

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

PROJECT OVERVIEW

General Project Information

Project Title:	Main and Madrone Pipeline Repair
Project Location:	Morgan Hill
Estimated Cost:	\$8,363,000

Brief Project Description (1 to 2 sentences):

This project will repair the Main and Madrone Pipelines to increase groundwater recharge in the Llagas Groundwater Subbasin, improve operational flexibility by re-establishing a connection between Anderson Reservoir and Llagas Groundwater Subbasin recharge facilities, improve countywide water supply reliability, and improve energy use efficiency.

Project Proponent Information

Contact Name:	Emmanuel Aryee
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Email:	earyee@valleywater.org

Other participating agencies/organizations (if applicable):

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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 Main Avenue and Madrone pipelines are located in Morgan Hill. The Main Avenue Pipeline extends from the Anderson Force Main, near Anderson Reservoir, to the Main Avenue recharge ponds. The Madrone Pipeline extends from the Main Avenue Pipeline to the Madrone Channel recharge ponds. Both pipelines intersect the Santa Clara Conduit, a San Felipe Division facility. Neither pipeline is operational upstream of the Santa Clara Conduit and the Madrone Pipeline is in poor condition downstream of the Santa Clara Conduit. The operational portion of the Madrone Pipeline downstream of the Santa Clara Conduit leaks and cannot be pressurized. The pipeline is infested by large roots that fill up to 70% of pipeline capacity in some areas.

The project will rehabilitate all reaches of the pipelines to convey a maximum of 37 cfs from Anderson Reservoir. The Main Avenue Pipeline upstream of the intersection with the Madrone Pipeline will be replaced with about 2,800 ft of 36-inch pressurized steel pipe, the Main Avenue Pipeline down stream of the intersection with the Madrone Pipeline will be cleaned and place back in service, and the Madrone Pipeline would be replaced with about 6,300 ft of 32-inch pressurized steel pipe.

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The Madrone pipeline is needed to meet current and future demands in the Llagas Groundwater Subbasin. By restoring the pipeline, the District can increase water supply yield by about 1,650 AFY through use of existing recharge capacity in the Madrone Channel. In addition, prior SCVWD and private party studies have identified the water quality benefits provided by the District's groundwater recharge program in the Llagas Groundwater Subbasin. It is estimated that the pipeline will fail completely within three - 20 years. Without the pipeline in operation, the Llagas groundwater subbasin would go into overdraft and wells would begin to go dry within a few years even under normal rainfall conditions. The project will also decrease the magnitude of countywide water supply shortages from a maximum of 15% to 7% by increasing operational flexibility.

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 involves replacing an existing pipeline in a rural area. The replacement would occur within road easements using trench excavation/placement techniques.

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.
X	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

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

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| | 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-year event and to maximize |
| | 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 and stream functions. |
| | 5. Provide community benefits beyond flood protection such as public access, open space, recreation, agriculture preservation and economic development. |

Environmental Protection and Enhancement

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

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	X
	System Reoperation	X
	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	
	Groundwater Remediation /Aquifer Remediation	X
	Matching Quality to Use	

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	Pollution Prevention	
	Salt & Salinity Management	X
	Urban Runoff Management	
Improve Flood Management	Flood Risk Management	
Practice Resources Stewardship	Agricultural Lands Stewardship	
	Economic Incentives (Loans, Grants, & Water Pricing)	
	Ecosystem Restoration	
	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: The project improves local conveyance by repairing the pipelines, expands conjunctive use opportunities, allows system reoperations, supports the District's conjunctive use program, and increases recharge with high quality water to manage salt loading to Llagas Groundwater subbasin.

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

The Main and Madrone Pipeline projects were combined into a single project.

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

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

Please describe: The project improves water supply reliability, provides additional water supply to the Llagas Subbasin, and provides recharge that promotes water quality protection.

Mitigation Strategies

	Increase water use efficiency or promote energy-efficient water demand reduction
x	Improve water system energy efficiency
	Advance / expand recycled water use
	Promote urban runoff reuse
x	Promote use of renewable energy sources
	Contribute to carbon sequestration

Please describe: The project improves water system energy efficiency by reducing the amount of pumping required at the Coyote Pumping Plant. The amount of CVP supplies delivered to the Main and Madrone recharge facilities would be reduced, which would increase the hydraulic grade line in the Santa Clara Conduit and reduce pumping requirements at the Coyote Pumping Plant. In addition, increased operational flexibility could result in increased use of the hydroelectric facility at Anderson dam.

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

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The project could reduce regional greenhouse gas emissions by increasing use of the hydroelectric facility at Anderson Dam. The project will improve energy efficiency by reducing pumping at Coyote Pumping Plant.

Social Benefits and Impacts

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

There are 11 DAC blocks, with a total population of about 14,000, in the Llagas Subbasin. This project will help maintain water supply and water quality throughout the subbasin.

Does the project address any known environmental justice issues?

Project Cost

Total Estimated Capital Cost	\$8,363,000
Annual Operation & Maintenance (O&M) Cost	\$50,000
Cost Basis (Year)	2012
Source(s) of Funding for Capital	Local agency water utility funds; Measure B (2012) parcel tax
Source(s) of Funding for O&M Cost	Local agency water utility funds
Project Life (years)	50
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.

A preliminary benefit-cost analysis was completed as part of the Business Case Report. Benefits were calculated based on the frequency of shortage and amount of supply provided by the project. A more detailed economic analysis is in progress and should be completed by December 2013.

If known, please provide the Benefit:Cost Ratio.

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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 project will increase water supply in the Llagas Subbasin by an average of about 1,650 AFY and reduce the magnitude of countywide water supply shortages by about 8%. The technical justification of the water supply benefits is evaluated in the Business Case Report for the project and water supply system modeling results. Water quality benefits are evaluated in Olin Corporation's 2006 Groundwater Cleanup Feasibility Study and 2006 Basin Characterization Report.

Total failure of the Madrone pipeline and lack of recharge in the Madrone Channel would result in approximately 2,700 wells in the Llagas Groundwater Subbasin going dry, based on groundwater modeling results.

The project will result in about 4,400 kWh of reduced pumping annually.

Project Readiness

Proposed Project Start Date:	Jul-13
Anticipated Project Completion Date:	2016

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

Project Element	Status	% Complete	Estimated Completion Date
<i>Feasibility Study</i>	In process	100	Nov-12
<i>Preliminary design</i>	Not started	0	Jun-14
<i>CEQA/NEPA</i>	Not started	0	Mar-15
<i>Permit Acquisition</i>	Not started	0	Mar-15
<i>Construction Docs</i>	Not started	0	Mar-15