

Monterey Peninsula Water Supply Project

Progress Report

July 31, 2013



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 percent 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 of 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. 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. It also provides redundancy that will enable the system to continue to provide water should one component become temporarily unavailable.

Key Partners

Monterey Peninsula Regional Water Authority (MPRWA)

MPRWA is a Joint Powers Authority that is represented by the mayors of six cities - Carmel-by-the-Sea, Del Rey Oaks, Monterey, Pacific Grove, Sand City and Seaside. Their purpose is to study, plan and help develop a sustainable water supply on the Peninsula that both satisfies the SWRCB's Cease-and-Desist Order and ensures public oversight and representation throughout the project's development.

Monterey Regional Water Pollution Control Agency (MRWPCA)

MRWPCA operates the regional wastewater treatment plant that serves member communities of Pacific Grove, Monterey, Del Rey Oaks, Seaside, Sand City, Fort Ord, Marina, Castroville, Moss Landing, Boronda, Salinas and some unincorporated areas in northern Monterey County.

Monterey Peninsula Water Management District (MPWMD)

MPWMD is a public agency that seeks to provide integrated management of surface and ground water resources on the Monterey Peninsula, provide for long-term sustainable water supply, and protect water resources for the benefit of the community and the environment. MPWMD is headed by a board of locally elected directors, representing geographic regions within the District's boundaries.

Governance Committee

This is a committee consisting of representatives from the MPRWA, California American Water, Monterey County and the MPWMD. This committee was enacted in order to ensure transparency and public representation at key decision points within the project.

WE CARE ABOUT WATER. IT'S WHAT WE DO.

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 9.6 million gallons per day (mgd) or 6.4 mgd.

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 its slant intake wells.

California American Water will be using a series of slant wells located west of the sand dunes to draw ocean water. The slant wells will be approximately 700 to 800 feet in length and will feature several hundred feet of screen below the ocean floor and seaward of the mean high-tide mark. 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.

Significant Milestones & Progress

A test well is scheduled to be completed by 1st Quarter 2014. A test well is needed to evaluate the amount, quality and sustainability of water to be pumped from a particular location. The test well will yield critical data that will determine whether the proposed intake site can produce enough water to fill the required needs of the system and to proceed with installing a full array of operational wells.

Aquifer Storage and Recovery

California American Water will expand its current ASR project – a partnership with the Monterey Peninsula Water Management District, which captures and stores the Carmel River’s excess winter flows into the Seaside Aquifer for 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 desal plant to be smaller than would be needed without the wells.

Significant Milestones & Progress

This component of the project will ultimately rely on six wells located on the Peninsula.

Wells 1–3: Completed.

Well 4: Construction is underway and expected to be completed by the end of this year.

Wells 5 and 6: Pending CPUC approval.

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.

MRWPCA's 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.

Significant Milestones & Progress

June 23, 2013: The Fiscal Year 2013/14 project budget was approved at the MRWPCA Board of Director's meeting. The budget includes \$2.4 M for 14 contracts with 12 consultants to perform:

- Required CEQA analysis and reporting, including identifying and analyzing alternatives.
- Drill and install a monitoring well.
- Hydrogeological modeling of proposed injection sites in the Seaside basin.
- Pilot testing, including analysis of groundwater, source waters, and bench-scale treatment processes.
- Public health study reviews and regulatory agency requirements coordination.
- Feasibility studies and facilities planning including conveyance pipeline and pump station analysis.
- Independent Advisory Panel meetings.

Proposed water sources include:

- City of Salinas commercial facility pond water (primarily produce wash water)
- Blanco Drain water
- Storm drain waters from MRWPCA member entity cities
- Secondary effluent from the MRWPCA treatment plant (limited)
- Reclamation Ditch water
- Combined, these wastewaters could potentially provide 9,550-12,050 acre-feet per year of source water.

June 18, 2013: A Public Scoping Meeting for the Environmental Impact Report (EIR) Notice of Preparation was held. The comment period expired July 2.

April 20, 2012: The MRWPCA Board of Directors approved a Memorandum of Understanding (MOU) with MPWMD and California American Water to continue to explore groundwater replenishment as a potential water supply source for California American Water customers.

Notable Challenges

Ground Water Replenishment

While this project holds great promise and environmental benefits, cost-effectiveness and delivery timelines remain as questions. To be included in the Monterey Peninsula Water Supply Project, GWR must meet certain development criteria before the decision to construct a 9.6 mgd or 6.4 mgd desalination plant is made. The project must also demonstrate that it is cost-effective and in its totality is a better alternative to ratepayers than constructing a larger desalination plant.

Desalination

The desalination plant is the largest water producing component of this proposed project. There are several challenges and unknown aspects that will need to be overcome.

- The placement of the wells will have to occur in a location that balances environmental concerns, such as the habitat of the endangered snowy plover, with the need to find prime geological conditions for extraction.
- The test well will confirm whether the initially proposed intake location can provide sufficient quantity and sustainability of supply. If it is revealed to be insufficient, other alternatives will be considered, which may carry additional challenges and obstacles.
- Another significant process is the substantial permitting that will be required for this project. From the testing to construction, numerous permits will be required from an array of local, state and federal agencies. California American Water has chosen an intake and outfall design it believes to be most compliant with present-day environmental permitting standards and is confident of the project's regulatory passage.
- Brine disposal is also under discussion amongst the parties in this case. Concerns over brine concentration and its effects on the ocean environment have some groups arguing for diffusers and/or alternative outfall methodologies, which might alleviate brine concentration but will likely add cost to the project. These issues and others are being actively discussed amongst the interested parties presently engaged in the application process before the CPUC.

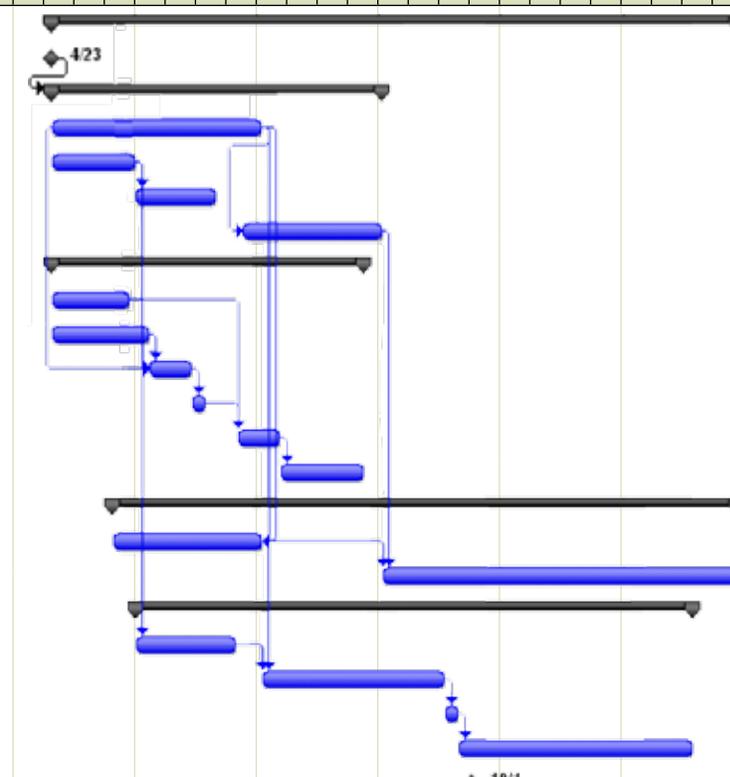
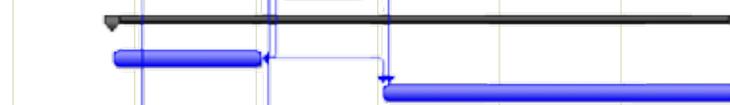
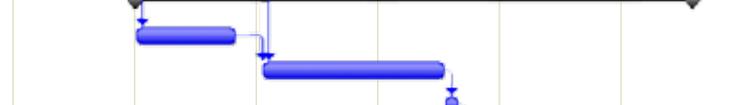


Snowy Plover Protection

The California Department of Parks and Recreation operates Plover Watch, a volunteer program to monitor the western snowy plover and help educate the public. For more information about becoming a Plover Watch volunteer, please call (650) 726-8819.

Timeline

The **Desalination Project** is expected to be completed in the 2nd quarter of 2018. Ground water replenishment is expected to be completed at the end of 2016. Below is a timeline chart depicting the major components of the project and their expected delivery dates.

TASK NAME	DURATION*	START	FINISH	2012				2013				2014				2015				2016				2017							
				Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
CAW Project	1469 days	4/23/2012	12/07/2017																												
File with CPUC	0 days	4/23/2012	4/23/2012																												
Permitting	709 days	4/23/2012	1/08/2015																												
Feedwater Test Well	669 days	4/23/2012	11/13/2014																												
Desalination Facility & Intakes	1339 days	10/22/2012	12/07/2017																												
Pipelines, Reservoirs & Pump Stations	1191 days	12/31/2012	7/24/2017																												
Decision on GWR	0 days	10/01/2015	10/01/2015																												

*Denotes business days, excluding holidays. All schedules are estimates and are subject to change as the project progresses.

Budget: Major Portions of the Project

Subsurface Intake System and Supply Return Facilities: \$91M – 0% spent to date

Desalination Plant: \$164M – 0% spent to date

Pipeline Facilities: \$128M – Approximately 1% spent to date

Pre Construction Cost:** \$8M – Approximately 25% spent to date

Further breakdown of the above components will occur after the CPUC issues a Certificate of Public Convenience and Necessity permit for the Monterey Peninsula Water Supply Project.

** Note pre-construction costs are included in the \$383M project total.

Contingency Planning

California American Water is advancing with the geo-technical investigation as suggested by the State Water Resources Control Board in order to obtain additional information for alternate subsurface intakes sites between the preferred property in Marina and the area of Moss Landing.

At this time, based on the preferences by the California Coastal Commission, the SWRCB and the Monterey Bay National Marine Sanctuary, only subsurface intakes are being considered for the project. Should the information provided by geo-technical investigations and the test well prove that a subsurface intake system is infeasible, California American Water would begin the process to investigate an open-ocean intake.

This quarterly newsletter was provided by California American Water. The next issue will appear October 31, 2013. Please visit the project's website www.watersupplyproject.org to get more information. Here you can also sign up to be placed on our email list to receive regular updates and other project news.

