

REDUCE DEPENDENCE ON IMPORTED WATER

SUMMARY

The 2012-2013 San Diego County Grand Jury (Grand Jury) investigated San Diego County Water Authority's (SDCWA) long-term strategy for water supply. The purpose of this report is to:

- Follow up on previous Grand Jury recommendations.
- Keep the issue of water supply at the forefront of public awareness.
- Encourage the SDCWA to continue to pursue a vigorous policy to lessen dependence on imported water.

Prior Grand Juries examined the San Diego County water-use strategy and the cost of water to ratepayers. The 2012-2013 Grand Jury looked into progress being made toward implementing recommendations made by prior Grand Juries. Each element of the SDCWA water supply strategy of conservation, reclamation, local aquifer utilization, long-term emergency storage, and desalination are insufficient as stand-alone efforts to insure a reliable and sustainable water supply for the County. The comprehensive strategy pursued by SDCWA is necessary for County water independence. With this in mind, the Grand Jury chose to emphasize the importance of water source diversity, with special focus on long-term water storage, reclamation and desalination as vital components of the diversified water supply strategy. Although reclamation may seem distasteful and desalination too costly, they are likely to be more acceptable and cost-effective as future imported water becomes more restricted and expensive. Along with increased production of local water resources, storage capacity for existing water supplies is an important component of water supply strategy.

The Grand Jury recommends that the City of San Diego (City) and SDCWA move forward with plans to incorporate both reclaimed wastewater and desalinated ocean water into regional water supplies. In addition, the Grand Jury recommends the expansion of water storage capacity for emergency use beyond the stated goal of a six-month emergency supply. The Grand Jury recommends that the City and SDCWA continue to expand their education and outreach efforts as a way to keep the public informed about water use, the cost of water and long-range water supply strategy.

INTRODUCTION

Water, specifically the lack of it, is becoming big business in Southern California. As the availability of imported water becomes less certain, the cost of this resource increases. The Grand Jury examined the SDCWA long-term strategy to move the County away from reliance on imported water and toward greater local water autonomy. Over the last decade, the City and the SDCWA developed a strategy based on supply diversification to insure that residents of the County will have enough fresh water to maintain our lifestyle and economy through the years ahead. Cornerstones of this strategy include:

- Conservation
- Reclamation
- Utilization of local aquifers
- Long-Term Emergency Storage
- Desalination.

Prior San Diego County Grand Jury reports¹ dealt with conservation, reclamation and cost of water to ratepayers. The 2010-2011 Grand Jury Report contains the following recommendations to SDCWA:

- 11-61: Evaluate and improve public outreach efforts to educate the ratepayers about efforts to diversify and stabilize rates in the future.
 - SDCWA Response: Recommendation 11-61 has already been implemented, and is continuing.
- 11-65: Increase the investment in diverse technologies such as desalination and reclamation. It is imperative to bring these sources online in anticipation of higher rates in San Diego County.
 - SDCWA Response: Recommendation 11-65 has been implemented, and is ongoing.

With these recommendations and responses in mind, this Grand Jury's investigation focused on the progress SDCWA was making to include reclamation and desalination in the overall water supply strategy. We found that the City is actively testing the feasibility of wastewater reclamation and SDCWA is spending millions of dollars to support a desalination plant in the County. However, we are aware that many residents of the County are not aware of these efforts. The Grand Jury thinks it is important to keep the issue of water in San Diego in the public eye.

PROCEDURE

The Grand Jury interviewed personnel from SDCWA and the City. In addition, we reviewed reports from the following:

- San Diego City Engineering Department
- San Diego County Water Authority regarding desalination
- San Diego Regional Water Quality Control Board
- California Department of Public Health.

The Grand Jury visited:

- The Point Loma Waste Water Treatment Facility
- North City Water Reclamation Plant
- Pumping Station #1 in National City
- Pumping Station # 64 in Los Penasquitos Canyon Lagoon
- The Lake Hodges/Olivenhain Reservoir Project

¹ <http://www.co.san-diego.ca.us/grandjury/reports.html>

- The San Vicente Reservoir Dam Raising Project
- The planned site of Carlsbad Seawater Desalination Plant

DISCUSSION

The Metropolitan Water District of Southern California (MWD) is a consortium of 26 cities and water districts that provide water to people in parts of Los Angeles, Orange, San Diego, Riverside, San Bernardino and Ventura counties.² The sources of this water include runoff from the Sierra Nevada snowpack and from the Colorado River.

In 1995, SDCWA received 95% of its water supply from the MWD. By 2012, SDCWA has reduced its reliance on water imported via MWD to 47%. Pumping restrictions in the Sacramento-San Joaquin Delta and shortages in the Colorado River watershed have reduced levels of water provided by the MWD.³ San Diego also receives Colorado River water from Imperial Irrigation District transfer.

Because the County is at the end of the MWD pipeline, the Grand Jury believes that a further reduction in imported water is important. The citizens of the County are at the mercy of MWD when it comes to water allocation and the cost of that imported water. The stated objective of SDCWA is to reduce water received from MWD to 30% by 2020.

Is water supply an issue of concern to County residents?

Polls conducted by SDCWA⁴ show water ranks high as an issue of major concern to the citizens who participated in the poll. These citizens have a willingness to pay more for water reliability. They accept the need for reclamation and desalination and the desire for supply diversification.

Polls rank diversification of water sources as a major concern to the citizens of San Diego.

- 82% of respondents said seawater desalination is important to water supply reliability.
- 57% of respondents supported the SDCWA supply diversification plan.
- 68% of respondents expressed willingness to pay more per month to add desalinated seawater to the supply, including 58 % who said that they would pay an extra \$5 or more per month.
- 71% of respondents believe it is possible to make wastewater (reclaimed water) safe for drinking.

Why is availability of imported water to San Diego uncertain?

Population and weather patterns influence the amount of water needed by and allocated to the various members of MWD. Population in the County rose from 1,357,854 in 1970 to 3,140,069 in 2011, with an associated increase in demand for water. At the same time the population has been increasing, the Southwest experienced extended drought and is

² Metropolitan Water District of Southern California Website www.mwdh2o.com

³ San Diego County Water Authority Website www.sdcwa.org

⁴ <http://www.sdcwa.org/public-opinion-research>

expected to become drier and hotter in the future.⁵ A severe drought in the early 1990s led to a 31% cut in water deliveries to San Diego by MWD. Abundant snow in the Sierra Nevada two winters ago provided a respite from dry conditions that have dominated the area since 1999. However, 2011-2012 seasonal runoff into Lake Powell on the Colorado River is about 46% of average, the third lowest since 1963. In addition, court-ordered pumping restrictions imposed on MWD reduced the amount of available water and increased the cost to San Diego for water delivered through MWD. San Diego is subject to the Preferential Rights of Shortage Allocations⁶ by the MWD.

Strategies to reduce reliance on MWD Supplies

The Grand Jury found that SDCWA has made substantial progress in diversifying water supply sources and is continuing to strive for improvement. Their stated goal is to reduce the region's reliance on the MWD to about 30% by 2020. Water from the Colorado River will supply 30% of the demand. Local resources are expected to provide 40% of regional demands by 2020.

Conservation, as discussed in previous Grand Jury reports, is one of the key components of the SDCWA's supply diversification strategy. SDCWA worked with its 24 member agencies to offer programs that improve water use efficiency for residential, commercial, and agricultural users. According to SDCWA, per capita water use by homes and businesses in the San Diego region is currently 37% below 1990 levels.

Implementation of the Emergency Storage Project⁷ (ESP) is another element of the SDCWA water supply diversification policy. ESP is a system of reservoirs, interconnected pipelines and pumping stations aimed at increasing water storage capacity in the County. When complete, the system will provide up to six months of locally stored water.

Construction of Olivenhain Dam, begun in August 2000 and completed in 2003, is one component of ESP. Olivenhain Reservoir holds 7.8 billion gallons (23,937 acre-feet) of imported water stored in the reservoir and reserved for emergency use.⁸

Another component of ESP is the Lake Hodges to Olivenhain Pipeline Tunnel (LHOP). LHOP connects Lake Hodges to the Olivenhain Reservoir. The pipeline allows the SDCWA to move water from one reservoir to another. An added benefit of LHOP is electricity generated at peak times. The LHOP pump storage project produces up to 40 megawatts of electricity valued at \$108 million over the long term. The project generates hydroelectric power for the region, on demand, by sending water from Olivenhain Reservoir through the pump turbines as it flows downhill into Lake Hodges. The LHOP generates power during daylight hours when electricity demand is

⁵ For example: J. Overpeck, B. Udall. Dry Times Ahead. *Science*, 2010; 328 (5986): 1642.
<http://www.sciencemag.org/content/328/5986/1642>

⁶ <http://www.reuters.com/article/2008/02/13/idUS18019+13-Feb-2008+BW20080213>

⁷ <http://www.sdcwa.org/emergency-storage-project>

⁸ Lake Hodges and Olivenhain Reservoir (LHOP) Tour and Interviews 11/14/2012

highest. The LHOP pumps water back into Olivenhain Reservoir during off-peak hours when energy costs are less.⁹

Another component of ESP involves raising the height of San Vicente Dam by 117 feet. Construction is completed and the reservoir is expected to fill to its new capacity in four or five years. When filled, water held in the San Vicente Reservoir will be increased from 90,000 acre-feet to approximately 242,000 acre-feet, or approximately 78.9 billion gallons.¹⁰

Seven major stream systems originate in the mountains of the County. Runoff from these seven watersheds supplies twenty-five regional reservoirs with local water supplies. These reservoirs have a combined capacity of approximately 587,000 acre-feet, the region's single largest local resource of supply.¹¹

In addition to MWD supply and local resources, SDCWA will get about 30% of its supply from the Colorado River. In October 2003, SCDWA, Coachella Valley Water District, Imperial Irrigation District, MWD, State of California, and the U.S. Department of the Interior signed agreements related to conservation and transfer of Colorado River water. One central agreement, Colorado River Quantification Settlement Agreement¹² (QSA) settled decades of dispute over the use of Colorado River water. Because of the QSA, California's basic annual apportionment of water from the Colorado River is 4.4 million acre-feet.¹³

The concrete lining project of the All-American Canal and the Coachella Canal are critical components of the QSA. The lining projects conserve water loss due to seepage from previously unlined portions of the canals. Concrete-lined canals constructed as part of this project result in an annual savings of 93,700 acre-feet of water.¹⁴ As part of the QSA agreement, SDCWA obtained the rights to a portion of the conserved water. SDCWA anticipates that by 2020, the canal lining transfer will constitute 9% of its water supply portfolio.

Each of these water policy issues and approaches are by nature independent and complimentary but strongly interrelated. This Grand Jury report principally addresses the two critical topics of Advanced Water Purification/Indirect Potable Reuse (AWP/IPR) and desalination of ocean water separately in the following sections. The Grand Jury deems each topic necessary and vital to a comprehensive water policy to achieve resource independence. Accordingly, our Facts and Findings and ensuing Recommendations for each topic follow each separate section.

⁹ Lake Hodges and Olivenhain Reservoir (LHOP) Tour and Interviews 11/14/2012

¹⁰ Lake Hodges Tour & Interview 11/14/2012

¹¹ <http://www.sdcwa.org/reservoirs>

¹² <http://www.sdcwa.org/quantification-settlement-agreement>

¹³ <http://www.sdcwa.org/canal-lining-projects>

¹⁴ <http://www.sdcwa.org/canal-lining-projects>

ADVANCED WATER PURIFICATION TO INDIRECT POTABLE REUSE

AWP and IPR processes involve using recycled wastewater that meets all regulatory requirements for non-potable use, treating it further to meet potable water standards, and adding it to an untreated potable water supply. The untreated potable water supply is usually a water body such as a surface-water reservoir, wetland or a groundwater aquifer. The term “indirect” refers to the distinction that highly treated recycled water is not plumbed directly to the potable distribution system. During a long residence time in a wetland, aquifer or reservoir, the recycled water blends with source water, usually imported water and/or local runoff.

Water recycling is the treatment and disinfection of municipal wastewater to provide a water supply suitable for non-drinking purposes. AWP takes recycled water to a higher level of purification.

Water treatment and reclamation

Two aspects of utilizing reclaimed water are adherence to public health standards and the cost of sanitizing the water to the level that meets public health requirements.

Financial savings from the use of reclaimed water may be significant. The current cost for recycled water is \$0.80 per hundred cubic feet (HCF)¹⁵ which is low compared to the current drinkable water rate of about \$3.60 per HCF.¹⁶ The cost of taking recycled water to the higher level of purity needed to meet public health standards depends on many factors, including the cost of the additional treatment and the cost of building treatment facilities and infrastructure to transport the product from the purification facility to the storage reservoir. The Grand Jury was unable to find a specific cost quote in terms of HCF for AWP and IPR water, but did receive the general assurance that the current estimation of cost per HCF is comparable to the predicted future imported water rates. MWD water costs are increasing at approximately a 6% yearly rate.

We did learn that the total cost of potable quality reclaimed water would likely be about \$2,000 per acre-foot. That is costlier than water purchased from the MWD, which totals about \$1,000 per acre-foot, according to the SDCWA.¹⁷ However, by diverting water from its wastewater system for reuse and the associated decrease in the amount of water purchased from other sources, the reclamation process may lead to savings that will bring the net cost to about \$1,000 per acre-foot.

The California Department of Public Health¹⁸ maintains the standards for three types of water. Their requirements are among the most rigorous in the United States.

- **Secondary Treated Recycled Water:** Provides water for surface irrigation of orchards, vineyards, trees and vines, and landscaping areas not subject to constant human use, such as highway roadsides.

¹⁵ One hundred cubic feet is equal to 748 gallons.

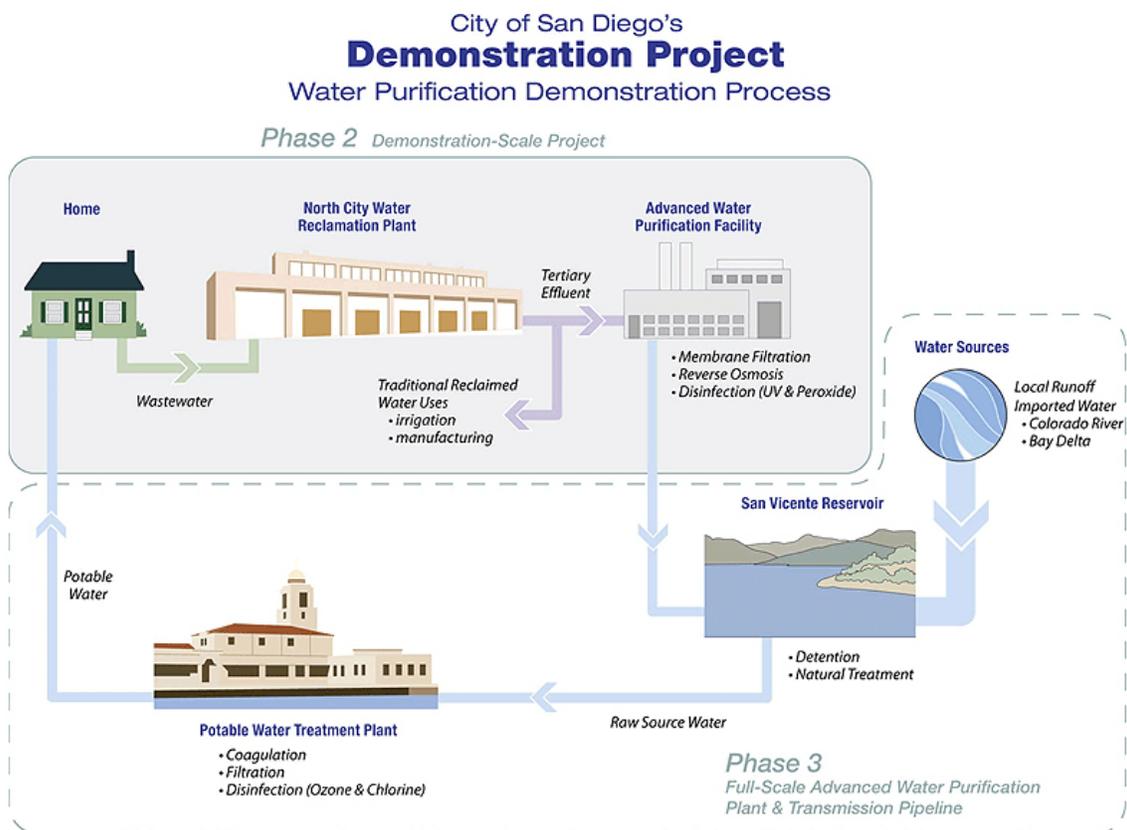
¹⁶ <http://www.sdcwa.org/recycled-water>

¹⁷ <http://www.sdcwa.org/>

¹⁸ <http://www.cdph.ca.gov/Pages/DEFAULT.aspx>

- Tertiary Treated Recycled Water: Provides water for spray irrigation on parks, playgrounds, golf courses, schoolyards, industrial uses, and on edible food crops.
- AWP Recycled Water¹⁹: Provides potable water that can be used for the replenishment of groundwater and surface reservoirs utilized for drinking water.

The Grand Jury learned that the City Council directed the Mayor and City staff to evaluate whether advanced water purification technology can safely and reliably produce purified water for eventual drinking water use. In October 2007, the City began a demonstration project to evaluate the feasibility of treating wastewater to drinking water standards. The demonstration project is located at the North City Water Reclamation Plant (NCWRP). Approximately a million gallons per day of reclaimed water is generated by NCWRP.



The above diagram summarizes the AWP/IRP process. Findings from the Water Purification Demonstration Project were published in the Project Report²⁰. One of the requirements of the Demonstration Project was to convene an Independent Advisory Panel²¹ (IAP) to provide expert peer review of the technical, scientific, and regulatory

¹⁹ <http://www.sandiego.gov/water/waterreuse/demo/>

²⁰ <http://www.sandiego.gov/water/waterreuse/pdf/projectreports/wdpfinalprojectreport.pdf>

²¹ <http://www.sandiego.gov/water/waterreuse/demo/iapanel/>

aspects of the City's water purification concept. The IAP, organized and managed by the National Water Research Institute²² completed their role in November 2012. The IAP summarized their findings as the following: "It is the unanimous conclusion of the IAP that the project as described in the Project Report is a landmark development in the acceptance and furtherance of Indirect Potable Reuse and will contribute to the City of San Diego's water portfolio." The panel found that the purified water meets or exceeds all drinking water standards, the quality of the water is actually better than existing water stored in San Vicente Reservoir, and City staff have conducted an extensive and well directed public outreach program to inform San Diego citizens about the project.

The San Diego City Council has reviewed the results of the demonstration project and has made a decision to proceed with reclaimed water technology. However, it remains for the Council to choose between 1) the immediate use of the purified water as it comes directly from the plant, or 2) reuse indirectly by flowing it through a new pipeline to wetlands above San Vicente Reservoir and flowing downhill into the reservoir for an augmentation period of at least 12 months. Direct use would be cheaper because construction of a 23-mile link-up pipeline to the San Vicente Reservoir would not be necessary. However, the IPR strategy may be more acceptable to the public because it adds another layer of purification.

Further implementation of the plan entails the construction of the AWP/IPR plant and if necessary a pipeline to wetlands in the vicinity above the San Vicente Reservoir. SDCWA is conducting a study of the San Vicente Reservoir to test the key functions of reservoir augmentation and determining the viability of a full-scale project.²³ The next stage will be to build an approximately \$370 million facility that will produce up to 15 million gallons per day of treated water, supplying about 3-4 percent of the city's water use.

FACTS AND FINDINGS

Fact: The cost of water imported to the County is increasing; availability of imported water is uncertain.

Fact: The stated objective of SDCWA is to reduce water received from the MWD to 30% by 2020.

Fact: NCWRP demonstration project shows that production of potable quality from wastewater is feasible.

Fact: The City Council is in the process of evaluating the results of the demonstration project. The evaluation is expected to conclude in 2013 when a decision will be made regarding the construction of a full-sized plant and a possible pipeline to the San Vicente reservoir.

Fact: The cost per acre-foot of reclaimed water treated to potable standards is close to that of water imported from MWD.

²² http://en.wikipedia.org/wiki/National_Water_Research_Institute

²³ <http://www.sandiego.gov/water/waterreuse/demo/>

Finding 01: Reclaimed water is a viable resource and its use should be expanded as part of a long-term water strategy.

Finding 02: It is important to keep the public informed about both the feasibility of water reclamation and its importance in San Diego's water supply strategy.

RECOMMENDATIONS

The 2012-2013 San Diego County Grand Jury recommends the San Diego Mayor and City Council:

- 13-61:** By October 31, 2013 complete their study, review and evaluation of the results of the Advanced Water Purification Pilot Study at NCWTP.
- 13-62:** By November 30, 2013 make a positive decision and vigorously pursue the approval process for construction of a full scale AWP plant next to the NCWRP and supporting infrastructure to utilize the lessons learned in the AWP demonstration pilot study.
- 13-63:** By January 31, 2014, initiate construction of a full-scale version of the AWP facility modeled upon the technology utilized in the AWP Pilot Study at the NCWRP.
- 13-64:** By January 31, 2014, decide whether to immediately use the AWP purified water and place it into the aqueduct system and the potable water supply, or, initiate construction of a pipeline from a new AWP facility to a San Vicente wetlands project.
- 13-65:** By January 31, 2014, make a positive decision for construction of a full-scale AWP plant next to the South Bay Wastewater Reclamation Plant (SBWRP) and infrastructure to utilize the lessons learned in the AWP demonstration pilot study.
- 13-66:** Expand ratepayer education and outreach on water policy leading to a positive public attitude toward future large-scale water storage and supply projects.

DESALINATION

The Carlsbad Desalination Project

After more than ten years of planning and another six years in the permitting process, the Carlsbad Desalination Project²⁴ was recently approved by SDCWA. The Grand Jury found this to be a significant move toward lessening dependence on imported water. When construction is complete, desalinated water will be a reliable local resource and

²⁴ <http://www.sdcwa.org/sites/default/files/files/publications/desal-carlsbad-fs-single.pdf>

move SDCWA further toward their stated goal of reducing dependence on imported water to 30% by 2020.

SDCWA and member agencies recently granted the Poseidon Corporation, a desalination development company, contractual approval to begin construction of a desalination plant in Carlsbad. The facility will use brackish water from the Agua Hedionda Lagoon to produce potable water for distribution by SDCWA. The expected amount of potable water produced by desalination at this facility is 50 million gallons per day (MGD), approximately 56,000 acre-feet annually. Pipelines will deliver the water produced at the desalination plant to the Twin Oaks Valley Treatment Plant (TOVTP) and the SDCWA's regional water delivery system. When complete, SDCWA expects the facility to produce 8-10 % of the County's water supply.

SDCWA estimates that, depending on the amount of water purchased annually under the agreement, the total price for the water (including the energy costs for the desalination process and the costs to make improvements to pipelines and treatment plants to accommodate the new supply) will be \$2,042 to \$2,290 per acre-foot in 2012 dollars. The average household's water bill may increase approximately \$5 to \$7 a month to pay for the new water resource. However, estimated costs for the average household's water (including desalinated water) are decreasing because of the current favorable bond market financing percentage rates. While the water initially will cost more than current sources, analysis by the SDCWA indicates that imports from the MWD could be more expensive than desalinated seawater by the late 2020s.

The proposed plant follows Leadership in Energy and Environmental Design²⁵ (LEED) program guidelines. The plant is fully automated to reduce impact on the environment. The plant will incorporate a solar-powered generation system on its approximately 50,000 square foot rooftop. The plant will also house a pressure-exchanger-based energy recovery system, variable frequency drives, and energy-efficient motors for all pumps. About 80 % of the pipes for the plant will be made of high-density polyethylene and fiberglass-reinforced plastic materials for energy saving water conveyance.

The Long Road to Approval

The Carlsbad Desalination Project is an illustrative case study of the initial costs and technical challenges associated with development of any seawater desalination plant. The developers also require many years of hearings and permit applications to get a desalination plant fully approved.

The project, first proposed in 1998, faced significant hurdles to gain required official approvals that delayed the construction. Thirteen lawsuits were filed against the project between 2006 and 2009. In seeking a construction permit from the California Coastal Commission for its project, the developer agreed to make up for the damage to marine life by improving coastal habitat in the San Diego Bay National Wildlife Refuge²⁶. Officials of the developer, Poseidon Corporation, pledged to create an estuary to nurture the kinds of small fish and microorganisms that the plant will destroy as well as boost the

²⁵ <http://new.usgbc.org/leed>

²⁶ <http://www.fws.gov/refuges/profiles/index.cfm?id=81682>

food supply and habitat for shorebirds and raptors. In addition, to offset the additional energy consumption, Poseidon has agreed to pay \$1 million to plant 100,000 trees as part of the Cuyamaca Rancho State Park Reforestation Project²⁷. The trees will capture carbon dioxide gases, thus reducing the region's emissions linked to climate change. The project will also dedicate 15 acres of lagoon and oceanfront property for improving public access and recreation as well as take steps to enhance, restore and maintain the marine environment.

The agreement²⁸ between the developer and local government agencies specifies the proposed programmatic and financial terms for the production and delivery of water from the planned desalination plant to the TOVTP and regional water delivery system. It also includes terms for the potential purchase of the plant by SDCWA.

Under the agreement, SDCWA will have no responsibility or liability for the design, permitting, financing, construction and operation of the project. SDCWA will purchase at least 48,000 acre-feet of desalinated water annually at a predetermined price for 30 years once commercial operations begin. Water in excess of 48,000 acre-feet annually will be purchased at SDCWA's discretion at a lower rate. The term can be extended up to three additional years due to unexpected or uncontrolled events.

At the end of the contract term, SDCWA will have the option, but not an obligation, to purchase the plant for \$1. SDCWA also has the option to buy the plant after ten years.

In addition, Poseidon will design and build a new ten-mile pipeline to convey desalinated water to SDCWA's regional water delivery system. The SDCWA will own and operate the new pipeline. However, to protect SDCWA against the risk of a stranded asset, Poseidon becomes responsible for a share of the cost of the pipeline, up to 100%, if the plant falls short in producing water. The agreement contains a number of other provisions to ensure reliability and protect ratepayers. They include:

- SDCWA will not have to begin paying for water until the desalination project passes its acceptance tests.
- SDCWA can reject buying water that does not meet specific water quality requirements.
- SDCWA will have rights to insure the plant is operated in a safe manner in accordance with industry standards, including setting employment standards for key personnel; establishing, reporting, and record-keeping requirements; reviewing security and emergency plans and conducting inspections. The agreement also includes measures to insure effective coordination between the plant's operations staff and the Water Authority's operations staff.
- The agreement also includes default provisions under which SDCWA would have the option to terminate the agreement and seek liquidated damages or other remedies. Default conditions include:
 - Plant failing to pass acceptance tests by a certain date

²⁷http://www.parks.ca.gov/pages/25071/files/reforestation_project_at_cuyamaca_rancho_state_park_bill_herms_jan_14_2009.pdf

²⁸ <http://www.sdcwa.org/desalination>

- Poseidon declaring bankruptcy or abandoning the project
- Plant receiving multiple notices of violation from regulators or having repeated violations of drinking water standards
- Project delivering less than 75% of contract year water supplies;
- Poseidon failing to make any necessary shortfall payments on debt service for the desalination pipeline.

In addition, SDCWA's 24 local member agencies have declared that they intend to purchase a portion of the desalinated water supply directly from SDCWA as a local supplier at the full cost per acre-foot. Such local supplies help improve the water agencies' water supply reliability, especially during times of drought or shortages in imported water supplies.

The project will inject millions of dollars into the local economy. A report commissioned by the development company forecasts more than 2,300 jobs in the County created by the plant over the 32-month construction period. Once the facility is operational, it will support nearly 600 jobs through direct and related spending.

Camp Pendleton Desalination Project

In November 2005, the County water agencies approved a contract to conduct a feasibility study for a seawater desalination plant on Camp Pendleton. Planning is being led by the SDCWA, with participation from Marine Corps Base Camp Pendleton. Early feasibility studies suggest potential for a seawater desalination plant that could produce from 100 to 150 million gallons per day. SDCWA plans to conduct further technical studies at the proposed facility site.

The study includes detailed feasibility evaluations of conveyance, intake, and discharge facilities as well as environmental and permitting requirements, cost estimates, and project implementation issues. Results of the feasibility study of the proposed Camp Pendleton seawater desalination project are on the SDCWA website. In brief, a seawater desalination plant on Camp Pendleton would be feasible unless unexpected environmental or legal obstacles surface.²⁹

SDCWA and the U.S. Marine Corps are proposing that the desalination project be located in the southwest corner of Camp Pendleton near the Santa Margarita River. The proposed plant would provide desalinated seawater to the SDCWA, Camp Pendleton, and possibly the MWD. At full capacity, the proposed plant would be three times larger than the Carlsbad plant. The project will cost more than \$2 billion. The estimated annual operation and maintenance costs range from \$42 million to \$96 million. If approved, SDCWA expects the desalination plant to go into service in 2018.

FACTS AND FINDINGS

Fact: Desalinated water is one component of SDCWA's long-term strategy for water supply.

²⁹ http://www.sdcwa.org/sites/default/files/files/water-management/desal/ExecSummary_desal-study_Dec09.pdf

Fact: After a lengthy process, the Carlsbad Desalination Project received final approval.

Fact: Water supplied by desalination costs more than water currently delivered by MWD because of the energy needed for the desalination process and the cost of building necessary processing facilities and infrastructure needed for water transfer to the existing distribution system.

Fact: SDCWA approved a contract to conduct a feasibility study for a potential seawater desalination plant on Camp Pendleton.

Finding 03: Desalination is a viable local source of water. Plans for use of desalinated water should be expanded as part of a long-term water strategy.

Fact: An objective of SDCWA is to have a local emergency water storage capacity of six months.

Finding 04: Long-term local storage of water for distribution during emergencies is an important component of SDCWA's water strategy.

Finding 05: The current City and SDCWA objective of six-month emergency water storage capacity is insufficient.

RECOMMENDATIONS

The 2012-2013 San Diego County Grand Jury recommends that the San Diego County Water Authority:

- 13-67:** Continue to pursue a vigorous policy to lessen dependence on imported water by continued conservation, reuse and reclamation, additional emergency storage projects and new desalination projects with an ultimate goal of sustainable and reliable water independence for the County.
- 13-68:** Further demonstrate the economic feasibility of expansion of desalination projects to include a Camp Pendleton location.
- 13-69:** Extend the objective of the water supply Emergency Storage Program beyond the current proposed six months.

REQUIREMENTS AND INSTRUCTIONS

The California Penal Code §933(c) requires any public agency which the Grand Jury has reviewed, and about which it has issued a final report, to comment to the Presiding Judge of the Superior Court on the findings and recommendations pertaining to matters under the control of the agency. Such comment shall be made *no later than 90 days* after the Grand Jury publishes its report (filed with the Clerk of the Court); except that in the case of a report containing findings and recommendations pertaining to a department or agency headed by an elected County official (e.g. District Attorney, Sheriff, etc.), such comment shall be made *within 60 days* to the Presiding Judge with an information copy sent to the Board of Supervisors.

Furthermore, California Penal Code §933.05(a), (b), (c), details, as follows, the manner in which such comment(s) are to be made:

- (a) As to each grand jury finding, the responding person or entity shall indicate one of the following:
 - (1) The respondent agrees with the finding
 - (2) The respondent disagrees wholly or partially with the finding, in which case the response shall specify the portion of the finding that is disputed and shall include an explanation of the reasons therefor.
- (b) As to each grand jury recommendation, the responding person or entity shall report one of the following actions:
 - (1) The recommendation has been implemented, with a summary regarding the implemented action.
 - (2) The recommendation has not yet been implemented, but will be implemented in the future, with a time frame for implementation.
 - (3) The recommendation requires further analysis, with an explanation and the scope and parameters of an analysis or study, and a time frame for the matter to be prepared for discussion by the officer or head of the agency or department being investigated or reviewed, including the governing body of the public agency when applicable. This time frame shall not exceed six months from the date of publication of the grand jury report.
 - (4) The recommendation will not be implemented because it is not warranted or is not reasonable, with an explanation therefor.
- (c) If a finding or recommendation of the grand jury addresses budgetary or personnel matters of a county agency or department headed by an elected officer, both the agency or department head and the Board of Supervisors shall respond if requested by the grand jury, but the response of the Board of Supervisors shall address only those budgetary or personnel matters over which it has some decision making authority. The response of the elected agency or department head shall address all aspects of the findings or recommendations affecting his or her agency or department.

Comments to the Presiding Judge of the Superior Court in compliance with the Penal Code §933.05 are required from the:

<u>Responding Agency</u>	<u>Recommendations</u>	<u>Date</u>
Mayor, City of San Diego	13-61 through 13-66	8/13/13
City Council, City of San Diego	13-61 through 13-66	8/13/13
San Diego County Water Authority	13-67 through 13-69	8/13/13

DEFINITIONS AND TERMINOLOGY

ESP	Emergency Storage Project
HCF	hundred cubic feet
IAP	Independent Advisory Panel
LEED	Leadership in Energy and Environmental Design
LHOP	Lake Hodges to Olivenhain Pipeline Tunnel
MGD	million gallons per day
MWD	Metropolitan Water District of Southern California
NCWRP	North City Water Reclamation Plant
QSA	Colorado River Quantification Settlement Agreement
SBWRP	South Bay Wastewater Reclamation Plant
SDCWA	San Diego County Water Authority
TOVTP	Twin Oaks Valley Treatment Plant