

**Pajaro River Watershed Integrated Regional Water Management Plan Update
Project Solicitation Form**

PROJECT OVERVIEW

General Project Information

Project Title:	Corralitos Creek Water Supply and Fisheries Enhancement Project
Project Location:	Watsonville, CA
Estimated Cost:	\$1,000,000

Brief Project Description (1 to 2 sentences):

The Corralitos Creek Project will expand the surface water treatment facilities to allow increased diversions from Corralitos Creek during the higher turbidity, winter flows; thereby optimizing and increasing the water supplies from the Creek. Additionally, the increased winter diversions would be accompanied by reduced summer diversions which would allow more water to remain in the Creek during the low flow period and improving the timing of the flow for the Steelhead fisheries. The project will serve the disadvantaged community of Watsonville.

Project Proponent Information

Contact Name:	Steve Palmisano, Deputy Public Works Director
Affiliation:	City of Watsonville
Address:	275 Main Street, 4th Floor, Watsonville, CA 95076
Phone Number:	(831) 768-3176
Email:	spalmisano@ci.watsonville.ca.us

Other participating agencies/organizations (if applicable):

US Bureau of Reclamation

DETAILED PROJECT INFORMATION

Description

Please provide a description of your project (including the location) and its purpose, what will be constructed and/or implemented, how the project will function, the area(s) and/or entities that will be affected by or will benefit from the project, and any potential obstacles to implementation.

The Corralitos Creek Water Supply and Fisheries Enhancement Project will meet the following integrated goals:

- Optimize water use efficiency and ensure long-term reliability of the City’s water supply from Corralitos Creek;
- Protect and improve the designated critical habitat, the threatened and endangered species, and the environmental sustainability of Corralitos Creek;
- Reduce dependence on an already over-drafted groundwater basin;
- Increase the energy efficiency of the treatment plant; and
- Provide a safe and cost effective water supply for a severely Disadvantaged Community.

The project design is based on membrane pilot testing that confirmed the ability of the membranes to successfully treat the water from Corralitos Creek under both wet and dry season conditions. This phase of the project is for a second set of

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membrane filters and plate settler and will add 1.25 MGD or 1,400 AFY of additional production over Phase 1 yields.

Technical Feasibility

Discuss the technical feasibility of the project. If possible, cite references that contain information about the proposed project and detail the technical feasibility of the project.

The project design is based on membrane pilot testing that confirmed the ability of the membranes to successfully treat the water from Corralitos Creek under both wet and dry season conditions. The pilot testing demonstrated that the ceramic membranes could reliably treat water with turbidity as high as 200 NTU and total organic carbon (TOC) levels up to 14 mg/L. The membranes were tested at a normalized flux of 145 gallons per square foot per day (gfd). At this rate the ceramic membranes will operate at an average transmembrane pressure (TMP) of 9 psi, which is lower than all the other membranes considered. Given these results, the City proceeded with project design of the membrane facility.

Pajaro River Watershed IRWM Regional Goals & Objectives

Put an X next to any goal that the proposed project will achieve.

Water Supply

- | | |
|---|---|
| x | 1. Meet 100% of M&I and agriculture demands (both current and future conditions) in wet to dry years including the first year of a drought. |
| x | 2. Meet 85% M&I and 75% agriculture demands (both current and future conditions) in second and subsequent years of a drought. |
| x | 3. Identify and address water supply needs of disadvantaged communities in the Pajaro River Watershed. |
| | 4. Implement water conservation programs to reduce M&I and agricultural water use consistent with SBx7-7 and CVPIA. |
| | 5. Maximize the use of recycled water during the irrigation season and expand other uses of recycled water. |
| x | 6. Optimize the use of groundwater and aquifer storage. |
| x | 7. Maximize conjunctive use opportunities including interagency conjunctive use. |
| | 8. Optimize and sustain the use of existing import surface water entitlements from the San Felipe Unit. |
| x | 9. Maximize the beneficial use of existing local water supplies while protecting existing surface water rights. |

Water Quality

- | | |
|---|---|
| x | 1. Meet or exceed all applicable groundwater, surface water, wastewater, and recycled water quality regulatory standards. |
| x | 2. Identify and address the drinking water quality of disadvantaged communities in the Pajaro River Watershed. |

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- | | |
|---|--|
| x | 3. Protect groundwater resources from contamination including salts and nutrients. |
| | 4. Address impacts from surface water runoff through implementation of Best Management Practices or other surface water management strategies. |
| | 5. Meet or exceed delivered water quality targets established by recycled water users. |

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Flood Protection

	1. Implement flood management strategies throughout the watershed that provide multiple benefits.
	2. Reach consensus on the Pajaro River Risk Reduction Project necessary to protect existing urban areas and infrastructure from flooding and erosion from the 100-
	3. Work with stakeholders to preserve existing flood attenuation by implementing land management and conservation strategies throughout the watershed.
	4. Develop approaches for adaptive management to minimize maintenance requirements and protect quality and availability of water while preserving ecologic
	5. Provide community benefits beyond flood protection such as public access, open space, recreation, agriculture preservation and economic development.

Environmental Protection and Enhancement

x	1. Address opportunities to enhance the local environment and protect and/or restore natural resources, in cooperation with landowners, when developing water
x	2. Improve biological and cultural resources, including riparian habitats, habitats supporting sensitive plant or animal species and archaeological/historic sites when
	3. Address opportunities to protect, enhance, or restore habitat to support Monterey Bay National Marine Sanctuary marine life in conjunction with water supply
	4. Address opportunities for open spaces, trails, parks along creeks and other recreational projects in the watershed that can be incorporated with water

Integration and Coordination

Put an X next to any Resource Management Strategies (RMS) that the proposed project will address.

Reduce Water Demand	Agricultural Water Use Efficiency	
	Urban Water Use Efficiency	
Improve Operational Efficiency and Transfers	Conveyance - Delta	
	Conveyance - Regional/local	
	System Reoperation	
	Water Transfers	
Increase Water Supply	Conjunctive Management & Groundwater Storage	x
	Desalination	
	Precipitation Enhancement	
	Recycled Municipal Water	
	Surface Storage - CALFED	
	Surface Storage - Regional/local	
Improve Water Quality	Drinking Water Treatment & Distribution	x
	Groundwater Remediation /Aquifer Remediation	
	Matching Quality to Use	x

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	Pollution Prevention	
	Salt & Salinity Management	
	Urban Runoff Management	
Improve Flood Management	Flood Risk Management	
Practice Resources Stewardship	Agricultural Lands Stewardship	
	Economic Incentives (Loans, Grants, & Water Pricing)	
	Ecosystem Restoration	x
	Forest Management	
	Recharge Area Protection	
	Water-Dependent Recreation	
	Watershed Management	
Other Strategies	Crop Idling for Water Transfers	
	Dewvaporation or Atmospheric Pressure Desalination	
	Fog Collection	
	Irrigated Land Retirement	
	Rainfed Agriculture	
	Waterbag Transport/Storage Technology	

Please describe:

List the projects that were integrated to develop a single proposed project, if applicable.

List the agencies and organization that are working together to implement the project.

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Climate Change Mitigation and Adaptation

Put an X next to any climate change adaptation or mitigation strategy the proposed project will contribute to.

Adaption Strategies

<input checked="" type="checkbox"/>	Improve water supply reliability
<input checked="" type="checkbox"/>	Expand conjunctive use of multiple water supply sources
<input checked="" type="checkbox"/>	Increase water use and/or reuse efficiency
<input checked="" type="checkbox"/>	Provide additional water supply
<input checked="" type="checkbox"/>	Promote water quality protection
<input type="checkbox"/>	Reduce water demand
<input type="checkbox"/>	Advance / expand recycled water use
<input type="checkbox"/>	Promote urban runoff reuse
<input type="checkbox"/>	Address sea level rise
<input checked="" type="checkbox"/>	Address other anticipated climate change impacts
<input type="checkbox"/>	Improve flood control
<input checked="" type="checkbox"/>	Promote habitat protection
<input checked="" type="checkbox"/>	Establish migration corridors
<input type="checkbox"/>	Re-establish river-floodplain hydrologic continuity
<input type="checkbox"/>	Re-introduce anadromous fish populations to watershed
<input type="checkbox"/>	Enhance and protect watershed forest and meadow systems

Please describe:

Mitigation Strategies

<input type="checkbox"/>	Increase water use efficiency or promote energy-efficient water demand reduction
<input checked="" type="checkbox"/>	Improve water system energy efficiency
<input type="checkbox"/>	Advance / expand recycled water use
<input type="checkbox"/>	Promote urban runoff reuse
<input checked="" type="checkbox"/>	Promote use of renewable energy sources
<input type="checkbox"/>	Contribute to carbon sequestration

Please describe:

Does the proposed project reduce regional greenhouse gas emissions and/or improve energy efficiency? If so, explain how.

Social Benefits and Impacts

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Does the project provide specific benefits to disadvantaged communities and/or Native American tribal communities? If so, explain.

Yes, the project benefits the disadvantaged community of Watsonville

Does the project address any known environmental justice issues?

No.

Project Cost

Total Estimated Capital Cost	\$1,000,000
Annual Operation & Maintenance (O&M) Cost	\$90,000
Cost Basis (Year)	2011
Source(s) of Funding for Capital	City Water Enterprise Capital Improvement Program
Source(s) of Funding for O&M Cost	Water sales
Project Life (years)	30 years
Provide link to project cost estimate, if available	

Economic Feasibility

Has a benefit:cost or cost effectiveness analysis been completed for your project? If so, please cite reference and briefly summarize. If no economic analysis has been completed for the project, the project may receive zero points out of a possible 100 points for the financial considerations criteria unless the project is a DAC project. If the project is not a DAC project but the B:C ratio is expected to be greater than 1, please provide a justification. The lack of an economic analysis may also affect the project's readiness score.

No but the project is a DAC project and the B:C ratio is expected to be greater than 1.

If known, please provide the Benefit:Cost Ratio.

Provide a detailed discussion of the benefits the project will provide. To the extent possible, quantify changes and benefits (e.g. water quality and water supply benefits) that will result from project implementation; otherwise, describe benefits qualitatively.

The objectives of the full scale project and the City are to:

- Improve water use efficiency, ensure long-term reliability of the City's potable water supply from Corralitos Creek, and increase the use of surface water to address the Pajaro Valley groundwater basin overdraft condition. These objectives will be accomplished by constructing a membrane system capable of treating the high turbidity water during the higher flow, rainy season. The City's goal is to ultimately divert approximately 2,000 AFY from Corralitos Creek.
- Enhance the overall riparian habitat along Corralitos Creek, and release more water during the dry season to address

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the life-cycle needs of and to provide a year-round fish habitat for the Federally endangered Central California Coast steelhead. This objective will be accomplished by increasing the wet season diversions (and the capacity to treat the higher turbidity water) and reducing the dry season diversions.

- Improve recharge of the overdrafted groundwater basin by allowing more water to remain in the creek during the dry summer months. Below the critical steelhead habitat area is a significant recharge area for the groundwater basin. The project will increase summer recharge into that zone, providing additional recharge into the basin over current conditions. This is a benefit in addition to the reduced pumping from the groundwater basin that will result from the increased wet-season drinking water diversion provided by this project.
- Construct the most cost-effective and energy efficient membrane system based on previous pilot testing data, detailed alternatives evaluation, and performance of other successfully operating systems.
- Improve water supply energy efficiency by installing a photovoltaic system of approximately 300 kW that will produce 432,000 kWh's of power, which would be used to supply electricity to the plant.
- Design a project that contributes to the regional water supply sustainability, is compatible with neighboring land uses, and provides a cost effective design that maintains a reasonable project budget and low operating costs.

This phase will deliver an additional 1,400 AFY over Phase 1 yields.

Project Readiness

Proposed Project Start Date:	First phase completed
Anticipated Project Completion Date:	1 year from NTP

Please Indicate the status (pending, in process, complete) of the following.

Project Element	Status	% Complete	Estimated Completion Date
<i>Feasibility Study</i>	complete	100	
<i>Preliminary design</i>	complete	100	
<i>CEQA/NEPA</i>	complete	100	
<i>Permit Acquisition</i>	complete	100	
<i>Construction Docs</i>		0	TBD