

Estuary Groundwater Monitoring

Background and Need

- Groundwater sources of nutrients have been identified in the estuary
 - SCCWRP Report 2011
 - Source thought to surface water discharge on northern side of estuary between I5 and Stuart Mesa Bridge
 - Source was based on meeting a mass balance for estuarine nutrients
 - SSC Pacific Report 2011
 - Source of groundwater and elevated nutrients measured entering the estuary near to Railroad Bridge (wet weather)
 - SSC Pacific 2012 Work
 - Source of groundwater and elevated nutrients measured entering the estuary east of I5 Bridge (wet weather)
- Groundwater sources need to be quantified for use in the numerical model and TMDL – both wet and dry weather conditions
- Long term trends in the upland source, tied to historical farming landuse, needs to be quantified to evaluate future impacts
- Work has been proposed as a Camp Pendleton stand alone project – Funding Status Is Unknown

Key Questions

- 1) What is the magnitude and extent of groundwater sources to the estuary from known locations under wet and dry conditions?
- 2) What is the long-term trend in the historical source?

Design

Two components:

1. Conduct monthly shoreline piezometer monitoring and sampling to quantify flow and nutrient levels over 18-month period
2. Conduct ultra-seep measurements during the piezometer monitoring period to quantify groundwater to surface water flow rates and nutrient

Budget and Collaborators

	Tasking	Cost	Man Days
1	Project Planning and Management	26,100	25
	Task Subtotal	26,100	25
2	Piezometer Monitoring		
	Field Mob/Demob	10,440	10
	Field Sampling	31,320	30
	Field Equipment and Consumables	10,000	na
	Nutrient Analysis	5,000	na
	Data Analysis	20,880	20
	Task Subtotal	77,640	60
3	Groundwater Seepage Meter		
	Field Mob/Demob	20,880	20
	Field Sampling	31,320	30
	Field Equipment and Consumables	5,000	na
	Nutrient Analysis	2,500	na
	Data Analysis	20,880	20
	Task Subtotal	80,580	70
4	Data Evaluation and Reporting		
	Develop Final Report	26,100	25
	Total Tasking	210,420	180
	Total w/ 10% Indirect Fees (rounded)	231,000	

Products

Technical

- Quantified groundwater source of nutrients to estuary
- Quantified trend in discharge to aid in TMDL implementation

Institutional: