7.4.2. Ocean Water

Desalination of ocean water provides a potentially large supply of drought-proof water limited only by coastal siting issues, system integration from the coastal areas inland and the cost competitiveness. This section addresses current proposals for developing desalinated ocean water supply in Orange County.

In 2001, the Metropolitan Water District of Southern California developed a Seawater Desalination Program (SDP) to provide incentives for development of new seawater desalination projects in Metropolitan's service area. In 2014, Metropolitan modified the provisions of the Local Resources Program (LRP) to include incentives for locally produced seawater desalination projects that reduce the need for imported supplies. To qualify for the incentive, proposed projects must replace an existing demand or prevent a new demand on Metropolitan's imported water supplies. In return, Metropolitan offers two incentive formulas under the program:

- Up to $340 per AF for 25 years, depending on the unit cost of the seawater project cost compared to the cost of Metropolitan supplies
- Up to $475 per AF for 15 years, depending on the unit cost of the seawater project cost compared to the cost of Metropolitan supplies

Development of local supplies within the Metropolitan service area are part of the overall goal of the Integrated Resources Plan (IRP) to improve water supply reliability in the region by creating new supplies that reduce the pressure on imported supplies from the State Water Project (SWP) and the Colorado River.

Comment [A1]: As you did in the 2011 UWMP, is it helpful to add current and/or projected IRP local water supply targets? How many acre feet is MWD looking for in the future?

On May 6th, 2015, the State Water Resources Control Board (State Water Board) approved an amendment to the state's Water Quality Control Plan for the Ocean Waters of California (Ocean Plan) to address effects associated with the construction and operation of seawater desalination facilities (Desalination Amendment). The amendment supports the use of ocean water as a reliable supplement to traditional water supplies while protecting marine life and water quality. The California Ocean Plan now formally acknowledges seawater desalination as a beneficial use of the Pacific Ocean and the Desalination Amendment provides a uniform, consistent process for permitting of seawater desalination facilities statewide.

The following projects, if developed, could result in reductions in Metropolitan imported water deliveries to the Orange County compared to what they otherwise would have been.

Huntington Beach Seawater Desalination Project – Poseidon Resources (Surfside) LLC (Poseidon), a private company, is developing the Huntington Beach Seawater Desalination Project to be located adjacent to the AES Power Plant in the City of Huntington Beach along Pacific Coast Highway and Newland Street. The proposed project would produce up to 50

MGD (56,000 AFY) of drinking water and to provide approximately 10~~9~~% of Orange County's water supply needs.

Over the past several years, Poseidon has been working with the Orange County Water District (OCWD) on the general terms and conditions for sale of the water to OCWD and with both OCWD and MWDOC on different options for distributing the water to agencies in Orange County. A north option distributes water to agencies closer to the plant and north of Huntington Beach and within the OCWD service territory. OCWD is also examining the possibility for recharging/injecting the water into the groundwater basin. A south option expands upon this north option by delivering a portion of the water into the existing OC-44 pipeline where it can be also conveyed to South Orange County water agencies. OCWD is also exploring a third option whereby all of the Poseidon Water would be recharged into the groundwater basin. It is also possible that some combination of all three options would be pursued.

~~Currently, the project is in the regulatory permit approval stage. Poseidon Water hopes to obtain its last outstanding permit project permit from the California Coastal Commission in 2016. If the permit is obtained, the plant could potentially be online as early as 202190 under optimum conditions.~~
The Orange County Water District's current Long-Term Facilities Plan ("LTFP") identifies the Huntington Beach desalination project as a priority project. The District's LTFP finds that the Huntington Beach Project's 56,000 acre feet per year capacity is the single largest source of new, local drinking water supply available to the region. In addition to offsetting imported demand, water from the project could provide flexibility in how the District manages the groundwater basin, specifically the desalinated water could be used to augment supplies injected into our Talbert Seawater Barrier to help prevent seawater intrusion into the groundwater basin.

In May of 2015 OCWD and Poseidon entered into a Term Sheet that provided the overall structure of how the two entities could partner to advance the project. Under the Term Sheet Poseidon Water would be responsible for permitting, financing, design, construction, and operations of the treatment plant. OCWD would purchase the production volume, but only as long as the quality and quantity meet specific contract parameters. In turn, OCWD would distribute the water in Orange County via the options described above.

Currently, the project is in the late-stages of the regulatory permit approval process. Poseidon Water hopes to obtain the~~its~~ last discretionary ~~project~~ permit from the California Coastal Commission in 2016 necessary to construct the plant. If the permit is obtained, the plant could potentially be online as early as 2019.

Doheny Desalination Project – The end of 2013 culminated five years and $6.2 million worth of work investigating a slant well intake for the Doheny Desal Project. The work concluded that the project was feasible and could produce 15 million gallons per day (mgd)

of NEW POTABLE SUPPLIES to the five participating agencies consisting of South Coast Water District, City of San Clemente, City of San Juan Capistrano, Laguna Beach County Water District and Moulton Niguel Water District.

Following conclusion of the work, only South Coast Water District and Laguna Beach County Water District expressed an interest in moving forward, with the other agencies electing to monitor the work and consider options for subsequently coming back into the project along with considering other water supply investments.

More recently, Laguna Beach County Water District has had success in utilizing previously held water rights in the OCWD groundwater basin and may elect to move forward with that project instead of ocean desalination. A final decision is pending based on securing the necessary approvals on the groundwater project.

South Coast Water District has taken the lead on the project and has hired a consulting team to proceed through project development for the Doheny Desal Project. Major items scheduled over the next year include:

- Preliminary Design Report and Cost Estimate
- Brine Outfall Analysis
- EIR Process
- Environmental Permitting Approvals
- Public Outreach
- Project Funding
- Project Delivery Method
- Economic Analysis

The aggressive schedule for this project includes start-up and operation of up to a 5 mgd facility by the end of 2019; South Coast Water District anticipates leaving the option open for other agencies to participate up to the full 15 mgd facility with subsequent permitting and construction of additional wells and treatment capacity.

Camp Pendleton Seawater Desalination Project– San Diego County Water Authority (SDCWA) is studying a desalination project to be located at the southwest corner of Camp Pendleton Marine Corps Base adjacent to the Santa Margarita River. The initial project would be a 50 or 100 MGD plant with expansions in 50 MGD increments up to a max of 150 MGD making this the largest proposed desalination plant in the US.

The project is currently in the study feasibility stage and SDCWA is conducting geological surveys, intake options, and studies of the effect on ocean life and examining routes to bring desalination water to SDCWA's delivery system. MWDOC and south Orange County

agencies are maintaining a potential interest in the project, but at this time they are only pursuing limited fact finding and monitoring of the project.