been the intent of SB 1069.

Conclusion: WaterWatch and Oregon Wild support efforts to address water supply challenges in the Klamath River Basin, but oppose this proposed project, as formulated, for the reasons stated above. Because the application does not meet the grant program requirements, OWRD should deny this funding request.

Sincerely,



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Confederated Tribes *of the*
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March 27, 2017

Grant Program Coordinator
725 Summner Street NE, Suite A
Salem, Oregon 97301
fsgrants@wrd.state.or.us

Grant Program Coordinator,

The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) Department of Natural Resources (DNR) appreciates the opportunity to provide comments on the City of Milton-Freewater (Milton-Freewater) Aquifer Storage and Recovery (ASR) feasibility study proposal. For the last twenty years, the CTUIR has worked with the Oregon Water Resources Department (OWRD) and other Walla Walla River Basin stakeholders to find a way to address over-allocated stream flows without undermining the beneficial consumptive uses of surface water supplies. If properly informed and collaborative, we believe ASR can be an important tool to help address inadequate instream flows, increasing demands, and diminishing supplies.

The DNR has generally supported ASR. The CTUIR worked with the City of Pendleton to design and implement its ASR program consistent with Umatilla River instream and municipal water supply objectives. We are currently engaged in a similar effort with the City of Walla Walla and are optimistic that it will also lead to a mutually beneficial outcome for Mill Creek. While Milton-Freewater's facilities have not been included, the ongoing Walla Walla Basin Integrated Flow Enhancement Study is also looking at ASR as a potential instream flow enhancement tool.

The DNR supports the proposal's intent to investigate:
1. Existing infrastructure resources for ASR compatibility;
2. Diversion options for Walla Walla River water;
3. Water quality treatment requirements and options; and
4. Instream flow impact analysis.

We also support the proposed investigation of re-use and conservation measures and suggest those actions be explicitly identified in a distinct task.

Nevertheless, the DNR is concerned about the proponent's intention to use Milton-Freewater's Walla Walla River surface water right. Given the complexity of surface and groundwater interactions, ongoing instream and groundwater supply issues, and the current lack of data to inform more comprehensive proposals, we suggest this Feasibility Study focus on the technical aspects of determining ASR capacity and forego the in-depth and likely controversial discussion about water rights and beneficiaries.

The proposal's desire to help fill important basalt groundwater data and ASR capacity gaps is vital to a comprehensive solution to the Walla Walla Basin's numerous water supply issues. We look forward to active involvement and potential coordination with other ongoing water supply planning efforts.

Sincerely,

Carl Merkle
Manager, First Foods Policy Program

Cc: David Hair, Manager, DNR Water Resources Program

Walla Walla River Irrigation District
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Oregon Water Resources Department
Grant Program Coordinator
725 Summer Street NE, Suite A
Salem, Oregon 97301

Submitted via email: fsgrants@wrd.state.or.us March 1, 2017

Dear Grant Program Coordinator,

The Walla Walla River Irrigation District would like to submit comments on the Milton-Freewater Aquifer Storage and Recovery Assessment proposal submitted by the Walla Walla Basin Watershed Council.

The proposed project is seeking $42,297.00 from Oregon Water Resources Department for a project with a total cost of $127,520.00. The proposed project is a feasibility study to investigate existing infrastructure, diversion options and water quality requirements in order to conduct instream flow analysis and investigate conservation and re-use options to meet long term water demands. The project entails diverting water from the Walla Walla River under the City of Milton-Freewater's water right certificate 12920 from November-May of each year for injection into one of the basalt wells owned and operated by the City of Milton-Freewater for domestic and municipal supply. The proposed project also identifies the possibility of implementing a split-season lease of water right certificate 12920 from June-October of each year.

Restoring both shallow alluvial and basalt aquifer levels in the Walla Walla River Basin is a high priority for the agricultural community served by the Walla Walla River Irrigation District. We do not believe that, due to the specific conditions and limitations of the source water chosen, the feasibility study as proposed by the Walla Walla Basin Watershed Council will provide basin stakeholders with the baseline data necessary to inform future Aquifer Storage and Recovery efforts. The water rights in the Walla Walla River basin are complex and cannot necessarily be taken at face value, which is what we believe the Walla Walla Basin Watershed Council did when making this proposal. When interpreting the intent of our Decree we have to assume the court provided a buffer of protection so as not to cause future injury to existing water rights. Such is the case with the City's water right certificate 12920. While the court allowed adequate water supply for the City's future growth, they limited and conditioned the right to provide protection to downstream water users. The City's water right was contested by downstream water users during the adjudication proceedings of the Walla Walla River and its tributaries. The court settled Contest 76, beginning at page 73 of the Findings of Facts. On page 74 of the Findings of Facts the court finds that water claimed under proof of claim 563A (certificate 12920) can only be used for domestic and municipal purposes. On page 75, the court explicitly limits the City's diversion under water right certificate 12920 by inserting a condition that reads: "but in no case shall the Contestee be permitted to use more water than it can beneficially use at any one time." If the proposed project is to study the feasibility of diverting the City's domestic and municipal demand from the Walla Walla River under water right certificate 12920, the diversion from the Walla Walla River would be limited to the

amount of water that the City pumps out of that well to supply domestic and municipal needs at any one time. Page 150 further limits the use of the water right granted under certificate 12920 to use within the city of Milton. We believe that the rate of diversion from the Walla Walla River would be limited to no more than what could be used beneficially at any one time for any basalt well serving municipal and domestic uses in Milton, Oregon.

The Walla Walla River Irrigation District agrees that Aquifer Storage and Recovery is an important tool in restoring basalt aquifer levels but feels that we should be thoughtful in that approach as time and money are limited. The feasibility study grant proposal, in the last paragraph of page 3, states "Because the City possesses both a groundwater and a surface water rights portfolio, Milton-Freewater has the capability of adopting a water resources management approach that benefits its citizens, residence of the basin, the aquifer, and ultimately summer flows in the Walla Walla River as aquifer levels are restored." We do not believe that aquifer levels can be restored or that summer flows in the Walla Walla River can ever benefit under the scenario proposed in this feasibility study. It is clear that, under this scenario, the City's wells located in Milton, Oregon could potentially store the amount of water that they provide for domestic and municipal use. There is benefit in that, though diverting water during the winter and spring months for injection into the basalt wells constitutes a new demand on the Walla Walla River, so the benefit may be negligible. But if the purpose of the feasibility study is to investigate options for restoring aquifer levels, we feel that conducting the feasibility study for the proposed project under a limited license issued by the Oregon Water Resources Department would better serve the citizens of our community, and would provide the information needed to direct future basalt aquifer restoration efforts. Carrying out the feasibility study under a limited license provides flexibility in the process and contributes to a holistic approach to water restoration efforts in the Walla Walla River Basin. In order to achieve success in addressing declining aquifers and flow limited streams, there must be an inclusive, coordinated effort between all stakeholders where trust and confidence in each other and the process are the first priority. Anything else is counterproductive.

Page 6 of the feasibility study proposal states that "This project will also look at the possibility of implementing a split-season lease of the City's water right providing additional protected instream flow during critical fish migration periods (June through October) when the Walla Walla River has low flow conditions downstream of the City's point of diversion." As an irrigation district that serves 3,400 acres of permanent crops downstream of the city's point of diversion, the idea that a Walla Walla River water right that has not been diverted since the 1940's could be leased and protected instream is very unsettling. The landowners served by the Walla Walla River Irrigation District have contributed significantly to instream flow restoration in the Walla Walla River. Any formal instream lease that would protect water in the Walla Walla River would be additive to the District's current bypassed flows, and detrimental to community ag producers. Again, we feel that the specific limitations placed on the City's water right certificate, limiting the use of water from the Walla Walla River to the amount of water used at any one time for domestic and municipal purposes, prevents this water right from contributing any actual water for the benefit of instream flows unless there is a method of turning paper water into measureable flow.

By researching the water rights thoroughly and looking at water in a comprehensive manner, the Walla Walla Basin Watershed Council has the potential to conduct a feasibility study that could provide options that achieve restoration of basalt aquifer levels. The proposed approach, by failing to make a critical examination of the water rights, cannot provide basin stakeholders with the baseline data necessary to inform future Aquifer Storage and Recovery efforts or deliver long term restoration benefits to citizens, residence of the basin, the aquifer, or summer flows in the Walla Walla River.

We appreciate the opportunity to provide our perspective related to this proposal.

Sincerely,

Teresa Kilmer

Teresa Kilmer
District Manager
Walla Walla River Irrigation District

CC: Ron Brown, Board President Walla Walla River Irrigation District
Ray Williams, Board Member Hudson Bay District Improvement Company
Brian Wolcott, Executive Director Walla Walla Basin Watershed Council
Lewis Key, Mayor of the City of Milton-Freewater, via email to Linda Hall, City Manager
Michael Ladd, Oregon Water Resources Department, Pendleton, Oregon
Ivan Gall, Oregon Water Resources Department, Salem, Oregon
Chris Marks, Confederated Tribes of the Umatilla Indian Reservation

Study Evaluation Summaries

Feasibility Study Grants – 2017 Funding Cycle

The Oregon Water Resources Department's Water Resources Development Program seeks to help individuals and communities address instream and out-of-stream needs now and into the future. Feasibility Study Grants provide match funding for project planning studies performed to evaluate the feasibility of developing water conservation, reuse, or storage projects. A feasibility study is an assessment of a proposed project. Feasibility Study Grants fund qualifying costs of studies that evaluate the feasibility of proposed projects that appears to have merit but are lacking important details necessary to determine whether or not to proceed with project implementation. The Department received nine complete applications for feasibility studies by the October 15, 2016 deadline. Members of an inter-agency Application Review Team (ART) evaluated each application and recommended eight studies for grant funding (Table 1).

Table 1. 2017 Feasibility Study Grant Funding Recommendation

Study Name	Project Type	County	Funds Requested	Total Cost of Study
Recommended for Funding				
Baker Reuse Feasibility Study	Reuse	Baker	$30,000	$60,000
Carlton Raw Water Storage Expansion Study	Storage	Yamhill	$60,000	$120,000
Ferry Creek Dam & Reservoir Analysis	Storage	Curry	$72,500	$145,000
Hood River Water Bank Feasibility Study	Conservation	Hood River	$50,330	$101,980
John Day Feasibility Study for Wastewater Reuse	Reuse	Grant	$50,000	$110,000
Klamath Basin Feasibility Study to Identify Supplemental Storage	Storage	Klamath	$65,680	$145,680
Milton-Freewater ASR Assessment	Storage	Umatilla	$42,297	$127,520
Understanding Meadow Storage Capacity in the Upper John Day Basin	Storage	Grant	$40,505	$95,658
		Total	**$411,312**	**$905,838**
Not Recommended For Funding				
Applegate Reservoir Capacity Restoration Project	Storage	Jackson	$93,935	$188,742

The following are evaluation summaries for the nine proposed feasibility studies evaluated by the ART. Information provided on each proposed study includes a project summary adapted from the grant application, a summary of the study evaluation, as well as a summary of the public comments received on the application and the Department's response to the comment. The evaluation summaries are organized alphabetically by project name, with those recommended for funding listed first.

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Baker City Reuse Feasibility Study

Recommendation: *Recommended for Funding ($30,000)*

Study Information

Applicant: City of Baker City

Funding Requested: $30,000

Total Study Cost: $60,000

Project Type: Reuse

Proposal Summary: This study seeks to research opportunities for reuse of treated wastewater effluent for agriculture. The study proposes to identify and evaluate potential storage and irrigation sites for the reused water and solicit public interest in using the water. The feasibility study will include meeting with landowners to obtain information that will help further develop cost estimates for potential agricultural reuse projects.

Evaluation Summary

The study proposal to investigate alternatives to the direct discharge of treated wastewater effluent to surface water demonstrates readiness for funding. The need is apparent and important to address in a timely fashion. If deemed feasible and implemented, the project may provide an optional water source to local producers during the irrigation season. Land application of the treated wastewater effluent would eliminate the contribution of certain pollutants to the Powder River. The proposal additionally promotes compliance with the Water Management and Conservation Plan which recommends the city assess the feasibility of water reuse.

The study is recommended for funding as proposed. The following evaluation comments are not a requirement or condition of funding; however, integration of the points may serve to improve and best complete the study. The proposal would have been strengthened by providing additional detail to describe the tasks and the criteria, methods, and process for selecting the reuse site(s). The review team expressed the point that, if implemented, the project may increase regional water demand while reducing discharge back to the river, and therefore reduce instream flows. The review team proposed that the study consider whether the reuse water may be used on existing irrigated lands, not just lands currently unirrigated. The review team also highlighted that this project, if deemed feasible and implemented, must submit a registration of reclaimed water to Oregon Department of Environmental Quality.

Public Comment

No public comments were received on this application.

Carlton Raw Water Storage Expansion Study

Recommendation: *Recommended for Funding ($60,000)*

Study Information

Applicant: City of Carlton

Funding Requested: $60,000

Total Study Cost: $120,000

Project Type: Above-Ground Storage

Proposal Summary: The proposed study would assess the feasibility of expanding the City of Carlton's raw water reservoir that is located on Panther Creek by raising the existing dam's height. The study is designed to identify any 'fatal flaws' and determine if raising the dam will provide sufficient storage for the city's current and future needs. This will include: coordination regarding dam safety requirements, a site investigation, a preliminary geotechnical evaluation, a preliminary hydrological analysis, a review of water right and land ownership, a review of permits that may be required, a review of ecological flows, a comparison of alternative means of water supply, an analysis of environmental impact and the need to augment instream flows, and an evaluation of the future municipal use.

Evaluation Summary

The study demonstrates a readiness for funding, with detailed task descriptions included. The proposal also benefited from the inclusion of letters of support for the study. The proposal to assess the feasibility of expansion as related to dam safety concerns will additionally provide valuable information regarding current status of the structure.

The study will need to address all storage-specific study elements prescribed in statute and will need to follow the Storage-Specific Study Requirements Guidance. The proposal meets minimum requirements for all storage-specific study elements.

The study is recommended for funding as proposed. The following evaluation comments are not a requirement or condition of funding; however, integration of the points may improve the study. The review team noted that the City's Water Management and Conservation Plan indicates that its system water loss is 39.6% and recommends considering this issue in the comparative analyses of alternative means of supplying water. The proposal could also be strengthened by providing additional details on the analysis of environmental harm or impact. A thorough assessment of all water rights and pending extensions will help ensure inclusion of all relevant information in the assessment of water availability. The applicant may consider reordering the tasks to collect key information early in the study. As an example, the geotechnical related tasks may provide essential information on the feasibility of the potential project and, therefore, the study may benefit from completing that work earlier in the study.

Public Comment

Commenter: Lisa Brown, WaterWatch of Oregon

Location of Full Comment: Attachment 1, pages 1-6

Summary of Comment: WaterWatch's comments fall into three general topics: 1) the application does not adhere to the statutory standards for grants for storage projects or answer application question 17 and therefore is incomplete and fails to incorporate factors regarding listed fish and bypass flows, 2) it does not appear the alternatives analysis would inform whether to proceed with the reservoir enlargement, and 3) any additional public funding to address the city's water supply issues should be to assist the City in diversifying its water supply, not for enlarging the Panther Creek reservoir.

Department Response: Thank you for the comments. On the first issue of meeting the storage-specific requirements, the Department found that the applicant had adequately proposed approaches to meeting the minimum bars outlined in the Storage Specific Requirements as stated in the evaluation summary above. For the analysis of by-pass, optimum peak, flushing, and other ecological flows, Carlton's two-phase approach to completing by-pass, optimum, and peak flow analysis was considered adequate because the applicant proposes completing both phases within this feasibility study. If awarded a grant by the Commission, these requirements will be included as conditions in the grant agreement to ensure the applicant will complete these analyses.

The commenter notes that because the applicant did not clearly answer question 17 (and indicate whether the project would augment instream flows) that the application is incomplete and should not receive funding. The intent of question 17 in the application is to determine if the study should receive preference over other storage project studies. As per statute and rule, above-ground storage projects that include these provisions receive preference for funding over other storage projects. The applicant was not awarded any preference based upon their answer to this question because their intent was unclear. Even without that preference, the study is recommended for funding.

Regarding the concern that that alternative analysis may not be considered in decision making by the applicant, we note that while the statute and rule for the funding opportunity require applicants to pursue specific analyses, it does not direct applicants on how to use that information. The intent of the funding opportunity is to help recipients determine project feasibility, it is up to the recipient to determine how best to weigh the results of the study with other information in its decision on whether to proceed with project implementation.

Regarding the third concerns that public funds should be used to examine diversifying the City's water supply and not expanding existing storage, if funded, the applicant would be required to conduct a comparative analysis of other means of supplying water as required by 690-600-0020(4)(f)(B). The proposal includes this comparative analysis and the Department provides comments for potential improvements to this analysis in the evaluation summary on the previous page. The Department does not specify what alternative means of supplying water an applicant must analyze.

After consideration of these comments, the Department still recommends funding the study and recommends the applicant consider the notes in the evaluation summary.

Ferry Creek Dam and Reservoir Analysis

Recommendation: *Recommended for Funding ($72,500)*

Study Information

Applicant: City of Brookings

Funding Requested: $72,500

Total Study Cost: $145,000

Project Type: Above-Ground Storage

Proposal Summary: The study would assess the feasibility of a project to rehabilitate the existing dam and spillway associated with Ferry Creek Reservoir in the Chetco River basin. Recent analysis and inspection show that major rehabilitation is required to make the dam safe; the only other alternative is removal. The main goal of the project is to ensure the integrity of the dam. Additional goals are to utilize existing water rights to continue current uses of Ferry Creek Reservoir, including juvenile fish acclimation, and to maintain the ability to develop future planned uses of the reservoir and surrounding area. These future uses include the development of a backup and emergency drinking water supply and recreational development at the reservoir and surrounding property.

Evaluation Summary

The study demonstrates a readiness for funding. The proposal lays out an appropriate approach to explore current concerns related to dam safety, and long-term concerns for back up or emergency supply situations. The Oregon Department of Fish and Wildlife currently uses the reservoir for acclimation for Chinook smolts prior to release in the Chetco River and provides both a letter of recommendation and a share of match funds.

The study will need to address all storage-specific study elements prescribed in statute and will need to follow the Storage-Specific Study Requirements Guidance. The proposal meets minimum requirements for all storage-specific study elements. However, the Department recommends that the study provide additional detail on the analysis of environmental harm or impact in order to sufficiently address that required element in the study and final report.

The study is recommended for funding as proposed. The following evaluation comment is not a requirement or condition of funding; however, integration of the recommendation may improve the study. The study would be strengthened with a description of the criteria used to determine if dam removal or rehabilitation is the preferred option.

Public Comment

Commenter: Ann Vileisis, Kalmiopsis Audubon Society

Location of Full Comment: Attachment 1, pages 7-8

Summary of Comment: The Kalmiopsis Audubon Society supports the application; however it encourages the applicant to 1) integrate conservation concerns into its planning process and 2) include robust analysis to consider dam removal and restoration of the lower creek.

Department Response: Thank you for the public comment on the proposed study. The Department does not require feasibility studies to conduct specific analyses or conduct them in a certain order, except in the case of the storage-specific elements that are required in statute for certain storage projects. This study must include the storage-specific elements, which include conducting "comparative analyses of alternative means of supplying water, including but not limited to the costs and benefits of water conservation and efficiency alternatives and the extent to which long-term water supply needs may be met using those alternatives." It is up to the applicant to identify which comparative analyses are appropriate for the project. In its application, the City of Brookings noted that dam rehabilitation is the focus of the feasibility study and that it will use the City's Redundant Water Supply Plan as a starting point for identifying and listing alternative means of supplying water. These include conservation efforts, rehabilitating an out-of-service intake on the Chetco River, and alternative storage methods. The applicant proposes to complete both a quantitative and qualitative analysis of the alternatives means of supplying water and will compare the following among the alternatives: 1) degree to which water demand could be met, 2) benefits and costs, and 3) regulatory requirements. **After consideration of this comment, the Department still recommends funding the study as proposed.**

Commenter: Cameron La Follette, Oregon Coast Alliance

Location of Full Comment: Attachment 1, pages 9-10

Summary of Comment: ORCA is in favor of funding this application, as recent dam inspections of Ferry Creek Dam have indicated it as being in unsatisfactory condition. However, ORCA urges the Commission to require, as a condition of funding, that this grant 1) require equal study and analysis of removal of the dam and restoration of Ferry Creek, and 2) identify dam removal as the preferred alternative.

Department Response: Thank you for the comment. Please see the response to the comment above. **After consideration of this comment, the Department still recommends funding the study as proposed.**

Hood River Water Bank Feasibility Study

Recommendation: *Recommended for Funding ($50,330)*

Study Information

Applicant: Hood River Soil & Water Conservation District and Hood River Watershed Group

Funding Requested: $50,330

Total Study Cost: $101,980

Project Type: Conservation

Proposal Summary: The study is designed to: 1) to assess the viability of a Hood River water bank to increase summer stream flows for fish and provide greater irrigation water reliability for perennial crops during dry or drought years, and 2) to determine the feasibility of implementing a water bank program in the Hood River Basin. This feasibility study would determine whether a Hood River water bank is a viable and feasible endeavor. If the project were implemented, water would come from landowners willing to forgo some or all of their irrigation water for a season, in exchange for financial compensation. The goal of the project would be to increase instream flows and irrigation water reliability for perennial crops during drought years.

Evaluation Summary

The proposal demonstrates a readiness for funding. The scope of the study area is appropriate and the execution of the study is likely to produce essential and relevant information to determine if the concept is feasible to implement. There is interest in determining if the proposal is feasible as demonstrated by stakeholder involvement and support from a variety of groups. Additionally, the proposal is the result of a collaborative planning recommendation and the study process may contribute to continuing community partnerships. Information gathered as part of this study could also provide transferrable information for potential use of this approach at other locations throughout the state.

The study is recommended for funding as proposed. The following evaluation comment is not a requirement or condition of funding; however, integration of the recommendation may improve the study. The study could be strengthened with a proposal to evaluate any increase to instream flows. If instream flows are evaluated, it is recommended that the applicant request assistance and information regarding instream leases and water rights transfers from the Water Resources Department in order to ensure use of accurate information in any evaluation.

Public Comment

No public comments were received on this application.

John Day Feasibility Study for Wastewater Reuse

Recommendation: *Recommended for Funding ($50,000)*

Study Information

Applicant: City of John Day

Funding Requested: $50,000

Total Study Cost: $110,000

Project Type: Reuse

Proposal Summary: The City of John Day, Oregon, operates a wastewater treatment facility that has treated wastewater available for reuse. The feasibility study will evaluate two options for reuse: 1) a commercial-scale water reclamation and reuse system to use treated wastewater for hydroponic horticulture, and 2) an irrigation system to reuse treated wastewater to irrigate commercial pastureland. The feasibility study proposes to evaluate these options and recommend a preferred option and funding path to reuse the City of John Day's wastewater and possibly eliminate the need to indirectly discharge wastewater near the John Day River.

Evaluation Summary

The study demonstrates a readiness for funding, in part through its clear identification of the goals and needs of the proposal. The City of John Day's Water Management and Conservation Plan recommended the city consider reuse and, as described, the study would adequately assess two reuse options.

The study is recommended for funding as proposed. The following evaluation comments are not a requirement or condition of funding; however, integration of the points may serve to improve and best complete the study. An assessment of additional application sites for the reuse water may strengthen the study in two ways. First, it could highlight any options to potentially replace or supplement current water used for irrigated agriculture and reduce regional water demand. Second, examining reuse sites closer to the wastewater treatment facility may provide for additional comparative information, such as cost for reuse at different sites. The portion of the proposal looking at the feasibility of reusing the water for hydroponic horticulture would be strengthened by including an assessment of back-up systems and alternatives, for times when the reuse system may be off-line. Contacting the Oregon Department of Agriculture's Market Access and Certification Program for assistance may provide additional relevant information on this topic. This type of project, if implemented, will require a registration of reclaimed water be submitted to Oregon Department of Environmental Quality.

Public Comment

No public comments were received on this application.

Klamath Basin Feasibility Study to Identify Supplemental Storage

Recommendation: *Recommended for Funding ($120,000)*

Study Information

Applicant: Landowner Entity and the Klamath Water Users Association

Funding Requested: $65,680

Total Study Cost: $120,000

Project Type: Above-Ground and Below-Ground Storage

Proposal Summary: The study would assess the options available in the Upper Klamath Basin for augmenting instream flows, primarily to support Federally Listed aquatic species. The goal of this study is to assess above and below-ground storage options with the primary purpose of addressing instream needs and a secondary purpose of allowing more water to be available for out of stream uses (i.e. irrigation). Components of the study will include comparative analyses of alternative means of augmenting instream flows, not only for the purpose of increased instream flows at the local scale, but also to provide an instream flush of water to the lower Klamath River to improve water quality. The study will include a comparative analysis of the costs and benefits of above and below-ground storage.

Evaluation Summary

The study demonstrated a readiness for funding, in part because it adequately scopes out an initial study phase to consider and examine a suite of available options before further investigating the most promising options in future studies.

The study will need to address all storage-specific study elements prescribed in statute and to follow the Storage-Specific Study Requirements Guidance. The proposal meets minimum requirements for all storage-specific study elements. The Department has the following recommendations that the applicant should consider as it uses the guidance and conducts its study. First, the applicant intends to use the Peak and Ecological Flows white paper and a "percent of flow' analysis to address the required analyses of ecological flows in their study. As inferred in the proposal, the study should compare the "percent of flow" results to the by-pass/peak flows, in order to ensure the by-pass/peak flows are considered and protected in the comparison of potential storage projects. The Department also recommends discussing the white paper with the Oregon Department of Fish and Wildlife prior to the conducting analyses in order to make best use of that resource. In the analysis of environmental harm and impacts, the study should assess the impacts of reducing instream flows during the months, December through May. The comparative analysis of alternative means of supplying water may benefit from an assessment of the opportunities to improve efficiencies to conveyance and irrigation techniques as a means to enhance soil storage.

Public Comment

Commenter: Jim McCarthy, WaterWatch of Oregon and Oregon Wild

Location of Full Comment: Attachment 1, pages 11-16

Summary of Comment: WaterWatch of Oregon and Oregon Wild highlight two primary concerns. The first concern is that the proposed study does not comply with the statute and rules governing the funding opportunity. They posit that the study fails to address the "analyses of by-pass, optimum peak, flushing and other ecological flows of the affected stream and the impact of the storage project on those flows" (OAR 690-600-0020(4)(f)(A)) and the "comparative analyses of alternative means of supplying water, including but not limited to the costs and benefits of conservation and efficiency alternatives and the extent to which long-term water supply needs may be met using those alternatives" (OAR 690-600-0020(4)(f)(B)). Their second concern is that they believe this proposal would result in injury to the water rights of the Lower Klamath Wildlife Refuge.

Department Response: Thank you for the comments. The study meets the OAR 690-600-0020(4)(f)(A) requirement by linking the findings of the analysis of by-pass, peak, and flushing flows to the percent of flow computations. In its evaluation summary of the proposed study, the Department calls out that the applicant should ensure that analysis is conducted in order to comply with statute and rule. The applicant responded to this recommendation stating:

> *I have reviewed OWRD's summary evaluation with regards to the Klamath Basin Feasibility Study to Identify Supplemental Sources. It appears that I was negligent in connecting the dots, specifically under Section B, Task 5. As expressed in the application, the study will use the Peak and Ecological Flows white paper and a "percent of flow" as a method for analyses of ecological flows. However, I neglected to specifically state that this study will also compare the results of the "percent of flow" to the results of the bypass/peak flows in an effort to guarantee any potential storage project does not result in adverse consequences to the bypass/peak flows. Thank you for suggesting that the partners in this proposal discuss resource concerns with ODFW prior to conducting the study.*

Regarding 690-600-0020(4)(f)(B), the applicant met the minimum bar for compliance by identifying and listing an alternative approach (conservation and efficiency measures) for supplying water that it will examine. This is the only requirement listed to be in compliance with this rule. The applicant proposes a comparative analysis that addresses the degree to which the identified alternative can meet the water demand and includes a cost-benefit analysis of implementing conservation measures instead of building a storage project. The Department does not specify what alternative means of supplying water an applicant must analyze.

On the issue of potential injury to the Lower Klamath National Wildlife Refuge, the study proposes to examine what water may be available in each of the sub-basins identified and to examine water right issues in Task 3 (described on page 10 of the application).

After consideration of these comments, the Department still recommends funding the study and makes suggestions on how to ensure the study complies with the storage-specific requirements in the evaluation summary above.

Milton-Freewater Aquifer Storage and Recovery (ASR) Assessment

Recommendation: *Recommended for Funding ($42,297)*

Study Information

Applicant: Walla Walla Basin Watershed Foundation

Funding Requested: $42,297

Total Study Cost: $127,520

Project Type: Below-Ground Storage

Proposal Summary: The Milton-Freewater ASR Assessment study would investigate the feasibility of utilizing existing basalt wells and municipal water rights to store winter/spring water from the Walla Walla River via aquifer storage and recovery (ASR). The goal of this study is to determine whether ASR can contribute to maintaining long-term water supplies for the basalt aquifers near Milton-Freewater, Oregon. This study will determine the feasibility of the proposed ASR project by investigating: 1) the existing infrastructure for ASR, 2) the diversion options for Walla Walla River water, and 3) the water quality treatment requirements and options. In addition, the study would conduct an instream flow analysis and investigate conservation and reuse options to meet long-term water demands.

Evaluation Summary

The study demonstrates a readiness for funding. The clearly defined tasks are specific and support the proposed approach. The proposal works within the current water rights and proposes to address a regional need for underground storage. The study proposes to assess the need and potential to augment instream flows to support sensitive, threatened or endangered fish. Resulting details and information from the study may be transferrable to other potential projects in similar settings throughout the state.

The study will need to address all storage-specific study elements prescribed in statute and will need to follow the Storage-Specific Study Requirements Guidance. The proposal meets minimum requirements for all storage-specific study elements. The Department has the following recommendation that the applicant should consider as it uses the guidance and conducts its study: to ensure a comprehensive assessment of the environmental harm or impact storage-specific element, results from other task activities should be linked to the environmental impact analysis tasks.

Public Comments

Commenter: Carl Merkle, Confederated Tribes of the Umatilla Indian Reservation

Location of Full Comment: Attachment 1, pages 17-18

Summary of Comment: The CTUIR Department of Natural Resources (DNR) supports the proposal's intent to investigate: 1) existing infrastructure resources for ASR compatibility, 2) diversion options for Walla Walla River water, 3) water quality treatment requirements and options, and 4) instream flow impact analysis. The DNR is concerned about the applicant's intent to use Milton-Freewater's Walla Walla River surface water right, if the project were implemented. Given the complexity of surface and groundwater interactions, ongoing instream and groundwater supply issues, and the current lack of data to inform more comprehensive proposals, CTUIR suggests this Feasibility Study focus on the technical aspects of determining ASR capacity and forego the in-depth discussion about water rights and beneficiaries. The DNR also suggests that the proposed investigation of re-use and conservation measures be explicitly identified in a distinct task in the study.

Department Response: Thank you for your comments. As proposed, the study will focus on the technical components of examining the feasibility of ASR and not on the water rights. On the issue of analyzing conservation and reuse alternatives as a separate task from Task 4, the Department allows applicants to identify their own study tasks. However, as this study must include the storage-specific study elements, the Department will include its standard grant agreement condition that the results of those analyses be submitted as a separate attachment to the study Final Report (see Exhibit C of the Feasibility Study Grant Agreement Template posted online). **After consideration of this comment, the Department still recommends funding the study as proposed.**

Commenter: Teresa Kilmer, Walla Walla Irrigation District

Location of Full Comment: Attachment 1, pages 19-21

Summary of Comment: The Walla Walla Irrigation District does not believe that, due to the specific conditions and limitations of the water rights identified as the source of water for potential ASR, the feasibility study as proposed by the Walla Walla Basin Watershed Council will provide basin stakeholders with the baseline data necessary to inform future Aquifer Storage and Recovery efforts. By researching the water rights thoroughly and looking at water in a comprehensive manner, the Walla Walla Basin Watershed Council has the potential to conduct a feasibility study that could provide options that achieve restoration of basalt aquifer levels. The proposed approach, by failing to make a critical examination of the water rights, cannot provide basin stakeholders with the baseline data necessary to inform future Aquifer Storage and Recovery efforts or deliver long term restoration benefits to citizens, residents of the basin, the aquifer, or summer flows in the Walla Walla River.

Department Response: Thank you for the public comment on the water rights proposed for the study. The Department does not require feasibility studies to conduct specific analyses or conduct them in a certain order (except in the case of the storage-specific elements that are required in statute for certain storage projects). Instead it allows the applicant to identify which components of a feasibility analysis it would like to investigate at this time. Applicants commonly investigate different aspects of project feasibility in a phased approach—with Department funding and other funds. If the applicant were to pursue project implementation the Department will use its other statutory authorities and obligations to enforce the conditions of water right permits, certificates, decrees, etc. As such, we encourage the applicant to ensure it has the appropriate water rights in place prior to project implementation. **After consideration of this comment, the Department still recommends funding the study as proposed.**

Understanding Meadow Storage Capacity in the Upper John Day Basin

Recommendation: *Recommended for Funding ($40,505)*

Study Information

Applicant: North Fork John Day Watershed Council

Funding Requested: $40,505

Total Study Cost: $95,658

Project Type: Other Storage

Proposal Summary: The proposed study will determine the feasibility of increasing natural water storage capacity through wet meadow restoration in the John Day Basin. The goal of the study is to determine the feasibility of increasing: 1) the volume of water stored in the meadow, 2) the distribution of water throughout the meadow, and 3) the duration for which the meadow can retain that water. These results will be evaluated using piezometers, vegetation analyses, and soil analyses. This study will inform regional resource management groups regarding the benefits of wet meadow restoration and the technical and financial feasibility of such restoration practices.

Evaluation Summary

The study proposes to investigate an innovative means to augment the natural storage capacity of a meadow and demonstrates a readiness for funding. The study is collaborative, with letters of support. The approach, if determined feasible, may also have broader application in other areas of the state. Therefore, this study may provide transferable information in addition to answering the feasibility questions for the proposed study site.

The study is recommended for funding as proposed. The following evaluation comments are not a requirement or condition of funding; however, integration of the points may serve to improve and best complete the study. The proposal would be strengthened by extending the duration of monitoring. An explanation of how data would be evaluated to determine the potential timing and volume of potential natural storage would also improve the proposal. Understanding and characterizing past grazing practices would provide context for the study data set and help document the potential applicability for application of this approach at other locations.

Public Comment

No public comments were received on this application.

Applegate Reservoir Capacity Restoration Project

Recommendation: *Not Recommended for Funding*

Study Information

Applicant: Applegate Partnership and Watershed Council

Funding Requested: $93,935

Total Study Cost: $188,742

Project Type: Above-Ground Storage

Proposal Summary: The proposed study would assess the feasibility of restoring storage capacity to the Applegate Reservoir through the removal of sediment within the reservoir basin. It is estimated that sediment has reduced the storage capacity of the reservoir by an estimated 3,000-5,600 acre-feet, indirectly affecting the rate and duration of instream flows downstream of the dam.

Evaluation Summary

As proposed, the study did not sufficiently address, with methods or supporting information, how the storage-specific requirements would be addressed. These storage-specific requirements are required by statute [ORS 541.566(2)] and rule (OAR 690-600) for any storage project that 1) impounds surface water on a perennial stream, 2) diverts water from a stream supporting sensitive, threatened, or endangered fish, OR 3) diverts more than 500 acre feet. This study triggers all three of the storage-specific requirements and therefore, by not including the storage-specific study elements, the proposal does not demonstrate readiness for funding at this time.

While the study clearly identified the key tasks, and provided specific and well-documented details supporting the proposed approach, a number of additional concerns remained. Specifically, the study only considered examining the removal of sediment, which would only be a temporary solution to the issue. The study proposal would be strengthened by also examining how to reduce sediment from upstream sources or otherwise address the recurring issue of reservoir in-fill through the development of a maintenance plan or other approach.

Public Comment

No public comments were received on this application.