## PACIFIC GROVE PROPOSED SMALL WATER PROJECTS

The City of Pacific Grove (City), similar to other jurisdictions in the California American Water Monterey District service area, has a shortage of potable water due to limitations on existing water supplies from the Carmel River Aquifer and Seaside Groundwater Basin. The City currently uses approximately 100 to 125 acre-feet per year (AFY) of potable water for irrigation of the Pacific Grove Municipal Golf Links and the adjacent El Carmelo Cemetery. Replacement of this irrigation demand with non-potable supplies will create a new offset of at least 100 to 125 AFY of potable water per project, for use by California American Water in meeting its obligations to find replacement supplies.

Given the risk that the proposed desalination project may not be fully operational by the January 1, 2017 cut-off date, the ability of these projects to be up and running well in advance assumes greater significance to the total water supply portfolio.

The following are attributes of the City's proposals:

- New non-potable water supplies will be locally developed to offset current uses of potable water, through implementation of one or more of these proposed projects that can be operated in conjunction with one another.
- Resulting new water supplies will be reliable and sustainable, as their source water is existing wastewater flows, and the dry and wet weather diversions from urban runoff.
- The integration, treatment, and reuse of urban runoff produce a net water quality improvement for the City, the Pacific Grove Area of Special Biological Significance, and the Monterey Bay National Marine Sanctuary.
- No new discharges of any wastes will be produced.
- The proposed projects rely heavily on the use of existing infrastructure and available capacities.
- The energy consumption for all of the City of Pacific Grove's proposed projects will be less than the energy demand for an equal volume of desalinated water. Therefore, the proposed projects will all reduce the total and net greenhouse gas emissions that will otherwise be produced.
- With further investigation, the project proposals can be expanded beyond the currently identified 100 to 125 AFY benefit calculated for each of the three peoposals. Expansion may be possible to cost effectively more than double this capacity to 250 AFY or more.
- Use of proven technologies and techniques for the development of non-potable water supplies.
- Planning, analysis, design, and construction are on a timeline that will not alter or slow the CPUC process for the MPWSP.

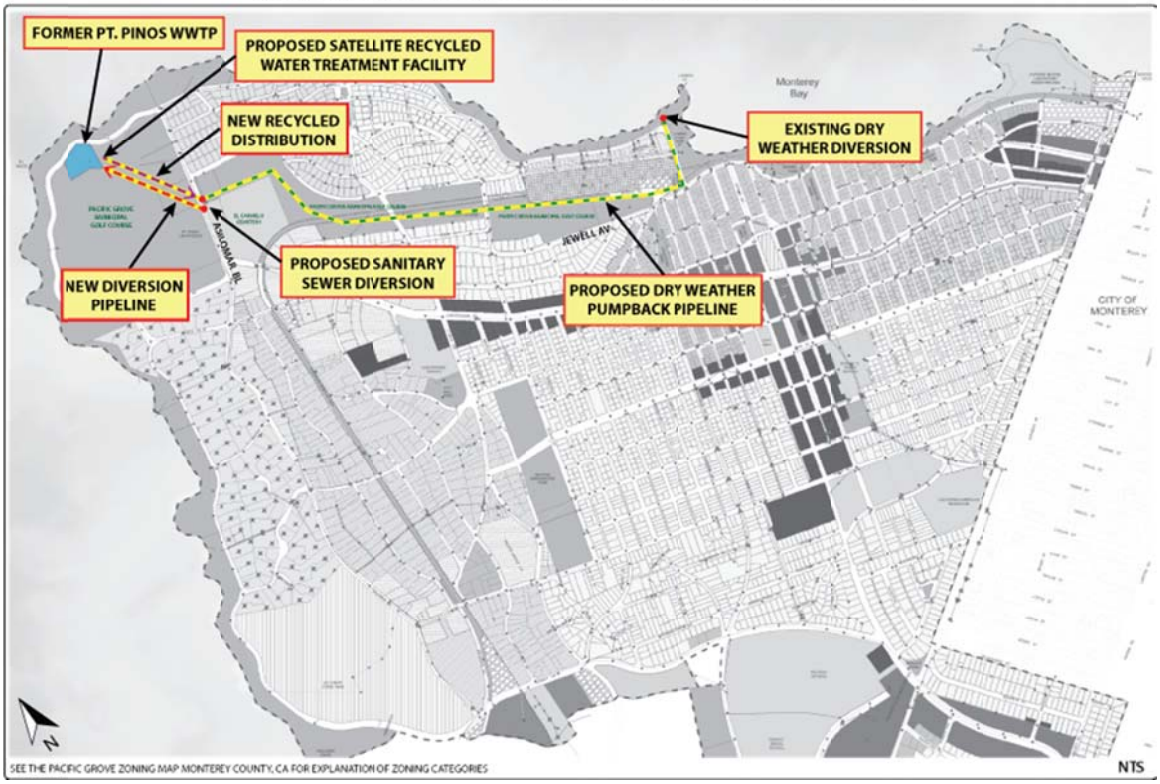
## PROJECT 1: PACIFIC GROVE SATELLITE RECYCLED WATER TREATMENT

Summary: Provide treatment of Pacific Grove wastewater at a new local satellite recycled water treatment plant (SRWTP) at the former Point Pinos Wastewater Treatment Plant and deliver recycled water to irrigation sites in the City.

A new satellite recycled water treatment facility will be constructed at the former Point Pinos Wastewater Treatment Plant and deliver recycled water to irrigation sites throughout the City. Raw wastewater will be captured and diverted from the City's sanitary sewer Basin 1 and conveyed to the new satellite recycled water treatment plant via 1,100 lineal feet of new 8-inch diameter sewer pipeline constructed within the golf links. Approximately 1,300 lineal feet of new 12-inch diameter recycled water pipeline will be constructed to deliver water to the golf links, cemetery, and other irrigation demands.

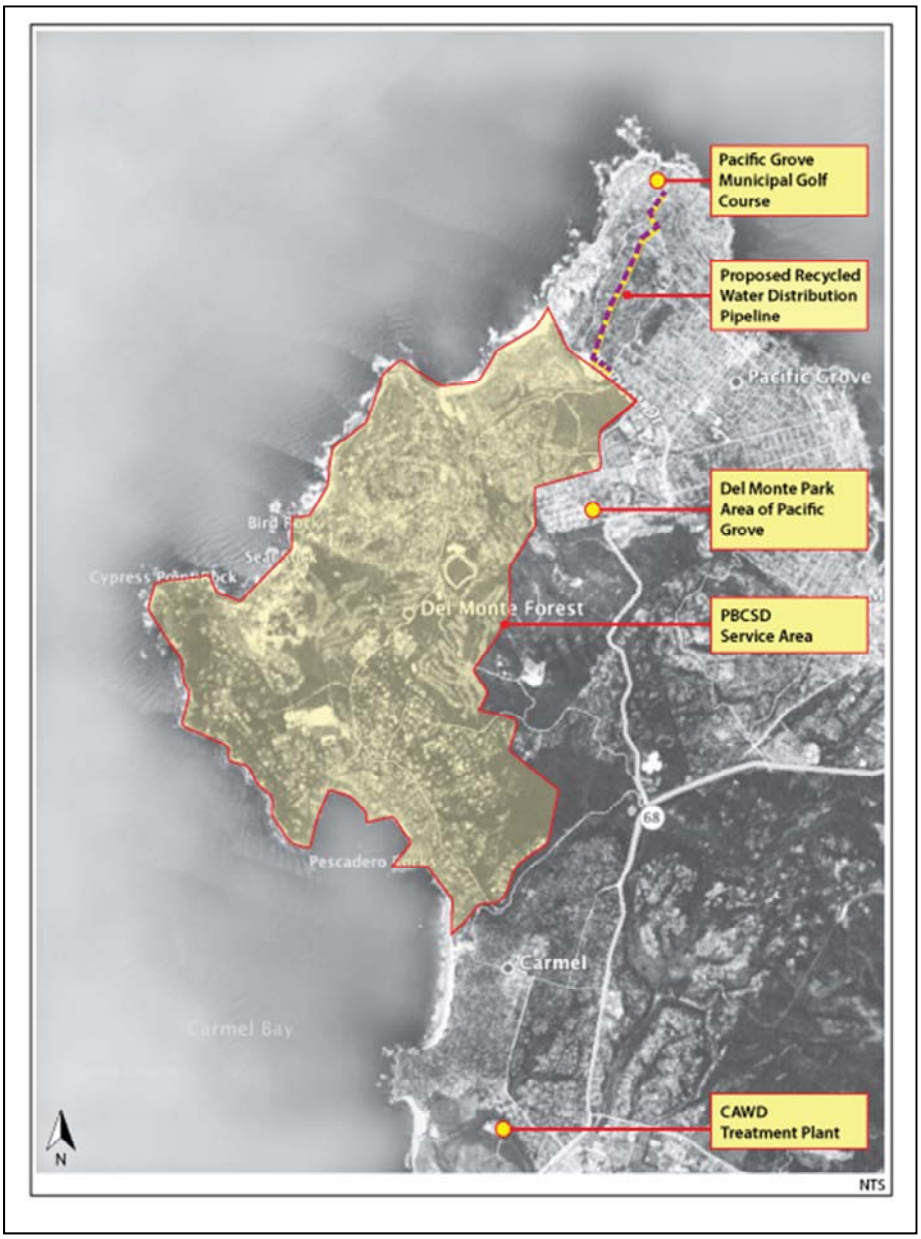
Costs of water are between $2,624 and $3,042/AF, depending on the final annual volume of water produced.

SATELLITE RECYCLED WATER TREATMENT PROJECT WITH DRY WATER DIVERSION



## PROJECT 2: PACIFIC GROVE RECYCLED WATER

Recycled water will be obtained from the Pebble Beach Community Services District (PBCSD). Raw wastewater from 500 homes in the Del Monte Park area of Pacific Grove will be captured and diverted to the existing Carmel Area Wastewater District (CAWD) reclamation facility for treatment. The wastewater diversion will flow through the existing wastewater collection system owned by the PBCSD. Recycled water from CAWD will be stored in the Forest Lake Reservoir and returned to the City through existing CAWD and PBCSD recycled water systems to a delivery point near the Spanish Bay Golf Course in Pebble Beach. Approximately 10,000 to 13,500 lineal feet of new 12-inch diameter recycled water pipeline will be required to be constructed to deliver water to the golf links, cemetery and other irrigation demands. Costs of water are $2,105/AF produced.



## PROJECT 3: PACIFIC GROVE STORM WATER RECYCLING

Summary: Divert storm water from the Greenwood Park and Congress Storm Drain Watersheds to the David Avenue Reservoir site, provide treatment, and deliver recycled water to irrigation sites throughout the City. A new 15-million gallon (MG) concrete reservoir or open storage reservoir will be constructed at the California American Water Company's David Avenue property to capture wet weather runoff. The storm water will be treated to meet aesthetic requirements and to comply with Title 22 Regulations for irrigation with non-potable water. Treatment will include a constructed wetland, microfiltration, ultraviolet radiation, and disinfection. Approximately 8,800 lineal feet of new 12-inch diameter recycled water pipeline will be required to deliver water to the golf links, cemetery irrigation and other irrigation demands. Costs of water are between $6,875 and $8,977/AF.

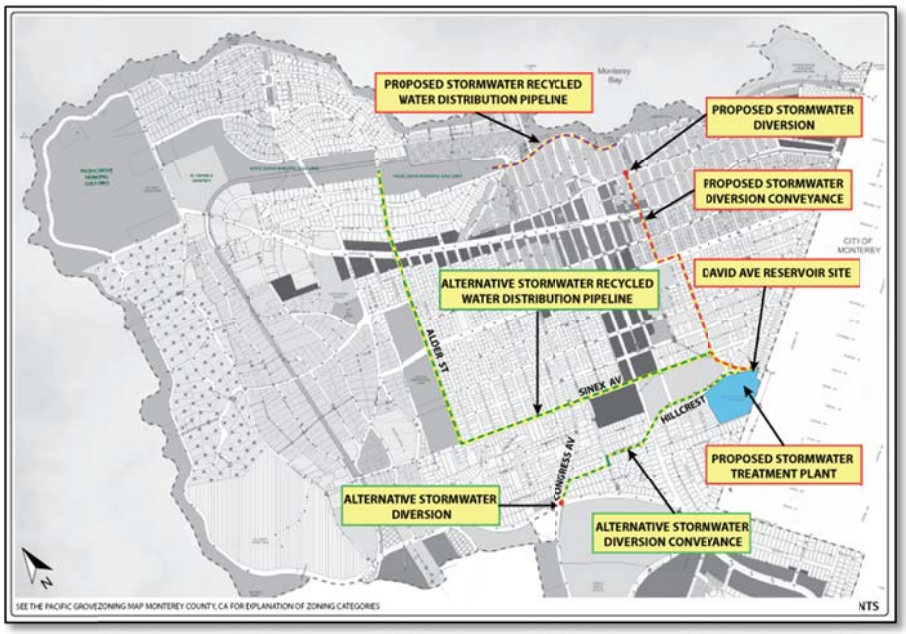
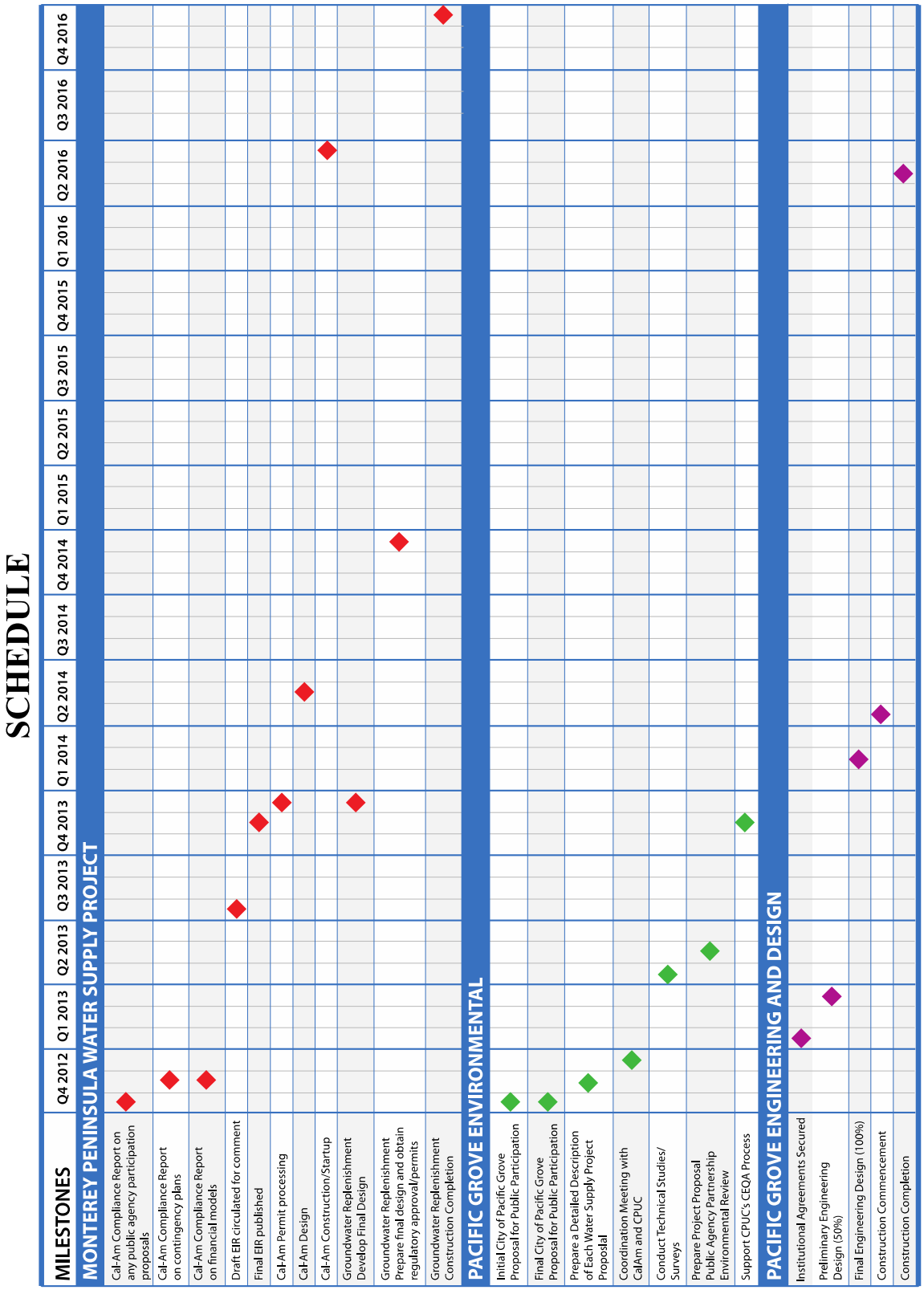


Figure 12 - David Avenue Site Plan

## PROPOSED PROJECT SCHEDULE