Local groundwater Supply Improvement Project (Local SiP)

Desalination Feasibility Study

WaterSMART: Water Recycling and Desalination Planning Grant

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Section 1

Executive Summary

On February 21, 2023, the following Technical Proposal (WaterSMART Funding Opportunity No. R23AS00076) was prepared by Mesa Water District (Mesa Water), located in the city of Costa Mesa and serving areas within the cities of Costa Mesa and Newport Beach, and unincorporated areas in Orange County, California.

1.1 Summary of Project

As water supplies across the western United States become increasingly stressed due to extended drought periods and climate change, water agencies throughout California are faced with the challenge of developing new, alternative water sources to maintain resiliency and secure reliable resources for future generations. In response to these challenges, Mesa Water, with support from Orange County Water District (OCWD), the City of Huntington Beach (Huntington Beach), and the City of Newport Beach (Newport Beach), has identified an opportunity to supplement local supply sources – and offset imported supply use – by pumping and treating areas of the Orange County Basin (OC Basin) that are impacted by brackish groundwater; which can also potentially protect existing production wells that may be susceptible to seawater intrusion. The proposed opportunity is referred to as the *Local groundwater Supply Improvement Project (Local SiP),* which will provide water security by diversifying the local water supply portfolio and providing a flexible water source during imported water shortages. The *Local SiP* is located within the Santa Ana River Watershed, which is susceptible to the impacts of climate change (United States Bureau of Reclamation [USBR], 2013). Mesa Water and supporting partners are requesting funding to complete a feasibility study for the *Local SiP* that aligns with the requirements of the Bureau of Reclamation's Feasibility Study Directives and Standards (WTR 11-01). The feasibility study will evaluate alternative groundwater well locations through a siting analysis and groundwater modeling, consider impacts of seawater intrusion to the local Basin, identify infrastructure needs, confirm environmental compliance, and assess treatment options for a brackish groundwater desalination facility, which will supplement local supplies by approximately 5 to 8 million gallons per day (mgd), or 5,600 to 8,960 acre-feet per year (AFY). The *Local SiP* will be developed in collaboration with partnering agencies and will provide the framework for selecting a proposed project alternative with estimated costs that can be moved into design and construction.

1.2 Estimated Project Duration

The *Local SiP* feasibility study is anticipated to kickoff in November 2023 and is anticipated to be completed by December 2024.

1.3 Federal Facility or Land

The following project will not be located at a federal facility or on federal land.

Section 2

Project Location

The Local SiP is located within the coastal region of the Santa Ana River Watershed within central Orange County, California, which is approximately 45 miles southeast of Los Angeles, California. The study area for the Local SiP is approximately 36 square miles and overlays the OC Basin that is managed by OCWD and includes portions of Mesa Water, Huntington Beach, and Newport Beach service areas, which is shown on Figure 2-1. The climate is characterized as a Mediterranean climate with warm, dry summers that range in temperature between 65 to 80 degrees Fahrenheit (°F) and mild winters that range in temperature between 50 to 65 °F. Moderate precipitation occurs in the region during the winter months between October and May, which is captured along the Santa Ana River and recharged into the Basin. Most recently, the region was significantly impacted by a historic drought period, which will continue to impact the region over time due to climate change.

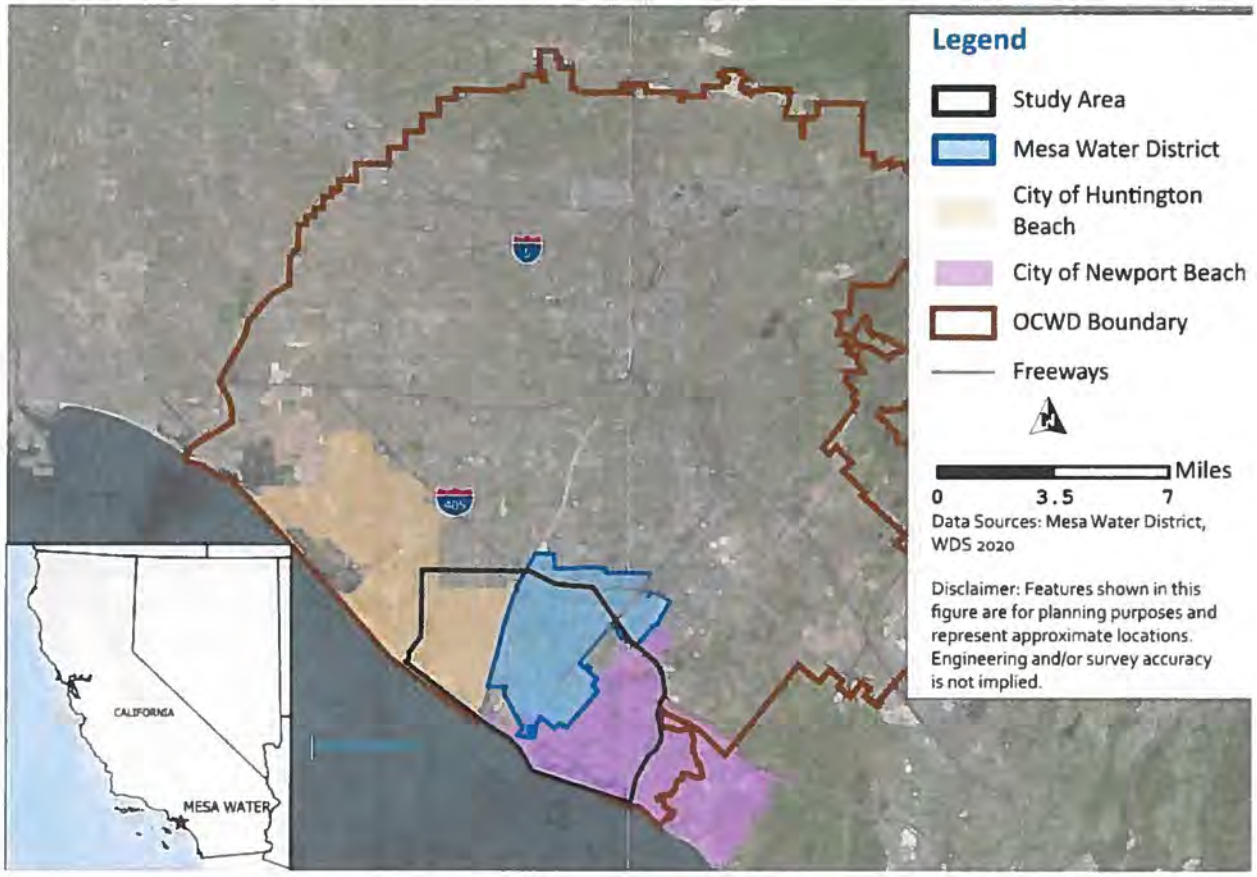


Figure 2-1. Project location

Section 3

Technical Project Description

3.1 Applicant Category and Eligibility

The applicant category for the *Local SiP* feasibility study is **Funding Group I**, which is available for the planning, preliminary design, and environmental compliance activities for desalination projects that may take up to 24 months to complete. The applicant is Mesa Water, which is a water district located in the Western United States.

3.2 Goals and Objectives

The goals and objectives of this funding request are to develop a brackish groundwater *desalination feasibility study* for the *Local SiP* that aligns within the requirements of WTR 11-01, which will evaluate opportunities to supplement local supply sources by pumping and treating areas of the OC Basin that are impacted by brackish groundwater and potentially protect existing production wells that may be susceptible to seawater intrusion. The *Local SiP* will provide water security by diversifying the local water supply portfolio by increasing local supplies by nearly 5,600 to 8,960 AFY and provide a flexible water source during water shortages resulting from climate change.

3.3 Approach to Project

The *Local SiP* feasibility study will be led by Mesa Water and developed in collaboration with partnering agencies, which currently include OCWD, Huntington Beach, and Newport Beach. The brackish groundwater desalination feasibility study will be guided by the requirements of WTR 11-01 and include data collection, a siting analysis to identify potential groundwater wells and treatment plant locations to accommodate a 5 to 8 mgd facility, analysis of groundwater impacts through groundwater modeling, evaluation of infrastructure sizing and needs, verification of environmental and cultural resource compliance, and the development of preliminary cost estimates for project alternatives. The *Local SiP* will be developed in collaboration with partnering agencies and will provide the framework for selecting a proposed project alternative that can be moved into design and construction.

The feasibility study will evaluate groundwater pumping opportunities for all aquifers, sub-aquifers, and zones seaward of the Talbert Barrier, which is an injection barrier within the study area to prevent seawater intrusion into the OC Basin. The assessment will include an evaluation of groundwater characteristics, such as, production potential, water quality, and seawater intrusion impacts for up to four (4) wellfield locations. In addition, treatment needs and potential plant locations will be identified. Once the preferred wellfield and treatment plant location alternatives have been selected, pipeline alignments will be assessed. All alternatives will be verified through groundwater modeling and an environmental review will be performed to identify potential impacts for top ranked alternatives. Preliminary cost estimates will then be developed for the selected alternatives and compared with the "do nothing" alternative.

Section 4

Evaluation Criteria

The following sections align with Section E.1 - Technical Proposal and Evaluation Criteria of the WaterSMART Funding Opportunity No. R23AS00076. Detailed descriptions regarding how the *Local SiP* addresses each of the criteria are listed within each respective section.

4.1 Evaluation Criteria 1 – Project Planning and Analysis

The following section addresses Sub-criterion 1a – Water recycling needs and opportunities and Sub-criterion 1b – Evaluation of project alternatives. Since the funding request for the *Local SiP* includes a desalination feasibility study, the responses align with this project type.

4.1.1 Sub-criterion 1a – Water Recycling Needs and Opportunities

1. Describe the problems and needs in the project area.
2. Describe the current and projected water supplies and demands in the project area; include a discussion on supply and demand imbalances. Additional consideration will be given to proposals that explain how the problems and needs in the area may be impacted by climate change, and/or if supply and demand projections will include climate change information.
3. Describe how the planning activities will investigate potential uses and markets for reclaimed or desalinated water (e.g., environmental restoration, fish and wildlife, groundwater recharge, municipal, domestic, industrial, agricultural, power generation, and recreation).
4. Describe the source water that will be considered for the project, including location, capacities, existing flows, treatment processes, and quantities of impaired water available to meet the new reclaimed, recycled, or desalinated water demands.

4.1.1.1 Project Area Problem and Needs

The *Local SiP* project area is located in a coastal community of Central Orange County, California that is both impacted by extreme drought conditions due to climate change and brackish groundwater due to seawater intrusion. In fact, the extended drought has had a significant impact on the availability of imported water supplies from the State Water Project (SWP) and Colorado River Aqueduct (CRA), which serves as a back-up source of water for Mesa Water and is used by partnering agencies to meet over 20 percent of demands. As climate change continues to increase the supply and demand gap, there is a need to transition away from historical water management strategies and prioritize resiliency, reclamation, and the development of local water supplies. In addition, coastal agencies have competing water supply challenges due to issues like brackish groundwater resulting from seawater intrusion. As shown on Figure 4-1 and Figure 4-2, the study area overlays the

shallow, principal, and deep aquifers of the OC Basin with areas that have Total Dissolved Solids (TDS) concentrations that exceed 2,000 milligrams per liter (mg/L). Over 95 percent of the groundwater that is currently pumped from the OC Basin comes from the principal aquifer, which is of higher water quality. However, a large portion of the study area overlays the shallow aquifer, which has experienced the highest water quality contamination threats. Currently, Newport Beach is the only project partner that pumps from this shallow aquifer for municipal use. Also, as shown on Figure 4-3, existing domestic wells are located near or along the chloride contour line, which is used to track seawater intrusion impacts. In fact, domestic wells within the City of Huntington Beach were removed from service as a result of high salinity levels. To address these challenges, opportunities for a new well field and treatment facility will be evaluated, which will increase local supplies and potentially mitigate or offset the impacts of seawater intrusion by locating wells seaward of the injection barrier.

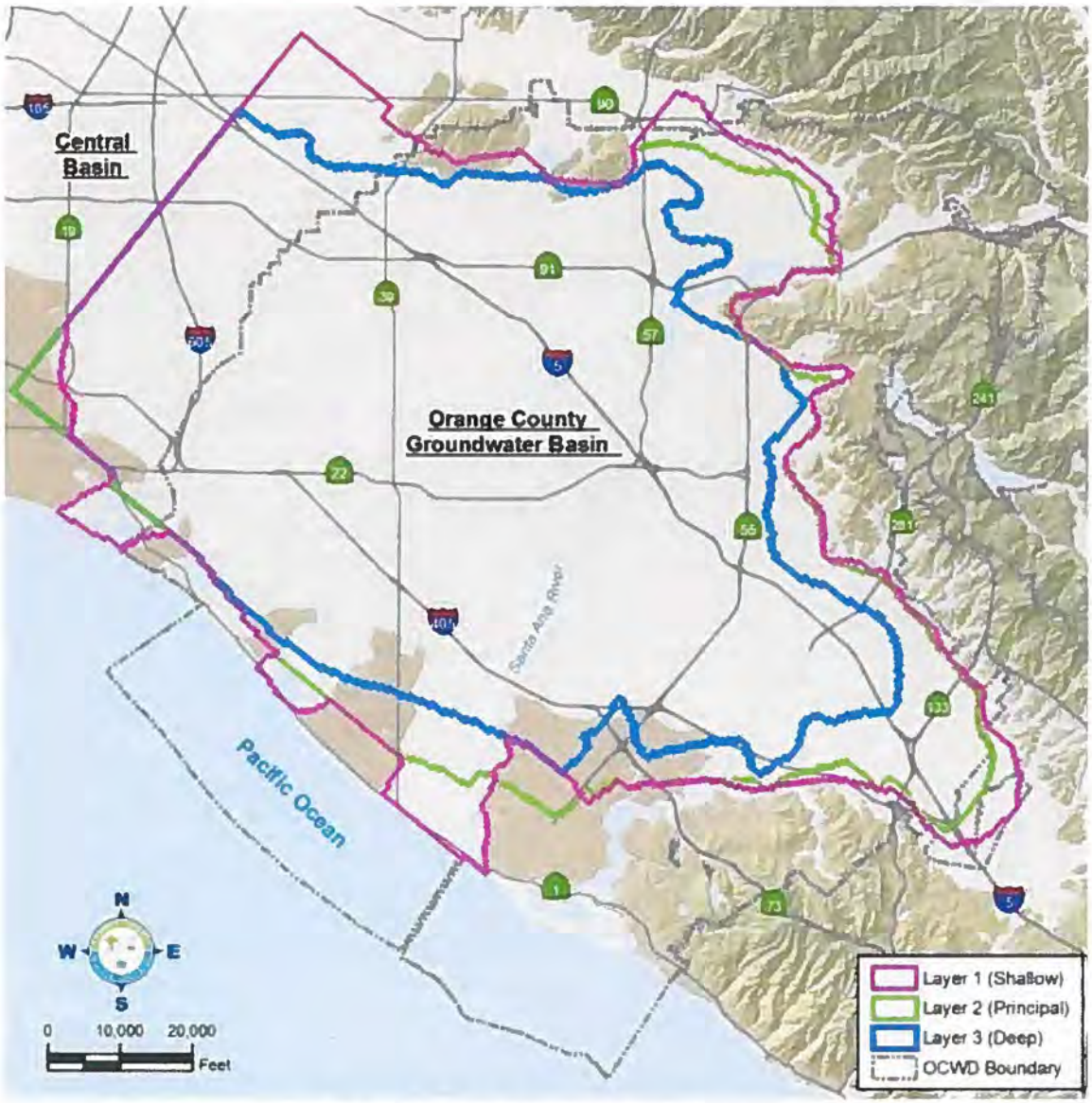


Figure 4-1. OC Basin Aquifer layers
(Source: OCWD Groundwater Management Plan 2015 Update)

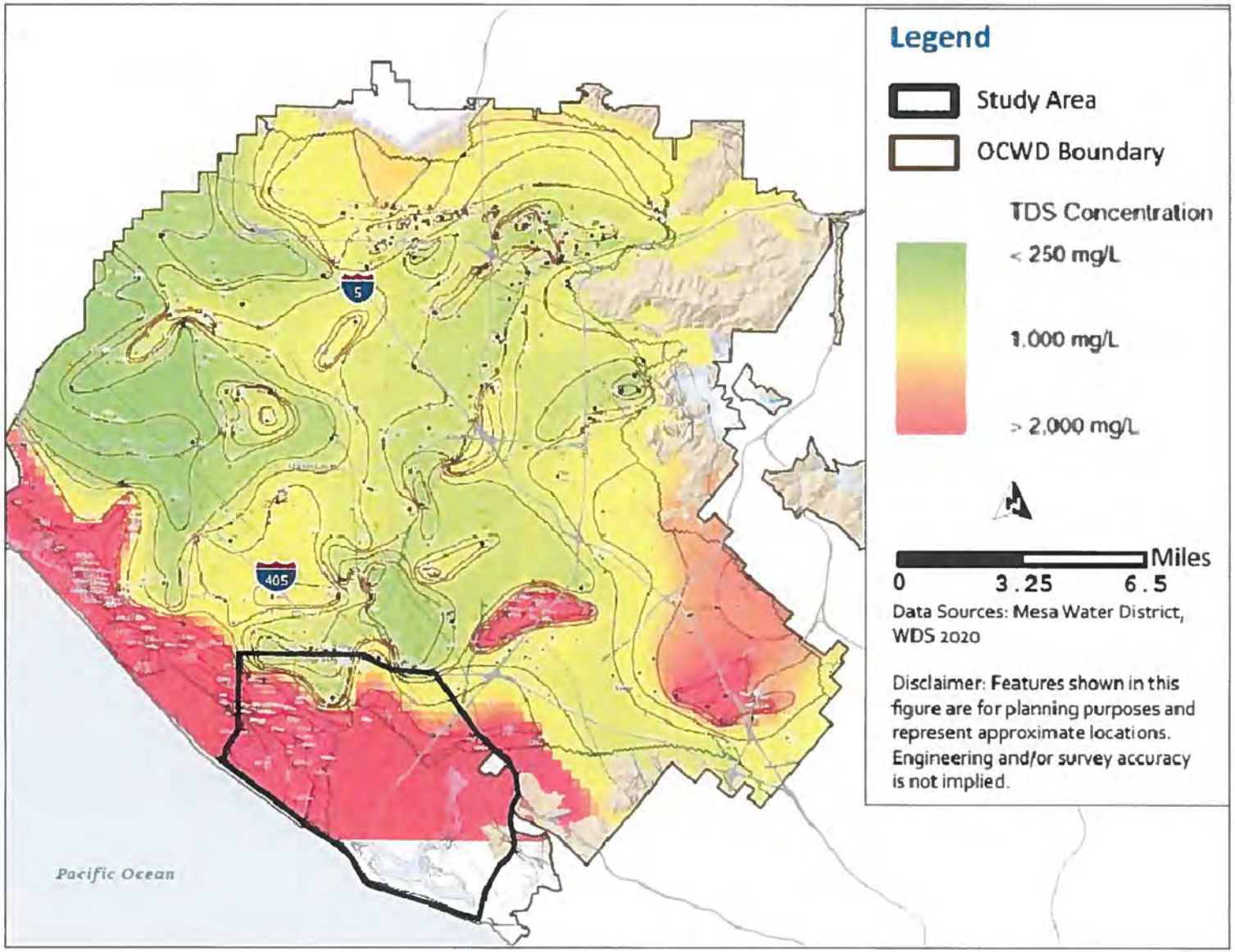


Figure 4-2. TDS Concentrations within study area

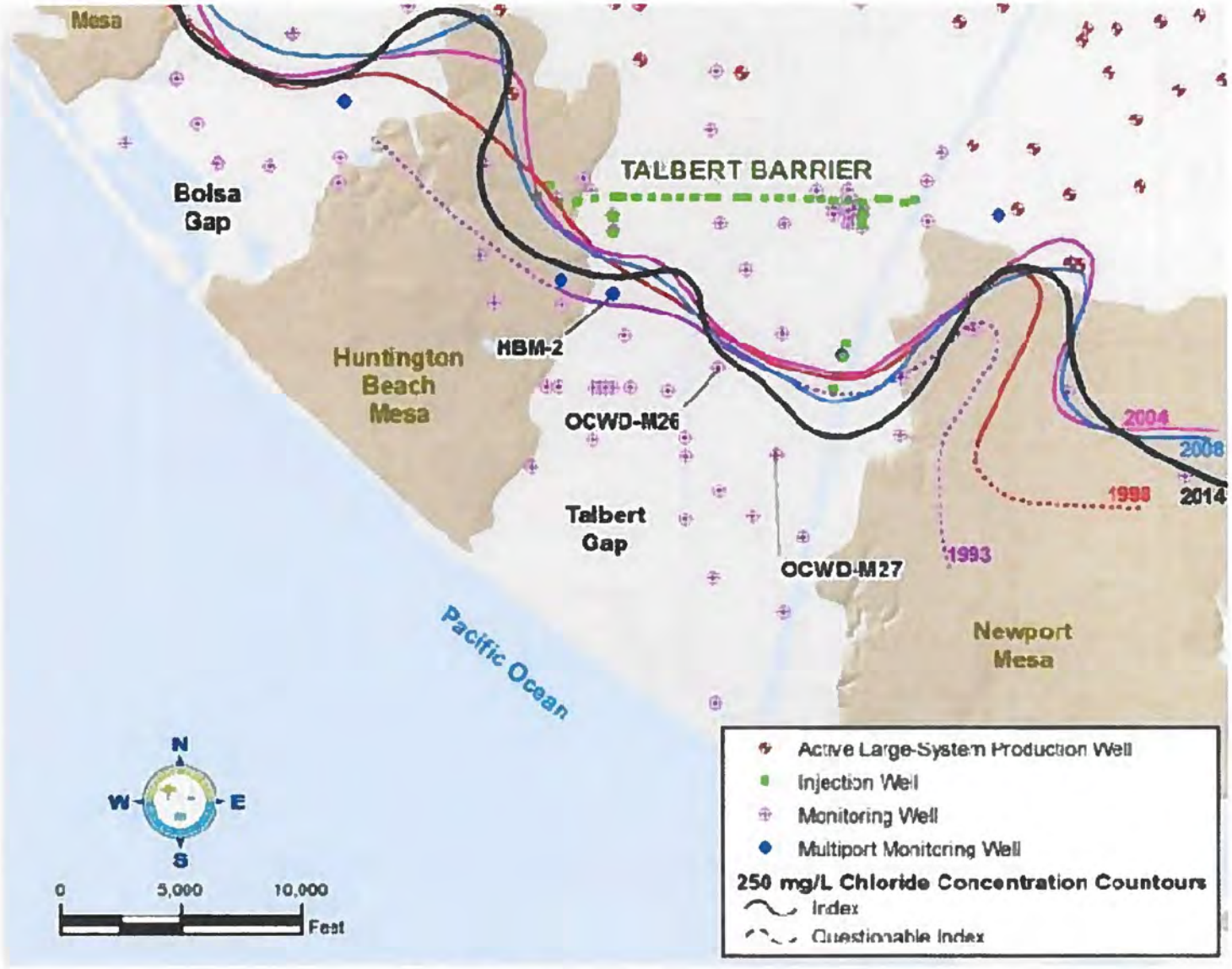


Figure 4-3. OC Basin chloride concentration contours
(Source: OCWD Groundwater Management Plan 2015 Update)

4.1.1.2 Summary of Supply and Demand Balance

Current and Projected Supplies

The supply portfolio for Mesa Water, Huntington Beach, and Newport Beach includes imported water from the SWP and CRA, groundwater from the OC Basin (which is replenished with highly purified wastewater), and small portions of recycled water. The imported water supplies are managed by Municipal Water District of Orange County and the local OC Basin is managed by OCWD. The existing and projected supplies are summarized in Table 4-1, and are based on data provided in the 2020 Urban Water Management Plan (UWMP) (Arcadis, 2021).

Since the development of the 2020 UWMPs, Governor Newsom issued an Executive Order N-7-22 in 2021 to declare a statewide drought emergency in California for all counties and highlighted the urgency for urban water suppliers to conserve and activate water shortage levels due to the anticipated reduction in deliveries from the SWP. Historically, imported water supplies have sufficiently met demands, even in times of drought, due to a significant investment in infrastructure and strategic water resource management. However, the climate in California and across the Western United States has continued to change, with consistently hotter and drier weather. Although Mesa Water utilizes imported water as a back-up source, Huntington Beach and Newport Beach rely on imported water to meet demands.

The OC Basin has also experienced a reduction in natural incidental recharge and Santa Ana River flows during drought periods. This trend is anticipated to continue as a result of climate change as well as reductions in discharges from upstream agencies that are implementing recycled water programs. The OC Basin is designated as a medium priority basin under the Sustainable Groundwater Management Act and the primary mechanism used by OCWD to manage pumping is the Basin Production Percentage (BPP), which is set after evaluating groundwater storage conditions, availability of recharge water supplies, and basin management objectives. The BPP is uniformly set each year for all producers within the OC Basin. OCWD anticipates being able to sustain the BPP at 85 percent starting in 2025. The primary reasons for the higher BPP is the completion of the Groundwater Replenishment System Final Expansion in 2023, which treats and injects recycled water into the OC Basin, and the potential reduction in water demands due to conservation.

Current and Projected Demands

The projected demands for Mesa Water, Huntington Beach, and Newport Beach are anticipated to increase by approximately 4,502 AFY through the year 2045. This projection may change over time as a result of the Regional Housing Needs Assessment allocation requirements and construction of accessory dwelling units.

Supply and Demand Balance

Based on the supply projections in the 2020 UWMPs and assumed availability of imported water, demands are met through the year 2045. However, as previously noted, Huntington Beach and Newport Beach are reliant on imported water supplies to meet demands, which are diminishing. In 2020, approximately 11,925 AFY of Huntington Beach and Newport Beach demands were met through the use of imported water supplies. If a significant reduction or loss of imported water supplies occur, a supply and demand imbalance will result.

Climate Change Impacts

As a result of climate change impacts, Governor Gavin Newsom issued Executive Order N-10-19 in April of 2019, calling on California state agencies to develop a comprehensive Water Resilience Portfolio to prioritize key actions to secure California's water future. Subsequentially, in 2022 the California Water Supply Strategy was released and highlighted accelerated impacts of the warming climate, which is anticipated to reduce California's existing water supplies by up to 10 percent by 2040 due to less snowfall, more evaporation, and greater water consumption by dry vegetation and soils (Department of Water Resources (DWR), 2022). The estimated supply reduction for Mesa Water, Huntington Beach, and Newport Beach is approximately 6,255 AFY by year 2045. This assumes a 10 percent reduction for all supply sources listed in Table 4-1.

Potential Alternative Supplies

The proposed *Local SiP* will offset the potential 10 percent reduction in total supply resulting from climate change, strengthen local supply security, and help meet future demands by providing a supplemental supply source of approximately 5,600 to 8,960 AFY. This project also aligns with the targeted goals within California's 2022 Water Supply Strategy, which includes creating new water supplies through desalting brackish groundwater.

Table 4-1. Projected Supply and Demand[a]

Supply Type	2020	2025	2030	2035	2040	2045
Groundwater	44,651	50,968	53,159	54,118	54,424	54,735
Imported Water	11,925	6,109	6,203	6,197	6,185	6,173
Recycled Water	1,472	1,642	1,642	1,642	1,642	1,642
Total Supplies (AFY)	58,048	58,719	61,004	61,957	62,251	62,550
10% Reduction in Supplies (AFY)	52,243	52,847	54,904	55,761	56,026	56,295
Total Demands (AFY)	58,048	58,719	61,004	61,957	63,251	62,550
Imbalance -10% Reduction (AFY)	*-5,805*	*-5,872*	*-6,100*	*-6,196*	*-6,225*	*-6,255*

a. (Source) Supply and demand projections based on the Mesa Water, Huntington Beach, and Newport Beach 2020 UWMP, (Arcadis, 2021).

4.1.1.3 Potential Uses and Markets for Desalinated Water

The *Local SiP* will supplement the domestic drinking water supply by treating brackish groundwater within the OC Basin.

4.1.1.4 Potential Source Water

The potential source of water for the *Local SiP* is located on the seaward side of the Talbert injection barrier within the OC Basin, which is considered a brackish groundwater source as shown on Figure 4-2 and Figure 4-3. The location of the potential well field and aquifer pumped (shallow, principal, or deep) will be determined as part of the feasibility study. Treatment options will be evaluated based on the water quality characteristics.

4.1.2 Sub-criterion 1b – Evaluation of Project Alternatives

1. Describe the objectives that all alternatives will be designed to meet. What other water supply alternatives and project alternatives will be investigated?
2. Describe how the planning activities will develop project alternatives (water supply sources, reuse strategies, or treatment technologies) that have been or will be investigated.
3. Provide a general description of the selected project, including project features, benefits, anticipated costs, and analyses conducted.
4. Include a preliminary schedule showing major tasks, milestones, and dates for the planning, design, and construction activities related to the project.

4.1.2.1 Objectives of Alternatives

The overarching objectives of the *Local SiP* are to evaluate opportunities to supplement local supply sources by pumping and treating areas of the OC Basin that are impacted by brackish groundwater and potentially protect existing production wells that may be susceptible to seawater intrusion. All alternatives will evaluate pumping, treatment, and conveyance needs that are sized to produce between 5,600 to 8,960 AFY of new and flexible supplies. The goal is to identify the most cost-effective alternative with the highest beneficial use of brackish groundwater. Other supply alternatives are not being considered.

4.1.2.2 Planning Activities for Project Alternatives

The *Local SiP* brackish groundwater desalination feasibility study will be guided by the requirements of WTR 11-01 and will evaluate groundwater pumping opportunities for all aquifers, sub-aquifers, and zones seaward of the Talbert Barrier, which is an injection barrier within the study area that prevents seawater intrusion into the OC Basin. The assessment will include an evaluation of groundwater characteristics, such as, production potential, water quality, and seawater intrusion impacts for up to four (4) wellfield locations. In addition, treatment needs and potential plant locations will be identified. Once the preferred wellfield and treatment plant location alternatives have been selected, pipeline alignments will be assessed. All alternatives will be verified through groundwater modeling and an environmental review will be performed to identify potential impacts for top ranked alternatives. Preliminary cost estimates will also be developed. The activities will be performed in collaboration with partnering agencies and will provide the framework for selecting a proposed project alternative that can be moved into design and construction.

4.1.2.3 Selected Project Alternative

The proposed project includes the development of a feasibility study that will assess initial findings and perform an alternative analysis that will be used to screen and select a preferred alternative with support from partners and stakeholders. The most cost-effective alternative with the highest beneficial use will likely be selected. The estimated cost to perform the feasibility study is approximately $500,000, which includes performing a siting study to identify wellfield and treatment plant locations, groundwater modeling to understand the groundwater characteristics and potential groundwater impacts, and an alternatives analysis to screen and select a preferred alternative. Since the project is in the

early planning stages, the anticipated design and construction cost estimates have not been finalized. However, the preliminary cost estimate for the planning, design, and construction of the *Local SiP* is approximately $170 million, which will be re-evaluated as part of the feasibility study.

4.1.2.4 Preliminary Schedule

The following schedule shown on Figure 4-4 outlines the preliminary schedule for the *Local SiP* from planning through design and construction. It is anticipated that the feasibility will be kicked off in the last quarter of 2023 and will be completed by December 2024. A pilot study will then be performed between 2024 through 2025. The design is anticipated to start in 2026 with an estimated completion date of 2027. Permitting tasks will be performed during both design and construction activities. The construction is anticipated start in 2028 with a completion date of 2030. Start-up will then commence and will be completed in early 2031. Once the feasibility study is completed, the preliminary project schedule will be updated.

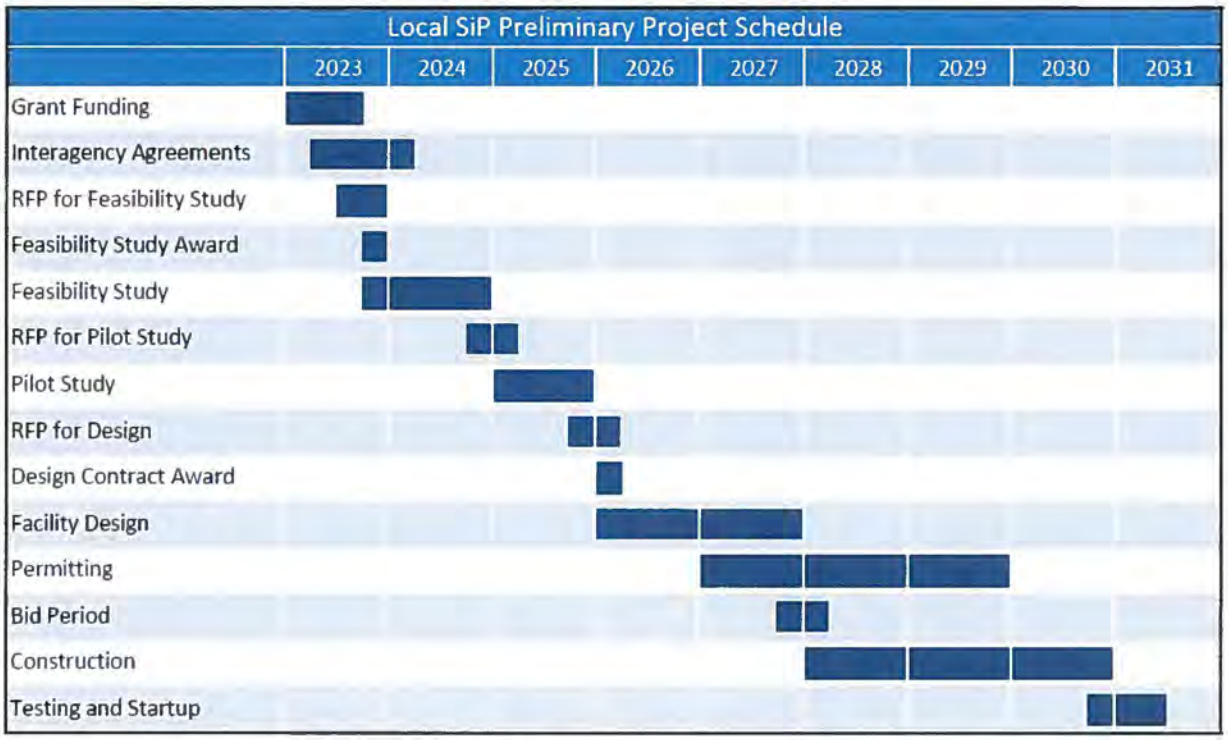


Figure 4-4. Local SiP preliminary project schedule

4.2 Evaluation Criteria 2 – Stretching Water Supplies

1. Describe the potential for the project to reduce, postpone, or eliminate the development of new or expanded non-recycled water supplies.
2. Describe the potential for the project to alleviate pressure on existing water supplies and/or facilities. Please describe the existing water supplies, identify the supplies and/or facilities that will be impacted and explain how they will be impacted by the Project, including quantifications where applicable.
3. Describe the potential for the project to make water available to address a specific concern. Explain the specific concern and its severity. Also explain the role of the project being investigated in addressing that concern and the extent to which the project will address it (refer to list of concerns in FOMO).
4. Describe the potential for the project to help create additional flexibility to address drought. Will water made available by the project being investigated continue to be available during periods of drought? To what extent is the water made available by the project being investigated more drought resistant than alternative water supply options? Explain.

4.2.1 Potential to Reduce, Postpone, or Eliminate New or Expanded Non-Recycled Water Supplies

The *Local SiP* would produce between 5,600 and 8,960 AFY of potable water. This facility could eliminate the need for new groundwater wells drilled into the principal aquifer within the OC Basin that would be needed to replace the 10 percent supply reduction due to climate change. The *Local SiP* will also reduce reliance on imported water sources and help offset the need to expand imported water facilities on the SWP or CRA.

4.2.2 Alleviate Pressure on Existing Water Supplies and/or Facilities

As previously mentioned, the primary supply sources for Mesa Water, Huntington Beach, and Newport Beach include groundwater from the principal aquifer of the OC Basin and imported water from the SWP and CRA. The *Local SiP* will alleviate pressure on these existing water supplies by reducing reliance on imported water and providing alternative supplies within the OC Basin by pumping and treating from areas impacted by brackish groundwater due to seawater intrusion. As listed in Section 4.1.1.2, the proposed *Local SiP* will help offset the potential 10 percent reduction in total supply resulting from climate change, strengthen local supply security, and help meet future demands by providing a supplemental supply source of approximately 5,600 to 8,960 AFY. The *Local SiP* would offset the potential 10 percent reduction in supply due to climate change or offset imported water demands for three agencies.

In addition, the *Local SiP* has the potential to protect existing production wells from seawater intrusion impacts, which will be analyzed as part of the feasibility. When placed in strategic locations with sufficient distance from the existing Talbert Barrier, additional brackish groundwater wells could create an additional line of defense against seawater intrusion and associated water quality issues, which in-turn maintains basin integrity and sustainability and alleviates pressure on existing facilities.

4.2.3 Potential to Make Water Available to Address a Specific Concern

The *Local SiP* will address concerns related to water supply shortages, water supply reliability, and water quality issues.

As previously mentioned, the *Local SiP* project area is located in a coastal community of Central Orange County, California that is both impacted by extreme drought conditions due to climate change and brackish groundwater due to seawater intrusion. In fact, the extended drought has had a significant impact on the availability of imported water supplies from the SWP and CRA, which serves as a back-up source of water for Mesa Water and is used by partnering agencies to meet over 20 percent of demands. As climate change continues to increase the supply and demand gap by 10 percent, there is a need to transition away from historical water management strategies and prioritize resiliency and the development of local water supplies. In addition, coastal agencies have competing water supply challenges due to issues like brackish groundwater resulting from seawater intrusion. The study area overlays the shallow, principal, and deep aquifers of the OC Basin with areas that have TDS concentrations that exceed 2,000 mg/L. Over 95 percent of the groundwater that is currently pumped from the OC Basin comes from the principal aquifer, which is of higher water quality. However, a large portion of the study area overlays the shallow aquifer, which has experienced the highest water quality contamination threats. Currently, Newport Beach is the only project partner that pumps from this shallow aquifer for municipal use. Also, existing domestic wells are located near or along the chloride contour line, which is used to track seawater intrusion impacts. In fact, domestic wells within the City of Huntington Beach were removed from service as a result of high salinity levels.

To address these challenges, opportunities for a new well field and treatment facility with a treatment capacity ranging between 5 to 8 mgd (or 5,600 to 8,960 AFY) will be evaluated, which will increase local supplies, treat brackish groundwater, and potentially mitigate or offset the impacts of seawater intrusion by locating wells seaward of the injection barrier.

4.2.4 Potential to Create Additional Flexibility to Address Drought

The *Local SiP* will provide a flexible supply that will be available during drought periods. The potential wellfield will be located seaward of the injection barrier that is impacted by brackish groundwater due to seawater intrusion. This area of the OC Basin is primarily replenished with recycled water at the injection barrier, which reduces reliance on supply sources that are vulnerable to climate change, such as, imported water and incidental recharge. These supply sources will likely be reduced by approximately 10 percent by the year 2040 (*DWR, 2022*).

The proposed project is more drought resilient and potentially more cost-effective than other alternative supply options like ocean desalination since groundwater will be pumped from a brackish region of the OC Basin and treated to drinking water standards. This area of the OC Basin is primarily recharged with recycled water, which is considered a more drought resilient supply source.

4.3 Evaluation Criteria 3 – Environment and Water Quality

1. Describe the potential for the project to improve the quality of surface water or groundwater.
2. Describe the potential for the project to improve effluent quality beyond levels necessary to meet State or Federal discharge requirements.
3. Describe the potential for the project to improve flow conditions in a natural stream channel.
4. Describe the potential for the project to restore or enhance habitat for non-listed fish and wildlife species.
5. Describe the potential for the project to provide water or habitat for federally listed threatened or endangered species.

4.3.1 Potential to Improve Water Quality

The location of the wellfield for the *Local SiP* is a critical aspect of the project's feasibility. By locating the wells within areas of the OC Basin that are impacted by seawater intrusion, the wells could draw the 250 mg/L chloride contour further away from existing production wells in the principal aquifer. This movement of chloride concentrations would improve water quality of the principal aquifer. A significant task for the *Local SiP* feasibility study is to model the impacts of the wells on the OC Basin and provide field testing to verify modeling assumptions.

In addition, the *Local SiP* will pump and treat brackish groundwater from the OC Basin, which will increase local supplies by 5 to 8 mgd (or 5,600 to 8,960 AFY).

4.3.2 Potential to Improve Effluent Quality

Historically, brine or waste discharge for the watershed has been treated at Orange County Sanitation District's facilities. The *Local SiP* will likely not have an impact on effluent quality since it is a small percentage of the overall influent flow at the wastewater treatment plant. However, the waste discharge will be evaluated as part of the feasibility study.

4.3.3 Potential to Improve Natural Stream Channel Flow Conditions

The *Local SiP* will not have a direct impact on natural stream channel flow conditions. However, the project will alleviate pressure on imported water and replenishment sources of the OC Basin, which include natural stream flows.

4.3.4 Potential to Restore, Enhance, or Provide Water or Habitat

The project will help continue to maintain habitat upstream within the Santa Ana River Watershed and Prado Basin. The Prado Basin, which lies within the Santa Ana River Basin, contains the largest stand of forested riparian habitat remaining in coastal Southern California. The preservation and management of this ecosystem provides habitat for a wide variety of wildlife, including many federal and state listed species. The *Local SiP* could improve the health and resiliency of the Prado Basin ecosystems by drawing on an alternative, brackish source of water that will have minimal impacts to natural resources. Brackish groundwater wells will be located inland, so there is no intake from the ocean that

may impact non-listed fish and wildlife species. An environmental impacts analysis will be performed to confirm compliance for preferred alternatives.

The *Local SiP* will be developed in coordination with the Santa Ana Watershed Association (SAWA) to prioritize watershed stewardship and identify the potential upstream benefits of this project. SAWA has a long history of implementing natural resource programs to support a sustainable ecosystem, enhance habitat, and protect endangered and threatened species. SAWA maintains comprehensive data on wildlife management which can be utilized to understand how developing this additional supply may improve watershed health and provide benefits to the native, endangered species of the region.

4.4 Evaluation Criteria 4 – Department of Interior Priorities

1. ***Climate Change***: Extent the project will reduce climate pollution; increase resilience to the impacts of climate change; protect public health; and conserve our lands, waters, oceans, and biodiversity. Address the following as relevant to your project.
    - Please provide specific details and examples on how the project will address the impacts of climate change and help combat the climate crisis.
    - Does this proposed project strengthen water supply sustainability to increase resilience to climate change? Does the proposed project contribute to climate change resiliency in other ways not described above?
2. ***Disadvantaged or Underserved Communities:*** Extent to which the Project serves economically disadvantaged or underserved communities in rural or urban areas.
    - Will the proposed project serve or benefit a disadvantaged or historically underserved community? Benefits can include, but are not limited to, public health and safety by addressing water quality, new water supplies, or economic growth opportunities.
    - Please describe in detail how the community is disadvantaged based on a combination of variables (refer to list in FOMO).
3. ***Tribal Benefits:*** Points will be awarded based on the extent to which the Project will honor the Federal government's commitments to Tribal Nations.

4.4.1 Climate Change Impacts

Maintaining a sustainable water supply and increasing supply resiliency is a top priority for Mesa Water, Newport Beach, Huntington Beach, and OCWD as the impacts of climate change become increasingly realized. Severe droughts, evapotranspiration, limited snowpack, and unpredictable precipitation have continuously occurred and increasing temperatures are stressing California's water supplies and leading to shortages throughout the state. In order to address these climate change impacts, California must rethink its water strategy to focus on conservation, stretching current supplies through reuse and water recycling projects, and creating additional alternative water supplies. As a desalination planning project, the *Local SiP* falls under latter. Brackish groundwater desalination has been identified as a key strategy to adapt to climate change impacts and develop resilient water resources; as brackish groundwater is more resistant to drought impacts and rising temperatures, such as increased evaporation. DWR estimates that by 2040, California will face a 10 percent reduction in water supplies due to less snowfall, more evaporation, and

increased water consumption by the atmosphere and water-scarce soils and vegetation. This reduction, combined with increased demand projections throughout California due to population increase and high temperatures, emphasizes the need to prioritize alternative water supply sources and utilize desalination technology to access resources that have historically been unused. By developing a drought resilient brackish groundwater resource, Mesa Water and partnering agencies will be less vulnerable to water resource limitations in times of severe, prolonged drought and also provide regional benefits to Southern California by freeing up imported water and fresh groundwater to be transported to areas in need. For example, imported water that has been historically used by Huntington Beach and Newport Beach, could now be saved for other agencies that do not have access to local supply options, and therefore improve resiliency within the local region, watershed, and state.

Disadvantaged or Underserved Communities

The *Local SiP* will benefit disadvantaged communities (DAC) both within Mesa Water and throughout the entire Santa Ana River Watershed. The treatment of the brackish groundwater supply source through the *Local SiP* will positively impact the DAC within Mesa Water's service area (13 percent of the population) by increasing water security while also freeing up water supplies to enhance supply reliability for the Santa Ana River Watershed, where DAC makeup about 23 percent of the population. Details regarding underrepresented communities within Mesa Water and the Santa Ana River Watershed are shown on Figure 4-5 and Figure 4-6.

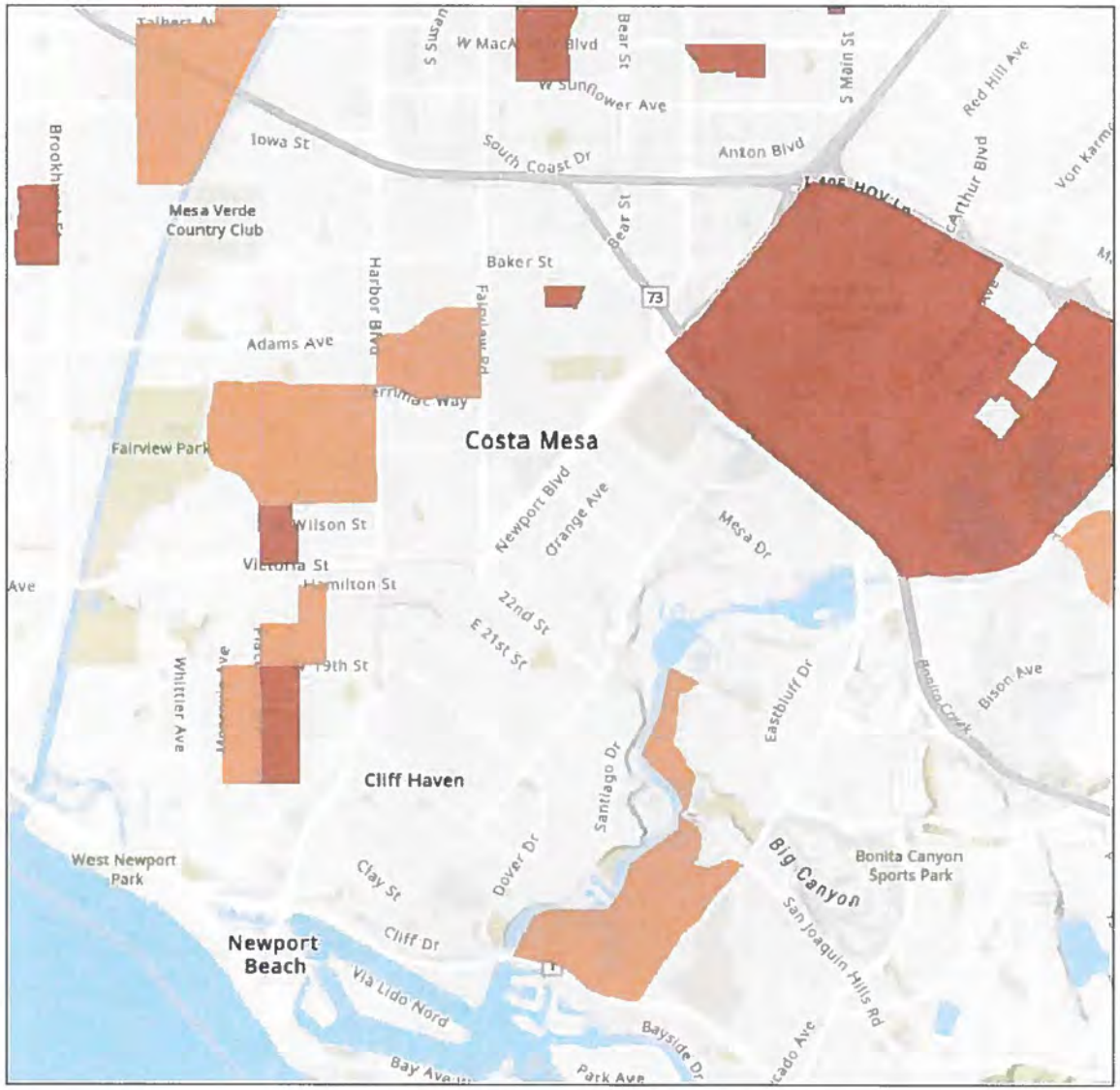


Figure 4-5. Mesa Water DAC, DWR map tool
(Source: DWR Map Tool)

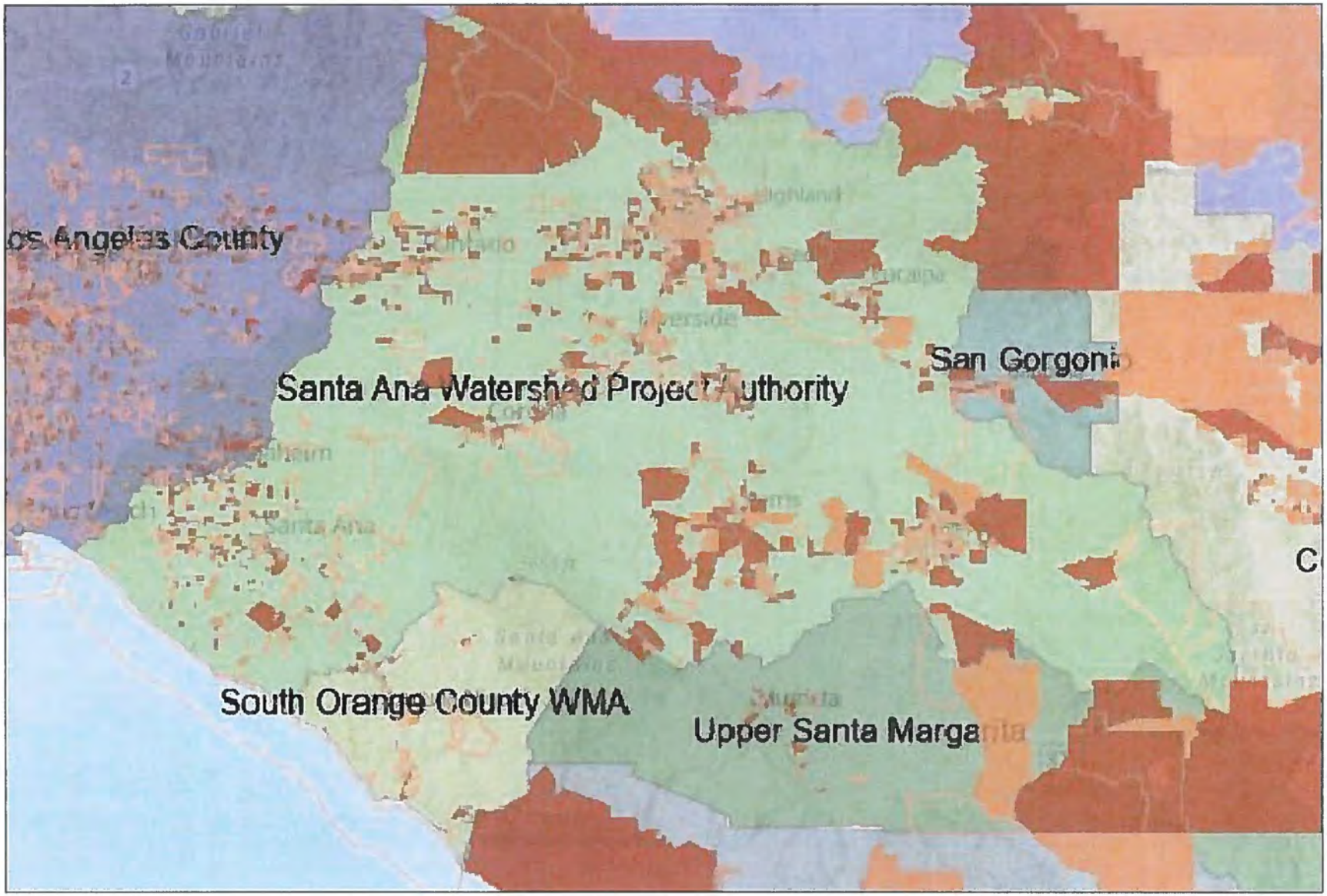


Figure 4-6. Santa Ana River Watershed DAC, DWR map tool
(Source: DWR Map Tool)

4.4.2 Tribal Benefits

This project does not directly serve and/or benefit a Tribe.

4.5 Evaluation Criterion 5 – Watershed Perspective and Stakeholder Involvement

1. Will the proposed project implement a regional or state water plan or an integrated resource management plan? Explain.
2. Will the proposed project help meet the water supply needs of a large geographic area, region, or watershed? Explain.
3. Will the proposed project promote collaborative partnerships to address water-related issues? Explain. Describe stakeholder involvement in the project planning process.
4. Will the proposed project include public outreach and opportunities for the public to learn about the project? Explain.

4.5.1 Impact to Regional or State Water Plan or Integrated Resource Management

While Mesa Water is the lead agency developing the Local SiP, the feasibility study will be the product of collaboration with various agencies in Orange County and within the Santa Ana River Watershed to provide regional benefits. The selected project from the *Local SiP* will be developed and implemented as a regional supply source, available to partnering agencies and any additional stakeholders identified. In addition, the *Local SiP* will work with OCWD to optimize well locations to provide the greatest benefits to groundwater quality and management. This optimization has the potential to improve the health of the OC Basin, which is a critical water resource for Southern California. Lastly, the *Local SiP* is in line with the State of California's 2022 Water Supply Strategy by investigating ways to create a new water source through desalination of brackish groundwater.

4.5.2 Water Supply Support for Large Area, Region or Watershed

The *Local SiP* is intended to offset the need of areas in Orange County that are currently importing water from SWP and CRA. By providing additional supply, the *Local SiP* can reduce reliance on imported supplies from these already stressed water systems. This offset can provide direct benefits to agencies that rely on imported water supply by reducing purchased imported water volumes, but also indirect benefits to the SWP and CRA by relieving pressure on the system. Imported supplies that have been historically used by Huntington Beach and Newport Beach can be freed up and used by other agencies within the local region and Santa Ana River Watershed that have limited access to local supplies or have been impacted by water quality issues (i.e., Per- and polyfluoroalkyl substances) that have impacted well production. The *Local SiP* aligns with State and Federal goals to increase regional partnerships and collaboration to build a reliable and drought proof water system for the future. Additionally, the *Local SiP* could further protect the OC Basin from seawater intrusion, which would benefit all groundwater producers within the OC Basin.

4.5.3 Collaborative Partnerships to Address Water-Related Issues

The feasibility study will encourage stakeholder involvement and collaboration throughout each phase of the project. The treated brackish groundwater supply source and desalter will be utilized as regional resource for Mesa Water, Huntington Beach, Newport Beach, OCWD and other potential agencies served by the OC Basin. Mesa Water has already engaged with interested partners to obtain commitment and develop initial framework of the *Local SiP*. Throughout the development of the Local SiP, Mesa Water will routinely work with representatives from each partnering agency and additional stakeholders to assess management practices that maximize beneficial uses within the region. As conditions fluctuate over time, Mesa Water understands the importance of flexibility when it comes to resource management and will prioritize maintaining open lanes of communication with partners and interested stakeholders.

4.5.4 Public Outreach and Opportunities

Mesa Water engages in public outreach and education programs related to water conservation and water use efficiency efforts, as well as general water resource information. Current public outreach efforts are aimed at increasing consumer awareness for conservation, efficient water use and investing in water reliability projects that are in the best interest of the region.

Opportunities for the public to learn about the *Local SiP* will include multiple public meetings – where the feasibility study will be slated for discussion, information, presentation, and possible action – taking place at Mesa Water, Huntington Beach, Newport Beach, and OCWD. Other public outreach about the project will include newsletter articles, press releases, social media postings, and website postings by Mesa Water. After the *Local SiP* feasibility study is completed, the results and any next steps will include the aforementioned public outreach and opportunities for the public to learn about the project.

Section 5

Project Budget

5.1 Funding Plan

The non-Federal cost share for the *Local SiP* will be funded by Mesa Water through its capital budget, and contributions from OCWD, Huntington Beach, and the Newport Beach. As *Local SiP* partners with Mesa Water, Newport Beach and Huntington Beach are anticipated to contribute $25,000 each in funding and OCWD is anticipated to contribute $50,000. Mesa Water will make up the difference to reach a total non-Federal funding amount of $250,000 as authorized by Mesa Water's Board of Directors. Funding commitment letters from Huntington Beach and OCWD are expected to be received by March 30th and April 27th, respectively. The funding commitment letter for Newport Beach is attached with this application. All funds will be made available to the applicant prior to the award date and there are no anticipated contingencies or time constraints associated with the funding throughout the duration of the project.

5.2 Budget Proposal:

The estimated total cost of the *Local SiP* feasibility study is $500,000, which includes $250,000 from Mesa Water and partnering agencies to meet the required match, and $250,000 in funding from the USBR WaterSMART grant. Budget will be allocated for payments to a selected consulting firm, following a competitive process, to complete the various planning activities guided by the scope of work and WTR 11-01, including but not limited to the following identified tasks:

- Identify potential groundwater supply opportunities
- Siting analysis for groundwater well and desalter locations
- Evaluation of groundwater impacts
- Evaluation of advanced treatment options and waste management procedures
- Alternatives Analysis
- Economic Analysis
- Selection of the Proposed Project
- Hydrogeologic field investigation
- Environmental Compliance and Permitting Review
- Identification of Additional Research Needs
- Implementation Schedule and Capital and operations and maintenance (O&M) Cost Estimates
- Final Feasibility Report
- Project management and meetings

Tables 5-1 and 5-2 summarize the respective proposed non-Federal and Federal funding source components and total estimated project costs, respectively. All expenses related to the feasibility study will be direct costs made by a selected consulting firm and paid by Mesa Water through the planned project budget. Funds will be available throughout the duration of the project, with anticipated calendar year 2023 spending of $80,000 and calendar year 2024 spending of $420,000.

Table 5-1. Summary of Non-Federal and Federal Funding Sources

Funding Sources	Funding Amount
Non-Federal Entities	
Mesa Water	$150,000
OCWD	$50,000
City of Huntington Beach	$25,000
City of Newport Beach	$25,000
Non-Federal Subtotal	$250,000
Federal Funding	
Requested USBR Funding	$250,000
Total Project Funding	$500,000

Table 5-2. Total Project Cost Table

Source	Amount
Costs to be reimbursed with the requested Federal funding	$250,000
Costs to be paid by the applicant	$250,000
Value of third-party contributions	$0
Total Project Cost	$500,000

5.3 Budget Narrative:

Salaries and Wages: The project manager for the feasibility study will be Andrew D. Wiesner, P.E., District Engineer for Mesa Water. The cost of labor is not proposed to be utilized as agency match or reimbursement by USBR, therefore, for the purpose of project budgeting, these items are estimated to be $0.

Fridge Benefits: No fringe benefits are proposed to be utilized as agency match or reimbursed by USBR, therefore, for the purpose of project budgeting, these items are estimated to be $0.

Travel: No travel expenses are proposed to be utilized as agency match or reimbursed by USBR, therefore, for the purpose of project budgeting, these items are estimated to be $0.

Equipment: No equipment is proposed to be utilized as agency match or reimbursed by USBR, therefore, for the purpose of project budgeting, these items are estimated to be $0.

Materials and Supplies: No materials are proposed to be utilized as agency match or reimbursed by USBR, therefore, for the purpose of project budgeting, these items are estimated to be $0.

Contractual: No contractual costs are anticipated.

Construction: No construction costs are anticipated.

Other Expenses: Table 5-3 provides a summary of the anticipated costs of contracting with a consulting firm to complete the Local SiP feasibility study. One professional service agreement is anticipated to be awarded through a competitive process. A consulting firm will be selected based on their expertise related to hydrogeologic conditions of the OC Basin, brackish groundwater management and treatment, water resources planning, the Southern California water market, and environmental analysis. The specific rates for the contractual services are not known that this time but have been estimated based on the scope of work to utilize the budget for the project. Consultant fees will be reviewed for competitiveness based on comparisons with other proposals and recently completed work for similar services.

Indirect Costs: No indirect costs are anticipated.

Total Cost: The total cost of the project is estimated to be $500,000

Table 5-3. Project Cost Breakdown			
Task No.	Task Name/Description	Task Cost	Estimated Hours
1	Project Management and Meetings	$25,000	100
2	Quality Control	$15,000	50
3	Siting Analysis and Groundwater Supply Opportunities	$32,000	160
4	Groundwater Source Assessment and Water Quality Analysis	$16,000	80
5	Evaluation of Groundwater Impacts	$40,000	200
6	Water Use Market Analysis	$16,000	80
7	Alternatives Analysis	$32,000	160
8	Economic Analysis	$24,000	120
9	Selection of the Proposed Project and Hydrogeologic Field Investigation	$196,000	980
10	Environmental Compliance and Permitting Review	$48,000	240
11	Identification of Additional Research Needs	$8,000	40
12	Implementation Schedule and Cost Estimates (Including Capital and O&M)	$16,000	80
13	Final Feasibility Report	$32,000	160
	Project Total	$500,000	2,450

Appendix A: Letters of Funding Commitment

CITY OF NEWPORT BEACH
Utilities Department
949 W. 16th Street
Newport Beach, California 92663
utilitiesinfo@newportbeachca.gov

February 9, 2023

Paul E. Shoenberger, P.E.
General Manager
Mesa Water District
1965 Placentia Avenue
Costa Mesa, CA 92627

RE: Funding Commitment for the Local groundwater Supply Improvement Project ("Local SiP")

Dear Mr. Shoenberger,

The City of Newport Beach (City) has prepared this letter of funding commitment in support of Mesa Water District's **Local groundwater Supply Improvement Project ("Local SiP")**—to explore the benefits of desalinating brackish groundwater to improve local and regional water supply reliability within the Orange County Groundwater Basin, which provides water for over 2.5 million people in North and Central Orange County, including Newport Beach.

To support execution of the Local SiP, the City will provide **$25,000.00** to Mesa Water District (Mesa Water®). This funding has been set aside and will be available to Mesa Water no later than July 30, 2023.

Developed through a collaborative process involving the City of Huntington Beach, City of Newport Beach, Orange County Water District (which manages the Orange County Groundwater Basin), and Mesa Water, the Local SiP would study a multi-agency undertaking to secure -- for our current population, including disadvantaged residents and underserved communities, and future generations -- a new source of water supply that is: abundant, affordable, environmentally-sensitive, high-quality, local, reliable, sustainable, and resilient to climate change, drought, and other potential disruptions to water supplies.

With the objective of providing Mesa Water and its partnering agencies with the framework for selecting a proposed project alternative to move into design and construction, the Local SiP will evaluate treatment alternatives for a 5 to 8 million gallons per day (MGD) regional brackish groundwater desalter, proposed locations for production wells, needed conveyance, and cost estimates. The Local SiP will also review potential groundwater and environmental impacts.

We appreciate the opportunity to partner with Mesa Water on this collaborative project and understand the important water reliability benefits that this project could provide -- such as climate change adaption, local water supply diversification, flexibility and improvement, and alleviation of current and future drought impacts to our City and the region.

Please contact me at (949) 644-3011 or mvukojevic@newportbeachca.gov should you have any questions or need additional information.

Sincerely,

Mark Vukojevic

Mark Vukojevic, P.E.
Utilities Director, City of Newport Beach

Appendix B: Official Resolution

RESOLUTION NO. 1574

RESOLUTION OF THE MESA WATER DISTRICT BOARD OF DIRECTORS AUTHORIZING ACTIONS FOR GRANT APPLICATION, ACCEPTANCE AND EXECUTION FOR THE MESA WATER LOCAL GROUNDWATER SUPPLY IMPROVEMENT PROJECT

WHEREAS, Mesa Water District (Mesa Water®) is a county water district organized and operating pursuant to the laws of the State of California (State or California); and

WHEREAS, Mesa Water proposes to implement the Mesa Water Local groundwater Supply Improvement Project (Local SiP), which Local SiP is described in documents on file with Mesa Water's District Secretary; and

WHEREAS, Mesa Water has the legal authority to enter into a funding agreement with the United States Department of Interior's Bureau of Reclamation; and

WHEREAS, Mesa Water intends to apply for grant funding for the Local SiP from the United States Department of Interior's Bureau of Reclamation; and

WHEREAS, Mesa Water's Board of Directors (Board) has reviewed, and supports, the grant application to be submitted to the United States Department of Interior's Bureau of Reclamation for the Local SiP; and

WHEREAS, Mesa Water will work with the United States Department of Interior's Bureau of Reclamation to meet established deadlines for entering into a grant agreement; and

WHEREAS, the Board desires to authorize all actions necessary or desirable to apply for, and obtain, such grant funding,

NOW, THEREFORE, THE BOARD OF DIRECTORS OF THE MESA WATER DISTRICT DOES HEREBY RESOLVE, DETERMINE, AND ORDER AS FOLLOWS:

Section 1. That pursuant and subject to all of the terms and provisions of the United States Department of Interior, Mesa Water's General Manager (General Manager) or the General Manager's designee(s), is hereby authorized and directed to prepare and file a WaterSmart: Water Recycling and Desalination Planning grant funding application with the United States Department of Interior's Bureau of Reclamation and take such other and further actions as may be necessary or appropriate to seek and obtain such grant funding for the Local SiP.

Section 2. The General Manager, or the General Manager's designee(s), is hereby authorized and directed to execute the applicable funding agreement, including any amendments and supplements thereto, with the United

States Department of Interior's Bureau of Reclamation in connection with obtaining such grant funding.

Section 3. The General Manager, or the General Manager's designee(s), is hereby authorized to submit any required information, documents, invoices, and reports, and to take other related and/or necessary or desirable actions, to seek and obtain such grant funding.

Section 4. This Resolution shall take effect upon adoption by the Board.

ADOPTED, SIGNED, and APPROVED this 22nd day of February 2023 by a roll call vote.

AYES:	DIRECTORS:	Atkinson, Bockmiller, Fisler, DePasquale, Dewane
NOES:	DIRECTORS:	
ABSTAIN:	DIRECTORS:	
ABSENT:	DIRECTORS:	

Shawn Dewane
President, Board of Directors

Denise Garcia
District Secretary

State of California
County of Orange

I, Denise Garcia, District Secretary of the Board of Directors of the Mesa Water District, do hereby certify that the foregoing Resolution No. 1574 was duly passed and adopted by the Board of Directors of the Mesa Water District at its regular Board meeting held on February 22, 2023, by the following vote:

AYES:	DIRECTORS:	Atkinson, Bockmiller, Fisler, DePasquale, Dewane
NOES:	DIRECTORS:	
ABSTAIN:	DIRECTORS:	
ABSENT:	DIRECTORS:	

Denise Garcia
District Secretary

Appendix C: Letters of Support

Additional Letters of Support for the Local SiP are being mailed directly to Ms. Gould from Congresswoman Porter, Senator Feinstein, and Senator Padilla.

STATE CAPITOL
P.O. BOX 942849
SACRAMENTO, CA 94249-0115

California Legislature

February 13, 2023

Jacklynn Gould, Regional Director
U.S. Bureau of Reclamation
Lower Colorado Basin
P.O. Box 61470
Boulder City, NV 89006-1470

RE: Local groundwater Supply Improvement Project ("Local SiP") -- Support for WaterSMART: Water Recycling and Desalination Planning Grant Application by Mesa Water District to study regional brackish groundwater desalination

Dear Ms. Gould,

This letter is to express to you and the U.S. Bureau of Reclamation our strong support for the WaterSMART grant application by Mesa Water District (Mesa Water®), seeking assistance for its **Local groundwater Supply Improvement Project ("Local SiP")** feasibility study. The Local SiP would explore the benefits of desalinating brackish groundwater to improve local and regional water supply reliability within the Orange County Groundwater Basin ("OC Basin"), which provides water for over 2.5 million people in North and Central Orange County.

California is experiencing increasingly extreme weather conditions, with less predictable precipitation patterns, followed by longer and more frequent dry and hot periods. Climate change is reducing the reliability of the state's precipitation and snowpack. Due to the uncertainties of imported water supplies from Northern California and the Colorado River, local and regional water supply reliability for Orange County is more important now than ever. The Local SiP seeks to further diversify and improve local water supplies for added flexibility and regional reliability within the OC Basin, which is already a leader in potable water reuse and water use efficiency.

The Local SiP would study a multi-agency collaboration -- between Mesa Water, the Orange County Water District, and the Cities of Huntington Beach and Newport Beach -- to secure a new source of water supply for the OC Basin that is: abundant, affordable, environmentally-sensitive, high-quality, local, reliable, sustainable, and resilient to climate change, drought, and other potential disruptions to water supplies.

Governor Newsom and his Administration have provided clear signals -- through the state's document entitled "California's Water Supply Strategy" and in many other venues -- that the ongoing development of new water supplies, such as desalination, must be embraced. Because brackish groundwater desalination projects like the Local SiP could help insulate Orange County's economy and residents from the devastating impacts of prolonged and ongoing drought, we respectfully request a favorable review of Mesa Water's application.

Sincerely,

Janet Nguyen, Senator
36th Senate District

Kelly Seyarto, Senator
32nd Senate District

Tri Ta, Assembly Member
70th Assembly District

Cottie Petrie-Norris, Assembly Member
73rd Assembly District

Phillip Chen, Assembly Member
59th Assembly District

Diane Dixon, Assembly Member
72nd Assembly District

STATE CAPITOL
P.O. BOX 942849
SACRAMENTO, CA 94249-0072
(916) 319-2072
FAX (916) 319-2172

Assembly
California Legislature

DIANE B. DIXON
ASSEMBLYMEMBER, SEVENTY-SECOND DISTRICT

February 13, 2023

Jacklynn Gould, Regional Director
U.S. Bureau of Reclamation
Lower Colorado Basin
P.O. Box 61470
Boulder City, NV 89006-1470

RE: Local groundwater Supply Improvement Project ("Local SiP") -- Support for WaterSMART: Water Recycling and Desalination Planning Grant Application by Mesa Water District to study regional brackish groundwater desalination

Dear Ms. Gould,

This letter is to express to you and the U.S. Bureau of Reclamation our strong support for the WaterSMART grant application by Mesa Water District (Mesa Water®), seeking assistance for its **Local groundwater Supply Improvement Project ("Local SiP")** feasibility study. The Local SiP would explore the benefits of desalinating brackish groundwater to improve local and regional water supply reliability within the Orange County Groundwater Basin ("OC Basin"), which provides water for over 2.5 million people in North and Central Orange County.

California is experiencing increasingly extreme weather conditions, with less predictable precipitation patterns, followed by longer and more frequent dry and hot periods. Thus, creating new sources of potable water is an ever-present need and will continue to be for many years. Due to the uncertainties of imported water supplies from Northern California and the Colorado River, local and regional water supply reliability for Orange County is more important now than ever. The Local SiP seeks to further diversify and improve local water supplies for added flexibility and regional reliability within the OC Basin, which is already a leader in potable water reuse and water use efficiency.

The Local SiP would study a multi-agency collaboration -- between Mesa Water, the Orange County Water District, and the Cities of Huntington Beach and Newport Beach -- to secure a new source of water supply for the OC Basin that is: abundant, affordable, environmentally-sensitive, high-quality, local, reliable, sustainable, and resilient to climate change, drought, and other potential disruptions to water supplies.

Orange County's dependency on imported water will only increase as more people move to California and the region. Working together, it is imperative that we plan for and create our future water supplies using all available tools, and new water supplies, such as desalination, must be embraced. Additionally, because brackish groundwater desalination projects like the Local SiP could help insulate Orange County's economy and residents from the devastating impacts of prolonged and ongoing drought, we respectfully request a favorable review of Mesa Water's application.

Sincerely,

Diane B Dixon

Diane Dixon
Assembly District 72

STATE CAPITOL
P.O. BOX 942849
SACRAMENTO, CA 94249-0068
(916) 319-2068
FAX (916) 319-2168

Assembly
California Legislature

AVELINO VALENCIA
ASSEMBLYMEMBER, SIXTY-EIGHTH DISTRICT

February 17, 2023

Jacklynn Gould, Regional Director
U.S. Bureau of Reclamation
Lower Colorado Basin
P.O. Box 61470
Boulder City, NV 89006-1470

RE: Local groundwater Supply Improvement Project ("Local SiP") – Support for WaterSMART: Water Recycling and Desalination Planning Grant Application by Mesa Water District to study regional brackish groundwater desalination

Dear Ms. Gould,

I write in strong support for the WaterSMART grant application by Mesa Water District (Mesa Water®), seeking assistance for its **Local groundwater Supply Improvement Project ("Local SiP")** feasibility study. The Local SiP would explore the benefits of desalinating brackish groundwater to improve local and regional water supply reliability within the Orange County Groundwater Basin ("OC Basin"), which provides water for over 2.5 million people in North and Central Orange County.

As you know, California is experiencing increasingly extreme weather conditions, with less predictable precipitation patterns, followed by longer and more frequent dry and hot periods. As a result, local and regional water supply reliability for Orange County is more important now than ever. The Local SiP seeks to further diversify and improve local water supplies for added flexibility and regional reliability within the OC Basin, which is already a leader in potable water reuse and water use efficiency.

The Local SiP would study a multi-agency collaboration -- between Mesa Water, the Orange County Water District, and the Cities of Huntington Beach and Newport Beach -- to secure a new source of water supply for the OC Basin that is: abundant, affordable, environmentally-sensitive, high-quality, local, reliable, sustainable, and resilient to climate change, drought, and other potential disruptions to water supplies.

Thank you for your attention to this important matter.

In Service,

AVELINO VALENCIA
Assemblymember 68th District

AV: nt

CAPITOL OFFICE
1021 O STREET
SUITE 6710
SACRAMENTO, CA 95814
(916) 651-4037

DISTRICT OFFICE
2151 MICHELSON DRIVE
SUITE 258
IRVINE, CA 92612
(949) 223-5472

WWW.SENATE.CA.GOV/MIN

California State Senate

SENATOR
DAVE MIN
THIRTY-SEVENTH SENATE DISTRICT

COMMITTEES
NATURAL RESOURCES AND WATER
CHAIR
BANKING AND
FINANCIAL INSTITUTIONS
BUDGET AND FISCAL REVIEW
BUDGET SUBCOMMITTEE #1
ON EDUCATION
ENERGY, UTILITIES AND
COMMUNICATIONS
JUDICIARY

February 17, 2023

Jacklynn Gould, Regional Director
U.S. Bureau of Reclamation, Lower Colorado Basin
P.O. Box 61470
Boulder City, NV 89006-1470

Dear Regional Director Gould:

This letter is to express my support for Mesa Water District's (Mesa Water®) WaterSMART grant application for $250,000 for the Local Groundwater Supply Improvement Project ("Local SiP").

The proposed feasibility study by Mesa Water District is an innovative response to the pressing need for environmental protection and improved water quality, and will investigate the benefits and environmental impacts of desalinating brackish groundwater to improve local and regional water supply reliability for over two and half million California residents in the Orange County Groundwater Basin.

Additionally, the study is a multi-agency collaborative effort between Mesa Water, the Orange County Water District, the City of Huntington Beach, and the City of Newport Beach, and aims to expand the water supply while also increasing the reliability of local water systems.

The State of California has a history of leadership in environmental stewardship and in emerging technologies. The Local SiP aligns with both the state and national goals of achieving a cleaner, healthier, and more sustainable environment. I ask that the US Bureau of Reclamation give all due consideration to Mesa Water District's application for funds.

Thank you for your time.

Sincerely,

DAVE MIN
Senator, 37th District

DKM:jb

STATE CAPITOL
P.O. BOX 942849
SACRAMENTO, CA 94249-0067
(916) 319-2067
FAX (916) 319-2167

Assembly
California Legislature

SHARON QUIRK-SILVA
ASSEMBLYMEMBER, SIXTY-SEVENTH DISTRICT

February 17, 2023

Jacklynn Gould, Regional Director
U.S. Bureau of Reclamation
Lower Colorado Basin
P.O. Box 61470
Boulder City, NV 89006-1470

RE:

Local groundwater Supply Improvement Project ("Local SiP") -- Support for WaterSMART: Water Recycling and Desalination Planning Grant Application by Mesa Water District to study regional brackish groundwater desalination

Dear Ms. Gould,

This letter is to express to you and the U.S. Bureau of Reclamation our strong support for the WaterSMART grant application by Mesa Water District (Mesa Water®), seeking assistance for its **Local groundwater Supply Improvement Project ("Local SiP")** feasibility study. The Local SiP would explore the benefits of desalinating brackish groundwater to improve local and regional water supply reliability within the Orange County Groundwater Basin ("OC Basin"), which provides water for over 2.5 million people in North and Central Orange County.

California is experiencing increasingly extreme weather conditions, with less predictable precipitation patterns, followed by longer and more frequent dry and hot periods. Climate change is reducing the reliability of the state's precipitation and snowpack. Due to the uncertainties of imported water supplies from Northern California and the Colorado River, local and regional water supply reliability for Orange County is more important now than ever. The Local SiP seeks to further diversify and improve local water supplies for added flexibility and regional reliability within the OC Basin, which is already a leader in potable water reuse and water use efficiency.

The Local SiP would study a multi-agency collaboration -- between Mesa Water, the Orange County Water District, and the Cities of Huntington Beach and Newport Beach -- to secure a new source of water supply for the OC Basin that is: abundant, affordable, environmentally-sensitive, high-quality, local, reliable, sustainable, and resilient to climate change, drought, and other potential disruptions to water supplies.

Governor Newsom and his Administration have provided clear signals -- through the state's document entitled "California's Water Supply Strategy" and in many other venues -- that the ongoing development of new water supplies, such as desalination, must be embraced. Because brackish groundwater desalination projects like the Local SiP could help insulate Orange County's economy and residents from the devastating impacts of prolonged and ongoing drought, we respectfully request a favorable review of Mesa Water's application.

Sincerely,

Sharon Quirk-Silva

Sharon Quirk-Silva
Assemblymember, 67th District

February 9, 2023

Jacklynn Gould, Regional Director
U.S. Bureau of Reclamation
Lower Colorado Basin
P.O. Box 61470
Boulder City, NV 89006-1470

RE: Local groundwater Supply Improvement Project ("Local SiP") -- Support for WaterSMART: Water Recycling and Desalination Planning Grant Application by Mesa Water District to study regional brackish groundwater desalination

Dear Ms. Gould:

CalDesal is pleased to convey to you and the U.S. Bureau of Reclamation our strong support for the WaterSMART grant application by Mesa Water District (Mesa Water®), seeking assistance for its **Local groundwater Supply Improvement Project ("Local SiP")** feasibility study. The Local SiP would explore the benefits of desalinating brackish groundwater to improve local and regional water supply reliability within the Orange County Groundwater Basin ("OC Basin"), which provides water for over 2.5 million people in North and Central Orange County, including Mesa Water's service area.

CalDesal is a statewide association comprised of water industry leaders, representing public and private sector entities as well as non-profit organizations, integrating the use of desalination to ensure a sustainable water future for communities throughout California.

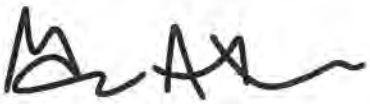
California is experiencing increasingly extreme weather conditions, with less predictable precipitation patterns, followed by longer and more frequent dry and hot periods. Climate change is reducing the reliability of the state's precipitation and snowpack. Due to the uncertainties of imported water supplies from Northern California and the Colorado River, local and regional water supply reliability for the OC Basin is more important now than ever. The Local SiP seeks to further diversify and improve local water supplies for added flexibility and regional reliability within the OC Basin, which is already a leader in potable water reuse and water use efficiency.

The Local SiP would study a multi-agency collaboration -- between Mesa Water, the Orange County Water District, and the Cities of Huntington Beach and Newport Beach -- to secure a new source of water supply for the OC Basin that is: abundant, affordable, environmentally-sensitive, high-quality, local, reliable, sustainable, and resilient to climate change, drought, and other potential disruptions to water supplies.

Governor Newsom and his Administration have provided clear signals -- through the state's "*California's Water Supply Strategy*" and in many other venues -- that the ongoing development of new water supplies, such as desalination, must be embraced. Additionally, brackish groundwater desalination projects can help insulate a region's community and economy from the devastating impacts of prolonged and ongoing drought.

For these reasons and more, we respectfully request a favorable review of Mesa Water's Local SiP application. Please don't hesitate to contact me at glennf@caldesal.org or at (916) 216-1747 if you have any questions regarding CalDesal's support for this grant application.

Sincerely,



GLENN A. FARREL
Executive Director, CalDesal

cc: Paul Shoenberger, Mesa Water District
Stacy Taylor, Mesa Water District

ORANGE COUNTY WATER DISTRICT
SINCE 1933
ORANGE COUNTY'S GROUNDWATER AUTHORITY

February 13, 2023

Jacklynn Gould, Regional Director
U.S. Bureau of Reclamation
Lower Colorado Basin
P.O. Box 61470
Boulder City, NV 89006-1470

RE: Local groundwater Supply Improvement Project ("Local SiP") -- Support for WaterSMART: Water Recycling and Desalination Planning Grant Application by Mesa Water District to study regional brackish groundwater desalination

Dear Ms. Gould,

This letter is to express the Orange County Water District's support for the WaterSMART grant application by Mesa Water District (Mesa Water®), seeking assistance for its feasibility study -- named the **Local groundwater Supply Improvement Project ("Local SiP")** -- to explore the benefits of desalinating brackish groundwater to improve local and regional water supply reliability within the Orange County Groundwater Basin, which provides water for over 2.5 million people in North and Central Orange County.

Developed through a collaborative process involving Mesa Water, the City of Huntington Beach, the City of Newport Beach, and OCWD (which manages the Orange County Groundwater Basin), the Local SiP would study a multi-agency undertaking to secure -- for our current population, including disadvantaged residents and underserved communities, and future generations -- a new source of water supply that is: abundant, affordable, environmentally-sensitive, high-quality, local, reliable, sustainable, and resilient to climate change, drought, and other potential disruptions to water supplies.

The Local SiP will evaluate treatment alternatives for a 5 to 8 million gallons per day (MGD) regional brackish groundwater desalter, proposed locations for production wells, needed conveyance, and cost estimates. The Local SiP will also review potential groundwater and environmental impacts. The Local SiP will provide Mesa Water and its partnering agencies with the framework for selecting a proposed project alternative to move into design and construction.

PO Box 8300
Fountain Valley, CA 92728-8300
18700 Ward Street
Fountain Valley, CA 92708
(714) 378-3200
(714) 378-3373 fax
www.ocwd.com

Due to adaption strategies required to manage the impacts of climate change, and the uncertainties of imported water supplies from Northern California and the Colorado River, local and regional water supply reliability for the Orange County Groundwater Basin is more important now than ever. Already a leader in potable water reuse and water use efficiency, the Orange County Groundwater Basin seeks to further diversify and improve local water supplies for added flexibility and regional reliability. This, in turn, will benefit the City of Huntington Beach.

We respectfully request favorable review for Mesa Water's application, as the Local SiP could alleviate current and future drought impacts to the Orange County Groundwater Basin.

Sincerely,

Michael R. Markus, P.E., D.WRE, BCEE, F.ASCE
General Manager, Orange County Water District

CITY OF HUNTINGTON BEACH

Public Works Department

Sean Crumby, PE
Director of Public Works

February 13, 2023

Jacklynn Gould, Regional Director
U.S. Bureau of Reclamation
Lower Colorado Basin
P.O. Box 61470
Boulder City, NV 89006-1470

RE: Local groundwater Supply Improvement Project ("Local SiP") -- Support for WaterSMART: Water Recycling and Desalination Planning Grant Application by Mesa Water District to study regional brackish groundwater desalination

Dear Ms. Gould,

This letter is to express the City of Huntington Beach's support for the WaterSMART grant application by Mesa Water District (Mesa Water®), seeking assistance for its feasibility study -- named the **Local groundwater Supply Improvement Project ("Local SiP")** -- to explore the benefits of desalinating brackish groundwater to improve local and regional water supply reliability within the Orange County Groundwater Basin, which provides water for over 2.5 million people in North and Central Orange County, including the citizens of Huntington Beach.

Developed through a collaborative process involving the City of Huntington Beach, City of Newport Beach, Orange County Water District (which manages the Orange County Groundwater Basin), and Mesa Water, the Local SiP would study a multi-agency undertaking to secure -- for our current population, including disadvantaged residents and underserved communities, and future generations -- a new source of water supply that is: abundant, affordable, environmentally-sensitive, high-quality, local, reliable, sustainable, and resilient to climate change, drought, and other potential disruptions to water supplies.

The Local SiP will evaluate treatment alternatives for a 5 to 8 million gallons per day (MGD) regional brackish groundwater desalter, proposed locations for production wells, needed conveyance, and cost estimates. The Local SiP will also review potential groundwater and environmental impacts. The Local SiP will provide Mesa Water and its partnering agencies with the framework for selecting a proposed project alternative to move into design and construction.

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We respectfully request favorable review for Mesa Water's application, as the Local SiP could alleviate current and future drought impacts to the Orange County Groundwater Basin.

Sincerely,

Alvin Papa
Deputy Director of Public Works-Utilities, City of Huntington Beach

DONALD P. WAGNER CHAIRMAN, THIRD DISTRICT
ANDREW DO VICE CHAIRMAN, FIRST DISTRICT
ORANGE COUNTY BOARD OF SUPERVISORS
HALL OF ADMINISTRATION, 10TH FLOOR
400 W. CIVIC CENTER DRIVE, SANTA ANA, CALIFORNIA 92701

February 15, 2023

Jacklynn Gould, Regional Director
U.S. Bureau of Reclamation
Lower Colorado Basin
P.O. Box 61470
Boulder City, NV 89006-1470

RE: Local groundwater Supply Improvement Project ("Local SiP") -- Support for WaterSMART: Water Recycling and Desalination Planning Grant Application by Mesa Water District to study regional brackish groundwater desalination

Dear Ms. Gould,

This letter is to express to you and the U.S. Bureau of Reclamation our strong support for the WaterSMART grant application by Mesa Water District (Mesa Water®), seeking assistance for its **Local groundwater Supply Improvement Project ("Local SiP")** feasibility study. The Local SiP would explore the benefits of desalinating brackish groundwater to improve local and regional water supply reliability within the Orange County Groundwater Basin ("OC Basin"), which provides water for over 2.5 million people in North and Central Orange County.

California is experiencing increasingly extreme weather conditions, with less predictable precipitation patterns, followed by longer and more frequent dry and hot periods. Climate change is reducing the reliability of the state's precipitation and snowpack. Due to the uncertainties of imported water supplies from Northern California and the Colorado River, local and regional water supply reliability for Orange County is more important now than ever. The Local SiP seeks to further diversify and improve local water supplies for added flexibility and regional reliability within the OC Basin, which is already a leader in potable water reuse and water use efficiency.

The Local SiP would study a multi-agency collaboration -- between Mesa Water, the Orange County Water District, and the Cities of Huntington Beach and Newport Beach -- to secure a new source of water supply for the OC Basin that is: ab undant, affordable, environmentally-sensitive, high-quality, local, reliable, sustainable, and resilient to climate change, drought, and other potential disruptions to water supplies.

Local, regional, state and federal governments have acknowledged that water supply sustainability includes desalination as an important water resilience strategy. Because desalination projects could help insulate Orange County's economy and residents from the devastating impacts of prolonged and ongoing drought, we respectfully request a favorable review of Mesa Water's Local SiP application.

Sincerely,

Donald P. Wagner
Chairman, Board of Supervisors
Supervisor, Third District

Andrew Do
Vice Chairman, Board of Supervisors
Supervisor, First District