

# Monterey Peninsula Water Supply Project

Progress Report

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## Tests Show Promise for Water Quality and Production

Over the past seven months, California American Water has completed 13 boreholes at sites in Marina, Moss Landing and in between. The boreholes will supply important data needed for the environmental review of the Monterey Peninsula Water Supply Project. The data will also be used to create simulated models that are being run to predict potential impacts, if any, to natural resources.

Boreholes are soil samples that are approximately six inches in diameter and 200 to 300 feet deep, depending on their location. In the course of drilling the boreholes, water quality samples are also taken. The make-up of the soil and water found beneath the surface will help determine if the sites being examined are conducive to directional well drilling, which is the preferred source water intake method for the desalination plant. The soil and water samples will also help determine the composition of existing subsurface conditions and aquifers.

The boreholes were drilled at three main locations – the Cemex property, the preferred project site; Potrero Road near Salinas River State Beach; and Del Mar Fisheries in Moss Landing. Favorable conditions were found at Cemex and Potrero Road. The ground beneath Moss Landing, however, presented a difficult environment for the construction of slant wells,

consisting of large layers of clay mixed with intermittent layers of sand and silt.

Preliminary results from the samples taken at Cemex show an adequately sized top layer aquifer, also called the Shallow Dunes Aquifer, to allow for slant wells to be constructed without going into lower aquifers, which are used for agricultural irrigation. The total dissolved solids found in the water indicate a heavy influence of ocean water, which is also favorable for the project. At Potrero Road, a clear division was found between the upper and lower aquifers that did not exist at the Cemex property. This creates a different, but also favorable environment for drilling. Water samples from the Potrero Road location also indicate a strong influence of ocean water.

In addition to the boreholes, the Monterey Peninsula Water Supply Project Governance Committee is currently examining the possibility of developing a second test well at Potrero Road.

A formal analysis of the borehole data will be released later this year. The City of Marina is currently reviewing California American Water's application to drill a test well at the Cemex site. Final permits from the City and the California Coastal Commission are expected in October, which would allow construction on a test slant well to begin in November of this year.



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## Desal Plant and Pipeline Facilities Progress

- **The Basis of Design Report for the desalination facility is now complete** and under review. Design is scheduled for 30% completion in June of this year and 60% completion in September.
- **A value engineering session is planned for the last week of June** to evaluate the desal plant design. This process is being led by the project's Governance Committee. Watch for updates on Governance Committee activities and meetings at [www.mprwa.org/agenda/governance-committee-meetings](http://www.mprwa.org/agenda/governance-committee-meetings).
- **The pipeline design is nearly 50% complete**, and coordination with local jurisdictions on pipeline routes and impacts continues.
- **The terminal reservoir preliminary site layout is complete** and will soon be submitted to the City of Seaside for review.

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## Financing Plan Advances

**A public financing bill to fund a major portion of the desalination project took a step forward** after being recently approved by the state's Senate Governance and Finance Committee. The bill still needs to be approved by an Assembly Committee before it goes to a full vote on the Senate floor.

The bill, introduced by Sen. Bill Monning last year, utilizes low-interest "water rate relief bonds," which promise to lower the total cost of the water supply project by nearly \$100 million. The bill authorizes the Monterey Peninsula Water Management District to issue bonds to finance a portion of the project as authorized by the settlement agreement reached between the parties to the CPUC's proceeding on the MPWSP last year. The expected cost savings come by shifting some of the project's expense from corporate debt/equity funding to the traditionally less-expensive public bond financing.

The bill enjoys wide-ranging support from the Farm Bureau and Sierra Club to the Monterey Peninsula Business Coalition, and is expected to have smooth passage through the legislature.

Carmel-by-the-Sea Mayor and Vice President of the Monterey Peninsula Regional Water Authority, Jason Burnett testified at the committee meeting, providing detailed accounts of the ratepayer savings he expects to see, should the bill pass. Monterey Peninsula Water Management District General Manager Dave Stoldt testified on the particulars of the financing mechanism. California American Water director of External Affairs Kevin Tilden also testified about the bill's benefits.

# Water Project's Public Outreach Expands

The Water Supply Project's public outreach campaign to bring the public up to date on the progress made thus far and expected in the near future is now in full swing.

The campaign includes a series of mailers to California American Water customers that contain general project timelines with major milestones accomplished and those still to be achieved. An informational brochure is also in the works that will provide customers with a general synopsis of the regulatory and operational history that necessitated the project, including briefings on the Carmel River's history as a water source, relevant environmental regulations, and summaries of the project's three distinct components. Also included in the campaign are a series of television and radio announcements broadcasted locally that serve to educate the public on the project's progress.

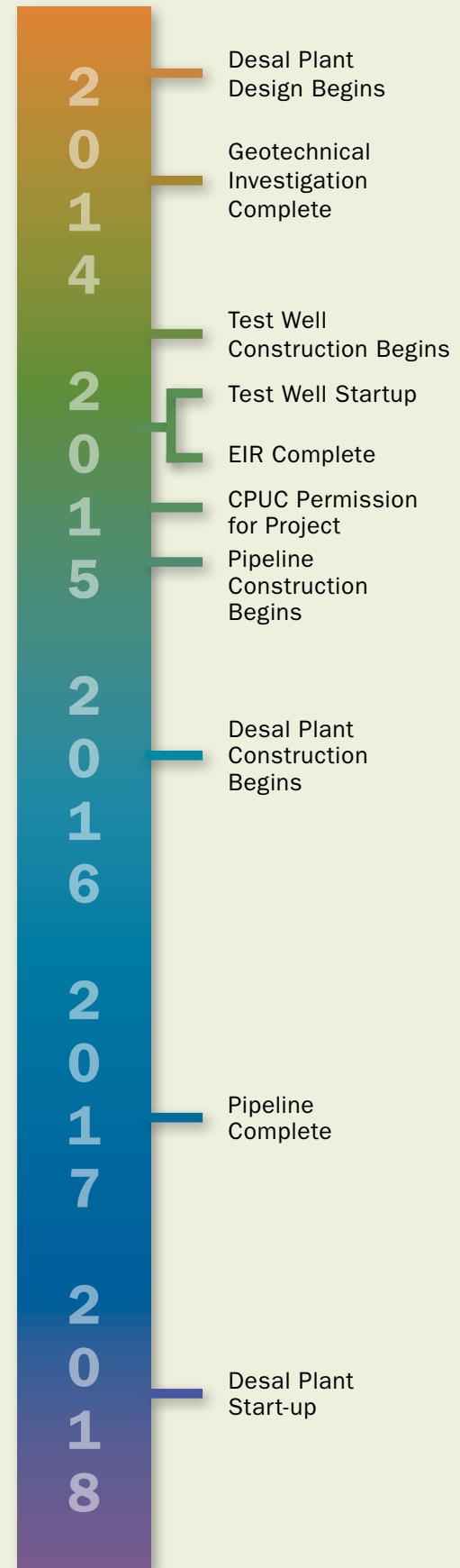
The educational campaign is meant to provide residents with a continuous update on the Water Supply Project as it unfolds, including projected cost and major milestones.

"With a project of this size, cost and importance, the public deserves to be well informed at every turn," said California American Water president Rob MacLean.

"This is perhaps the single most important project for the Monterey Peninsula in more than a century. The public outreach we do is to ensure everyone is apprised of the progress we are making together with the community to bring this historic project online."

California American Water will continue its public education campaign until the project is completed.

## Timeline of Progress Toward a Water Supply Solution



## About the Project

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**The Monterey Peninsula is facing a severe water supply problem.** That's because the State Water Resources Control Board (SWRCB) has ordered California American Water to significantly reduce its pumping of water from the Carmel River. This order coupled with pumping restrictions in other parts of the county means that nearly 70% of the Monterey Peninsula community's water supply must be replaced.

Since 2004, the company has pursued a multi-source solution to the Peninsula's water needs, which includes desalination. In 2010, the California Public Utilities Commission (CPUC), which regulates private utilities, approved a joint project with local Monterey County public agencies, termed the Regional Project, to solve the area's water shortage. However, California American Water withdrew from that project in January 2012 because it faced serious legal and financial challenges that prevented it from advancing.

After examining 11 potential alternatives to the Regional Project in October 2011, California American Water filed an application for the Monterey Peninsula Water Supply Project.

**The current project is comprised of three elements:**

- ✓ **Desalination**
- ✓ **Aquifer Storage and Recovery (ASR)**
- ✓ **Groundwater Replenishment (GWR)**

This multi-faceted approach brings numerous advantages over a single-source solution. For one, it will enable California American Water to build a smaller desalination plant, which will be less expensive and produce a smaller environmental footprint than a larger plant. Secondly, this strategy will build in redundancy that enables the water system to continue to provide water should one component become temporarily unavailable.

### **Desalination**

The Monterey Peninsula Water Supply Project will consist of sub-surface slant intake wells, the desalination plant, and related facilities including source water pipelines, product water pipelines and brine disposal facilities. Depending on the availability of water from the GWR project, the desalination plant will be sized at either 10,750 acre-feet per year (afy) or 7,200 afy.

California American Water has secured a 46-acre parcel of land located off of Charles Benson Road in Marina as the site for the proposed desalination plant. California American Water is also working to secure permanent easements for locations to host its slant intake wells.

California American Water will be using a series of slant wells located west of the sand dunes in North Marina to draw ocean water. The slant wells will be up to 1,000 feet long. The final layout and configuration will be based on the results of additional groundwater modeling that will be completed.

In addition to the plant and its intake wells, various other pipeline, storage and pump facilities will need to be constructed to ultimately deliver water to customers.

### Aquifer Storage and Recovery

California American Water will expand its current ASR project – a partnership with the Monterey Peninsula Water Management District – which captures excess winter flows from the Carmel River for storage in the Seaside Aquifer and withdrawal during the dry summer months. Winter flows are considered excess only when they exceed what is needed to protect the river’s threatened population of steelhead.

For the Monterey Peninsula Water Supply Project, the company plans to construct two additional ASR wells that will increase capacity of the program and allow the desalination plant to be smaller than would be needed without the wells.



**South-Central California Coast Steelhead Trout**

### Groundwater Replenishment

The proposed GWR project recycles wastewater through an advanced treatment process. The resulting highly purified drinking water will be injected into the Seaside groundwater basin. A new advanced wastewater treatment plant will be constructed for the project in addition to a number of supporting facilities. The project is expected to be online by the end of 2016.

Source water for this project will be put through an additional three-step treatment and purification process of microfiltration, reverse osmosis and oxidation with ultraviolet light and hydrogen peroxide — all commonly used in numerous industries and food manufacturing.

The first step in the treatment process is microfiltration, in which treated wastewater is pushed through a filter with highly fine pores. The second step is reverse osmosis, which pushes water through semi-permeable membranes under high pressure. Reverse osmosis is commonly used to remove salts from seawater for human consumption. The third stage of the proposed advanced water treatment facility is an insurance step to remove any molecules that may have slipped through. This is done by oxidizing the water with hydrogen peroxide in the presence of ultraviolet light. Together, these break apart any chemical bonds that may be present. This three-step process ensures complete water disinfection and purity.

The resulting purified water would be pH-adjusted and piped to the aquifer recharge area in Seaside where it is planned to be either injected into the groundwater or deeper into the aquifer itself.

### Budget: Major Portions of the Project

**Subsurface Intake System and Supply Return Facilities:** \$51M (3% spent to date)

**Desalination Plant:** \$95M (3% spent to date)

**Pipeline Facilities:** \$131M (Approximately 3% spent to date)

**Pre-Construction Cost\*\*:** \$8M (Approximately 60% spent to date)

*\* Note pre-construction costs are included in the \$277M project total. Further breakdown of the above components will occur after the CPUC issues a Certificate of Public Convenience and Necessity permit for the MPWSP.*

*\*\* These figures include financing and some contingency costs and therefore differ from the capital costs listed in the settlement.*



## Timeline

The Desalination Project is expected to be completed in 2018. Below is a timeline chart depicting the major components of the project and their expected delivery dates.

