

Salinas Valley Basin GSA

Update on Projects & Management Actions

Presented to Langley Area
Subbasin Committee
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Prepared by



Projects & Management Actions

Project Number	Name	Description	Project Benefits	Quantification of Project Benefits	Cost
RECHARGE PROJECTS					
A1	Decentralized Residential Recharge Projects	Small-scale projects initiated by homeowners and business owners, including rooftop rainwater harvesting, rain gardens, and graywater systems	Less domestic groundwater use, Groundwater recharge	If 75 households install 5000-gallon rain barrels, up to 4 AF/yr. rainwater harvested, and 1.6 AF/yr. from graywater systems installed by 75 houses	Cost to GSA (not for homeowner implementation or incentives): \$50,000 for 5 workshops on rainwater harvesting and \$50,000 for 5 workshops on graywater reuse
A2	Decentralized Stormwater Recharge	Medium-scale bioswales and recharge basins on non-agricultural land	Groundwater recharge, less flooding,	If 1% of the Subbasin is converted from an area of runoff to an area of recharge, 279 AF/yr.	Analysis underway
A3	Managed Aquifer Recharge with Overland Flow	Constructs basins for managed aquifer recharge of overland flow before it reaches streams	Groundwater recharge, less stormwater and erosion, more regular surface temperature	400 AF/yr. in groundwater recharge	Capital Cost: \$4,128,000 Unit Cost: \$870/AF
A4	Surface Water Diversion from Gabilan Creek	Build a new facility on Gabilan Creek that would be allowed to divert water when streamflow is high	Collects streamflow that would otherwise be lost to the ocean	On average, 350 AF/yr. of excess streamflow is saved for later use.	Capital Cost: \$5,477,000 Unit Cost: \$1,800/AF

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DEMAND MANAGEMENT					
B1	Pumping Allocations and Control	Extractors are assigned a pro-rata share of the Subbasin's sustainable yield and are allowed several years to gradually reduce their water use.	Decreases extraction	Range of potential project benefits	Analysis underway
CROSS BOUNDARY PROJECTS					
C1	Floodplain Enhancement and Stormwater Recharge	Restore creeks and floodplains to slow the flow of water	Groundwater recharge, less erosion, less flooding	Valley-wide: 2,600 AF/yr. in groundwater recharge	Valley-wide Capital Cost: \$12,596,000 Unit Cost: \$400/AF
C2	Castroville Seawater Intrusion Project (CSIP) Expansion	Expand CSIP into the southwest corner of the Langley Area Subbasin	Less groundwater pumping	Valley-wide: 9,900 AF/yr. of recycled water	Valley-wide Capital Cost: \$73,366,000 Unit Cost: \$630/AF
IMPLEMENTATION ACTIONS					
D1	Local Groundwater Elevation Trigger	Develop a system for well owners to notify the GSA if their wells go dry. Refer those owners to resources to assess and improve their water supplies. Form a working group if concerning patterns emerge.	Support affected well owners with analysis of groundwater elevation decline	N/A – Implementation Action	Not estimated at this time
D2	Groundwater Elevation Management System (GEMS) Expansion	Collect more groundwater elevation data	Better informed decisions	N/A – Implementation Action	Not estimated at this time
D3	Well Registration	Register all production wells. Monitor flowmeters on all non- <i>de minimis</i> wells.	Better informed decisions, more management options	N/A – Implementation Action	Not estimated at this time
D4	Domestic Water Partnership	Form a working group for different agencies to coordinate on domestic water issues	Better access to quality drinking water	N/A – Implementation Action	Not estimated at this time

DECENTRALIZED RECHARGE PROJECTS

Decentralized In Lieu Recharge Projects

Rain barrels:

- If 500 of the 3000 households attend a workshop and 15% implement a 5000-gallon rain barrel to provide water in lieu of pumping, it would result in **4 AF/yr. benefit**
- 5 workshops with 100 households each would cost about \$50,000
- GSA cost would be \$50,000, not including any monetary incentive
- Cost to homeowner to implement a 5000-gallon rain barrel is \$10,000, which would be \$15,000 if used over 25 years
- *Costs and benefits are variable depending on # workshops, size of rain barrels implemented, number of rain barrels implemented, if other in lieu recharge features are implemented*

Laundry to Landscape:

- If 500 of the 3000 households attend a workshop and 15% implement a laundry-to-landscape system to provide water in lieu of pumping, it would result in **0.94 AF/yr. benefit**
- 5 workshops with 100 households each would cost about \$50,000
- GSA cost would be \$50,000, not including any monetary incentive
- Cost to homeowner to implement a laundry-to-landscape system is \$2,100, which would be approximately \$15,960 if used over 25 years
- *Costs and benefits are variable depending on # workshops, amount of laundry done, and number implemented*



DECENTRALIZED RECHARGE PROJECTS

Decentralized Stormwater Capture

- Incentivizing installation of stormwater capture features for groundwater recharge
- Stormwater is directed to small recharge basins, flood plains, and bioswales for recharge, or for immediate irrigation application
- **Project benefit:** increased groundwater elevations and storage
 - Secondary flood hazard mitigation benefits
 - Stormwater capture off 1% of Langley land area (176 acres) would result in up to ~279 AF/yr.
- **GSA program cost (to do outreach, preliminary studies, and encourage implementation):** *still refining estimated cost*
- **Cost to implement:** varies widely, very site-specific
- **Example of potential project under this program:** stormwater capture from Prunedale shopping center
 - 9 AF/yr captured for recharge
 - Capital cost = \$3.3 million






Managed Aquifer Recharge (MAR) of Overland Flow

➤ Benefits:

- Approximately 400 AF/yr. (4 x 100 AF/yr. recharge basins)
- Highly dependent on site and precipitation
- Enhance sustainable yield and groundwater elevations
- Enhance soil moisture, which also helps erosion protection and near-surface temperature regulation

➤ Approximate Costs:

- \$4.2 million for 4 recharge basins, each of which recharges 100 AF/yr
- \$870/AF



Mitigation of Overdraft

- Langley Area Subbasin has not historically been in overdraft
- Historical sustainable yield on the order of 500 AF/yr.
- From 1980 to 2016, the basin was in overdraft during only 9 years
- Calculation of the mitigation of overdraft is not needed at this time
- Given that the Subbasin's extraction is currently close to the sustainable yield, this chapter includes a robust set of potential projects and management actions that could be undertaken if needed



Questions

