



OREGON WATER RESOURCE DEPARTMENT WATER CONSERVATION, REUSE AND STORAGE FEASIBILITY STUDY GRANT PROGRAM

I. Grant Information

Study Name: Applegate Reservoir Capacity Restoration Project

Type of Feasibility Study: Water Conservation Reuse Above-Ground Storage
 Storage Other Than Above-Ground [Including Aquifer Storage and Recovery (ASR)]

Program Funding Dollars Requested: \$ \$89,925
Note: Request may not exceed \$500,000

Total Cost of Feasibility Study: \$ \$181,615

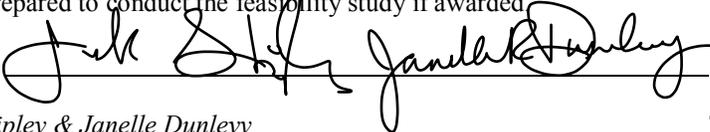
II. Applicant Information

Applicant Name: <u>Applegate Partnership and Watershed Council</u>	Co-Applicant Name:
Address: <u>P.O. Box 899</u>	Address:
<u>Jacksonville, OR. 97530</u>	
Phone: <u>541-899-9982</u>	Phone:
Fax:	Fax:
Email: <u>contact@apwc.info</u>	Email:

Principle Contact: <u>APWC-Janelle Dunlevy, Coordinator</u>
Address: <u>P.O. Box 899</u>
<u>Jacksonville, OR. 97530</u>
Phone: <u>541-899-9982</u>
Fax:
Email: <u>coordinator@apwc.info</u>

Certification:

I certify that this application is a true and accurate representation of the proposed work for a project feasibility study and that I am authorized to sign as the Applicant or Co-Applicant. By the following signature, the Applicant certifies that they are aware of the requirements of an Oregon Water Resources Department grant, have read and agree to all conditions within the sample grant agreement and are prepared to conduct the feasibility study if awarded.

Applicant Signature:  Date: 1/29/2016

Print Name: Jack Shipley & Janelle Dunlevy

Title: APWC Board Pres & Coordinator

III. Feasibility Study Summary

Please give a brief summary of the feasibility study using no more than 150 words.

This study is being pursued to determine the economic, environmental, and social feasibility of partially restoring the storage capacity of Applegate Reservoir, through the removal of coarse sediment deposits within the reservoir basin. The Applegate Dam and Reservoir were completed in 1980, and since that time tributary streams have continued to deliver bedload to the reservoir. These sediment deposits have reduced the storage capacity of the reservoir by an estimated 3000-5600 acre feet and have indirectly affected the flow rate and duration of instream flows downstream of the dam. The feasibility study would be led by the local watershed council, the Applegate Partnership and Watershed Council, and would utilize local and regional contractors to accomplish the specific individual elements of the study proposal. The US Forest Service (USFS) and US Army Corps (Corps) are active partners in this project, and they are responsible for all land ownership and management associated with the project.

IV. Grant Specifics

Section A. Common Criteria

Instructions: Please answer all questions contained in this section. It is anticipated that completed applications will result in additional pages.

1. Describe your goal and how this study helps to achieve the goal.

The overall goal of the project would be to partially restore reservoir capacity within the Applegate Lake through the removal of coarse sediment deposits that have occurred since the Applegate Dam was completed in 1980. The proposed feasibility study will help us achieve this goal by providing the foundation for the project through the analysis of project level economics, public outreach, development of a project implementation design package (30% design), and pre-project monitoring of deposited sediment.

2. Describe the water supply need(s) that the proposed project addresses. Identify any critical local, regional, or statewide water supply needs that implementation of the project associated with the feasibility study will address. **Responses should rely upon solid water availability and needs data/analysis.** For examples of water supply needs see “Criteria and Evaluation Guidance Document.”

The Applegate Dam and Reservoir were completed in 1980. The purpose of the impoundment was primarily for flood control. The congressionally authorized allocation of water within Applegate Lake is: 40 KAF (thousand acre-feet) for fishery enhancement, 26 KAF for irrigation, and 9 KAF for carryover storage. Currently, not all of the irrigation storage is allocated, which allows for unallocated irrigation water to remain instream for the benefit of fish as the Corps annually drops the reservoir in the summer and fall for flood control operations.

Based on survey work conducted by the Army Corps after the 1997 flood and more recent work that the USFS contracted (Stillwater Sciences 2010), there is an estimated 5,600 acre-feet of sediment accumulation (1980-2010) that has occurred within the reservoir since 1980. Approximately 3,000 acre-feet of this deposit is located within delta areas of tributary streams. The proposed feasibility study would determine if these delta deposits are economically, logistically, and socially feasible to remove; thereby restoring a substantial portion of lost capacity within the reservoir. Ultimately, restored capacity within the reservoir would result in a greater volume of stored water, and could result in increased summer flows within the Applegate River downstream of the dam to the benefit of fish, including federally listed SONCC Coho salmon (ESA Threatened).

3. Explain how the proposed project will meet the water supply need(s), and indicate what percentage of that need will be met. (For example: If your water supply need is 20,000 acre-feet of additional water and the project will supply 10,000 additional acre-feet, 50 percent of your need will be met).

At present, the reservoir storage capacity within Applegate Lake is capable of fulfilling 100% of the congressionally authorized water allocations (fishery enhancement, irrigation, and carryover). However, due to infill of sediment over the years the reservoir has lost some of its initial storage capacity. Removal of deposited coarse sediment from the reservoir basin would result in partial restoration and maintenance of reservoir capacity; thereby, facilitating the continuation of adequate reservoir storage to meet its primary purposes and the potential to increase outflow with an additional 25 cubic feet per second during low flow periods to benefit aquatic species and the Applegate Community downstream of the reservoir.

4. Describe the technical aspects of the feasibility study and why your approach is appropriate for accomplishing the specific study goals and objectives.

The feasibility study would involve three primary tasks: economic analysis of removal and hauling of coarse sediment deposits, coarse sediment removal 30% project design package, and survey of existing water and sediment quality (with particular emphasis on the RCRA 8 metals). The completion of these primary tasks is critical to this project. Without these foundational elements, the NEPA and public outreach components cannot

be completed; leaving the project short of all elements required to implement and achieve our goals and objectives.

5. Describe how the feasibility study will be performed. Include:
 - a. General summary statement that describes the study progression.
 - b. When the feasibility study will begin.
 - c. Listing of key tasks to be accomplished with each task having:
 - i. Title
 - ii. Timeline for completion
 - iii. Description of the activities to be performed in this key task
 - iv. Description of the resources necessary for accomplishing the key task

Example:

- (i) Streamflow measurement;
- (ii) September-April;
- (iii) Weekly streamflow measurements will be performed to gather hydrographic data for the hydrologic analysis to take place in May;
- (iv) A technician will be hired to perform the streamflow measurements.

(Key tasks listed here are to be placed in Section VI. Project Feasibility Study Schedule for a quick reference “graphical” representation of the schedule.)

The three primary components (economic analysis, project logistics/design, and sediment quality survey) of the feasibility study could occur simultaneously, beginning Spring/Summer 2016. The findings from these project components would inform the NEPA analysis and public outreach process. It is reasonable to estimate that the NEPA analysis and public outreach process could begin in the fall of 2016 and continue for 9-12 months.

Based on the outcome of the feasibility study, environmental analysis, and acquisition of implementation funding, the soonest that the coarse sediment deposits would begin to be removed from the reservoir basin would be fall of 2017; however, it may be more reasonable to target the fall of 2018.

Key Tasks:

(A) Economic Analysis;

(i) May-September 2016;

(ii) Analysis of economic factors related to the removal of coarse sediment deposits from the reservoir at Applegate Lake. Specifically: the analysis will include: estimated value of coarse sediment deposit (by CY and location), estimated cost to excavate and haul material to processing and storage location, estimate of potential economic benefit to Rogue Basin fishery and Applegate water users.

(iii) Economic consultant to be hired via contract

(B) Project Design and Logistics;

(i) May-September 2016;

(ii) Evaluation of project implementation logistics and development of a 30% design package that details the process for removal of delta deposits, including: ingress/egress to delta deposits, sequencing of delta deposit removal, tracking of excavation depth as it relates to original reservoir

dimensions, equipment needs, adequacy of existing infrastructure, infrastructure improvement and/or construction needs.

(iii) Aquatic restoration or engineering design consultant/firm to be hired via contract

(C) Sediment Survey

(i) August-September 2016

(ii) Survey and testing of coarse sediment deposits located within stream tributary deltas, to determine the presence and concentration of RCRA 8 heavy metals or other harmful substances. Collection of coarse sediment samples would need to occur after the reservoir is drawn down in late summer or early fall.

(iii) A technician or environmental consultant will be hired to collect and test the substrate samples.

(D) NEPA Analysis (National Environmental Policy Act)

(i) Oct. 2016-Sept. 2017

(ii) Environmental analysis to inform and complete the NEPA process. This process would include consultation under the endangered species act and the historical preservation act.

(iii) The US Forest Service will complete the NEPA process.

6. Please provide the following data and information for the proposed project and the project's sources of water supply:

a. The location of the proposed project. Include the basin, county, township, range and section. Attach a **map** that identifies the project's implementation area to this application.

The project is located within the Rogue River Basin, Applegate subbasin, Jackson County, Township 40 South, Range 3 West, Section 31; Township 41 South, Range 3 West, Section 6; Township 41 South, Range 4 West, Sections 1, 2, 10, and 11.

42° 1.487'N, 123° 8.942'W

b. The name(s) and river mile(s) of the source water and what they are tributary to, if applicable.

Middle Fork Applegate River, Carberry Creek, Squaw Creek, and French Gulch. All of these streams are tributaries to the existing Applegate Reservoir, and ultimately the Applegate River.

c. Whether the project will be off-channel or on-channel (for above-ground storage only).

Project would be on-channel.

d. Water availability to meet project storage. For above-ground storage the Department typically evaluates availability using a 50 percent exceedance water availability analysis.

The project would partially restore reservoir capacity at Applegate Lake. Any and all impounded water is already allocated to and would fit within existing reservoir storage authorization.

e. Proposed purposes and/or uses of conserved or stored water.

The restored capacity volume would be used for flood control storage, with potential secondary benefits to instream flows and the downstream fishery from increased summer flow within the Applegate River.

- f. Environmental flow needs and water quality requirements of supply source water bodies.

The project would not alter or impact any existing water rights or the congressionally authorized storage allocation in the reservoir at Applegate Lake. The intent of the project is to partially restore reservoir capacity at the Applegate Lake; thereby improving the storage of water at the reservoir for its intended use and subsequent benefits to downstream areas.

7. What local, state or federal project permitting requirements/issues/approvals do you anticipate in order for the feasibility study to be conducted? If approvals are required, indicate whether you have obtained them. If you have not obtained the necessary permits/governmental approval, describe the steps you have taken to obtain them. If no permits are needed, please provide explanation.

There are no known local, state, or federal permits that would need to be obtained to proceed with the feasibility study components, based on the presumption that none of the feasibility study tasks require ground disturbance with heavy equipment. NEPA analysis from the USFS is not required to complete any of the feasibility study components. Survey methodology and needs would be coordinated at the local level with the USFS and Applegate Partnership & Watershed Council. If the project proceeds to implementation, project level NEPA, ESA consultation, NHPA consultation, and permitting by US Army Corps, and State DSL would be required.

8. Describe the level of involvement, interest and/or commitment of local entities associated with the feasibility study. Describe how the feasibility study and/or proposed project will benefit/impact these entities. Attach letters of support if available.

The feasibility study is supported by multiple partner organizations and agencies within the Rogue Basin, including: Applegate Partnership & Watershed Council, Rogue Basin Partnership, Rogue River-Siskiyou National Forest, US Army Corps of Engineers, and Jackson County Soil & Water Conservation District. We have communicated with the Jackson County Watermaster and the Regional Watermaster and have been advised that although they can not provide us with a letter of support they will be available to assist when needed and are in support of the project.

9. Identify when matching funds will be secured, from whom, and the dates of matching funds availability.

Match funding for this feasibility study would primarily be obtained through in-kind contributions from the USFS (NEPA and consultation expenses), and the APWC (public outreach and project coordination). These funds would be secured starting in Fall 2016.

10. Provide a description of the relevant professional qualifications and/or experience of the person(s) that will play key roles in performing the feasibility study. If the personnel have not been decided upon, include a description of the professional qualifications and/or experience of the person(s) you anticipate will play key roles in performing the feasibility study.

Janelle Dunlevy, Applegate Partnership & Watershed Council (APWC) Coordinator: Administration of feasibility grant funded contracts and coordination of project with USFS, USACE, BOR. Janelle has worked as the APWC Coordinator since 2010, her background in fisheries and wildlife science, collaborative work in the Rogue Basin and experience as managing multiple restoration project grants provides the project with leadership and direction.

Jakob Shockey, APWC Project Manager: Jakob will provide project management and coordination of on the ground tasks and reporting for the project. He is currently managing and developing multiple riparian restoration and in-stream restoration project in the Applegate for the APWC.

Steve Brazier, US Forest Service (USFS) Fisheries Biologist: Steve will provide oversight, consultation and be the liaison with the USFS regarding this project.

Economic Analysis Contractor: Southern Oregon University Market Research Institute (SOU MRI), a part of the Oregon Small Business Development Center will likely prepare the economic analysis.

- The principal researcher on this project will be Torrey Byles, MS. Torrey has a masters degree in ecological economics from SOU (2015), a bachelors degree in economics from UCSD (1979), IMPLAN analyst certificate, and an operations research certificate from Stanford University (1998). Torrey has over 25 years as an industry analyst and economic development professional, first in Silicon Valley and the technology sector, and for the past 13 years in regional economic development in Sonoma County, CA and Southern Oregon. He has been trained and certified in the IMPLAN econometric software and has recently completed IMPLAN studies in the Southern Oregon area.*
- Assisting Torrey will be Eunice Gois, analyst at SOU MRI. Eunice will receive her MBA from SOU in June 2016. She has a bachelors degree in accounting and work experience in international finance with PriceWaterhouseCoopers.*
- Jack Vitacco is the head of SOU MRI and will provide guidance.*
- SOU professors John Gutrich, Ric Holt and others in environmental studies and economics may be brought in for advisory capacity on our work.*

SEDIMENT ANALYSIS CONTRACTOR: The contractor hired for sediment analysis will be familiar with assessment and characterization of sediment and water in riparian areas, preferably with a strong working knowledge of mining-related issues. The contractor will be responsible for preparation of a Sampling Analysis Plan and a Work Plan that will be approved by the team prior to performing any field activities. The contractor will provide equipment able to collect sediment samples to the initial depths of construction in the large-sized gravels and cobbles identified. The contractor will be able to perform the tasks required to standard industry and environmental protocol and demonstrate an understanding of comparable concentration standards, such as the USACE Sediment Evaluation framework or the ODEQ Clean Fill standards.

ENGINEER, 30% DESIGN: The contractor hired as the project engineer will provide the project with technical designs that incorporate the needs of the project with the needs of the USFS and USACE management protocols. The contractor will be able to perform the tasks required to industry and environmental protocol and standards.

(The APWC has received a bid from Gravity Consulting LLC for the Sediment Analysis and

Engineering, we have not made a final decision to contract with this company at this time.

http://gravityenv.com/)

NEPA Contractor: The USFS will conduct the Environmental Analysis for this project in-house. The costs associated with this evaluation will be match for this project.

11. If the project concept is ultimately deemed feasible, describe how the project will be implemented. Response should include a tentative funding plan for project implementation (e.g. other state or federally sponsored grant or loan programs) and the project proponent's track record in implementing similar projects.

The implementation process will be highly dependent on the result of the economic analysis. We will ask for additional implementation dollars from OWRD to complete the remaining tasks (design completion, project management, etc.) but we hope that the local industry will help with the funding through the purchase of the material. We will request more than one option be evaluated during the feasibility project that include the possibility for direct sales of the material to the public and reuse of the material for restoration projects which include instream gravel augmentation below the Applegate Dam.

The APWC or RBP have not endeavored on a project of this type, but we have collaboratively worked on restoration projects that directly impact our local natural resources for more than 20 years. The APWC's Aquatic & Riparian Committee is comprised of local constituents that includes landowners, business owners, and agency professionals with backgrounds in fisheries, wildlife and hydrology. We meet monthly to discuss local Applegate projects and we have developed and implemented projects collaboratively. This project, while on a larger scale, is not as technically intricate as some of our past projects and through our collaborative efforts we will be able to successfully address the social issues that arise from the project.

Section B. Unique Criteria

Instructions: Address the set of items below that applies to the type of feasibility study that this grant will fund.

Water Conservation or **Reuse**

1. Water Conservation or Reuse projects that are identified by the Department in a statewide water assessment and inventory receive a preference in the scoring process. Contact the Department's Grant Specialist to include your project on the inventory.
2. Explain how the associated project will either: (a) mitigate the need to develop new water supplies and/or (b) use water more efficiently. Reference documentation and/or examples of the success of similar or comparable water conservation/reuse projects that would be available upon request.
3. Provide a description of: (a) Local, state and/or federal permitting requirements and issues posed by the **implementation** of the project associated with the feasibility study and (b) property ownership status within the project implementation area. If permitting or other approvals are not needed please indicate and provide an explanation.

Above-Ground Storage

Please answer the following three questions **BEFORE** proceeding:

- Will the project divert more than 500 acre-feet of surface water annually? Yes No
- Will the project impound surface water on a perennial stream? Yes No
- Will the project divert water from a stream that supports sensitive, threatened or endangered species? Yes No

If you answered "Yes" to any of these questions, by signature on this application, you are committing to include the following required elements in your feasibility study.

Describe how you intend to address the required elements in your feasibility study:

- 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.
The project will not impound any surface water. Tributary streams to Applegate Reservoir will continue to flow into the reservoir basin. Coarse sediment deposits within tributary deltas would be excavated and removed from the reservoir basin.
- b) 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.
N/A
- c) Analyses of environmental harm or impacts from the proposed storage project.
The project would not alter the existing operation schedule for the Applegate Dam and Reservoir, and would provide benefits to the local community, economy, and downstream aquatic habitat. If the project is carried forward to implementation following the feasibility study, a full environmental analysis (NEPA) would be carried out by the USFS, including consultation under ESA and section 106 of NHPA. Further, all applicable federal, state, and local permits would be obtained prior to implementation.

- d) Evaluation of the need for and feasibility of using stored water to augment instream flows to conserve, maintain and enhance aquatic life, fish life and any other ecological values.

There is potential for increased storage capacity within Applegate Reservoir resulting from this project. This increased storage volume could be used to help extend the viability of the reservoir, augment instream flows within the Applegate River during annual reservoir drawdown, and would provide additional water to downstream aquatic habitat during the low flow periods of the year in late summer and early fall.

Is the proposed storage project for municipal use?

Yes No

If “Yes,” then please describe how you intend to address the following required element in your feasibility study:

- 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.

Proceed in addressing the following items:

1. Describe to what extent the project associated with the feasibility study includes provisions for using stored water to augment instream flows to conserve, maintain and enhance aquatic life, fish life or other ecological values. Projects that include the above provisions receive preference in the scoring process.

This project would partially restore the capacity of Applegate Reservoir, through the removal of coarse sediment deposits that have formed within the reservoir basin since its construction in 1980. The US Army Corps of Engineers completed a survey and sediment analysis in 1997 and 1998 to determine the extent and significance of sedimentation into the reservoir basin during a January 1997 flood event. At that time it was estimated that the reservoir capacity had been reduced by 5.9% of the total volume since the reservoir went into operation, though this figure is partially attributed to errors in the 1980 reservoir capacity estimate (US Army Corps 1998). Subsequently, the Rogue River-Siskiyou National Forest led an effort in 2010 to further analyze and estimate the extent and volume of coarse sediment accumulation in the reservoir since its inception. This study estimated that approximately 5,600 acre-feet of coarse sediment accumulation had occurred within the reservoir since 1980. Further, approximately 3,000 acre-feet of this accumulation occurs within delta deposits associated with the tributary streams (Middle Fork Applegate River, Carberry Creek, Squaw Creek, and French Gulch) to the reservoir (Stillwater Sciences 2010).

The 1997 study by the US Army Corps estimated that the lost volume within the reservoir represented approximately 25 cubic feet per second (cfs) over a 90 day period of summer releases during annual reservoir drawdown. Using this flow estimate as a starting point, a reasonable link can be made between removal of coarse sediment deposits within reservoir basin and increased summer instream flows downstream within the Applegate River. These increases in summer flows would be beneficial to all coldwater fish species within the river, particularly rearing anadromous salmonids including federally listed SONCC Coho salmon and steelhead. In recent years, summertime instream flows within tributary streams in the Applegate subbasin have been extremely low, resulting in poor rearing conditions for anadromous fish. Increasing flow within the mainstem Applegate River would result in improved rearing conditions for anadromous juveniles that move out of tributary streams in search of suitable habitat.

2. Provide a review of: (a) Local, state and/or federal permitting requirements and issues posed by the **implementation** of the project associated with the feasibility study and (b) property ownership status within the project implementation area.

a) There are several permitting requirements and issues that would need to be addressed prior to, during, and after implementation of the project. First, the environmental impacts of the project would need to be analyzed under NEPA, and ESA and NHPA consultation would need to be completed. Additionally, the project would require a 404 permit and 401 Water Quality Certification from the US Army Corps, and a removal/fill permit

from the Oregon DSL. Lastly, upon completion of the sediment removal a hydro survey of the reservoir would need to be completed to update the capacity tables for the operation of the reservoir.

b) All lands within the project implementation area are publically owned and managed by the US Forest Service, Rogue River-Siskiyou National Forest, Siskiyou Mountains Ranger District.

Storage Other Than Above-Ground [Including Aquifer Storage and Recovery (ASR)]

Please answer the following three questions **BEFORE** proceeding:

Will the project divert more than 500 acre-feet of surface water annually? Yes No

Will the project impound surface water on a perennial stream? Yes No

Will the project divert water from a stream that supports sensitive, threatened or endangered species? Yes No

If you answered "Yes" to any of these questions, by signature on this application, you are committing to include the following required elements in your feasibility study.

Describe how you intend to address the required elements in your feasibility study:

- 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 water 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 instream flows to conserve, maintain and enhance aquatic life, fish life and any other ecological values.

Is the proposed storage project for municipal use?

Yes No

If "Yes," then please describe how you intend to address the following required element in your feasibility study:

- 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.

Proceed in addressing the following items:

1. Underground storage projects that are identified by the Department in a statewide water assessment and inventory receive a preference in the scoring process. Contact the Department's Grant Specialist to include your project on the inventory.

2. Provide a review of: (a) Local, state and/or federal permitting requirements and issues posed by the **implementation** of the project associated with the feasibility study and (b) property ownership status within the project implementation area.

V. Match Funding Information

Applicants must demonstrate a minimum dollar-for-dollar match based on the total funding request. The match may include a) secured funding commitment from other sources, b) pending funding commitment from other sources, and/or c) the value of in-kind labor, equipment rental, and materials essential to the feasibility study. For secured funding, you must attach a letter of support from the match funding source that specifically mentions the dollar amount shown in the “Amount/Dollar Value” column. For pending resources, documentation showing a request for the matching funds must accompany the application.

In the “type” column below matching funds may include:	In the “status” column below matching funds may have the following status:
<ul style="list-style-type: none"> • Cash - Cash is direct expenditures made in support of the feasibility study by the applicant or partner*. 	<ul style="list-style-type: none"> • Secured - Secured funding commitments from other sources.
<ul style="list-style-type: none"> • In-Kind - The value of in-kind labor, equipment rental and materials essential to the feasibility study provided by the applicant or partner. 	<ul style="list-style-type: none"> • Pending - Pending commitments of funding from other sources. In such instances, Department funding will not be released prior to securing a commitment of the funds from other sources. Pending commitments of the funding must be secured within 12 months from the date of the award.

*“Partner” means a non-governmental or governmental person or entity that has committed funding, expertise, materials, labor, or other assistance to a proposed project planning study. OAR 690-600-0010.

Match Funding Source (if in-kind, briefly describe the nature of the contribution)	Type (✓ One)	Status (✓ One)	Amount/ Dollar Value	Date Match Funds Available (Month/Year)
<i>US Forest Service, NEPA analysis, ESA consultation, NHPA consultation</i>	<input type="checkbox"/> cash <input checked="" type="checkbox"/> in-kind	<input type="checkbox"/> secured <input checked="" type="checkbox"/> pending	\$85,000	<i>October 16</i>
<i>US Forest Service, Technical Assistance, Fisheries Biologist, Other Staff</i>	<input type="checkbox"/> cash <input checked="" type="checkbox"/> in-kind	<input checked="" type="checkbox"/> secured <input type="checkbox"/> pending	\$1,215	<i>January 16</i>
<i>APWC Board Volunteers & Staff</i>	<input type="checkbox"/> cash <input checked="" type="checkbox"/> in-kind	<input checked="" type="checkbox"/> secured <input type="checkbox"/> pending	\$3,225	<i>January 16</i>
<i>US Forest Service, Technical Assistance, Fisheries Biologist, Other Staff</i>	<input type="checkbox"/> cash <input checked="" type="checkbox"/> in-kind	<input checked="" type="checkbox"/> secured <input type="checkbox"/> pending	\$2,250	<i>May 16</i>
	<input type="checkbox"/> cash <input type="checkbox"/> in-kind	<input type="checkbox"/> secured <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in-kind	<input type="checkbox"/> secured <input type="checkbox"/> pending		
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	<input type="checkbox"/> cash <input type="checkbox"/> in-kind	<input type="checkbox"/> secured <input type="checkbox"/> pending		

VI. Feasibility Study Schedule

Estimated Study Duration: January 1, 2016 to December 31, 2017

Place an “X” in the appropriate column to indicate when each Key Task of the project will take place.

Feasibility Study Key Tasks	2016			2017				2018 & Beyond
	2 nd Qtr	3 rd Qtr	4 th Qtr	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	
<i>Economic Analysis</i>	X	X						
<i>Project Design and Logistics</i>	X	X						
<i>Sediment Survey</i>	X	X						
<i>Outreach & Collaboration</i>	X	X	X	X	X	X		
<i>NEPA</i>			X	X	X	X		

- **Please Note:** Successful grantees must include all invoices and identify which key tasks are associated with each invoice when requesting financial reimbursement.

APPLICATION CHECKLIST

Instructions: Use this checklist to ensure that your application is complete. An incomplete application will jeopardize your application's review. **This form does not need to be included in your application packet.**

General

If submitting electronically, the preferred format is either a Microsoft word or Adobe pdf

- Only one application is included with the packet (other applications must be sent separately).

Paper submissions only

- The application and attachments are on 8 ½" x 11" paper.
- The application and attachments are single-sided.
- The application and attachments are not stapled or bound.

Section I – Grant Information

- All questions in this section have been answered.
- The Grant Dollars Requested and the Total Project Cost mirror the totals shown in Section VII.

Section II – Applicant Information

- All contact information for the applicant(s) and fiscal officer is complete and current.
- The certification is signed by an authorized signer.

Section III – Feasibility Study Summary

- A brief summary, of no more than 150 words, is complete.

Section IV – Grant Specifics

- All questions in Section A have been answered.
- If the type of feasibility study is water conservation, reuse or storage other than above-ground, you have contacted the Department and requested project be added to the Oregon Water Resources Department's statewide water assessment and inventory.
- All applicable questions for the type of grant requested have been answered.

Section V – Match Funding Information

- Applicant has identified that at least 50 percent match has been sought, secured or expended.
- Letters of support are included for "secured" match funding sources.
- Documentation is included for "expended" match funds.
- Documentation is included for "pending" match funds.

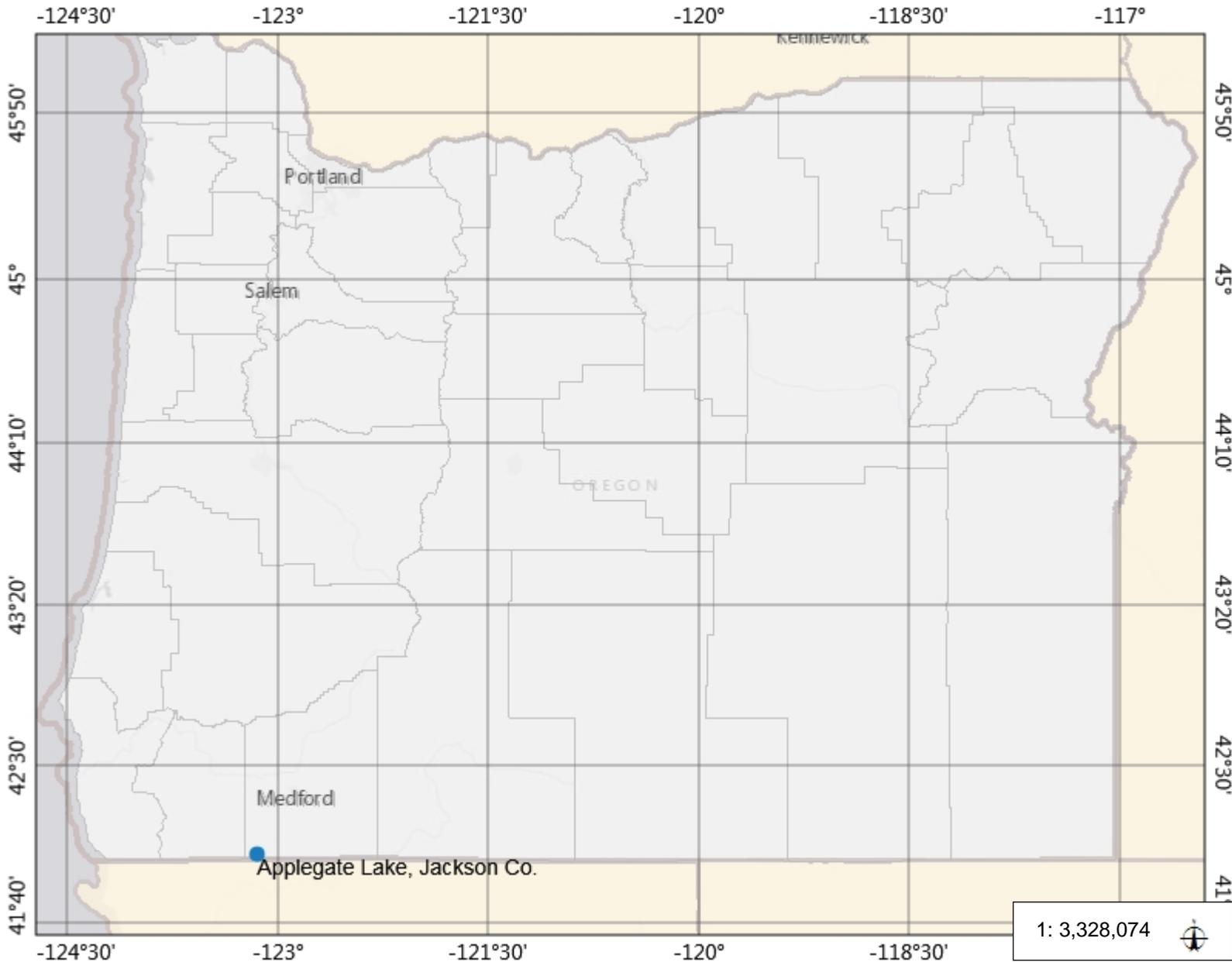
Section VI – Feasibility Study Schedule

- Estimated project duration dates have been supplied.
- All Key Tasks of the project are listed.

Section VII – Feasibility Study Budget

- Section A is complete.
- Administration costs do not exceed 10 percent of the requested OWRD Grant Funds.
- If grant amount requested is \$50,000 or greater, Section B has been completed.
- All Key Tasks listed in Section B mirror the Key Tasks listed in Section VI.

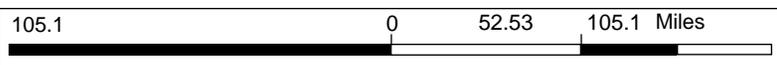
Applegate Reservoir Capacity Restoration Project Location Map



Legend

- County Boundaries (2007)
- States & Provinces
- Other States and Provinces
- Oregon

1: 3,328,074

WGS_1984_Web_Mercator_Auxiliary_Sphere
© Oregon Explorer (<http://oregonexplorer.info>)

This map is a user generated static output from the Oregon Explorer Map Viewer (http://tools.oregonexplorer.info/oe_map_viewer/Viewer.html?Viewer=OE) and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

Notes

Applegate Watershed, Jackson County

Applegate Reservoir Capacity Restoration Project

Legend

- 2010 USFS Sediment Samples
- ▭ Applegate Res. Capacity Proj. Delta Areas
- 📌 Applegate Res. Capacity Proj. Delta Areas
- ◆ Photos
- 🌊 Streams



PHOTOS



Photo 1 taken near 2010 Sampling Point 11
View is Northeast (2015-Fall, S. Brazier, USFS)



Photo 2 taken near 2010 Sampling Point 12
View is North (2015-Fall, S. Brazier, USFS)



Photo 3 taken near 2010 Sampling Point 7
View is Northeast (2015-Fall, S. Brazier, USFS)





Photo 2 taken near 2010 Sampling Point 5
View is Northeast (2014-Fall, J. Shockey)



Photo 3 taken near 2010 Sampling Point 5
View is North (2014-Fall, J. Shockey)



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, PORTLAND DISTRICT
ROGUE RIVER BASIN PROJECT
100 COLE M RIVERS DRIVE
TRAIL OR 97541-9608

22 January 2016

Mr. John Unger
Oregon Water Resources Department

Dear Mr. Unger:

I am writing in support of the Applegate Reservoir Capacity Feasibility Study. Regaining water storage capacity that was lost due to sedimentation directly supports the congressionally authorized purposes of flood reduction, fisheries enhancement, and irrigation.

I appreciate your consideration of this project and can be reached at 541-878-1077 or at jim.a.buck@usace.army.mil

Sincerely

A handwritten signature in blue ink that reads "Jim Buck".

Jim Buck
Operations Project Manager



File Code: 2610
Date: January 28, 2016

Jon Unger
Grant Program Coordinator
Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301

Dear Jon:

The Rogue River-Siskiyou National Forest, Siskiyou Mountains Ranger District is fully supportive of the Applegate Reservoir Capacity Restoration Project submitted by the Rogue Basin Partnership and Applegate Partnership and Watershed Council, and encourages funding of the feasibility study through the Oregon Waters Resources Development Program. The individual tasks included within the grant proposal would help to inform the subsequent Forest Service NEPA process, should the feasibility study indicate that project implementation would be viable economically, socially, and environmentally.

Previous studies have indicated that a substantial amount of coarse sediment has deposited within the reservoir basin over its 35 year life. The potential opportunity to remove a portion of these deposits and partially restore storage capacity within the reservoir is a worthy goal. Restoration of storage capacity would completely support the authorized purposes of the reservoir and could provide important benefits to downstream fisheries and aquatic habitats and help to mitigate the effects of climate change, primarily through increasing the flow rate and periodicity of instream flow downstream of the dam. Additionally, this project has the potential to benefit the local community economically, by using local contractors and accessing deposited mineral material.

The Rogue River-Siskiyou National Forest looks forward to continuing our partnership on this project and future aquatic restoration efforts within the Applegate sub-basin.

Sincerely,

For

DONNA M. MICKLEY
Siskiyou Mountains Ranger District





Oregon

Kate Brown, Governor

Department of Fish and Wildlife

Rogue Watershed District Office

1495 East Gregory Road

Central Point, OR 97502

(541) 826-8774

Fax: (541) 826-8776

odfw.com



January 22, 2016

Mr. Jon Unger, Program Coordinator
Water Conservation, Reuse and Storage Grant Program
Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301

RE: Feasibility Study for Applegate Reservoir Capacity Restoration

Dear Jon:

I am writing in support of funding for the Applegate Reservoir Capacity Restoration project submitted by the Rogue Basin Partnership and the Applegate Partnership and Watershed Council. The findings from the project components in this feasibility study provide much needed information to support the NEPA analysis, as well as the public outreach process that will be critical to the success of the project.

Unique to dams owned and operated by the Corps of Engineers in the Rogue watershed, fishery enhancement is a primary purpose and required function of Applegate Dam and Applegate Reservoir. This project will ultimately restore storage capacity in the reservoir. By restoring a sizable amount of water storage the project is an ideal fit for funding under your program.

As stated in the application, the Corps has predicted a measurable increase in releases in summer and early fall as a result of this type of project. The Oregon Department of Fish and Wildlife works closely with the Oregon Water Resources Department to make recommendations and help the Corps of Engineers meet its fishery enhancement objective. Summer releases at Applegate are targeted at increasing summer rearing area for juvenile coho salmon (listed as threatened under the federal ESA), juvenile steelhead and cutthroat trout. In reality, all native fish species found below the dam benefit from the release.

Sincerely,

Dan Van Dyke
Rogue District Fish Biologist





United States Department of the Interior



FISH AND WILDLIFE SERVICE

Roseburg Field Office

2900 NW Stewart Parkway

Roseburg, Oregon 97471

Phone: (541) 957-3474 FAX: (541) 957-3475

Filename: Letter of Support for the Applegate
Reservoir Capacity Restoration Project

January 29, 2016

TS#: 16-239

Jon Unger
Grant Program Coordinator
Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301

Subject: Letter of Support for the Applegate Reservoir Capacity Restoration Project submitted by the Rogue Basin Partnership and Applegate Partnership and Watershed Council.

Dear Mr. Unger:

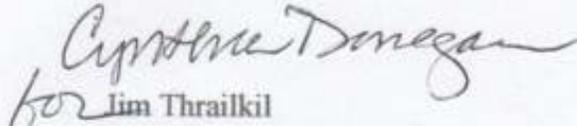
This letter documents the U.S. Fish and Wildlife Service's (Service) support for the Applegate Reservoir Capacity Restoration Project submitted by the Rogue Basin Partnership and Applegate Partnership and Watershed Council, and encourages funding the feasibility study through the Oregon Waters Resources Development Program.

Previous studies indicate a substantial amount of coarse sediment has deposited within the reservoir basin over its 35 year life span. The potential opportunity to remove a portion of these deposits and partially restore storage capacity supports the authorized purposes of the reservoir and could provide important benefits to downstream fisheries and aquatic habitats that support federal trust species. In addition, implementation of activities that reduce sediment loads has the potential to mitigate the effects of climate change, primarily through increasing flow rates and periodicity of instream flow downstream of the dam.

The Service appreciates the opportunity to partner with local conservation groups, watershed councils and other federal agencies in the promotion of projects designed to maintain and improve water quality and availability to aquatic species and systems.

Please direct questions regarding this letter to Cindy Donegan of the Service's Roseburg Field Office at 541 618-2374.

Sincerely,


for Jim Thrailkil
Field Supervisor

January 28, 2016

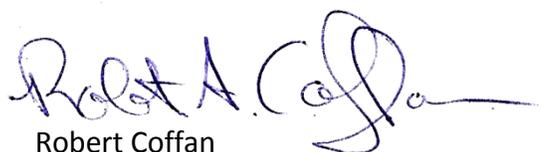
Dear OWRD Feasibility Grant Review Team,
Attn: Jon Unger

The Rogue Basin Partnership (RBP) is pleased to provide this letter in support of the Applegate Partnership and Watershed Council's (APWC) Feasibility Study application to the Oregon Water Resources Department (OWRD) to determine the potential of partially restoring the storage capacity of the Applegate Reservoir by removing coarse sediment deposits from the reservoir basin. This feasibility study would ultimately result in the Applegate Reservoir regaining much-needed storage capacity that has been lost historically due to sedimentation. Restored storage capacity would result in increased summer and late fall releases, which would directly benefit all native fish species that are found below the dam.

RBP was created to serve as a convening entity for natural resource management in the Rogue Basin, and to facilitate collective success through coordinated implementation of conservation and restoration actions. Our Rogue Restoration Action Plan articulates priority actions to effectively manage our natural resources for the benefit of local communities, the economy and native species. The Applegate is a priority area identified in our Action Plan, and this project to potentially increase flow below the Applegate Reservoir complements the recommendations in the Action Plan and would ultimately help the entire basin.

Thank you for your consideration of this proposal. Please contact me if you have any questions about our support of this project.

Sincerely,



Robert Coffan
RBP Board Chair



Jackson Soil & Water Conservation District
89 Alder Street, Central Point, Oregon 97502
Telephone: (541) 664-1070 FAX: (541) 727-7471
web-site: www.jswcd.org

January 28, 2016

Oregon Water Resources Department
Attention: Grant Specialist
725 Summer Street, NE, Suite A
Salem, OR 97301-1290

Dear Water Conservation, Reuse and Storage Feasibility Study Grant Program,

The Jackson Soil and Water Conservation District (The District) strongly supports the Pilot Study for the Applegate Reservoir Capacity Restoration Project. Oregon Revised Statutes 568.225 authorizes Soil and Water Conservation District's to participate in effectuating policy that, among other things, control floods, conserve and develop water resources and water quality, and prevent the impairment of dams and reservoirs. Issue 1, Resolution 3.c. of the Districts "Vision for the District" directs the District to develop and improve water storage facilities for the capture, storage, and beneficial release of water. This feasibility study is very complementary to our Mission & Vision Statement and our Long Range Plan.

Sincerely,

Randy White, District Manager



APPLEGATE PARTNERSHIP & WATERSHED COUNCIL

P.O. Box 899 | Jacksonville, OR 97530

(541) 899-9982 | coordinator@apwc.info

www.applegatepartnershipwpc.org

www.apwc.info

a 501 (c)(3) Nonprofit organization

January 28, 2016

Oregon Water Resources Department
Attention: Grant Specialist
725 Summer Street, NE, Suite A
Salem, OR 97301-1290

Dear Water Conservation, Reuse and Storage Feasibility Study Grant Program,

The Applegate Partnership and Watershed Council (APWC) is very excited to submit a grant application for the Applegate Reservoir Capacity Restoration Project. We have considered this a viable project for many years, but have not found the right timing to begin planning the project.

The APWC is providing match funding for the feasibility project totaling \$3225. This match includes staff time and board member time for pre-planning and outreach throughout the feasibility study.

Line Item	# of Units	Unit Cost	In-Kind Match
Staff Salary/Benefits (Pre-Planning)	25	#35	\$875
Staff Salary/Benefits (Outreach)	50	\$35	\$1750
APWC Board Member Time (Pre-Planning)	30	\$20	\$600

Sincerely,



Jack Shipley, Chairman
Applegate Partnership & Watershed Council

Janelle Dunlevy

From: Brazier, Steven -FS [sbrazier@fs.fed.us]
Sent: Friday, January 29, 2016 9:54 AM
To: Janelle Dunlevy (coordinator@apwc.info)
Cc: Mickley, Donna -FS
Subject: Applegate Reservoir Capacity Restoration Project - Forest Service Match Funding

Hi Janelle,

The Rogue River-Siskiyou National Forest has secured match funding for the Applegate Reservoir Capacity Project feasibility grant to cover resource specialist time during the federal Fiscal Year 2016 (ending September 30, 2016). The total dollar amount of this match funding is \$3,465. The funding covers personnel time for technical assistance and consultation during all phases of the feasibility study.

Additionally, The Rogue River-Siskiyou National Forest is a committed partner to this project and is planning to initiate and complete in federal Fiscal Year 2017 all NEPA, ESA consultation, and NHPA consultation work to support project implementation, should the feasibility study results deem the capacity restoration project to be viable. The estimated cost of this NEPA and consultation workload is \$85,000, and would cover a Forest Service interdisciplinary team to complete all project level environmental analysis. However, due to the congressional timeline and process for establishing a federal budget at the national level, these Fiscal Year 2017 funds are not currently secured or available for obligation.



Steve Brazier
Fish Biologist

Forest Service
Rogue River-Siskiyou National Forest
Siskiyou Mountains and High Cascades Ranger Districts

Grants Pass: 541-471-6766
Star Ranger Station: 541-899-3852
sbrazier@fs.fed.us

2164 NE Spalding Ave
Grants Pass, OR 97526
www.fs.fed.us



Caring for the land and serving people