



KITSAP COUNTY

Project Title: Wastewater Reuse and Water Supply Project
Applicant: Kitsap County, Washington
Address: 614 Division Street, Port Orchard Washington
98366

Contact Information:

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Funding Application for:

US Bureau of Reclamation

**Funding Opportunity Announcement No. BOR-DO-17-
F003**

WaterSMART:

**Development of Feasibility Studies under the Title XVI
Water Reclamation and Reuse Program for Fiscal Year
2017**

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Unique Entity Identifier and System for Award Management (SAM)

- **DUNS: 071855191**
- **CAGE: 1N3X4**

Technical Proposal and Evaluation Criteria

The technical proposal (20 pages maximum) includes:

- (1) Executive summary
- (2) Study description
- (3) Evaluation criteria

1. Executive Summary

Date: January 5, 2017

Applicant: Kitsap County, Washington

Address: 614 Division Street, Port Orchard, WA 98366

The feasibility study is for a comprehensive water reuse project at the Kitsap County (County) Kingston Wastewater Treatment Plant (WTP). Funds will be used to accomplish the Study Description tasks described in Section 4.B of the Reclamation Feasibility Study D&S as summarized below. The feasibility study contributes to accomplishing the goals of this Funding Opportunity Announcement (FOA) by allowing the County to achieve a sustainable water strategy to meet its water needs, supplement water supplies and improve efficiency, providing flexibility during water short periods, and diversifying the water supply. Specifically, reclaimed water will be used during the summer to provide irrigation for the Suquamish Tribes White Horse Golf Club and will provide infiltration during the wet months to enhance surface stream flow in Grovers Creek (an impaired water body). In addition, the project will provide enhanced flushing of Miller Bay, conservation of potable water in the aquifer, and reduced discharge of secondary effluent pollutants in Appletree Cove. This reclamation project will provide the growing community with a new source of clean water while promoting water and energy efficiency and environmental stewardship. The study is estimated to start in July, 2017, be completed within 12 to 18 months, and will be finalized by December 31, 2018.

2. Study Description

The study description will address the requirements of a Title XVI feasibility study described in Section 4.B of the Reclamation Feasibility Study D&S. To ensure that a Title XVI feasibility study report complies with Pub. L. 102-575, as amended, other Federal laws, and to otherwise allow Reclamation to assess the feasibility of the proposed Title XVI project, at a minimum the following task items shall be included. Detailed data required for each task will be provided in accordance with the Title XVI Feasibility Study D&S. Below is a summary description of the Section 4B. Title XVI Feasibility Study Report Contents.

(1) Introductory Information.

(2) Statement of Problems and Needs. Describe key water resource management problems and needs for which water reclamation and reuse may provide a solution, including the following information. All projections shall be reasonable and for a minimum of 20 years.

(3) Water Reclamation and Reuse Opportunities. Address the opportunities for water reclamation and reuse in the study area, and identify the sources of water that could be reclaimed

(4) Description of Alternatives.

(5) Economic Analysis. A Title XVI feasibility study report must include an economic analysis of the proposed Title XVI project relative to other water supply alternatives that

could be implemented by the non-Federal project sponsor. This assessment needs to identify the degree to which the water recycling and reuse alternative is cost-effective, and the economic benefits that are to be realized after implementation.

(6) Selection of the Proposed Title XVI Project. Provide a justification of why the proposed Title XVI project is the selected alternative in terms of meeting objectives, demands, needs, cost effectiveness, and other criteria important to the decision.

(7) Environmental Consideration and Potential Effects. The review of a Title XVI feasibility study report does not require National Environmental Policy Act (NEPA) compliance. The Department of the Interior categorical exclusion 1.11 “Activities which are educational, informational, advisory, or consultative to other agencies, public and private entities, visitors, individuals or the general public” applies to Reclamation’s consultative review, and preparation of the Title XVI feasibility study reports.

(8) Legal and Institutional Requirements. The Title XVI feasibility study shall identify any legal or institutional requirements, or barriers to implementing the proposed Title XVI project.

(9) Financial Capability of Sponsor. At the Title XVI feasibility study stage, Reclamation must request enough information to determine that the non-Federal project sponsor is likely to demonstrate financial capability if the project moves to construction.

(10) Research Needs. At a minimum, the report must include a statement on whether the proposed water reclamation and reuse project includes basic research needs, and the extent that the proposed Title XVI project will use proven technologies and conventional system components.

3. Evaluation Criteria

Evaluation Criterion 1—Statement of Problems and Needs (10 points)

Describe in detail the water resource management problems and needs in the area and explain how water reclamation and reuse may address those problems and needs. Additional consideration will be given to proposals that explain how the problems and needs in the area may be impacted by climate change, and/or if the feasibility study will include climate change information in the supply and demand projections used.

Water Resource Needs and Problem:

The project is located at the Kingston Wastewater Treatment Plant (WWTP), on Washington States Kitsap Peninsula, which is essentially an "island" surrounded by salt water with little freshwater sources other than direct rainfall to recharge its aquifers and surface waters. More than 80% of potable water comes from groundwater and usage is increasing with development. With increased aquifer withdrawals, there is also a concern of salt water intrusion.

The Suquamish Tribes White Horse Golf Club, located to the south of the Kingston WWTP, requires approximately 28 million gallons (MG) of potable water for irrigation annually.

In addition, the Kingston WWTP discharges an average of 42 MG per year of treated wastewater through an outfall into Appletree Cove, resulting in higher levels of pollution into the waterway (3,000 lbs. of nitrogen and over 900 lbs. of biochemical oxygen demand (BOD)). The Suquamish Tribe operates a Chinook and chum hatchery at the mouth of

Grovers Creek, which runs north and south, to the west of the Kingston WWTP and the golf course. Other species - steelhead, coho, and cutthroat migrate upstream. Grover's Creek is classified as an Extraordinary Primary Contact stream and is listed as an impaired water body due to bacteria and dissolved oxygen. Summertime stream-flows do not meet the state regulatory requirement of minimum flow of 2 cubic feet per second (cfs) at the Creeks mouth. Miller Bay, at the mouth of Grovers Creek, is currently closed for shellfish harvest because of pollution.

Climate Change Impacts:

Anticipated climate change impacts stress the community water supply and the project, that the feasibility study will develop, will mitigate those problems. Qualitatively, climate change will exacerbate problems of groundwater recharge (due to less snowpack and increased runoff due to more intense storm events), and surface-water, including stream temperatures that stress fish populations. Stream flow is also affected as the water balance shifts. Decreased snow pack, coupled with the fact that it gets warmer faster in the spring, means that rather than water slowly saturating the ground and replenishing the groundwater supply, there is a significant amount of runoff. Similarly, streams get a larger flood and then diminished supply, instead of a steadier supply of cool water into the summer. As part of the feasibility study development, climate change will be accounted for qualitatively to address anticipated longer/hotter summers (greater irrigation water use) and more intense winter storms (more runoff from the system). Engineering consultants working on the feasibility study will consult with the Kitsap County PUD, that tracks water use, and provide projections based on climate change impacts.

Reclamation Project Solution:

This project will assist with the future design of a 0.30 million gallon per day (MGD) reclaimed water facility at the Kingston WWTP. The reclaimed water will be used to provide 28 MG for irrigation the White Horse Golf Club during the summer months and will reduce the County's reliance on groundwater resources. In the wet weather months, the reclaimed water will be infiltrated to enhance stream flow, recharge drainage and improve water quality in Grovers Creek to provide environmental restoration. The project will also reduce or eliminate wastewater discharges that affect the health of local water bodies.

In 2014, a Memorandum of Understanding (MOU) was signed between the Suquamish Tribe and Kitsap County Sewer Utility to explore the viability of a project to produce Class A reclaimed water for local beneficial uses including reducing dependence on potable water, and enhancing existing stream flows and wetlands. The Sewer Utility has completed an initial assessment of the project including engineering infrastructure for treatment, conveyance, and storage of reclaimed water; preliminary soils and subsurface transport for recharging the Grover's Creek drainage; water balance modeling to look at reclaimed water usage; and the impact on the shellfish closure zone in Appletree Cove by reducing or eliminating wastewater treatment plant discharges.

The feasibility study will be a further evaluation of the recommended solution in the December 2015 Kingston Recycled Water Project report. The initial project evaluation solution was determined by ongoing discussions with stakeholders that identified the project goals of (1) reducing or eliminating effluent from the outfall, (2) providing irrigation water to the White Horse Golf Club, and (3) infiltrating Class A water to benefit stream flow and fisheries health in Grovers Creek.

The initial assessment reports selected option had the lowest chemical requirements while providing the highest capacity for recycled water production. Three pipeline options were evaluated, for the conveyance of reclaimed water to the storage facility at the Golf Course. The selected option was not necessarily the shortest but paralleled the Puget Sound Energy power line the least. It also follows existing trails. The combination of these two factors will result in simpler construction and future maintenance. Three locations were identified as potential locations for an approx. 0.5 MG storage facility to equalize irrigation flows. The three sites were rated based on the extent of required tree removal, disruption to the existing service roads, topography as it affected views and pumping requirements, and cost of infrastructure needed to access the existing irrigation system. Using these parameters, a site on the west side of the Golf Club was selected. Cost was a decisive factor in identifying a preferred alternative in all evaluations, but impact on existing infrastructure, O&M costs, facility flexibility, and environmental impacts, were weighed as additional issues that contributed to the final alternative selection. However, the assumptions that went into the preferred alternative selection will be revisited and confirmed or modified during the development of the feasibility study. The County will maximize its resources so that the feasibility study and other planning will build on project information already developed and include the following: (1) Feasibility Study to provide data for an Engineering Report and Facility Plan, (2) Survey and base mapping, (3) Sensitive species and conditions identification, (4) Permits, (5) Alternatives evaluation, (6) Conceptual design, (7) Field investigations via soils sampling, shallow infiltration pits, deep borings, monitoring wells, (8) Water quality of discharges and receiving waters Groundwater modeling, (9) Environmental, (10) Economic evaluation and (11) Continued stakeholder outreach.

The County has already begun significant stakeholder outreach to determine overlapping goals of producing and utilizing reclaimed water in Kingston. Through those discussions, the project has the support of Friends of Miller Bay, Puget Sound Partnership, Kitsap Public Utility District, the WA State Depts. of Health and Ecology, the WA State Dept. of Fish and Wildlife and the Puget Sound Restoration Fund. In July 2016, the project was presented to the West Sound Local Integrating Organization (LIO) that prioritizes local actions for investment of the Puget Sound Partnership, and to stakeholders and interested parties at the Suquamish Tribe in August 2016. This project meets the goals of the 2009 Kitsap County "Water As A Resource Policy" and the states Puget Sound Action Agenda Item C6.5 to promote reclaimed water projects to reduce pollutant loading to Puget Sound. This project solution was highlighted and presented by the Suquamish Tribe at the Summit for Water Reuse in September 2016 and was also be presented at Pacific Northwest Clean Water Association (PNCWA) in October 2016.

The proposed facilities can also be expanded to attract additional users of the alternative water supply, creating a new water market and reducing the communities' reliance on a limited natural water supply, while providing a stable future water source to replenish a depleting groundwater supply. Long term water right conflicts will be reduced by having a flexible alternative County-managed water supply.

Evaluation Criterion 2—Water Reclamation and Reuse Opportunities (15 points)

1. Describe how the feasibility study will investigate potential uses for reclaimed water (e.g., environmental restoration, fish and wildlife, groundwater recharge, municipal, domestic, industrial, agricultural, power generation, and recreation).

The main potential use for reclaimed water is to provide approximately 28 MG of reclaimed water, rather than potable water from the aquifer, that is used annually to irrigate the White Horse Golf Club. Reclaimed water will also be used for environmental restoration, recharge, and municipal benefit. Reclaimed water will be used in non-irrigation periods, to infiltrate Class A water to provide local beneficial uses including reducing dependence on potable water, enhancing existing stream flows and wetlands, and reducing the impact on the shellfish closure zone in Appletree Cove by reducing or eliminating wastewater treatment plant discharges. Recreation and other uses will be evaluated based on affordability and opportunity.

2. Describe the potential water market available to use any recycled water that might be produced upon completion of a water reuse project, as well as potential methods to stimulate recycled water demand and/or methods to eliminate obstacles for use of reclaimed water.

The County already has a significant potential reclaimed water market located in the community. The Suquamish Tribes White Horse Golf Club, located to the south of the Kingston WWTP, requires approximately 28 MG of potable water for irrigation that can be provided from recycled water upon completion of the project. The Tribe is the largest identified customer for reclaimed water use in Kingston. The County signed an MOU with the Tribe to evaluate the beneficial uses of reclaimed water for resolving water supply and environmental problems. The Suquamish Tribe supports the construction of the reclaimed water project and presented the initial assessment of the project at the Summit for Water Reuse on September 29, 2016.

To stimulate demand, the County is undertaking planning studies to further the progress on the reclamation project to present to interested parties and comply with the largest potential customers request to do so. The County is presenting the benefits and estimated success of its project at conferences and through local agencies to spread the word to attract other potentially interested parties.

To eliminate obstacles the County is involving customers, regulators and other stakeholders in the project planning efforts (see Evaluation Criteria 1). The County has contracted with an engineering firm to evaluate potential obstacles and alternatives to determine the most viable project solution. This feasibility study will further assist with that effort. As the project moves forward, the County will also enlist customers and local agencies to help contribute to the financing of the up-front project and its on-going costs to eliminate obstacles associated with financing and maintaining the system.

3. Describe the sources of water that will be investigated for potential reclamation, including impaired surface and ground waters.

The Kingston WWTP treats an average of 42 MG of wastewater per year. The project will construct a 0.30 MGD reclaimed water facility at the Kingston WWTP that will create class A reclaimed water, from a portion of the WTP treated wastewater effluent, to provide a source of reclaimed water for irrigation of the White Horse Golf Club in the

summer months. In the wet season, reclaimed water sources will be infiltrated into the groundwater to enhance impaired surface water stream flow and water quality in Grovers Creek. The project will also include approximately 0.5 MG of storage to equalize irrigation flows.

Evaluation Criterion 3—Description of Potential Alternatives (15 points)

1. Describe the objectives that all alternatives will be designed to meet. What other water supply alternatives will be investigated as part of the feasibility study?

The project that will be the focus of the feasibility study is the recommended solution in the December 2015 Kingston Recycled Water Project report. The solution was determined by ongoing discussions with stakeholders that identified the project goals of (1) reducing or eliminating effluent from the Kingston WTP outfall, (2) providing irrigation water to the White Horse Golf Club, and (3) infiltrating Class A water to benefit stream flow and fisheries health in Grovers Creek. The Recycled Water Project report describes the County's initial findings and a proposed alternative reclamation project to address its needs.

The objectives of the project that all alternatives will be designed to meet are:

- By example, encourage the use of reclaimed water
- Preservation of potable water
- Conservation and enhancement of instream flows and wetlands
- Reduction of discharges to Puget Sound
- Improvement of estuarine flushing in Miller Bay and Appletree Cove
- Response to growth and climate change by proactively reusing water
- Supply alternative water supply to Suquamish Tribe Whitehorse Golf Course

2. Provide a general description of the proposed project that will be the subject of a feasibility study.

The proposed project that feasibility study will support is the design of a 0.30 MGD reclaimed water facility at the Kingston WTP. The project will produce Class A reclaimed water for local beneficial uses including reducing dependence on potable water, and enhancing existing stream flows and wetlands. The reclaimed water will be used to irrigate the White Horse Golf Club during the summer months, to reduce approximately 28 MG of potable water drawn from groundwater supplies annually, and will be infiltrated during wet weather to enhance stream flow and water quality in Grovers Creek.

The project that will be the focus of the feasibility study was initially developed in the December 2015 Kingston Recycled Water Project report. The initial findings presented a solution(s) determined by ongoing discussions with stakeholders that identified the project goals of (1) reducing or eliminating effluent from the outfall, (2) providing irrigation water to the White Horse Golf Club, and (3) infiltrating Class A water to benefit stream flow and fisheries health in Grovers Creek. The selected option had the lowest chemical requirements while providing the highest capacity for recycled water production. Three pipeline options were evaluated, for the conveyance of reclaimed water to the storage

facility at the Golf Course. The selected option was not necessarily the shortest but paralleled the Puget Sound Energy power line the least. It also follows existing trails. The combination of these two factors will result in simpler construction and future maintenance. Three locations were identified as potential locations for an approx. 0.5 MG storage facility to equalize irrigation flows. The three sites were rated based on the extent of required tree removal, disruption to the existing service roads, topography as it affected views and pumping requirements, and cost of infrastructure needed to access the existing irrigation system. Using these parameters, a site on the west side of the Golf Club was selected. Cost was a decisive factor in identifying a preferred alternative in all evaluations, but impact on existing infrastructure, O&M costs, facility flexibility, and environmental impacts, were weighed as additional issues that contributed to the final alternative selection. The assumptions that went into the initial preferred alternative selection will be further analyzed and confirmed or modified during the development of the feasibility study.

3. *Describe alternative measures or technologies for water reclamation, distribution, and reuse that will be investigated as part of the feasibility study.*

The Feasibility Study process will start by assessing a wide range of reuse options in the Kingston area that could achieve County and stakeholder goals of improving water quality and water quantity. Presently, there are five high-level reuse options that will be considered:

- Option 1 – Summer Irrigation, Winter Infiltration
- Option 2 – Summer Irrigation, Winter Discharge to Puget Sound
- Option 3 – Summer Irrigation, Winter Storage
- Option 4 – Summer and Winter Infiltration
- Option 5 – Summer and Winter Wetlands

Depending on the reuse option(s) selected and the corresponding requirements for water quality for those options, reclaimed water technology alternatives will be assessed to achieve those requirements. An evaluation of alternative filtration systems will be conducted to assess which system will best meet the County's needs. It is anticipated that filtration technologies such as sand, cloth, and membranes will be reviewed. The technology selection will be based on factors such as capital and operation and maintenance costs and reliability.

Evaluation Criterion 4—Stretching Water Supplies (15 points)

1. *Describe the potential for the project to reduce, postpone, or eliminate the development of new or expanded water supplies.*

The local aquifer is the source of approximately 28 MG annually of potable water now used to irrigate the White Horse Golf Club. The project will provide an alternative source of water for irrigation, eliminate the need for the County to develop or expand water supplies to serve this large customer and free up 28 MG of potable water for other future users to reduce, postpone or eliminate the need for additional supplies. In the winter

months reclaimed water will be infiltrated back into the aquifer to enhance existing water supplies.

2. *Describe the potential for the project to reduce or eliminate the use of existing diversions from natural watercourses or withdrawals from aquifers.*

The project will reduce the use of approximately 28 MG annually of potable water now used to irrigate the White Horse Golf Club from diminishing groundwater supplies withdrawn from the aquifer.

3. *Describe, if applicable, the potential for the project to reduce the demand on existing Federal water supply facilities.*

Not applicable

Evaluation Criterion 5—Environment and Water Quality (15 points)

Points will be awarded based on the extent to which the proposal demonstrates that the feasibility study will address the potential for a water reclamation and reuse project to improve surface, groundwater, or effluent discharge quality;

1. *Describe the potential for the project to improve the quality of surface or groundwater, including description of any specific issues that will be investigated or information that will be developed as part of the feasibility study.*

This project will improve water quality of surface and groundwater in Grovers Creek and the Kingston-area aquifer and also in Puget Sound via Miller Bay and Appletree Cove. Specifically, the project will address the following issues and provide these improvements:

- Restore surface water quality in Grover's Creek, that is currently listed as an Extraordinary Primary Contact stream, is a 303(d) listed stream for dissolved oxygen and bacteria. Its summertime flows do not meet Ecology standards of 2.0 cfs at its mouth in Miller Bay. The water quality of Grovers Creek also affects the health of Miller Bay which is currently closed to shellfish harvesting due to pollution
- Reduce Kingston WTP outfall pollutants into Appletree Cove, which currently receives 3,000 pounds per year of nitrogen and over 900 lbs. per year of BOD. This loading contributes to the current closure of shellfish harvesting and water quality degradation in Appletree Cove. The production and use of Reclaimed Class A water from the Kingston WTP would be in full compliance with its Reclaimed Water Permit. Among other constituents, nitrogen and total solids concentrations would be reduced in accordance with the requirements of that permit
- Improve overall water quality and health of Puget Sound
- Minimize groundwater withdrawals to preserve stream flows, prevent saltwater intrusion, and to address future concerns related to growth and climate change
- Increase flow in Grovers Creek to enhance salmonid habitat

- Infiltration is projected to increase flows in Grovers Creek by a minimum of 0.25 cfs.
- Increase flow in Grovers Creek and Miller Bay to minimize toxicity impacts of surface runoff
- Protect and conserve freshwater resources and sustain instream flows (Puget Sound Partnership Strategy A7)
- Potentially upgrade Miller Bay harvest status; provide for healthy shellfish habitat (Dept. of Health listing, Puget Sound Partnership Strategy C7.1)
- Decrease temperatures in local creeks to benefit aquatic life
- Minimize nutrient loading and organic carbon to Puget Sound by reducing/eliminating 54 MG/year discharge from Kingston WTP; address cumulative water pollution impacts in Puget Sound including ocean acidification, low DO, and nutrient loading (PSP Strategy C9)

2. *Describe the potential for the project to improve flow conditions in a natural stream channel, including a description of any specific issues that will be investigated or information that will be developed as part of the feasibility study.*

The project, investigated and developed as part of the feasibility study, will minimize groundwater withdrawals to preserve stream flows and increase flow in Grovers Creek to enhance salmonid habitat. Infiltration is projected to increase flows in Grovers Creek by a minimum of 0.25 cfs and increase flow in Grovers Creek and Miller Bay to minimize toxicity impacts of surface runoff.

3. *Describe the potential for the project to provide water or habitat for federally listed threatened or endangered species, including description of any specific issues that will be investigated or information that will be developed as part of the feasibility study.*

Currently, the Kingston WTP discharges an average of 42 MG per year of treated wastewater through an outfall into Appletree Cove, resulting in high levels of pollution into the waterway (3,000 lbs. of nitrogen and over 900 lbs. of BOD). Treating wastewater at the Kingston WTP to be able to provide Class A reclaimed water will significantly reduce or eliminate these high levels of pollutants into the waterways.

Grover's Creek is classified as an Extraordinary Primary Contact stream and is listed as an impaired water body for bacteria, and dissolved oxygen. Summertime stream-flows do not meet the state regulatory requirement of minimum flow of 2 cfs at its mouth. The Suquamish Tribe operates a Chinook and chum hatchery at the mouth of Grovers Creek, which runs north and south, to the west of the treatment plant and the golf course. The Creek serves as a migration stream for other salmonids. Other species - steelhead, coho, and cutthroat migrate upstream. Grover's Creek, listed as an Extraordinary Primary Contact stream, is a 303(d) listed stream for dissolved oxygen and bacteria. The water quality of Grovers Creek also affects the health of Miller Bay which is currently closed to shellfish harvesting due to water pollution. The feasibility study and resulting reclamation project will remedy these water quality problems and restore habitat and improved water quality for threatened aquatic species in the area.

The project will use Sensitive Species and Conditions Identification to identify sensitive species that may be impacted by the project including wetlands, streams, and local wildlife. GPS data points will be used to identify the location of any sensitive areas and to develop a sensitive conditions map. This map will be used for alternatives screening purposes, permitting, and design of project operational parameters.

Evaluation Criterion 6—Legal and Institutional Requirements (10 Points)

How will the feasibility study address legal or institutional requirements or barriers to implementing a project, including water rights issues and any unresolved issues associated with implementation of a water reclamation and reuse project?

The feasibility study and resulting reclamation project will allow the County to be in compliance with its regulatory, institutional and legal requirements for providing wastewater and reclaimed water service. Stakeholder outreach has been undertaken to determine overlapping goals of producing and utilizing reclaimed water in Kingston and issues for implementing the project. Currently, there are no identified major barriers or unresolved issues associated with implementation of a water reclamation and reuse project. However, there are unresolved issues such subsurface soil and groundwater conditions and assessment of infiltrated water flow paths and impacts. The study will address these issues by conducting the following investigations:

- A shallow subsurface field investigation to assess shallow soil properties
- A deep boring, monitoring well and testing investigation to evaluation the infiltration potential and groundwater transport pathways
- A groundwater sampling program to establish a baseline water quality data set.
- A groundwater modeling task to determine effects of infiltration to groundwater mounding, flow paths, and potential impacts to area receptors.

The feasibility study will also address permitting and public outreach issues and recommend solutions to resolve concerns.

The production and use of Reclaimed Class A water from the Kingston WTP would be in full compliance with its Reclaimed Water Permit. Among other constituents, nitrogen and total solids concentrations would be reduced in accordance with the requirements of that permit.

In 2014, a Memorandum of Understanding was signed between the Suquamish Tribe and Kitsap County Sewer Utility to explore the viability of a project to produce Class A reclaimed water for local beneficial uses including reducing dependence on potable water, and enhancing existing stream flows and wetlands. The feasibility study will address the requirements and implementation of the MOU.

The project will address the regulatory and institutional requirements by promoting the goals reclaimed water that are referred to in the following regulations, codes and planning documents:

- 2009 Kitsap County "Water As A Resource Policy" in acknowledgement that sewage plants discharge over 80% of the nitrogen load into Puget Sound,

contributing to low oxygen, and wishing to establish a culture of operating practices that treat water as a resource; not a waste stream.

- Puget Sound Partnership Agenda Item C6.5 to promote reclaimed water projects to reduce pollutant loading to Puget Sound
- Puget Sound Partnership Agenda Item A7.2 to decrease the amount of water withdrawn or diverted from existing resources
- The Washington State Blue Ribbon Report on Ocean Acidification specifically mentions nutrient loadings from wastewater treatment plants as a source of acidification
- The goals of this project line-up with the stated goals of the Washington State Department of Ecology (DOE) Reclaimed Water Rulemaking including:
 - ✓ By example, encourage the use of reclaimed water
 - ✓ Preserve potable water
 - ✓ Conserve and enhance instream flows and wetlands
 - ✓ Reduce discharges to Puget Sound
 - ✓ Improve estuarine flushing
 - ✓ Respond to growth and climate change by proactively reusing water

Evaluation Criterion 7—Renewable Energy and Energy Efficiency (10 points)

How will the feasibility study address methods to incorporate the use of renewable energy or will otherwise address energy efficiency aspects of the water reclamation and reuse project being investigated?

The facilities identified in the feasibility study will incorporate the use of renewable energy and/or energy efficient equipment where feasible. At present, specific opportunities known for incorporating energy efficient equipment include; new aeration diffusers, ultraviolet disinfection, and filter feed and reclaimed water pumps. Variable frequency drives (VFDs) will be considered so that new equipment speed can be matched to the actual load requirement and thereby optimize the energy usage. On the recent Resource Recovery project at the County’s Central Kitsap WTP, high-efficiency turbo blowers and diffusers were installed along with dissolved oxygen probes and air control valves. These upgrades increased the overall energy efficiency from 62 to 81 percent and will be evaluated for use on this Kingston WTP reuse project. Throughout the planning and decision making process, all technologies and processes that are evaluated will evaluate operational costs, and energy efficiency will be a determining factor.

Evaluation Criterion 8—Watershed Perspective (10 points)

How will the feasibility study address alternatives that promote and apply a regional or watershed perspective to water resource management?

The feasibility study will address alternatives that promote regional benefits to water resource management (alternative water supply and aquifer recharge) by 2018. By example, the County will encourage the use of reclaimed water and set policy and precedent for future development in the region. A successful reuse facility in Kingston will further the goals of conserving groundwater supplies and protecting surface and estuarine environments of the Puget Sound Partnership, the Kitsap Public Utility

District, the Kitsap Dept. of Health and the Kitsap County Water Policy group. The use of reclaimed water for beneficial uses will promote public familiarity with reclaimed water as a resource, and assist in gaining support for other local projects including the development of purple pipe distribution networks, the installation of reused water facilities in new construction, and irrigation of public and private green spaces. Since water quality monitoring will be a feature of this project, databases will be generated on effluent quality, stream flow and groundwater impacts, and changes in the marine environment in the absence of wastewater treatment plant discharges as an added benefit. This data will be available to other parties and to regulators to assist with the design and permitting of other reuse projects. The project will also be an example to other tribal governments wishing to utilize reclaimed water in the region.

Letters of Support

To ensure your proposal is accurately reviewed, please attach all letters of support/partnership letters (attached to the application as an appendix).

Required Permits or Approvals

Applicants must state in the application whether any permits or approvals are required and explain the plan for obtaining such permits or approvals.

Permits are not required for the feasibility study. The County will hire an environmental permitting firm to be part of the feasibility study project team. The environmental specialists will be tasked with identifying all permitting requirements and constraints for the project. Presently, the following permits are anticipated to be required to obtain project approval from the regulatory agencies:

- Corps of Engineers
- Section 404/401 – JARPA
- Endangered Species Act Section 7 – Biological Evaluation
- National Historic Preservation Act – Cultural Resources Report
- Washington Department of Fish and Wildlife
- Hydraulic Project Approval – JARPA
- Washington Department of Ecology
 - CZM Consistency Determination – CZM Form
 - Section 401 Water Quality Certification – JARPA
 - NPDES General Construction Permit – Notice of Intent
 - State Environmental Protection Act – Environmental Checklist
 - Facility Plan (Feasibility Study) – Submit for Project Approval
 - Design Criteria/Drawings – Submit for Project Approval
 - Washington Department of Health and Ecology
 - Reclaimed Water Permit – Application
 - Local Permits
 - Tribal Environmental Protection Act – Environmental Checklist
 - Critical Area Review – Critical Areas Study
 - Shoreline Substantial Development Permit – JARAP with Shoreline Supplement
 - Conditional Use Permit – Application
- Design Review – Application
 - Flood Hazard Area Development Permit – Application
- Land Clearing – Application

- Road Use – TBD

Official Resolution

Include an official resolution adopted by the applicant’s board of directors or governing body, or, for state government entities, a signed statement from an official authorized to commit the applicant to the financial and legal obligations associated with receipt of a financial assistance award under this FOA (attached to the application).

Study Budget

The study budget includes:

- (1) Funding plan and letters of commitment
- (2) Budget proposal
- (3) Budget narrative

Funding Plan and Letters of Commitment

The funding plan must include all project costs, as follows:

How you will make your contribution to the cost-share requirement, such as monetary and/or in-kind contributions and source funds contributed by the applicant (e.g., reserve account, tax revenue, and/or assessments).

County sewer rates, charges and reserves will provide the local cost share. The County may also negotiate an agreement with the Suquamish Tribe to share the project costs through an interlocal agreement to reduce County cost .

Describe any project expenditures that have been incurred or may be incurred before the anticipated award date that you may seek to include as project costs. For each cost, identify:

- *The project expenditure and the amount:*

Planning costs will start in July 2017. Any costs included in the total \$547,500 budget that will be part of the County provided share of the costs may be incurred after that date.

- *Whether the expenditure is or will be in the form of in-kind services or donations*

None

- *How the expenditure benefits the project?*

Consulting fees to advance the project concepts and conduct community/stakeholder outreach and field investigations.

Provide the identity and amount of funding to be provided by funding partners, as well as the required letters of commitment.

Does not apply

Describe any funding requested or received from other Federal partners.

None

Describe any pending funding requests that have not yet been approved, and explain how the project will be affected if such funding is denied.

In October 2016, the County applied for a planning loan from the Washington State Revolving Fund (SRF) to reduce the financial impact on ratepayers. The County has funds for its share of project costs included in the 2017 Budget and the project will not be affected if funding is denied.

Describe how the non-Federal share of study costs will be provided. Reclamation will use this information in making a determination of financial capability.

Non-federal project costs will be provided by the County or a combination of SRF loans supported by County rates and County reserves.

Please include the following chart (Table 1) to summarize all funding sources. Denote in-kind contributions with an asterisk (*).

Table 1. Summary of Non-Federal and Federal Funding Sources

Funding sources	Funding amount
Non-Federal entities	
County Funds (via rates and charges & reserves)	\$397,500
Other (County funds already spent)	
<i>Non-Federal subtotal:</i>	\$397,500
Other Federal entities	
Other	
<i>Other Federal subtotal:</i>	\$0
<i>Requested Reclamation funding:</i>	\$150,000
<i>Total project funding:</i>	\$547,500

Section D: Application and Submission Information

Budget Proposal

The budget proposal should include detailed information on the categories listed below and must clearly identify all study costs. Unit costs shall be provided for all budget items including the cost of work to be provided by contractors. The budget proposal should also include any in-kind contributions of goods and services that will be provided to complete the study. It is strongly advised that applicants use the budget proposal format shown below on Table 2 or a similar format that provides this information. If selected for award, successful applicants must submit detailed supporting documentation for all budgeted costs. **Costs associated with Reclamation’s review of the feasibility study report should not be included.**

Table 2. Sample Budget Proposal Format

Budget item description	Computation		Quantity type (hours/days)	Total cost
	\$/Unit	Quantity		
Salaries and wages				
Stella Vakarcs: Project Manager				Included in County O&M cost
Barbara Zaroff, County Engineer: Reporting & staff time				Included in County O&M cost
Contractual/Construction:				
Engineering Planning				\$487,500
Economic & Financial				\$20,000
Environmental Planning				\$40,000
Other				
Total project costs				\$ 547,500

Budget Narrative

Submission of a budget narrative is mandatory. An award will not be made to any applicant who fails to fully disclose this information. The budget narrative provides a discussion of, or explanation for, items included in the budget proposal. Include the value of in-kind contributions of goods and services and donations that will be provided to complete the study. The types of information to describe in the narrative include, but are not limited to, those listed in the following subsections.

Salaries and Wages

Indicate program manager and other key personnel by name and title. Other personnel may be indicated by title alone.

Paid as part of the County Annual Budget costs and funds are not being requested to pay these expenses in this application.

Fringe Benefits

Indicate rates/amounts, what costs are included in this category, and the basis of the rate computations.

Paid as part of the County Annual Budget costs and funds are not being requested to pay these expenses in this application

Travel. Does Not Apply

Equipment Does Not Apply

Itemize costs of all equipment having a value of over \$5,000 and include information as to the need for this equipment, as well as how the equipment was priced if being purchased for the agreement.

Materials and Supplies Does Not Apply

Itemize supplies by major category, unit price, quantity, and purpose, such as whether the items are needed for office use, research, or construction. Identify how these costs were estimated (i.e., quotes, past experience, engineering estimates, or other methodology).

Contractual

Identify all work that will be accomplished by subrecipients, consultants, or contractors, including a breakdown of all tasks to be completed, and a detailed budget estimate of time, rates, supplies, and materials that will be required for each task. If a subrecipient, consultant, or contractor is proposed and approved at the time of award, no other approvals will be required. Any changes or additions will require a request for approval. Identify how the budgeted costs for subrecipients, consultants, or contractors were determined to be fair and reasonable.

The budget includes costs for engineering, financial and environmental planning to be paid under a single contract to Brown and Caldwell as the prime consultant, with ESA, KPG, Robertson, and a well-driller as sub-consultants to Brown and Caldwell to conduct the work.

Summary of contract work budget by task:

Project Administration/Management/Coordination: \$ 142,700

Data Collection, Evaluation, and Research: \$20,900

Alternative Development and Analysis: \$49,000

Reclaimed Water System Conceptual Design: \$26,000

Reclaimed Water Field Investigations: \$213,400

Reclaimed Water Plan: \$70,000

Public Outreach and Stakeholder Coordination: \$25,500

Total \$547,500

Other Expenses Does Not Apply

Any other expenses not included in the above categories shall be listed in this category, along with a description of the item and why it is necessary. No profit or fee will be allowed.

Indirect Costs Does Not Apply

Indirect costs that will be incurred and which will not otherwise be recovered, may be included as part of the applicant's project budget.

Total Costs

Indicate total amount of project costs, including the Federal and non-Federal cost share amounts.

Total Amount: \$547,500: Federal Share: \$150,000 / Non-Federal Share: \$397,500

Unique Entity Identifier and System for Award Management (SAM)

- DUNS: 071855191
- CAGE: 1N3X4



KITSAP COUNTY BOARD OF COMMISSIONERS

Efficient, accessible and effective county services

September 13, 2016

Robert Gelder
DISTRICT 1

Charlotte Garrido
DISTRICT 2

Edward E. Wolfe
DISTRICT 3

Barbara Zaroff, P.E.
Capital Projects Engineer
Kitsap County Department of Public Works
Sewer Utility Division
614 Division St, MS-27
Port Orchard, WA 98366

RE: Kingston Recycled Water Project

Dear Barbara,

I am writing to support Kitsap County's proposal to the Department of Ecology Clean Water State Revolving Fund for the Kingston Recycled Water Project. This project has the potential to both positively impact water quality in the Puget Sound while helping conserve our drinking water supply. These are two of the goals stated in the Kitsap County "Water as a Resource" Policy, adopted by the Board of County Commissioners in 2009.

The policy that "water is a resource and NOT a waste stream" applies to all departments that report to the Board of County Commissioners. This was a large driver for the upgrade to tertiary treatment at the Central Kitsap Treatment Plant. Our four treatment plants discharge over 1.5 billion gallons per year. By upgrading our largest plant to tertiary treatment, we have already reduced the pollution going into Puget Sound. However, as we continue to upgrade our assets, we must look for more opportunities to improve our environment and lower our dependence on groundwater as stated in the "Water as a Resource" policy.

In the case of the Kingston Wastewater Treatment Plant, we have already a proposed use for the recycled water and the support of many stakeholders in the community. With this in mind, and with the lessons we can learn from tertiary treatment in Central Kitsap, now is the time to plan for recycled water production in Kingston.

The Kingston Recycled Water Project strongly aligns with the Kitsap County Board of Commissioners goal to establish a culture of innovative development and operating practices that treat water as a resource rather than a waste stream. I fully support the efforts of the Kitsap County Department of Public Works to seek external funding for this project.

Sincerely,



Robert Gelder, Commissioner

September 23, 2016

Barbara Zaroff, P.E.
Capital Projects Engineer
Kitsap County Department of Public Works
Sewer Utility Division
614 Division St, MS-27
Port Orchard, WA 98366

RE: Kingston Recycled Water Project

Dear Barbara,

The Kitsap Public Health District is writing to support Kitsap County's proposal to the Department of Ecology Clean Water State Revolving Fund for the Kingston Recycled Water Project. As a region with a growing population that relies almost exclusively on groundwater for its potable water supply, it is important that we protect our water supply and use other sources for non-potable uses. This project will also protect our environment by reducing the volume of treated wastewater discharged directly to the Puget Sound.

This project is of particular interest to the Health District as we have a shared goal of conserving groundwater resources as we are dependent upon them for our drinking water supply. This project would reduce the demand on our groundwater resources for irrigation supply water, conserving the resource for its most vital use, domestic potable water. In addition, we seek to reduce water pollution of our surface waters to protect human health and shellfish resources in our community.

This project will protect our drinking water resources, and enhance our waterways to benefit our people, our wildlife and help sustain the beautiful Kitsap Peninsula. In conclusion, we fully support the efforts of the Kitsap County Department of Public Works to seek external funding for the Kingston Recycled Water Project.

Sincerely,



John Kiess
Environmental Health Director
Kitsap Public Health District



Kitsap Public Utility District
PO Box 1989
1431 Finn Hill Road
Poulsbo, WA 98370
360.779.7656
www.kpud.org

September 9, 2016

Barbara Zaroff, P.E.
Capital Projects Engineer
Kitsap County Department of Public Works
Sewer Utility Division
614 Division Street, MS-27
Port Orchard, WA 98366

Re: Kingston Recycled Water Project

Dear Barbara,

I am writing to support Kitsap County's proposal to the Department of Ecology Clean Water State Revolving Fund for the Kingston Recycled Water project.

Kitsap PUD was recently given wastewater authority and is engaged in a project to replace the existing treatment plant at Port Gamble. Once rebuilt, the new treatment plant will remove the existing marine outfall and redirect the treated effluent to an upland drainfield. This will help replenish local aquifers, support local streamflows and – by removing the existing outfall – improve the health of Puget Sound.

We believe efforts to recycle water yield a two-fold benefit: they help recharge our local aquifer system (which provides drinking water to the vast majority of our residents) and they help restore Puget Sound. Insofar as your effort with the Kingston Recycled Water Project will yield these same benefits, we wholeheartedly support your proposal to the Clean Water SRF.

Sincerely,

Bob Hunter
General Manager
360-626-7714



THE SUQUAMISH TRIBE
**DEPARTMENT OF COMMUNITY
DEVELOPMENT**

18490 Suquamish Way
Post Office Box 498
Suquamish, Washington 98392
Phone (360) 598-3311
Fax (360) 697-2728

September 27, 2016

Barbara Zaroff, P.E.
Capital Projects Engineer
Kitsap County Department of Public Works
Sewer Utility Division
614 Division St, MS-27
Port Orchard, WA 98366

RE: Kingston Recycled Water Project

Dear Barbara,

I am writing to support Kitsap County's proposal to the Department of Ecology Clean Water State Revolving Fund for the Kingston Recycled Water Project. As a region with a growing population that relies almost exclusively on groundwater for its potable water supply, it is important that we protect our water supply and use other sources for non-potable uses. This project will also protect our environment by reducing the volume of treated wastewater discharged directly to the Puget Sound.

This project is of particular interest to the Suquamish Tribe as we share many of the goals, such as enhancing aquatic habitat and reducing pollution.

This project will protect our drinking water source, and enhance our waterways to benefit our people, our wildlife and help sustain the beautiful Kitsap Peninsula. In conclusion, I fully support the efforts of the Kitsap County Department of Public Works to seek external funding for the Kingston Recycled Water Project.

Sincerely,

A handwritten signature in black ink, appearing to read 'Leonard Forsman'. The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Leonard Forsman
Tribal Chairman



Washington State Senate

Olympia Office:
PO Box 40423
Olympia, WA 98504-0423

Senator Christine Rolfes
23rd Legislative District

Phone: (360) 786-7644
Toll-Free: 1-800-562-6000
TDD: 1-800-635-9993
E-mail: Christine.Rolfes@leg.wa.gov

October 4, 2016

Barbara Zaroff, Capital Projects Engineer
Kitsap County Department of Public Works
Sewer Utility Division
614 Division St, MS-27
Port Orchard, WA 98366

RE: Kingston Recycled Water Project application
To the Department of Ecology Clean Water State Revolving Fund

Dear Barbara,

This letter is in support of Kitsap County's proposal to the Department of Ecology Clean Water State Revolving Fund for the Kingston Recycled Water Project. Kitsap County has adopted and follows a forward-thinking policy of "Water as a Resource," and this project aligns perfectly with the county-wide policy to conserve water resources, reduce pollution and restore natural hydrologic flow.

Our county relies almost exclusively on groundwater for its potable water supply. With current and projected population growth, there will be increased demand and pressure on our groundwater resources. It is vital, therefore, that we protect our water supply and use other sources for non-potable water consumption and this project will do just that. Additionally, this project will protect our environment by reducing the volume of treated wastewater discharged directly to the Puget Sound and it will help provide stream flow enhancement and beneficial water quality impacts to Appletree Cove, Miller Bay, and Grover's Creek, which will impact salmon populations.

This is a terrific project and supports the efforts of Kitsap County to make advances in the protection of potable water supply and restoration of waterways to protect wildlife and keep Kitsap County healthy.

I wholeheartedly support this work. Thank you for your consideration.

Sincerely,

Christine Rolfes
State Senator
23rd Legislative District

USBR GRANT RESOLUTION

WHEREAS, Kitsap County, Washington (Kitsap County) is authorized to apply to the U.S. Bureau of Reclamation (Reclamation) WaterSMART Title XVI Water Reclamation and Reuse Feasibility Grant Program: Funding Opportunity Announcement No. BOR-DO-17-F003 for Fiscal Year 2017 ; and

WHEREAS, Kitsap County; is capable of providing the amount of funding and/or in-kind contributions specified in the funding plan to complete the Feasibility Study, and

WHEREAS, Kitsap County will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement; and

NOW, THEREFORE, be it resolved that Kitsap County is authorized to commit to the financial and legal obligations associated with receipt of a financial assistance award, and

Kitsap County designates Commissioner (name _____) as the authorized Chief Administrative Official and the authorized representative of the Kitsap County Board of Commissioners to act in all official matters in connection with this application and Kitsap County's participation in the WaterSMART Title XVI Water Reclamation and Reuse Feasibility Grant Program.

Signature _____

Date _____

Name _____

Title _____

Attested _____

Date _____

RESOLUTION WITH CERTIFICATIONS OF COMPLIANCE INSTRUCTIONS

The applicant's local legislative body must pass a resolution authorizing the chief administrative official to submit the CDBG application to Commerce and certifying compliance with state and federal laws and specific program requirements. For the current CDBG contract terms and conditions, visit the CDBG website at www.commerce.wa.gov/cdbg under CDBG Management Handbook (1.1 Getting Started).

Access the electronic version of this resolution on the CDBG website under the General Purpose Grant webpage, or retype the sample and insert the local and project specific information as indicated. This resolution may be reformatted to meet the local government's requirements for official resolutions. Do not change the wording of the clauses without prior approval from the CDBG program.

Amount Requested

The CDBG amount you list in the resolution must not be less than the actual CDBG amount requested in the application budget. It is recommended this resolution be adopted after the CDBG amount to be requested is finalized.

Greenhouse Gas Emission Policy

The Legislature passed ESSSB 5560 during the 2009 Session which requires competitive state infrastructure funding programs to take into consideration the reduction of Greenhouse emissions in the selection process. Example Greenhouse Gas Emission Policies and additional information about Green Building can be found on our website at: www.commerce.wa.gov/cdbg under Guidance Materials.

! Projects that are **not capital construction** can choose to take out this greenhouse gas emission clause from the certifications template: "Has adopted or will adopt a policy(s) to reduce greenhouse gas emissions in accordance with RCW 70.235.070 and certifies this project will adhere to this policy(s)."

Signature

The resolution must be signed by the authorized chief administrative official, and a signed copy must be included with the application. The chief administrative official is the mayor, county commission chair, county administrator or city manager. An original signature is not required on the resolution.

Next Steps If Funded

If funded, Commerce will collect the following documents as identified in these certifications prior to executing a CDBG contract:

1. Residential Anti-Displacement and Relocation Assistance Plan
2. Excessive Force Policy
3. Greenhouse Gas Emissions Reduction policy (if applicable)

Samples of these documents are available on the CDBG website or upon request.

A resolution that references another project submitted previously for CDBG funding will not be accepted. Using a version of the certifications of compliance from a prior year CDBG application handbook may not be accepted.