

**WaterSMART:  
Water and Energy Efficiency Grants for FY 2017**

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**City of Torrance:  
Torrance Van Ness Well Field for Water Self Sufficiency  
and Drought Resiliency**

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February 14, 2017

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**TECHNICAL PROPOSAL (Begin 20-page narrative)**

Date: February 14, 2017

City: TORRANCE (applicant)

County: LOS ANGELES

State: CALIFORNIA

**Executive Summary**

Project Length of Time: 36 MONTHS

Estimated Completion Date: JULY 2020

Located on a Federal Facility: NO

Estimated New Water Supply: 4,500 AFY

**Project Summary**

The City of Torrance, California (population 148,495) requests \$750,000 to offset costs associated with the \$16.7 million ***Torrance Van Ness Well Field for Water Self-Sufficiency and Drought Resiliency*** (Project) to enhance local and regional drought resiliency and water emergency preparedness by constructing three new groundwater wells, which can produce an average 4,500 AFY of local, drought-resilient groundwater. Construction of a four-mile



**Figure 1.** The project wells will connect to existing, but unused Border Avenue Storage and Treatment reservoir, above. The storage capacity of the one million gallon reservoir will be approximately .9 million gallons to allow for space for aeration treatment at the top of the tank.

municipal water main will connect the wells to the City's existing, but unused Border Avenue water treatment and storage reservoir, enhancing local supply and emergency delivery capability to Torrance and neighboring jurisdictions. The Project will reduce withdrawals. The Project is sustainable with a useful life of 30 years, and is essential for achieving greater levels of water supply reliability and drought response capabilities. This project specifically aims to improve water

management and increase operational flexibility by increasing local groundwater production capabilities to reduce withdrawals from the State Water Project and Colorado River, which are dwindling due to recurring drought. This project will proceed immediately upon notification of grant funding, and we anticipate the final design, engineering, environmental and construction of the project can be completed within 36 months. The City will continue monitoring and

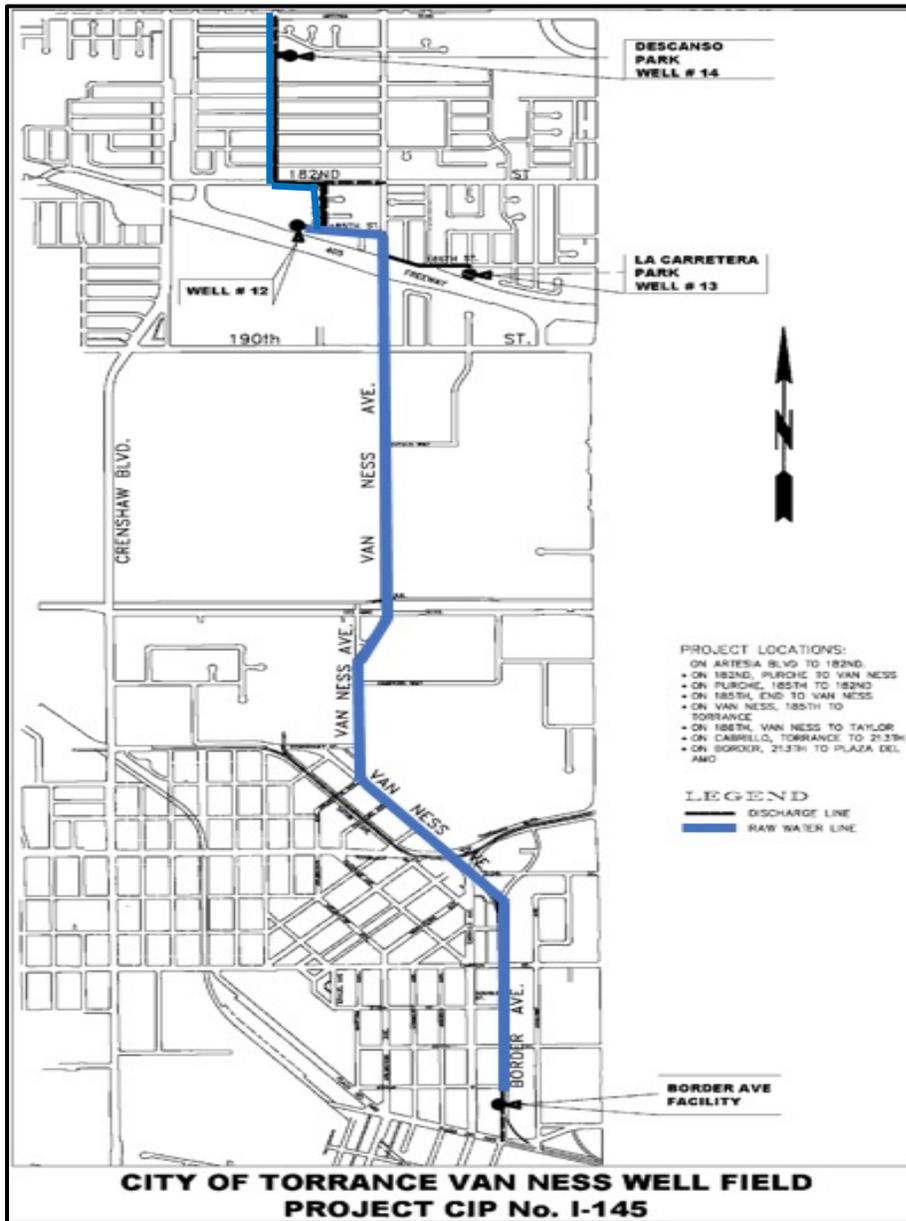
evaluation for the final 6 months of the grant period. The project is not located on a federal facility.

### **Background Information**

The wells will provide a local water source in a densely-populated region that is almost completely reliant on federal imported water. Furthermore, the Project is directly aligned with the region's Conjunctive Use Agreement, which will allow for additional pumping rights in our adjudicated basin for water emergencies. When completed, the Project will allow the City to increase its groundwater pumping rights within the adjudicated West Coast Basin (Basin), in accordance with the terms of a 2014 Conjunctive Use Amendment (Amended Judgment) to the original 1961 judgment. Further, Torrance has historically relied on expensive imported water due to a lack of viable wells. The proposed Project builds upon The North Torrance Well Field Project, another initiative to tap into high quality local groundwater in this coastal City. Upon completion of that important infrastructure improvement in 2019, the City, for the first time, will be able to fully utilize our adjudicated limit for groundwater drawn from the Basin. Importantly, the City is now in a position to strategically enhance our infrastructure capabilities to ensure uninterrupted and reliable drinking water for our customers should drought conditions worsen or emergency water loss situations arise. The proposed Project will enable the City to advance our goal to move toward more water independence and less reliance on imported water sources. Total project costs are estimated at \$16.7 million. Of this total, \$750,000 is requested in Federal funding. The additional groundwater supply will be used for potable water, storage and potentially Conjunctive Use. For the purposes of this grant application, the City will discuss the entire project and its benefits throughout the text, but will request funds only to offset costs to drill and construct Well No. 14. The project components for the three Wells have a total cost of \$5,000,000, which, should the project be awarded, will be divided by Reclamation (\$750,000 grant request) and the City (\$4,250,000) in local matching funds). Reclamation funds will enable benefits associated with the entire project portfolio. The City of Torrance has included the Project in its Capital Improvement Budget, and \$9 million in local funding is available to complete the pre-construction environmental and design tasks, and some of the construction.

Historically, due to the poor groundwater quality and sea water intrusion, we have only utilized about one third of our groundwater rights, and we have been dependent on imported water for over 65% of our supply. We have undertaken tremendous groundwater management efforts to strategically convert our supply portfolio from imported water to locally sourced groundwater, including the addition of two groundwater wells in our North Torrance Well Field Project (partially BOR-funded). We are now uniquely positioned to implement a dramatic change towards self-sufficiency by creating the capability to use 4,500 AFY local groundwater resources, and also the capability to produce up to 7,000 AFY for drought and other water emergencies. Our community remains in drought, and continues to seek measures to reduce

reliance on imported water sources that include the State Water Project – a water source that is severely impacted by drought. The complete project will allow the City to benefit from the terms of the Amended Judgment by utilizing local water sources to manage the impacts of prolonged, or recurring drought. The new wells are capable of producing high quality,



abundant and drought-resistant yields as they will be drilled to a depth up to 700 feet.

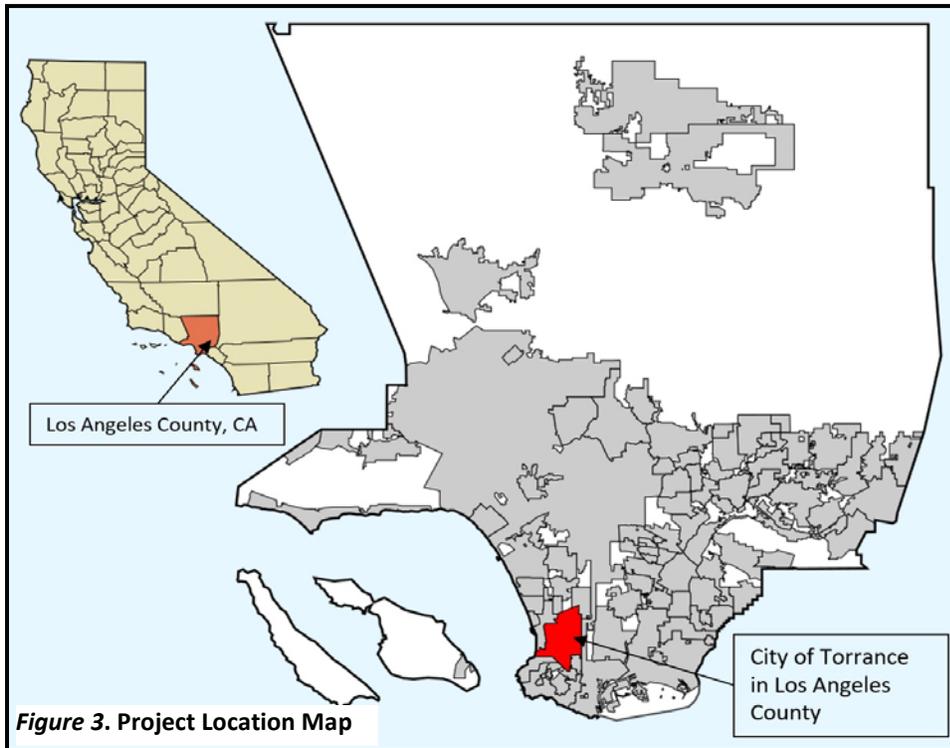
Furthermore, this portion of the groundwater basin is continuously replenished with recycled water from the West Basin Water Recycling Facility, and a regional effort to prevent seawater from contaminating the groundwater. The Project will seamlessly integrate with a network of existing infrastructure, specifically designed to promote self-sufficiency through the production of reliable **local water supplies.**

Two of our older groundwater wells were decommissioned due to high chloride levels from a saline plume from the Pacific Ocean, where seawater infiltrated local groundwater.

**Figure 2.** The Project includes the installation of approximately four miles of water transmission lines underlying Van Ness Street from the well sites to the treatment and storage facility on Border Avenue.

There is only one area in Torrance where water is of higher quality and suitable for local use. The proposed project provides a significant opportunity to utilize this high-quality groundwater in the north portion of the City, which is uncommon in the region. The City of Torrance is

continuously looking to find alternative local sources of water supply to offset imported water and realize the full allocation of our groundwater rights. The proposed project will do just that.



The City of Torrance Van Ness Well Field for Water Self-Sufficiency and Drought Resiliency will enable Torrance to tap into its best quality groundwater. Reclamation funds will allow the City to drill one of three groundwater wells, and enable an important portion of the total \$16.7 Million overall project. It is part of a long-range plan

to increase local water sources, reduce dependence on imported water, and ensure emergency water delivery capabilities for our 26,000 residential, business and industrial customers.

**Torrance Municipal Water Department (TMWD).** The TMWD staff and system deliver over 30,000 acre feet (9.8 billion gallons) of both potable (drinking water) and recycled water supplies to residential, business and industrial customers in the City. We maintain and repair 320 miles of distribution pipelines, 2,700 fire hydrants, 7,500 valves and 26,000 service connections, provide responses to emergencies and water outages on a 7 day/24 hour basis; and conduct approximately 2,200 water quality tests annually as part of a comprehensive water quality program. The City of Torrance owns and operates TMWD, which is allowed to pump 5,649 acre feet of groundwater per year in an adjudicated basin. An Amended Judgment allows Torrance to purchase more pumping rights as needed. It also provides for carryover of pumping allocations that were not used in prior years. TMWD serves residents and business customers covering 78% of the City. The Department is responsible for local water supply, the monitoring and maintenance of water quality, planning preventive and predictive maintenance, the operation and repair of the water system, distribution system, and interfacing with the State Health Department and other agencies regarding water quality matters. Please see Appendix A for TMWD Service Area Map.

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## Torrance Van Ness Well Field for Water Self-Sufficiency and Drought Resiliency

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The adjudicated limitations are designed to prevent over-drafting groundwater from the West Coast Basin which underlies the entire City of Torrance and 11 other cities. TMWD is currently only utilizing about one third of its groundwater rights (pumping 1,800 AFY). However, ongoing construction of our North Torrance Well Field Project (BOR funded) will finally enable our City to fully utilize our groundwater pumping rights. Construction of the proposed Project wells will build on the City's new capabilities, and upon completion will allow us for the first time to pump stored water and purchase additional pumping rights in accordance with the Amended Judgement. Groundwater provides only a small portion, (about 3.5%) of Torrance's water supply, but our portfolio is poised for a dramatic change towards self-sufficiency using local groundwater resources. As previously mentioned, the City will soon begin to use its full pumping allocation of 5,649 AFY upon completion of its North Torrance Well Field Project. The proposed Project will enhance the overall production capabilities and support an increased, new local supply, represented as an increase in our percentage of supply from 3.5% to 46% groundwater, as well as a brand new capacity to facilitate emergency water delivery.

The proposed drought resiliency Project will allow Torrance to tap into local groundwater for:

- Purchase of additional rights
- Store and pump up to 1,128 AF of carryover groundwater.
- Purchase and store up to 25,800 AF in the Basin for future use.
- Potable use for an emergency situation.
- Provide extra or emergency water to California Water Services Company, a neighboring water delivery system.

Topographically, the service area consists of the El Segundo Sand Hills and the Torrance Plain. Along the southern edge of the service area are the Palos Verdes Hills, which rise about 445 feet at the southern border of Torrance. The service area overlies the West Coast Groundwater Basin, which consists of four main water bearing formations in the vicinity of Torrance, the Gage, Gardena, Lynwood, and Silverado aquifers. TMWD has five imported water connections with a total capacity of 33,666 gallons per minute to receive Metropolitan water. TMWD also has one active well, and one inactive, or standby well, to pump groundwater from the West Coast Basin. The standby well is located at the Border Avenue facility and was shut down due to poor water quality. Water sources currently available to TMWD consist of imported water purchased from Metropolitan, groundwater including desalinated water purchased from the Water Replenishment District of Southern California (WRD), and recycled water purchased from the West Basin Municipal Water District (WBMWD). Imported water supplies are delivered to TMWD by Metropolitan which diverts water from the Colorado Aqueduct, and from the State Water Project (SWP), via the California Aqueduct. Both the Colorado Aqueduct and the Cal Fed Bay Delta Program (aka State Water Project) are Bureau of Reclamation facilities.

<b>Figure 4. City of Torrance Current Water Consumption</b>		
<b>Water Supply Sources</b>	<b>% of Average Annual Supply</b>	<b>Annual Consumption (AFY) 2014 - 2015</b>
Imported Water	68.5	<b>16,205</b>
Local Supply (Groundwater)	3.5	<b>829</b>
Local Supply (Desalter)	5.8	<b>1,366</b>
Recycled Water	22.2	<b>5,270</b>
<b>Totals</b>	<b>100</b>	<b>23,670</b>

*Note: Water consumption during this period was reduced compared to typical consumption due to partial shutdown of the Exxon Mobile refinery which uses recycled water and also due to drought-related conservation mandates.*

Although recent drought conditions have improved in parts of California, the state has been in extreme and severe drought for the past several years. On January 17, 2014, California Governor Jerry Brown declared a State of Emergency for California in the face of record dryness, triggering a variety of water conservation measures and a request for California residents to voluntarily cut back on water use.<sup>1</sup> In 2015, facing continuing extreme drought, Governor Brown declared another State of Emergency, and announced California’s first call for statewide mandatory water restrictions. 2016 brought heavy storms that filled reservoirs and partially rebuilt the snowpack in the Sierras, which supplies much of the SWP; however, The California Department of Water Resources stressed that Southern California remains in drought conditions and the statewide snowpack is still below average despite recent storms.<sup>2</sup> The City is cognizant that droughts often have long tails, especially given the extended droughts over such a large state, and therefore Californians must reconcile our water systems to function in a dry place with permanent water shortages (except in unusual wet years). In other words, we must continue to prepare for periods of drier than average conditions with greater shortages and costs, which are droughts. Even more telling is a blog post from UC Davis water expert Jay Lund: “Drought damage to California’s forests could require decades to recover, or, if higher temperatures persist, the ecology of many forests might shift to new native conditions. Native fish also will likely need years to recover – with impediments from already depleted numbers and highly disrupted and altered ecosystems.”<sup>3</sup>

Not only is the City’s imported water supply affected by these conditions, but so are local groundwater supplies, which are greatly reduced as a result of recent drought conditions. These factors have forced Metropolitan to tap into reserves in order to maintain deliveries to Torrance and the rest of the 26-member agencies. The City is now under more pressure than ever to implement alternative water conservation and management processes. The project will enable the City to increase its self-sufficiency by converting 4,500 AFY of imported water into local water. This will reduce the City of Torrance’s continued dependence on imported water, currently over 65% of the City’s water. Less dependence means that the

<sup>1</sup> Orange County Register, 1/18/14

<sup>2</sup> drought.ca.gov, 1/4/17

<sup>3</sup> 1/10/17, “Tails of California’s Drought”

**Torrance Van Ness Well Field for Water Self-Sufficiency and Drought Resiliency**

City can utilize this local well water from the proposed project during dry years or in emergency situations that could potentially cut off imported water supplies, such as an earthquake. Moreover, in wet years, the City can ‘bank’ a portion of the groundwater for conjunctive use during the next drought. The deep new wells (~700 ft.) can produce high quality, abundant yields. Also, the wells are continuously replenished with recycled water that is used to replenish the aquifer and create a barrier to prevent seawater intrusion.

**Figure 5. Project Implementation Schedule**

Task No.	Timeline Major Project Tasks	Quarters 2017-18				Quarters 2018-19				Quarters 2019-20			
		3	4	1	2	3	4	1	2	3	4	1	2
0	BOR Awards Announced June 2017, Awarded September 2017												
1	Project/Grant Administration (includes: negotiating grant agreement with BOR, project kick-off meeting, day-to-day project administration, reimbursements, and performance reporting)												
2	Design and CEQA												
3	Environmental and Regulatory Compliance												
4	Construction/Implementation												
4.1	Prepare and Issue Bid Documents												
4.2	Evaluate proposals and award construction contract. Conduct Kickoff meeting with selected contractor												
4.3	<u>Raw Water Transmission Mains and Well Site Improvements.</u> Construction tasks include: Mobilization, installation of approximately four miles of 24" diameter water transmission pipe, and all appurtenances required for complete system, including traffic control during construction.												
4.4	<u>Discharge Storm Drain Pipelines.</u> Construction tasks include: Installation of storm water infrastructure, including catch basins manholes, and new storm water lines between the existing storm water systems and Project well sites, including all necessary permits, development of a Storm Water Pollution Prevention Plan (SWPPP)												
4.5	<u>Three Wells and Buildings.</u> Construction tasks include: Drilling and equipping three groundwater wells and protective housing.												
5	Construction Management and Inspections												
***Project completion expected before September 30, 2020***													

**Technical Project Description**

The City of Torrance is implementing the Project to expand its pumping and treatment capacity to expand and use groundwater rights according to the terms of the Amended Judgment, and

provide sufficient capacity to participate in conjunctive use and enable additional groundwater extractions during a drought or emergency. The Project will utilize the design-then-build methodology for design and construction of the following components:

- Drill three additional wells (No. 12 , 13, and 14):
  - Wells No. 12 and 13. The pilot holes for proposed Wells No. 12 and 13 were drilled at the project site in 2013 to determine water quality parameters and develop the design for the well. URS Corporation observed the construction of the pilot holes and prepared a report recommending the well designs. The wells were drilled to a depth of 900 feet below ground surface and backfilled to a depth of 46 feet below ground surface. The conductor casing was installed and grouted in place. The well will be completed as part of this project.
  - Well No. 14. Well No. 14 is proposed to be constructed on the southwest corner of Descanso Park on Casimir Avenue, and will include a 50' radius of impervious



**Figure 6.** Well No. 14 will be constructed at City-owned Descanso Park. A four-mile transmission main will route fresh groundwater to an existing, but unused treatment and storage reservoir.

surface to separate the well from the park's recycled water irrigation system.

The construction of three additional groundwater wells will expand the City's local groundwater production capacity by 4,500 AFY, on average. In a water emergency, the system would be capable of producing up to 7,000 AFY. The Project will also connect to the existing, but unused City-owned Border Avenue Treatment Facility. It was used previously for two wells in

Torrance that are no longer viable due to poor water quality (odor, color, taste). Treatment of the new wells' water will consist of disinfection (the addition of Chloramines) and also aeration at the Border Avenue facility. The aeration is a spraying process within the tank that allows for organic chemicals such as hydrogen sulfide and methane) to dissipate and escape through vents at the top of the tank. The reservoir will have the capacity to store approximately .9 million gallons of treated water.

Feasibility studies, project design, engineering, and preliminary planning are complete for well Nos. 12 and 13 and the raw water and discharge pipelines. Pilot drilling on two of the three wells reported high quality water and excellent yields. A separate Design/Build contract will be awarded to develop the wells and construct the well buildings. The City approved an amendment to the existing design contract to add raw water and discharge piping for Well No.

14 and update CEQA documents on February 7, 2017. The Project will be completed within 36 months of funding using a design-then build approach. Project tasks include:

1. Grant Management
2. CEQA/NEPA. The City's design and environmental consultant, Quantum Quality Consulting, Inc. has prepared a Mitigated Negative Declaration and the City is conducting additional noise and air testing.
3. Environmental and Regulatory Compliance. Acquisition of a Caltrans encroachment permit for the installation of the pipe in Van Ness Avenue at the 405 Freeway undercrossing is required. The City has obtained a permit from BNSF (Burlington Northern Santa Fe Railroad) for the pipe crossing (in secure casing ten feet below the roadbed);
4. Construction of raw water line and discharge piping, well development and well buildings; and
5. Construction Management and Inspections.

Please also see Appendix B – C for Transmission Main Plans and Pilot Well data.

### **Evaluation Criterion A—Project Benefits**

***Please describe how the proposed project will improve drought resiliency, including: Will the project make additional water supplies available?*** Yes. The proposed project will produce an average of 4,500 AFY of water available for potable uses. The three new wells are capable of producing up to 7,000 AFY with more continuous pumping if necessary during water emergencies. This water can be used locally in Torrance or shared with California Water Services Company, a neighboring provider that delivers water in other coastal cities.

***If so, what is the estimated quantity of additional supply the project will provide and how was this estimate calculated?*** The estimated quantity of 4,500 AFY of additional supply was calculated using potential draws from Well No.'s 12, 13, and 14 using the "forward simulation" methodology, which includes developing a groundwater model (i.e., drilling a test hole) and calibrating the model until observed data (i.e., pumping test data) match estimated specific capacity within an acceptable accuracy. For purposes of analysis of the proposed new wells, the City used forward simulation at two site-specific pilot holes (Wells No. 12 and 13) to estimate potential yields.

***What percentage of the total water supply does the additional water supply represent? How was this estimate calculated?*** The additional water represents 19% of the City's total water supply. TMWD delivers roughly 23,670 AFY of water to approximately 26,000 residents and businesses, representing about 78% of the City of Torrance.<sup>4</sup> TMWD purchases the majority of its supply (approximately 65%) from Metropolitan. The imported water supplies are sourced from the Colorado Aqueduct and the SWP. The City relies so heavily on imported water because, until now, we have only had the infrastructure capacity to pump 31% (1,800 AFY) of

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<sup>4</sup> Torrance.gov

our adjudicated rights, limited by shutting down wells due water quality issues (brine caused by seawater intrusion and high concentration of nitrates).

If TMWD has the capability to source an additional 4,500 AFY of reliable, local groundwater we will not only be able to reduce our reliance on imported water proportionately, through the purchase or lease of additional groundwater rights, but also we will for the first time be able to actively bank and pump local groundwater for reliable and efficient delivery throughout the City and some surrounding jurisdiction in the event of a drought or other water emergency. Implementation of the Project will allow Torrance to realize pumping rights as described in the Amended Judgment beyond its adjudicated pumping rights, **while reducing the City’s reliance on imported water and creating a facility that will enable us to respond to a water emergency.** The Project will connect with Torrance’s existing but unused Border Avenue Groundwater Treatment and Storage Facility, bringing it back online. The reservoir has not been used since two other Torrance groundwater wells stopped production due to poor water quality. **Together with Torrance’s Desalter expansion, and new North Torrance wells, the City will nearly meet our goal of complete water self-sufficiency.**

**Figure 7. City of Torrance Percentage of Water Supply Comparison**

Water Supply Sources	% of Average Annual Supply	% of Average Annual Supply Post Project
Imported Water	68.5	<b>26</b>
Local Supply (Groundwater)	3.5	<b>46</b>
Local Supply (Desalter)	5.8	<b>5.8</b>
Recycled Water	22.2	<b>22.2</b>
Totals	100	100

***Provide a brief qualitative description of the degree/significance of the benefits associated with the additional water supplies.*** Torrance residents will benefit from a local, high-quality water source that is cost-efficient. The new wells will provide water in the TMWD system where it is needed the most. Much of the groundwater in Torrance is not suitable for local use. Regulatory entities measure and monitor Total Dissolved Solids (TDS) in water to calculate the total mineralization of water. Coastal Torrance has been significantly affected by the salinization of the Silverado Aquifer – data from West Coast Basin wells indicate that while most drinking water wells in production had TDS concentrations within the Maximum Contaminant Levels, production wells located close to the coast in Torrance had TDS concentrations above recommended levels. The water at the proposed Project location is in the only area in the City with higher quality water suitable for local use. The significance of this is extremely important to note as we move toward our goal of less dependence on imported water. The volatility of our imported water supply (and that of all Southern California) is at an all-time high, and the need for local, high-quality water for potable use is paramount. This project will produce potable, high-quality water that is currently not available to our residents. The locally sourced water will provide a less costly source than that of our imported, desalter, or recycled water,

drawing the overall cost of our water supply down, which translates to more sustainable water rates for customers.

***How will the project build long-term resilience to drought? How many years will the project continue to provide benefits?*** The project will decrease the City's dependence on drought-stricken imported water supplies, and move us closer to local supply sustainability. The project will continue to provide benefits for at least 20 years, and we expect that the wells will provide benefits for upwards of 35 years or more. A significant threat to Torrance's drought resilience is its dependency on imported water. The new wells in this Project are drought-resistant because they are continually replenished with recycled water. The State Department of Water Resources (DWR) has not granted any of its contractors their entire request for water for the last 10 years. California's conservation plans for the SWP are predicated on the assumption that individual regions become more self-sufficient by investing heavily in water conservation, water-use efficiency, water recycling, and use of a region's surface or underground storage waters. The City of Torrance is working diligently to increase self-sufficiency in water supply, and has met the Governor's mandate to reduce per capita potable water use by 20%. By increasing our groundwater well extraction by 4,500 acre-feet per year, the City will reduce the need to purchase imported water, help preserve CRA and SWP supplies, and ensure the capability to efficiently respond to a drought or other water emergency. Pumping rotations at the new wells can be accelerated to produce up to 7,000 AFY, if needed.

***How will the project improve the management of water supplies? If so, how will the project increase efficiency or operational flexibility?*** The proposed project will equip three wells with pumps and outlet pipes to increase the return capacity of the City in meeting dry period or emergency water needs, thereby improving water management efficiency by allowing the City to gain more control of its water sources. As mentioned above, supply shortages have forced SWP to make steep cuts to regional water supplies for the last decade. The new wells are a more reliable and sustainable source for Torrance and other coastal cities who could use the water through water-sharing agreements with TMWD and the California Water Services Company. The three additional wells also allow the City to keep pumping full groundwater rights should the NTWFP be taken off line for maintenance or system modifications.

***Will the project make new information available to water managers? If so, what is that information and how will it improve water management?*** Torrance is committed to researching and collecting information about the groundwater it will collect from the proposed site, in partnership with the Water Replenishment District of Southern California (WRD) and the West Basin Water Association, mentioned in more detail further in the application. The water supply quality and quantity data the City will collect and share with other water managers will include, but not be limited to: groundwater elevation data; groundwater extraction data; surface water supply; total water use; change in groundwater storage; and sustainable yield.

***Will the project have benefits to fish, wildlife, or the environment? If so, please describe those benefits.*** Yes. In 2008, the Fish and Wildlife Service issued a biological opinion which

determined that the continued operation of the Central Valley Project (CVP) and State Water Project (a Reclamation facility) was likely to jeopardize the continued existence of the Delta Smelt, a small fish that lives in the Bay Delta (source of SWP water) and adversely modify its critical habitat.<sup>5</sup> Delta Smelt, among other endangered species, are adversely affected by federal and state exportation of fresh water from the Delta (CVP/SWP). Delta water salinity levels continue to increase, without sufficient fresh water replenishment, thus recent population samples, in an area which typically yielded 50 to 100 smelt fish, now present only six fish, with increased water salinity cited as a major contributing factor. Reduced reliance on imported water from the SWP will contribute to preserving the Delta Smelt habitat, and help protect other species.

***What is the estimated quantity of water that will be better managed as a result of this project? How was this estimate calculated? What percentage of the total water supply does the water better managed represent? How was this estimate calculated?*** The amount of water expected to be better managed through implementation is equal to the 4,500 acre-feet per average pumping capacity of the Project. Over the Project's 30-year life, this equates to approximately 135,000 acre-feet of water better managed. With groundwater costs fixed and imported water costs rising, this means that we can offer more competitive pricing structures even as our population grows, and control over half of our water supply, which has historically never happened for our City. With local control we can utilize or sell our supply depending on regional needs and other conditions (i.e. drought or earthquake situations which can interrupt water delivery) and increase our drought resiliency by growing our reserves of non-imported water supply. By requesting less future allocations from Metropolitan, we are better managing our water supply during dry and drought conditions, thus managing our entire portfolio of water supply sustainably.

***Provide a brief qualitative description of the degree/significance of anticipated water management benefits.*** These wells are resistant to drought because of reliable replenishment through recycled water, bolstering our resilience to the next drought cycle or another emergency water loss scenario, such as an earthquake causing a disruption of the flow of imported water sources. This additional supply will save imported water during dry years, alleviating the stress on state water supplies deeply affected by drought conditions. Good groundwater management will provide a buffer against drought and climate change, and contribute to reliable water supplies regardless of weather patterns. The significance of reliable water supplies that buffer our community against drought are numerous and include prevention of more costly measures, such as water hauling.

#### **West Coast Basin**

The adjudicated limitations are designed to prevent over-drafting groundwater from the West Coast Basin (Basin). In 1961, the Basin adjudication set forth limits to the allowable annual extraction of groundwater per water rights holder within West Basin in order to prevent seawater intrusion and an unhealthy groundwater level. As part of the adjudication, the Court

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<sup>5</sup> "Envisioning a Healthy and Sustainable Bay-Delta Ecosystem," US Fish and Wildlife Service. <<http://fws.gov/sfbaydelta>>, accessed on April 3, 2016.

appointed the California Department of Water Resources (DWR) to serve as Watermaster to account for all water rights and groundwater extraction amounts per year. Since the adjudicated groundwater production is substantially higher than the natural recharge of the Basin, the California State Legislature in 1959 created the Water Replenishment District of Southern California (WRD) to manage, regulate and replenish the Basin. Each year WRD determines the amount of supplemental recharge that is needed for the Basin based upon annual groundwater extractions and groundwater levels. As part of the recharge and protective duties, WRD procures imported water and recycled water for the West Coast Basin Barrier Project and Dominguez Gap Barrier Project to prevent seawater intrusion. The Basin is not experiencing overdraft or land subsidence. Please see Appendix G West Coast Basin Map for physical locations of the West Coast Basin Barrier Project and Dominguez Gap Barrier Project – the additional water supplies for this Basin. This supplemental recharge using recycled water ensures the proposed new wells will be sustainable and not vulnerable to drought.

### **Groundwater Monitoring Plan**

As mentioned above, the WRD is the groundwater management agency responsible for managing, regulating, and replenishing the Basin, and is the official Groundwater Level Monitoring Entity for the Basin. WRD is in support of the proposed project to enhance local sustainability. WRD has been monitoring the Central Basin and West Coast Basin for over 50 years, and produces the Regional Groundwater Monitoring Report (RGWMP) annually with comprehensive information from WRD's growing network of aquifer-specific monitoring wells and in-depth water quality analysis. The RGWMP presents information on groundwater levels and groundwater quality for the previous water year which runs from October 1 through September 30 of each year. WRD will continue to update and augment its RGWMP to best serve the needs of the District, the pumpers, and the public. Some of the possible mitigation activities planned, or which utilize data generated from this program for the current year 2016-17, are listed below.

- Continue to maximize recycled water use without exceeding regulatory limits;
- WRD will continue to maximize recycled water use at the West Coast Basin Seawater Intrusion Barrier and will promote maximum permitted recycled water injection at the Dominguez Gap and Alamitos Gap Seawater Intrusion Barriers;
- WRD will continue efforts under its Groundwater Contamination Prevention Program in order to minimize or eliminate threats to groundwater supplies. The Groundwater Contamination Prevention Program includes several ongoing efforts, including the CBWCB Groundwater Contamination Forum with key stakeholders that meet regularly and share data on contaminated groundwater sites within the District.

***Describe how the mitigation actions will respond to or help avoid any significant adverse impacts to third parties that occur due to groundwater pumping.*** Groundwater is pumped from deep aquifers, therefore there is no surface subsidence issues related to an increase in pumping, nor any impact on groundwater contamination plumes because of the recharge of the basin with recycled water to create a seawater barrier. The City has contracted with Quantum Quality Consultant, Inc. for design and the preparation of a CEQA Mitigated Negative

Declaration. The City's consultant submitted a draft checklist for review, and the City will perform additional noise and air studies to ensure there will not be a significant impact. Finally, the design includes the installation of stormwater infrastructure that will be necessary for discharging test water when the new wells begin pumping. This infrastructure will help alleviate localized flooding at the Well No. 12 location. Well Nos. 13 and 14 are proposed to be constructed in City parks. Those parks will be improved to mitigate impact on the parks.

### **Evaluation Criterion B—Drought Planning and Preparedness**

***Explain how the applicable plan addresses drought.*** The City of Torrance has a long history of preparing for and addressing drought and its consequences. The City's efforts include the development of the comprehensive Urban Water Management Plan (UWMP, 2015). Prior to the UWMP, the City worked with Metropolitan and other relevant entities and agencies to develop the 1996 and subsequent 2004 Integrated Resource Plans (IRP) that have made investments in conservation and supply augmentation as a part of its long-term water management strategy, and provided a large portion of information for the UWMP. We refer to the UWMP as the drought contingency plan of reference for this application. The UWMP includes a Contingency Response Plan that implements initiatives to optimize water supply during water shortages or drought conditions. In the event of a water shortage, City Council implements the appropriate water conservation stage by resolution. The objectives of the UWMP Response Plan are to: a) prioritize essential uses of available water; b) avoid irretrievable loss of natural resources; c) manage current water supplies to meet ongoing and future needs; d) maximize local municipal water supplies; e) eliminate water waste city-wide; f) create equitable demand reduction targets; and g) minimize adverse financial effects.

The City also has significant groundwater storage and recharge capabilities. As mentioned above, the Amended Judgment allows for additional groundwater purchases above our adjudicated amount for water banking and long-term storage. The proposed project will integrate with existing facilities as well as infrastructure improvements underway throughout the City, including our Robert W. Goldsworthy Desalter and North Torrance Well Field Project to shift our water portfolio from imported sources to local supplies, to very nearly realize our goal of water self-sufficiency. We will be uniquely poised with the capability to not only purchase additional pumping rights under the Amended Judgment but to actually store local water in the West Coast Basin for drought preparedness and emergency use.

***Explain whether the drought plan was developed with input from multiple stakeholders. Was the drought plan developed through a collaborative process?*** As part of the UWMP, the initial resource strategies included a multi-level collaborative process that involved Metropolitan member agencies, retail water agencies, other water and wastewater managers, environmental, business, and community interests. In the fall of 2008, Metropolitan's senior management, Board of Directors, member agency managers, elected officials, and community groups collectively met and discussed strategic direction and regional water solutions at a series of four stakeholder forums; nearly 600 stakeholders participated in the forums. Stakeholder data was directly utilized in the UWMP.

***Does the drought plan include consideration of climate change impacts to water resources or drought?*** Yes. The UWMP discusses climate change and the City’s focus with respect to water stewardship and climate change. Appendix I to the UWMP provides City Council Ordinance No. 3717, water conservation and water supply programs and regulations. The City is committed to policy principles that allow for sustainable management of scarce water resources viewed in terms of future climate change impacts, including evaluating staff recommendations regarding climate change and water resources against the California Environmental Quality Act (CEQA) to avoid adverse effects on the environment.

***Describe how your proposed drought resiliency project is supported by and existing drought plan. Does the drought plan identify the proposed project as a potential mitigation or response action? Does the proposed project implement a goal or need identified in the drought plan?*** The proposed drought resiliency project, to drill three new wells that penetrate existing deep aquifers in Torrance to capture clean potable water for city residents and businesses is supported by the UWMP. As stated in Section 2.4 of the UWMP “Projected Water Supply,” the Plan directly identifies the Project as part of its mitigation and response strategy, “The City recognizes the need to identify, support and implement local water supply projects to augment imported supplies and help drought proof the Municipal service area...overall groundwater supply reliability is expected to increase through the implementation of planned improvements to its groundwater facilities, WRD’s Goldsworthy Desalter expansion, through continued access to imported water, and through continued and augmented use of recycled water.”<sup>6</sup> The project helps implement the City’s goal to reduce their dependence on imported water.

***Describe how the proposed project is prioritized in the referenced drought plan.*** One of the primary objectives of the UWMP is to “maximize local municipal water supplies.”<sup>7</sup> The Van Ness Well Field will meet this objective by extracting clean potable water from the highest quality local aquifers in the area. The proposed construction of three additional groundwater wells and transmission main will connect to the City’s existing, but unused Border Avenue Treatment and Storage Facility, allowing for groundwater production capacity of 4,500 AFY of reliable, fresh water to replace imported water sources. Moreover, the project will provide the City with the pumping capacity to participate in sharing water through Conjunctive Use programs for future drought or water emergencies, and will advance the City’s goal to move toward more water independence and less reliance in imported water sources.

## **Evaluation Criterion C—Severity of Actual or Potential Drought Impacts to be Addressed by the Project**

***What are the ongoing or potential drought impacts to specific sectors in the project area if no action is taken, and how severe are those impacts?*** The year 2014 was one of the driest years

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<sup>6</sup> UWMP 2015, p. 2-13

<sup>7</sup> UWMP 2015, p. 7-1

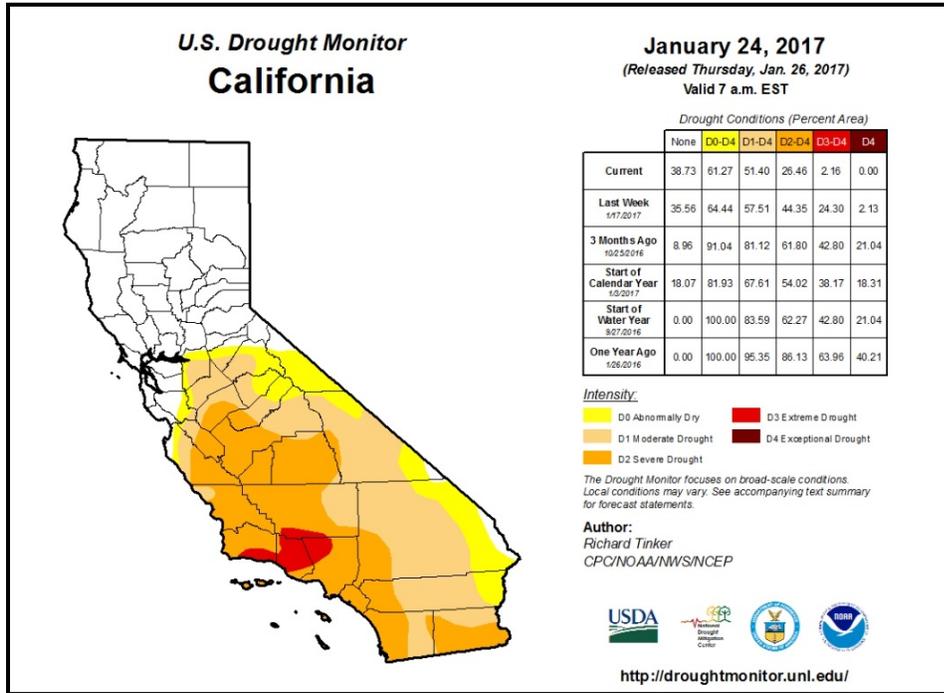
in California's recorded history, and, faced with record drought conditions in 2015, California Governor Jerry Brown declared a State of Emergency, and announced California's first set of statewide mandatory water restrictions. On February 9, 2017, the State Water Resources Control Board voted to extend, through September, California's existing water conservation restrictions. Despite the wettest January on record in 112 years, Los Angeles County, including Torrance, is still experiencing a variety of drought impacts, such as potential shortages of drinking water supplies, increased risk of wildfires, and environmental concerns. Impacts include the following:

**Water Supply Shortage.**

Sixty-eight percent of Torrance's potable water is imported from Metropolitan, which draws water from the State Water Project (SWP), as mentioned throughout this application. The SWP is an enormous water conveyance system, supplying water to contractors throughout California. The water supply available to the SWP is derived directly from the Sierra Nevada snowpack. By the end of 2015, the Sierra Nevada Snowpack held only 8% of its historical average. March 2016 and January 2017 brought storms which increased the snowpack levels, however, the improvement in snowpack levels has not been evenly distributed, and Torrance remains in "Severe Drought" conditions.<sup>8</sup> According to the U.S. Drought Monitor website National Drought Summary for January 24, 2017 (see Figure 7, below), to date groundwater levels remain critically low and have not responded to the storms as one might expect, and therefore imported water is still being trucked to serve residents with dry wells, and the deepest wells may not respond to the recent inundation for several months. Further, Southern California is expected to experience an increase in regional demands in the years 2015 through 2035 as a result of population growth. Increased population necessitates increases in water supply demand. It is important to note that the proposed project wells will be extremely deep (approximately to 700 feet) and will be constantly replenished with recycled water from the West Basin Water Recycling Facility. Therefore, the wells are not at risk of drying up and will be a reliable local water source, even in times of dryness and drought.

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<sup>8</sup> US Drought Monitor, NOAA, USDA as of January 24, 2017



**Figure 8.** Torrance is located within the area of Severe drought in Los Angeles County, shown above in orange.

**Environmental Impacts.**

The project supports the comprehensive, long-term management plan for the California Bay Delta and aligns with the state’s coequal goals for the Delta: Improve statewide water supply reliability, and protect and restore a vibrant and healthy Delta ecosystem, all in a manner that preserves, protects and enhances the

unique agricultural, cultural, and recreational characteristics of the Delta. The Bay-Delta is the source for SWP imported water. It is also an important habitat for plants and animals, many of which are found only in the Delta. The State Office of Administrative Law subsequently approved the 14 regulations to implement the Delta Plan, effective September 1, 2013. Among these are policies that require those who use water from the Delta to certify in their water management plans that they are implementing all feasible efforts to use water efficiently and are developing additional local and regional water supplies. By constructing the proposed groundwater wells, we are developing additional local water supplies and thus helping contribute to the goals of the Bay-Delta Plan and protecting this key ecosystem in the State of California. In addition, any water that is not drawn from the Colorado River contributes to efforts to protect the water and habitat for federally-listed threatened or endangered species. The Colorado River is home to four fish species identified as endangered (the Colorado Pikeminnow, Humpback Chub, Razorback Sucker, and the Bonytail). Any efforts to reduce the draw on the water resource of the Colorado River will benefit these endangered species by minimizing the impact on their native habitat.

**Describe any projected increases to the severity or duration of drought in the project area resulting from climate change.** A 2015 study which analyzed multiple levels of atmospheric pressure concluded that climate change worsened California’s dry season by up to 20%.<sup>9</sup> In 2016, the White House issued a Memorandum and Action Plan to communicate impacts of

<sup>9</sup> Geophysical Research Letters August 2015

drought. The national Memorandum specifically names California water basins suffering from, or at-risk for drought. Experts predict climate change is expected to increase the frequency, intensity, and duration of droughts.<sup>10</sup> Scientists are comparing Southern California's current drought conditions to similar mega-droughts in the region that occurred 1,000 years ago. Severe water shortages caused major societal disturbances, including human mortality. They warn that drought conditions will be as, or more, severe than the mega-droughts of the past, and cannot be ignored.<sup>11</sup>

### **Evaluation Criterion D—Project Implementation**

The City of Torrance can enter into a financial assistance agreement with the Bureau of Reclamation as soon as a grant agreement is presented. This is a major capital improvement project for the City, to be funded primarily by Capital Improvement Project appropriations and a loan. TMWD is a debt-free entity and has a reliable source for loan repayment through the Water Enterprise Fund. The City is seeking a Safe Drinking Water Safe Revolving Fund loan for construction of the project, and confident that we will be able to complete the entire Project within the 36-month timeframe proposed. The City of Torrance Public Works Department will manage the project, and has a proven capacity to manage large-scale, grant-funded projects. The Public Works Department has over 200 employees to support operating activities and construction projects and has an annual operating budget slightly over \$11.5 million. Over the past five years, the City has received over \$15 million in federal and state grant funding to implement complex projects ranging from a water desalination plant expansion (\$3 million Proposition 50 grant) to storm water basin enhancements (\$3.3 million State Water Resource Board and \$300,000 Bureau of Reclamation grant) and a similar groundwater well project in North Torrance (\$300,000 Bureau of Reclamation grant received 2016).

We employ a standard grant management process that includes developing tracking tables at the onset of a new grant award and reviewing all grant contract requirements. Project Manager, John Dettle, PE, and the Senior Business Manager will be responsible for overseeing this particular project's grant reporting, reimbursement requests, overseeing the design contracting and process, and the public/education outreach. Mr. Dettle has 25 years of project management experience, including administration of the following large-scale construction projects: 1) Machado Lake Trash TMDL Project (Prop. 84, \$1.75 million grant); 2) Stormwater Basin Enhancement Project (Prop. 84, \$3.3 million and BOR, \$300,000); 3) California Water Replenishment District Desalter Expansion Project (Prop. 84 IRWM, \$3 million, Prop. 50, \$4 million); and 4) North Torrance Well Field Project (Prop. 84, IRWM, \$3 million, \$300,000 BOR). We have a proven track record of successfully managing grant-funded projects and will bring the same level of project management experience to this final design and specifications project.

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<sup>10</sup> Building National Capabilities for Long-Term Drought Resilience" issued 3/21/16

<sup>11</sup> Climate Institute, Volume 27, No. 2

### Permits.

All work is to be in accordance with the City of Torrance, California Department of Water Resources and California Department of Public Health (CDPH). Standard permits required for the Project include the following:

- Caltrans. Coordination and permitting will be required from Caltrans for routing of pipelines under the I-405 Freeway.
- The City has obtained a permit from BNSF (Burlington Northern Santa Fe Railroad) for the pipe crossing (in secure casing ten feet below the roadbed). Upon issuance of a Negative Declaration or Mitigated Negative Declaration by the City of Torrance, the permit can be processed.
- Southern California Edison. The site will require new 480-volt 3-phase electric service to operate electric motors for the well pumps.
- State Water Resources Control Board (SWRCB). A general permit to discharge storm water associated with construction activity including clearing, grading, and excavation activities that disturb greater than 1 acre of total land area is required.
- City Plan Checking and Permit Process. When completed, the well-building plans need to be submitted to the City of Torrance for plan-check approval.
- Los Angeles County Flood Control District (LACFD). A permit from the LACFD will be required to connect to the LACFD storm drain system for the Well Nos. 13 and 14 drain lines.

Engineering and Design Work Complete. The Project raw water and discharge pipe design is nearly implementation-ready. The well development and buildings will be completed within three years of funding using a design-build approach. A draft Mitigated Negative Declaration has been prepared. Additional noise and air studies are underway All preliminary design work has been completed. These and other tasks include:

- Complete design and construct raw water and discharge pipes.
- Prepare Design-Build contract documents and award Design-Build contract for Well Nos. 12, 13, and 14

### *Describe any new policies or administrative actions required to implement the project.*

No new policies or administrative actions are required to implement the project.

## **Evaluation Criterion E—Nexus to Reclamation**

### *How is the proposed project connected to a Reclamation project or activity?*

Torrance receives approximately 69% of its water from the Metropolitan Water District of Southern California, which is the designated contractor for the Colorado River Project and the Cal Fed Bay Delta Project (State Water Project). The City's goal is to continue to reduce its dependence on these sources with successful water conservation methods.

*Does the applicant receive Reclamation project water?* Yes. The City receives its water from Metropolitan, which is supplied from the original water sources of the Colorado River Aqueduct and the State Water Project (SWP).

***Is the project on Reclamation project lands or involving Reclamation facilities?*** The project is not on Reclamation lands but will directly benefit Reclamation project facilities and environmental impacts due to a long-term, decreased dependence on Reclamation water.

***Is the project in the same basin as a Reclamation project or activity?*** No.

***Will the proposed work contribute water to a basin where a Reclamation project is located?*** Yes. The proposed project will decrease dependence on both the State Water Project and the Colorado Aqueduct projects, which means that less water will be pulled from these projects' source basins.

***Will the project help Reclamation meet trust responsibilities to any tribe(s)?*** The proposed project will not meet trust responsibilities to tribes directly. However, freeing up water from the SWP and Colorado Aqueduct by utilizing local supplies through the three new wells will indirectly allow Reclamation facilities to better meet their responsibilities to tribes.

**Performance Measures.** Facilities and wells will be designed to allow for automatic operation with remote monitoring and supervision. Each well will be tied together with the SCADA workstations via a spread spectrum radio network. The City proposes to use two performance measures to quantify the proposed project's benefits. We aim to show an incremental increase in total groundwater produced and served to customers with this project:

1) **Total Groundwater Produced:** We know that our 2015 average annual pumping of groundwater was 1,800 AFY. We estimated that the two new wells under construction in the North Torrance Well Field Project will produce enough potable water to fulfill our adjudicated limit of groundwater (5,640 AFY), and the proposed Project provides the capability to always use our adjudicated rights and produce additional groundwater beyond our adjudicated amount for potable water and Conjunctive Use or water emergencies. For the sake of this project application, we will measure the total amount of groundwater produced by all Torrance wells both before and after project construction is complete and the wells are in use. All groundwater produced beyond the North Torrance Well Field Project production will be attributed to the proposed Project. We will continue to gather incremental data each quarter during the reporting period to be published in our quarterly Program Performance Reports to the BOR.

2) **Total Groundwater Served to Customers:** We will use 2015 baseline data to measure total amount of groundwater served to customers before project implementation, and measure the total amount of groundwater served post-construction during each quarter of the grant performance period. We will include this data with our quarterly Program Performance Reports to the BOR. It is already anticipated that we will soon increase our groundwater supply to customers to represent 23.8% of our portfolio versus 3.5%, which is its current rate. The proposed Project will enable us to increase our groundwater supply by an additional 4,500 AFY, which can be stored for future drought or emergency supplies. Reporting will continue via the WRD and its annual Regional Groundwater Management Report, thus information regarding the viability of the project will be continually documented throughout its useful life.

## **Environmental and Cultural Resources Compliance**

***All applicants must respond to the following list of questions focusing on the NEPA, ESA, and NHPA requirements. If any question is not applicable to the project, please explain why.***

The project is being evaluated for both CEQA and NEPA compliance and a draft Mitigated Negative Declaration for CEQA has been prepared. A Negative Declaration is a document that states upon completion of an initial study, that there is no substantial evidence that the project will have a significant effect on the environment if certain mitigation practices are utilized. For CEQA we refer to Article 6. Negative Declaration Process of Sections 15070 to 15075 (Title 14. California Code of Regulations Chapter 3. Guidelines for Implementation of the California Environmental Quality Act):

*“A public agency shall prepare or have prepared a proposed negative declaration or mitigated negative declaration for a project subject to CEQA when: (a) The initial study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, or; (b) The initial study identifies potentially significant effects, but: (1) Revisions in the project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and; (2) There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment.”*

The City is also performing air quality studies and noise studies to mitigate any possible impact. It is expected that the proposed activities under this Project will be covered by the environmental documents that have been prepared.

***Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.***

The extent of the Project is relatively small and located exclusively within City-owned land that has been previously disturbed. The project is not expected to impact the surrounding environment. No impacts to water or animal habitat is expected, and the City will implement Best Management Practices during construction to mitigate impacts, including noise and dust-control measures, installing sound walls during well development and powering down construction equipment when not in use to reduce unnecessary emissions.

***Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be***

***affected by any activities associated with the proposed project?*** There are no known species listed as a Federal threatened or endangered species in the project area.

***Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as “Waters of the United States?” If so, please describe and estimate any impacts the proposed project may have.*** There are no wetlands or other surface waters inside the project boundaries.

***When was the water delivery system constructed?*** The water delivery system that will be the focus of the proposed project was constructed in the 1950’s.

***Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.*** The proposed project will not result in any modification of individual features of an irrigation system such as headgates, canals, or flumes.

***Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.*** There are no buildings, structures, or features in the proposed project area that are listed or eligible for listing on the National Register of Historic Places.

***Are there any known archeological sites in the proposed project area?*** There are no known archeological sites in the proposed project area.

***Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?*** No. In fact, the proposed project will have a highly positive effect on all residents of the City of Torrance and its surrounding areas including low income and minority populations. The project will produce a new source of safe drinking water locally, decrease dependence on water imported from the State Water Project (SWP) and Colorado Aqueduct, and enable the City to store local groundwater supplies for dry weather and emergency use.

***Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?*** No, the project will not have any impacts on sacred sites or tribal lands.

***Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?***

The proposed project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species.

LETTERS OF SUPPORT

1. Congressman Ted Lieu
2. Congresswoman Maxine Waters
3. Supervisor Janice Hahn, Fourth District
4. West Basin Municipal Water District – Richard Nager, General Manager
5. Los Angeles Regional Water Quality Control Board – Samuel Unger, P.E., Executive Officer

TED W. LIEU  
33RD DISTRICT, CALIFORNIA

COMMITTEE ON THE BUDGET

COMMITTEE ON OVERSIGHT  
AND GOVERNMENT REFORM

**Congress of the United States**  
**House of Representatives**  
**Washington, DC 20515-0533**

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MANHATTAN BEACH, CA 90266  
(310) 321-7664

February 7, 2017

Mr. Michael Dieterich  
U.S. Department of the Interior  
Bureau of Reclamation  
Denver Federal Center  
Bldg. 67, Room 152  
Denver, CO 80255

**RE: Torrance, CA Application for the USBR Drought Resiliency Grant Program**

Dear Mr. Dieterich:

I am writing in support of the application submitted by the City of Torrance for a Drought Resiliency grant through the Federal Bureau of Reclamation's (USBR) Drought Resiliency Grant Program. If awarded this grant, the City of Torrance would use the funds for the Van Ness Well Field project, a \$16 million project which would help our region to more effectively use local groundwater especially in times of drought and water emergencies.

As a member of Congress, I represent the 33<sup>rd</sup> Congressional District of California including the City of Torrance. Throughout my Congressional service, I have been a proponent of projects that protect our natural resources for long-term sustainability. Serving a region that is in severe drought, I know that the efficient management of our water supply is a key component of addressing climate change at the local level. The proposal by the City of Torrance aims to ensure reliable groundwater supplies exist during a severe drought so that the region may depend less on imported water.

If awarded the grant in the amount of \$750,000, the City of Torrance would finalize funding for the Torrance Van Ness Well Field project which will construct three new wells that will provide emergency water for Torrance and its neighboring cities. This project will take steps ahead of time to help Torrance and neighboring cities prevent known impacts of severe drought, reducing the reliance on more costly and less efficient emergency measures to provide water when we are in crisis mode.

Thank you for your consideration of this grant application. If you have any questions, please contact Wes Haas in my Los Angeles office at (323) 651-1040.

Sincerely,

  
Ted Lieu  
Member of Congress

**MAXINE WATERS**  
MEMBER OF CONGRESS  
43RD DISTRICT, CALIFORNIA

COMMITTEE:  
FINANCIAL SERVICES  
RANKING MEMBER

**Congress of the United States**  
**House of Representatives**  
**Washington, DC 20515-0535**

PLEASE REPLY TO:  
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January 31, 2017

Mr. Michael Dieterich  
U.S. Department of the Interior  
Bureau of Reclamation  
Denver Federal Center  
Bldg. 67, Room 152  
Denver, CO 80255

**RE: Torrance, CA Application for the BOR Drought Resiliency Grant Program**

Dear Mr. Dieterich:

I write to express my support for the City of Torrance's grant request for funding toward an important project that will drill three new groundwater wells near Van Ness Avenue. The project will have multiple benefits including providing back-up water supplies during drought and other water emergencies and increasing the flexibility to share local water in Southern California.

As a member of Congress, I represent the 43rd Congressional District of California which includes the City of Torrance. In my many years in elected office, I have worked to address environmental issues affecting my Districts including our water needs and finding sustainable water solutions for the future. According to the Third National Climate Assessment published by the U.S. Global Change Research Program, there is growing evidence that climate change is causing longer and more frequent droughts in some areas, including California. New local wells, like the ones proposed in Torrance will help reduce Southern California's reliance on imported water supplies which face multi-jurisdictional demands and are especially vulnerable during droughts.

I urge you to provide funding for this valuable project which will advance the City of Torrance's efforts to construct three new wells so that our region is better equipped to deliver water in times of drought and other water emergencies.

Sincerely,



Maxine Waters U.S. House of Representatives  
California 43rd Congressional District



# BOARD OF SUPERVISORS COUNTY OF LOS ANGELES

822 KENNETH HAHN HALL OF ADMINISTRATION / LOS ANGELES, CALIFORNIA 90012

Telephone (213) 974-4444 / FAX (213) 626-6941

## JANICE HAHN

SUPERVISOR, FOURTH DISTRICT

February 7, 2017

Mr. Michael Dieterich  
U.S. Department of the Interior  
Bureau of Reclamation  
Denver Federal Center  
Bldg. 67, Room 152  
Denver, CO 80255

**RE: Torrance, CA Application for the BOR Drought Resiliency Grant Program**

Dear Mr. Dieterich:

I am pleased to support the City of Torrance's application for funding to drill three new groundwater wells in the Van Ness Well Field Project. It is my understanding that the project will increase the City's water supply resiliency in advance of emergency drought situations. Identifying and securing additional local water sources supports drought planning efforts and improves the City's ability to continue to deliver water to Torrance residents and its regional neighbors during times of low water supply. It will also help reduce our region's overall reliance on imported water sources which face multi-jurisdictional demands.

The project will mitigate the need for costly emergency water hauling should a water emergency arise. I wholeheartedly support the project and recognize the value of this project and its multiple benefits, which include:

- Regional resiliency to drought;
- Increasing the reliability/flexibility of water supplies; and
- Avoiding the need for emergency response actions, such as water hauling.

I know that grant funding will be critical to enable the City of Torrance to implement this project. I hope that you will provide favorable consideration to this project for the Drought Resiliency Grant Program.

Sincerely,

Janice Hahn  
4th District  
Los Angeles County Board of Supervisors



EDMUND G. BROWN JR.  
GOVERNOR

MATTHEW RODRIGUEZ  
SECRETARY FOR  
ENVIRONMENTAL PROTECTION

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## Los Angeles Regional Water Quality Control Board

February 8, 2017

Mr. Michael Dieterich  
U.S. Department of the Interior  
Bureau of Reclamation  
Denver Federal Center  
Building 67, Room 152  
Denver, CO 80255

**RE: SUPPORT OF CITY OF TORRANCE, CALIFORNIA APPLICATION FOR BUREAU OF RECLAMATION DROUGHT RESILIENCY GRANT PROGRAM**

Dear Mr. Dieterich:

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is the public agency responsible for the protection of ground and surface water quality for all beneficial uses within major portions of Los Angeles and Ventura Counties, which includes the City of Torrance.

The Regional Board is pleased to support the installation and operation of the proposed Descanso Park Well (Well 14), which is part of the planned Van Ness Well Field Project (VNWFP) in the City of Torrance. It is our understanding that the project has multiple benefits, including increased water supply reliability and flexibility during times of emergency drought. The proposed additional groundwater well (Well 14) will provide the City and neighboring coastal communities with proactive drought contingency water supplies. Well 14 is the first of three proposed municipal supply wells that comprise the VNWFP.

We understand that the City of Torrance's prior well testing has confirmed that abundant, high quality water is available from nearby well sites in the vicinity of Van Ness Avenue in Torrance. Based on prior testing, the City of Torrance has estimated that Well 14 alone would have the capacity to produce at least 1,400 gallons per minute and that this could provide the region with an additional 2,260 Acre Feet per Year during droughts when other wells run dry or other water related emergencies occur. This local water source could be particularly valuable after a major earthquake which has the potential to disrupt delivery of imported water to Southern California. The two additional wells will further augment supply needs.

The City of Torrance's proposed project will help the Los Angeles region to cope with and respond to drought and other water emergencies by securing additional water supplies prior to an emergency. We have been informed that this project is well-aligned with other projects in Torrance that are using storm water to recharge the aquifer so groundwater supplies will be replenished and available for new wells.

There are known groundwater contaminant plumes under investigation and remediation in the vicinity of the VNWFP that are under the Regional Board's oversight. However, recent groundwater modeling<sup>1</sup> has demonstrated that the plumes will have no impact on proposed VNWFP wells, including Well 14 located 3,000 feet north of the known plumes. We encourage the City of Torrance to continue to work closely with the State Water Resource Control Board Division of Drinking Water and the Regional Board to ensure that their proposed VNWFP does not impact groundwater remediation projects and helps to maintain the drinking water quality and all current and future beneficial uses of the groundwater basin.

In conclusion, the Regional Board supports the City of Torrance's proactive effort to ensure adequate water supplies during ongoing drought conditions in Southern California, and strongly encourages the Bureau of Reclamation to consider their application to secure grant funds to implement this project.

**If you have any questions, please contact Mr. Samuel Unger, Executive Officer at (213) 576-6605 ([Samuel.Unger@waterboards.ca.gov](mailto:Samuel.Unger@waterboards.ca.gov)).**

Sincerely,

  
Samuel Unger, PE  
Executive Officer

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<sup>1</sup> Mutch Associates, LLC, Technical Memorandum Regarding *Particle Tracking Analysis to Estimate Groundwater Travel Time from Site A to Proposed City of Torrance Production Wells*, dated November 29, 2016.



January 27, 2017

Mr. Michael Dieterich  
U.S. Department of the Interior  
Bureau of Reclamation  
Denver Federal Center  
Bldg. 67, Room 152  
Denver, CO 80255

**RE: Torrance, CA Application for the BOR Drought Resiliency Grant Program**

Dear Mr. Dieterich:

On behalf of the West Basin Municipal Water District (WBMWD), I am pleased to support the City of Torrance in its application to the Bureau of Reclamation (BOR) Drought Resiliency Grant Program. The WBMWD provides safe and reliable drinking and recycled water to its 185-square mile service area. We procure water from the Metropolitan Water District of Southern California (MWD), sourced from the State Water Project and Colorado River (a BOR facility), and wholesale the imported water to seventeen cities via municipalities and private companies in Southwest Los Angeles County.

The City of Torrance's Van Ness Well Field Project will enable the City to drill new wells that will be capable of producing additional potable water supplies. The additional water will be stored and treated at the City's existing reservoir and booster pump station, and will be available for immediate distribution to Torrance and neighboring jurisdictions if necessary. The proposed project is essential for achieving greater levels of water supply reliability. It also helps our region reduce the emergency use of imported water from the State Water Project and Colorado River. By ensuring reliable water supplies in advance of a crisis, water purveyors throughout the region will be able to respond to an emergency drought situation much more quickly, thereby enabling a more efficient response to address and mitigate the economic and environmental costs of hauling emergency water.

Thank you for the opportunity to provide this letter of support for the City's important grant application. I hope you agree this project is worthy of funding as it is directly aligned with the goals of the Bureau of Reclamation to facilitate the voluntary sale, transfer, or exchange of valuable water resources.

Sincerely,

A handwritten signature in blue ink, appearing to read "Richard Nagel", is written over a light blue circular stamp.

Richard Nagel  
General Manager  
West Basin Municipal Water District

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Carson, CA 90746  
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**REQUIRED PERMITS AND APPROVALS**

All work is to be in accordance with the City of Torrance, California Department of Water Resources and California Department of Public Health (CDPH). Standard permits required for the Project include the following:

- Caltrans. Coordination and permitting will be required from Caltrans for routing of pipelines under the I-405 Freeway.
- The City has obtained a permit from BNSF (Burlington Northern Santa Fe Railroad) for the pipe crossing (in secure casing ten feet below the roadbed). Upon issuance of a Negative Declaration or Mitigated Negative Declaration by the City of Torrance, the permit can be processed.
- Southern California Edison. The site will require new 480-volt 3-phase electric service to operate electric motors for the well pumps.
- State Water Resources Control Board (SWRCB). A general permit to discharge storm water associated with construction activity including clearing, grading, and excavation activities that disturb greater than 1 acre of total land area is required.
- City Plan Checking and Permit Process. When completed, the well-building plans need to be submitted to the City of Torrance for plan-check approval.
- Los Angeles County Flood Control District (LACFD). A permit from the LACFD will be required to connect to the LACFD storm drain system for the Well Nos. 13 and 14 drain lines.

RESOLUTION - DRAFT

Attached is a draft resolution. The City of Torrance City Council will meet on February 28, 2017 to review and approve this Resolution. An executed copy will be provided to the BOR prior to March 14, 2017.

**RESOLUTION NO. 2017 - [REDACTED]**

**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF TORRANCE APPROVING THE APPLICATION FOR GRANT FUNDS FROM THE BUREAU OF RECLAMATION WATERSMART: DROUGHT RESILIENCY PROJECT GRANT PROGRAM FOR FISCAL YEAR 2017**

**WHEREAS**, the United States Department of the Interior has provided funds for the WaterSMART: Drought Resiliency Project Grant Program; and

**WHEREAS**, the City of Torrance desires to submit an application for grant funds from said program; and

**WHEREAS**, the Bureau of Reclamation has been delegated the responsibility for the administration of this grant program and establishing necessary procedures; and

**WHEREAS**, said procedures established by the Bureau of Reclamation require the applicant to certify by resolution the identity of the official with legal authority to enter into an agreement; that the appropriate official or governing body has reviewed and supports the application submitted; the capability of the applicant to provide the amount of funding and/or in-kind contributions specified in the application funding plan; and that the applicant will work with the Bureau of Reclamation to meet established deadlines or entering into a cooperative agreement; and

**WHEREAS**, the applicant will enter into a cooperative agreement or grant agreement with the Bureau of Reclamation to complete the project(s) if awarded grant funds.

**NOW, THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL OF THE CITY OF TORRANCE HEREBY:**

1. Appoints the Director of Public Works, or his designee, to act as agent with legal authority to enter into the grant agreement, conduct all negotiations, execute and submit all documents including, but not limited to, applications, agreements, payment requests and any other grant required correspondence which may be necessary for the completion of the grant program; and
2. Certifies that the City Council of the City of Torrance has reviewed and supports the proposed application; and
3. Certifies that the City of Torrance has sufficient funds available to provide the amount of funding specified in the funding plan as matching funds/in-kind contributions; and
4. Certifies that the City of Torrance will work with the Bureau of Reclamation to meet established deadlines for entering into a cooperative agreement.



## 6. PROJECT BUDGET

*The project budget includes:*

- (1) Funding plan and letters of commitment*
- (2) Budget proposal*
- (3) Budget narrative*

### 6A. Funding Plan and Letters of Commitment

- *Describe any costs incurred before the anticipated Project start date that you seek to include as project costs. For each cost, identify:* The City has invested \$284,710 in design costs and approximately \$134,870 in project management.

Bureau of Reclamation funding will secure a critical segment of funding needed to complete the third well (#14) proposed in this project. \$750,000 toward total project costs of \$16.5 million in BOR funds are The City of Torrance has included this project in its Capital Improvement Budget and \$9 million in local funding is available to complete the pre-construction (CEQA and design) tasks, and some of the construction. The City is also seeking a Safe Drinking Water State Revolving Fund loan for construction of the project. The City is likely to receive this low-interest loan because it has a secure revenue source to repay the loan (Water Enterprise Fund). The City is confident the project will be complete within the required three-year BOR time frame for a category two project.

- *Describe any funding requested or received from other Federal partners. Note: other sources of Federal funding may not be counted towards the required cost share unless otherwise allowed by statute.* None.

- *Describe any pending funding requests that have not yet been approved, and explain how the project will be affected if such funding is denied.* A Safe Drinking Water State Revolving Loan Fund application is denied. If the SRF loan is denied (which is unlikely) additional funds will be appropriated from this important capital improvement project.

*Please include the following chart (Table 1) to summarize all funding sources. Denote in-kind contributions with an asterisk (\*)*

**Table 1.—Summary of Non-Federal and Federal Funding Sources FUNDING SOURCES**

FUNDING SOURCES	AMOUNT
Non Federal Entities	
1. City of Torrance, capital improvement (CIP) appropriations, Safe Drinking State Revolving Fund Loan, in-kind* staff contribution for project and grant management .	\$15,953,090
Non Federal Subtotal	\$15,953,090
Other Federal Entities	None
Other Federal Subtotal	None
<b>REQUESTED RECLAMATION FUNDING</b>	<b>\$750,000</b>
<b>TOTAL PROJECT COST</b>	<b>\$16,703,090</b>

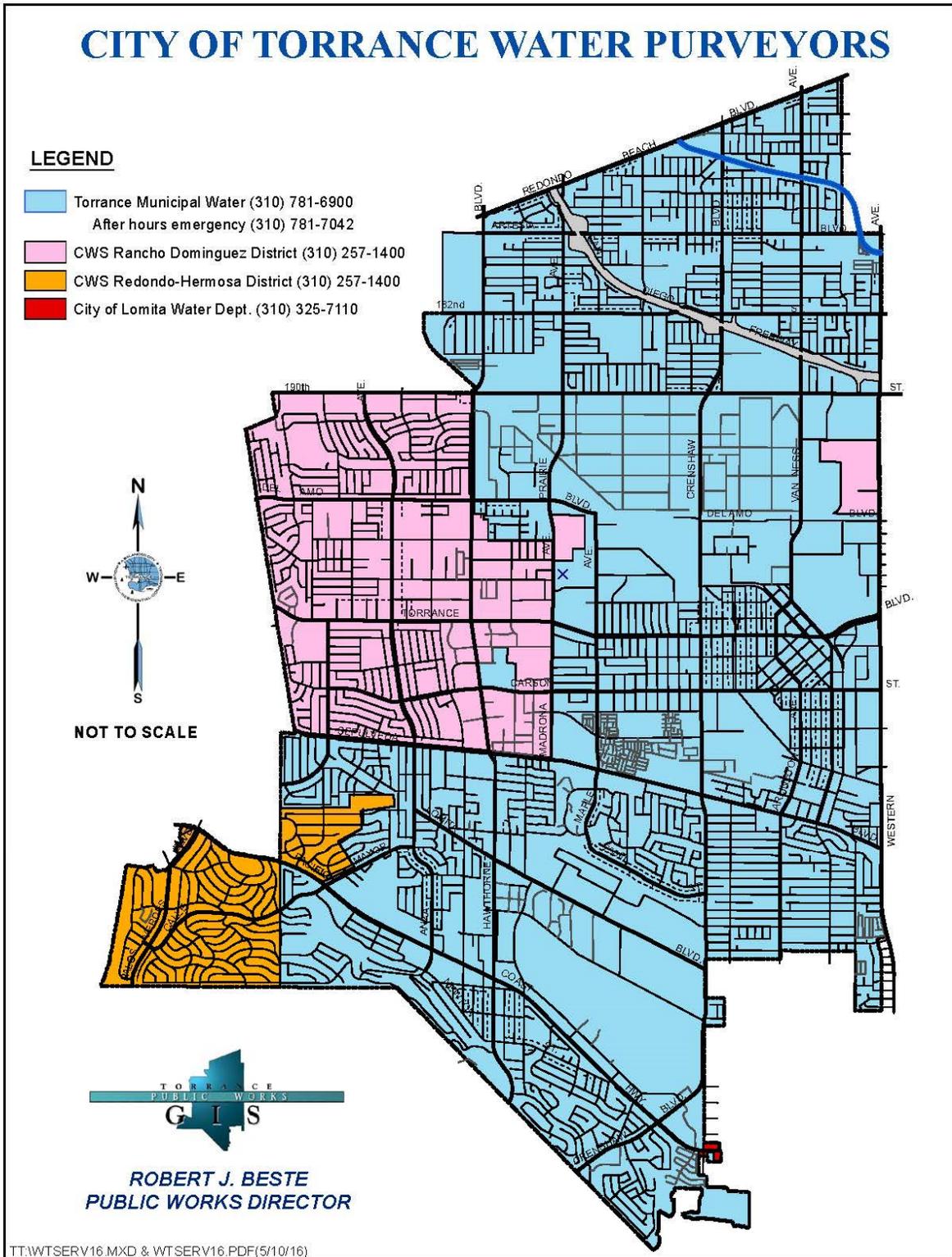
**APPENDICES**

APPENDIX A – WATER SERVICE AREA MAP

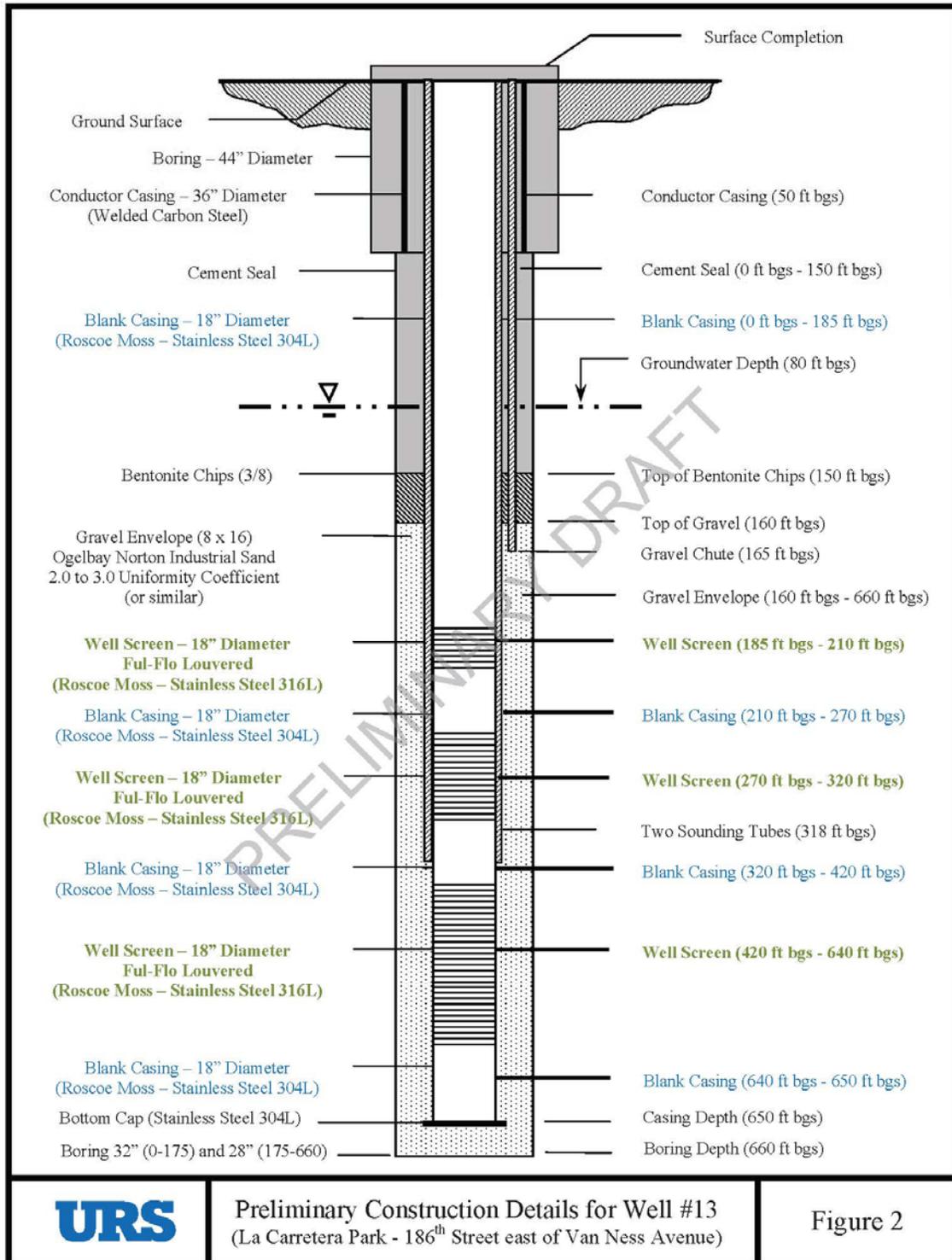
APPENDIX B – TRANSMISSION PIPELINE DESIGN AND PILOT WELL DATA

APPENDIX C – DROUGHT PLAN DOCUMENTS

APPENDIX A – WATER SERVICE AREA MAP



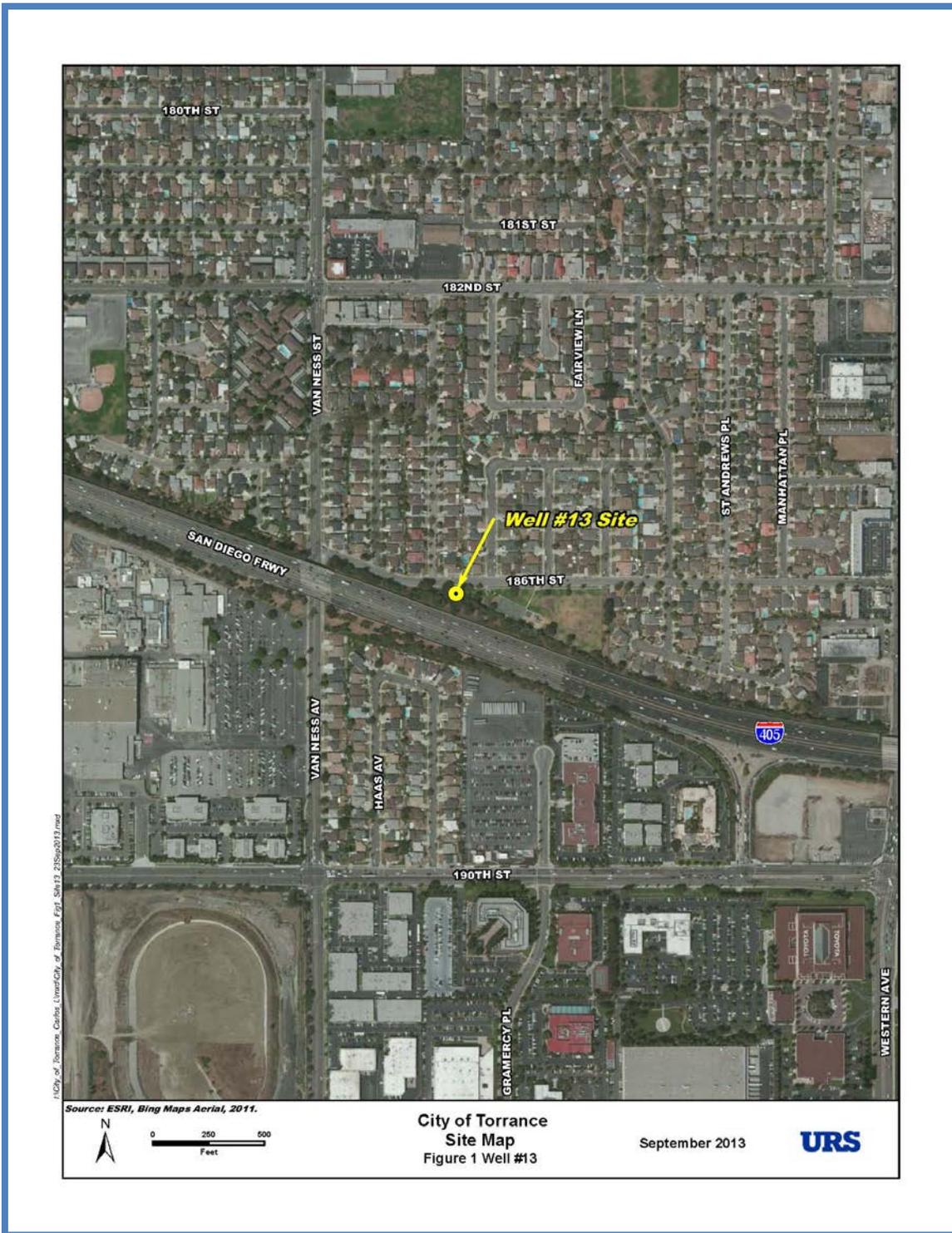
APPENDIX B – TRANSMISSION PIPELINE DESIGN AND PILOT WELL DATA



Preliminary Construction Details for Well #13  
(La Carretera Park - 186<sup>th</sup> Street east of Van Ness Avenue)

Figure 2

APPENDIX B – TRANSMISSION PIPELINE DESIGN AND PILOT WELL DATA



The City retained URS Corporation (URS) to prepare preliminary well designs, and drill pilot wells, as pictured above at La Carretera Park (186th Street east of Van Ness Avenue) in Torrance, California. The above image is sourced from a URS 57-page report provided to the City October, 2013. The City maintains the entire report in electronic and hard copy, either of which can be provided to BOR for review.

