

U.S. Bureau of Reclamation
Notice of Funding Opportunity
No. R23AS00076

WaterSMART: Water Recycling and Desalination Planning

Chino Basin Advanced Treated Recycled Water, Storage, and Production

February 2023

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Executive Summary

Date: February 23, 2023

Application Name: Inland Empire Utilities Agency (IEUA)

Applicant City, County, State: Various Cities, San Bernardino County, California.

IEUA's Chino Basin Program (CBP) is an innovative approach to addressing local, regional, and statewide water resources management issues through strategic

partnerships, creative water exchanges, and deployment of new critical infrastructure. Integral to the CBP is a 15 million gallon per day (MGD) advanced water purification facility (AWPF) that would remove salinity from recycled water, improving the sustainability of a resource that would otherwise be gradually degraded beyond usability, resulting in loss of local supplies, stranded assets, and increased reliance on State Water Project (SWP) supplies. Along with these water quality benefits, the CBP is uniquely designed to deliver other public benefits including environmental, water supply, emergency response, and additional regional benefits. Over the October 31, 2023 to October 31, 2025 planning period, IEUA will be executing planning and pre-final design activities in support of the CBP, including advancing terms and agreements necessary to implement the CBP, preparation of environmental documentation, regulatory compliance and permitting activities, and pre-final design of key CBP components. Program management in support of these activities will also be provided over the planning period. These activities directly align with the activities outlined in WaterSMART: Water Recycling and Desalination Planning Notice of Funding Opportunity No. R23AS00076. Planning, regulatory compliance and permitting, and pre-final design activities for the CBP are currently underway and are estimated to be completed in late 2025. The proposed planning efforts are not for a project on a Federal facility and will not involve Federal land.

Project Location

The proposed project (the CBP) is primarily located within the northeastern region of IEUA's service area in the cities of Rialto, Fontana, and Rancho Cucamonga in San Bernardino County, California, which is approximately 40 miles east of downtown Los Angeles. *See Figure 1 for a project location map.*

Technical Project Description

Inland Empire Utilities Agency

IEUA is a regional wastewater treatment agency and wholesale distributor of imported water. Today, IEUA is responsible for serving approximately 935,000 people over 242 square miles in western San Bernardino County. IEUA is focused on providing three key services: (1) treating wastewater and developing recycled water, local water resources, and conservation programs to reduce the region's dependence on imported water supplies, thus enabling the service area to become drought-resilient; (2) converting biosolids and waste products into a high-quality

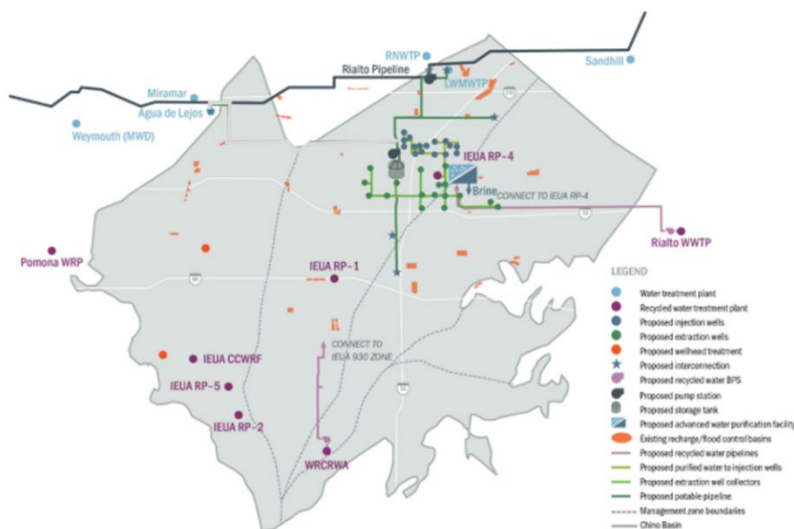


Figure 1: Project Location Map

compost made from recycled materials; and (3) generating electrical energy from renewable sources.

Applicant Category

In the mid-1990s, IEUA identified recycled water as one of the critical components to provide a resilient water supply for the region, a hydrology-independent and reliable local supply source. IEUA's CBP is an innovative approach which will help secure recycled water as a resource within the region. The CBP would develop new southern California advanced treated water supplies to be stored in the Chino Basin and exchanged in dry years for southern California-bound imported SWP supplies stored in northern California. The stored northern California water would subsequently be released as multi-day pulse flows to support anadromous fish populations in the Feather River and the Sacramento-San Joaquin Delta (Delta), providing a statewide public benefit. Integral to the CBP is a 15 MGD AWPf that would remove salinity from recycled water, improving the sustainability of the region's water resources that would otherwise be gradually degraded beyond usability, resulting in loss of local supplies, stranded assets, and increased reliance on imported SWP supplies. The CBP would also consist of injection wells, extraction wells, groundwater treatment facilities, external recycled water supplies, and a pipeline distribution network connecting the facilities to local agencies. The estimated cost of the CBP in 2019 dollars is \$650 million. With an estimated cost greater than \$500 million, IEUA is seeking funding under Funding Group II. A greater description of the CBP including project features, benefits, and anticipated costs can be found in Subcriterion 1b.

Eligibility of Applicant

IEUA is eligible to receive an award under this funding opportunity as a wastewater treatment agency and wholesale distributor of imported water located in San Bernardino County, California.

Goals and Objectives

IEUA's goal is to meet or exceed key final design and construction milestones for the CBP identified in the Subcriterion 1b Project Schedule. To meet this goal, IEUA has identified the following objectives:

- Identify key participation, ownership, and operating considerations for the CBP.
- Ensure the CBP is constructed and implemented in accordance with local, State, and federal laws and regulations.
- Identify and inform the public of the potential environmental effects of the CBP.
- Prepare the basis of design for key CBP components.

IEUA intends to achieve these objectives by executing planning and pre-final design activities as described below.

Approach

IEUA will be executing activities under the following categories to further advance the CBP over the October 31, 2023 to October 31, 2025 planning period:

- **Agreements:** IEUA will coordinate and collaborate with local and regional partner agencies along with state resource agencies to advance the terms and agreements necessary to implement the CBP. The agreements that will be advanced over the planning period include:
 - Public benefit agreements with California Department of Fish and Wildlife (CDFW), the State Water Resources Control Board (SWRCB), and the California

Department of Water Resources (DWR) for delivery of ecosystem, water quality, and emergency response water supply benefits, respectively.

- Pulse flow agreements with CDFW and DWR to describe the criteria and timing and volume of the pulse flow releases from Lake Oroville to the Feather River to achieve the desired ecosystem benefits.
 - Water exchange agreements with Metropolitan Water District of Southern California (Metropolitan) and DWR to describe the commitments and terms for use of CBP water supplies stored in the Chino Basin in lieu of water deliveries from Metropolitan.
 - Recycled water purchase agreement with Western Riverside County Regional Wastewater Authority (WRCRWA)/Jurupa Community Services District to secure water supplies for advanced water treatment to implement the CBP.
 - Performance, ownership, and operating agreements with Fontana Water Company (FWC), Cucamonga Valley Water District (CVWD), and potentially other retail agencies to describe commitments for funding the design, construction, and operation of CBP facilities.
 - Call year performance operating agreement with Metropolitan.
 - Local storage agreement (injection wells) with the Chino Basin Watermaster and performing partners (FWC, CVWD, and potentially other retail agencies) to describe the storage capacity in the Chino Basin for the CBP and mitigation measures to protect the Chino Basin.
 - Funding agreement with the State of California (California Water Commission) that will identify the terms and conditions for the State to provide funding from the Water Quality, Supply, and Infrastructure Improvement Act of 2014 to IEUA to assist in financing the CBP.
- **Regulatory Compliance and Permitting:** The CBP will require a variety of regulatory permits/approvals from federal, state, and local agencies as described in the required permits or approvals section in this grant application. IEUA will prepare a permitting and regulatory strategy and engage with these agencies over the planning period to secure the necessary permits/regulatory approvals needed for construction and implementation of the CBP.
 - **Environmental Documentation:** IEUA will develop supplemental project-level environmental documentation required for the CBP in compliance with California Environmental Quality Act (CEQA) requirements.
 - **Pre-final Design:** IEUA will execute pre-final design activities for the following CBP components over the planning period: extraction wells, purified and potable conveyance pipelines, booster stations and reservoirs, and interconnections (Metropolitan, CVWD, and FWC).
 - **Program management** activities over the planning period will also be performed to ensure the coordinated planning, management, and execution of the planning and pre-final design activities described above.

IEUA will be executing activities under each of these categories concurrently over the October 31, 2023 to October 31, 2025 planning period as shown in the project schedule under Subcriterion 1b – Project Schedule.

Responses to Evaluation Criteria

Evaluation Criterion 1: Project Planning and Analysis (30 points)

Subcriterion No.1a-Water Recycling Needs and Opportunities (15 Points)

1. Problems and Needs

IEUA's water resources are affected by climate conditions, environmental and regulatory factors, and growth. Climate change-induced temperature increases, changes in precipitation patterns, and droughts impact regional water supplies. As one of the fastest growing regions in the State, continued residential and commercial growth in the region will create new demands for water that could strain existing water supplies. IEUA will be required to continue investing in treatment technologies for the region's water supplies in the future and improve the operational management of these treated supplies to help meet future demands.

IEUA is heavily reliant on imported water supplies, which can vary significantly from year to year based on uncertain regional hydrology, changing environmental conditions, and established legal and institutional regulations. As shown in Table 1, the SWP was able to supply 75 percent of its contract allocation during the 2019 water year, but since drought conditions began in 2020, SWP allocations have declined significantly, with the SWP only able to supply 5 percent of contract allocations in the 2021 and 2022 water years. It is anticipated that climate change and other factors will further curtail SWP supplies to the region, underscoring the need to maintain existing and develop new local supplies.

Table 1: SWP Allocation History

Water Year	SWP Allocation
2022	5%
2021	5%
2020	15%
2019	75%
2018	35%
2017	85%
2016	60%

As a result of the nation's most variable climate, California is frequently affected by severe and extreme droughts (Figure 2(a)). According to data from the U.S. Drought Monitor, San Bernardino County (i.e., IEUA's service area) experienced **seven** severe drought events, **six** extreme drought events and **two** exceptional drought events between 2000 and 2022 (Figure 2(b)), which has resulted in strict water use restrictions and significant water rate increases. Portions of the IEUA service area can also be classified as disadvantaged (see Criterion 4). Both water restrictions and rate hikes are more detrimental to disadvantaged communities than to wealthier communities. Unless measures are taken to increase the resilience of the water supply in the region, future climate conditions will cause droughts to become more severe, leading to increased social vulnerability and greater income inequality.

Recycled water is an increasingly essential asset to the region particularly with the uncertain future of imported water supplies due to climate change and environmental factors. Currently, recycled water makes up approximately 20 percent of IEUA's water supply portfolio. However, the continued use of recycled water is compliance driven, with regulatory limitations for total dissolved solids (TDS) in IEUA's recycled water and groundwater recharge. In the event of non-compliance, IEUA would need to supplement the water supply portfolio with more expensive and/or less reliable sources. Today, IEUA estimates that without taking additional action, TDS limits for recycled water direct use and groundwater recharge may be exceeded within the next ten years.

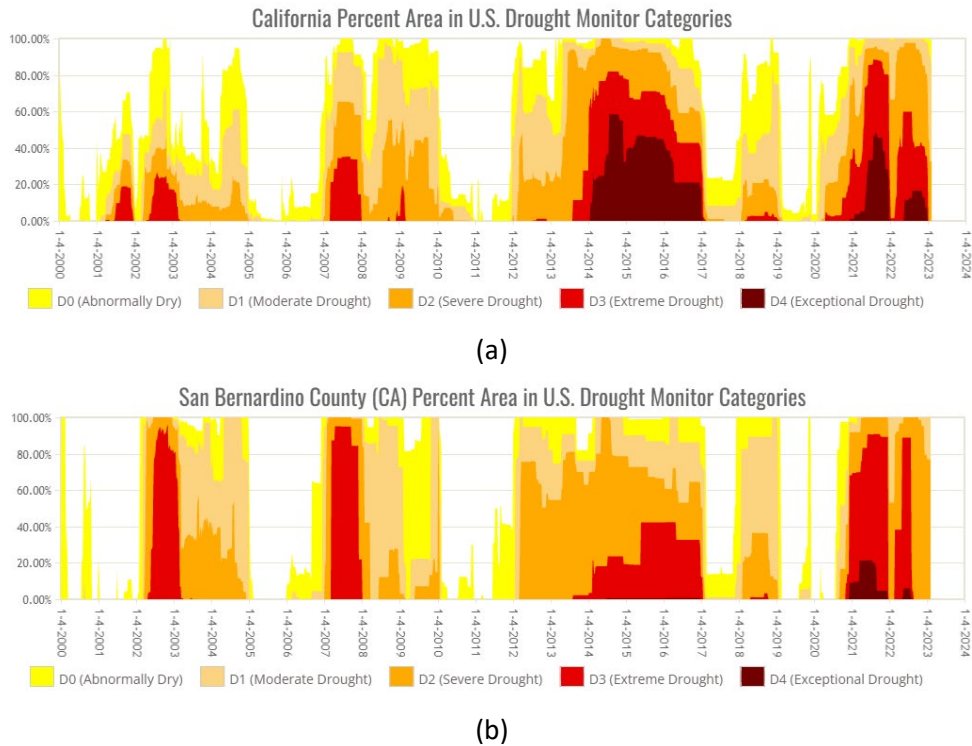


Figure 2: Percent area affected by historical droughts (a) State of California, and (b) San Bernardino County. Source: U.S. Drought Monitor

2. Current and Projected Water Supplies and Demands

a. Current and Projected Water Supply

The water resource inventory for the IEUA service area is generally made up of stormwater and other local supply sources (3%), desalter product water (10%), direct use recycled water (10%), imported water (32%), and groundwater (45%). IEUA’s regional water usage in fiscal year 2021/2022 was 196,552 acre-feet (AF) (177,292 AF potable usage and 19,260 AF in recycled direct usage). Recycled water used for groundwater recharge is not included in this total. IEUA estimates that regional water supply will increase to 287,804 AF by 2030 and 322,461 AF by 2040. The section below provides an overview of current and projected water supplies and demand for these key supply sources, as well as the potential impacts of climate change these sources.

Groundwater: Groundwater makes up 45 percent of the area’s annual water supply and comes primarily from the Chino Basin and from basins adjacent to the Chino Basin. These basins include Cucamonga, Rialto, Lytle Creek, Colton, and the Six Basins groundwater basins.

Climate Change Impacts: Climate change is expected to have a negative impact on groundwater supply. Warmer temperatures and severe droughts cause the soil to absorb less water. More intense periods of rainfall also lead to increased water runoff instead of percolating into the soil. Simulations by the Chino Basin Watermaster indicate that a 1 percent decrease in long-term precipitation would lead to a 0.44 percent decrease in natural groundwater recharge. In addition, reduced rainfall and increased groundwater withdrawal can result in increased salinity levels in the topsoil and aquifer. The future viability of local groundwater is likely to be affected by changes in precipitation and temperatures as well as increases in salinity and other constituents in the aquifer.

Other Challenges: Future development patterns, such as increased hardscaping and more efficient irrigation practices, may alter the groundwater supply. Additionally, groundwater quality in the Chino Basin has historically been adversely affected by high concentrations of salt, nitrate, and other constituents, making water quality a crucial constraint in future groundwater production.

Imported Water: Imported water contributes to 32 percent of the regional water supply. Imported water purchased from Metropolitan is limited by a purchase order agreement. This limit is based on historical imported water purchases for municipal use.

Climate Change Impacts: The largest potential climate change impact on imported SWP water is the effect of shifting snowmelt and resulting runoff patterns on the SWP. The SWP's infrastructure was designed to capture snowmelt from the Sierra Nevada snowpack, and when snow melts during the spring and summer months, a combination of reservoirs and conveyance facilities provide a steady water supply throughout the year. The reservoirs were sized based on historical precipitation patterns, so with more precipitation falling as rain instead of snow in the winter months, more water will be required to be released from reservoirs due to flood storage operating constraints and will not be stored to be made available later during the higher summer demand periods. The reliability of imported SWP water is expected to decrease as the changes in precipitation caused by climate change continue.

Other Challenges: The existing SWP infrastructure relies on the ability to pump water from the Delta where local water rights, environmental protections, and imported water conveyance are often in competition with one another. As a result of these frequently competing interests, regulations, and restrictions on Delta exports, SWP deliveries to the IEUA service area could be adversely affected in the future. In addition, the infrastructure that is used to deliver imported supplies in the region is also susceptible to damage because of earthquakes and other natural disasters. Unplanned or catastrophic occurrences may halt the supply of imported water.

Recycled Water: Recycled water is generated from IEUA's four recycling plants (*see* section Source Water and Related Infrastructure). Recycled water is used within the region for direct use (landscape irrigation, agricultural irrigation, industrial process water and construction), groundwater recharge, and to meet discharge requirements in the Santa Ana River.

Climate Change Impacts: Recycled water is a constant source not subject to the variable seasonal rainfall, snowpack conditions, and drought that impact other water supplies.

Other Challenges: The Chino Basin groundwater quality affects the use of recycled water in the region, as requirements from the Santa Ana Regional Water Quality Board and the SWRCB mandate salt management and reduction actions for recycled water to be used for outdoor irrigation and groundwater recharge. If recycled water increases salinity levels in the Chino Basin, its applications will be limited (see Criterion 2 and 3 for further details).

Stormwater and Other Local Water Supply: Stormwater comes primarily from rain and snow starting in the San Gabriel Mountains and moving down through the Santa Ana watershed and diverted into groundwater recharge basins. Local surface water is available on a limited basis from several tributaries in the region. This local surface water is treated at local water treatment facilities and delivered locally to help meet demands.

Climate Change Impacts: Local surface water supplies are dependent on precipitation and temperature, and each of these factors is predicted to be influenced by climate change, creating uncertainty from year to year. In the future, it is expected that the climate extremes will be more severe, and temperatures are expected to increase. Extreme precipitation events can result in short periods with high volumes of runoff that will be difficult to capture. Conversely, extended droughts and dry years will result in long periods without available local surface water supplies,

which will increase demands on other supply types. Additionally, warmer temperatures cause more evaporation and transpiration, reducing the amount of soil moisture. This means that the soil may absorb and hold more water when rain occurs, and this can reduce the amount of water flowing into creeks and streams.

b. Current and Projected Water Demands

IEUA currently serves a population of 935,000. Based on IEUA’s 2020 Urban Water Management projections, the population within IEUA’s service area is expected to reach 1,119,568 by 2045. Additionally, the IEUA service area is experiencing rapid growth in business, industry, and real estate. If the current rate of expansion is sustained, residential areas will grow by over 38 percent. It is expected that these developments will result in an increase in water demand. Table 2 presents the water demands for the IEUA service area for the years 2030 to 2045. These demands include imported water, surface water, groundwater, desalinated water, and recycled water.

Table 2: Projected Water Demand (acre-feet per year)

Water Demand (AFY)	2030	2035	2040	2045
IEUA Service Area	243,050	251,989	267,512	270,471

3. Potential Uses and Markets for Recycled Water

IEUA has identified the need to augment recycled water supplies by 15 thousand acre feet per year (TAFY) to meet the growing demand for recycled water while reducing reliance on imported water and enhancing overall water supply reliability. Concurrently, through CBP planning efforts to date, IEUA has identified that both the City of Rialto and WRCRWA are interested in marketing their unused recycled water supplies which are currently discharged to the Santa Ana River. The CBP will leverage these unused recycled water supplies from the City of Rialto and WRCRWA as external supply sources for the AWPf, allowing IEUA to deliver greater recycled water supply volumes to those retail agencies who currently use recycled water. Over the planning period, IEUA plans to continue engaging with WRCRWA and local agencies to identify additional supply sources and other potential markets.

4. Source Water and Related Infrastructure

A description of the source water and related infrastructure for the CBP is provided below.

Water Recycling Plants: IEUA owns and operates four regional water recycling plants that produce recycled water as described above (*see* Figure 1). The treated wastewater effluent from the regional wastewater recycling plants delivers the reuse supply to the member agencies and customers via six pressures zones, several hundred miles of pipelines, several booster pump stations and storage reservoirs, and four pressure regulating stations.

Selected Advanced Water Purification Facility: Recycling Plant (RP)-4 was selected as the preferred location for the CBP AWPf due to its close proximity to recharge basins, its greater capacity to pump to these basins, proximity to surface water treatment facilities, and overall operational flexibility. A 15 MGD (17 TAFY) AWPf is proposed at RP-4 as part of the CBP. Approximately 2 TAFY of water will be lost through the AWPf process, requiring that 17 TAFY of source water supply to the AWPf be made available for treatment. At RP-4, the proposed treatment processes consist of membrane filtration (MF), reverse osmosis (RO), and ultraviolet advanced oxidation process (UV-AOP).

Groundwater Recharge: The Chino Basin has 19 existing spreading basins that can recharge stormwater, recycled water, and/or imported water. IEUA operates 10 existing recharge basins

that are currently connected to the recycled water system. These recharge basins provide capacity to recharge imported water, stormwater, and recycled water, based on availability. The recharge infrastructure consists of a network of pipelines that direct stormwater run-off, imported water from the SWP, and IEUA recycled water to recharge sites.

Subcriterion No.1b-Evaluation of Project Alternatives (15 Points)

1. Project Objectives

Issues of rising TDS concentrations in recycled water nearing compliance levels and other regulatory challenges associated with contaminants of emerging concern puts the region at great risk. IEUA's objectives are to meet permit compliance for the continued use of recycled water in the Chino Basin, maintain commitments for salt management to enable sustainable use of recycled water in the Basin, develop infrastructure that addresses long term supply vulnerabilities, provide a source of water for emergency response, and develop an integrated solution to produce State and federal environmental benefits.

2. Project Alternatives

To achieve the objectives identified above, IEUA and its partners explored three different alternatives, which include: (1) Baseline Compliance; (2) Regional Water Quality and Reliability; and (3) CBP. Each of these project alternatives, along with the No Action alternative, are discussed below.

No Action Alternative: Under this “no project” No Action Alternative, there would be no expansion of existing recycled water systems or groundwater by member agencies of IEUA. Anticipated future growth would generally be served with imported potable water and local agencies would need to increase their water purchases or implement more restrictive conservation programs to satisfy potable water demand.

Alternative 1 - Baseline Compliance Plan Alternative: Alternative 1 would address TDS levels for both direct use of recycled water and groundwater recharge. Under Alternative 1, an AWPf located at RP-4 would be used with IEUA's existing conveyance system to help address the region's regulatory compliance challenges. With the AWPf, the effluent TDS concentration will be reduced by 100 milligrams per liter (mg/L). Also included is a pump station, 6 TAFY of external supplies, and brine conveyance pipelines. The facilities under Alternative 1 would be expanded to 9 TAFY online by 2030 and 15 TAFY by 2040. Alternative 1 does not include any facilities associated with the extraction of groundwater from the Chino Basin, or the conveyance of potable water supply (also known as TAKE facilities).

Alternative 2 - Regional Water Quality and Reliability Plan Alternative: Alternative 2 builds upon Alternative 1 to address regional water quality and water supply challenges. Alternative 2 would include an AWPf, 16 injection wells, purified water pipelines, and brine conveyance (also collectively known as PUT facilities). Alternative 2 includes the same AWPf, pump station, external supplies, and brine conveyance pipelines as Alternative 1. These facilities would not be phased, and the full 15 TAFY capacity AWPf would be on-line by 2030. Alternative 2 also includes TAKE facilities, including extraction wells, groundwater treatment facilities, pipelines, and connections that are integrated with the PUT facilities. Alternative 2 would collectively treat and store up to 15 TAFY of recycled water in the Chino Basin, creating a new local water supply. This water would be available for local use for the 50-year project life, which would reduce dependence on imported water, improve water quality, and provide a new local water supply for the Basin. It would include a network of regional pipelines that provide the ability for IEUA and its member agencies to access 15 TAFY of stored water in the Chino Basin,

connecting these new potable water supplies for use in lieu of planned water deliveries from Metropolitan.

Alternative 3 - Chino Basin Program: Similar to Alternative 2, the CBP would consist of AWPf, injection wells, extraction wells, groundwater treatment facilities, external recycled water supplies, and a pipeline distribution network connecting the facilities to local agencies. The CBP differs from Alternative 2 by increasing total extraction capacity from 15 TAFY to 40 TAFY and connects the CBP pipeline distribution network to Metropolitan's distribution system to allow for up to 10 TAFY of water supply to be pumped to Metropolitan to offset imported water supplies that would be released from Lake Oroville to create pulse flows in the Feather River for ecosystem benefit. The CBP greatly enhances flexibility and resiliency of regional and local water operations, particularly during future extended droughts that are expected as climate change continues to impact California. The CBP will allow more optimal management of a new local source of water that will reduce TDS concentrations to meet water quality requirements for the continued use of recycled water within the Chino Basin, improve groundwater storage and recovery operations, reduce dependence on imported water, and add redundancies in water delivery infrastructure that will facilitate future rehabilitation and replacement of existing major water supply pipelines and provide emergency water supply in response to catastrophic events.

Evaluation and Comparison of Alternatives: The No Action Alternative is not a feasible alternative as it results in the Chino Basin being out of regulatory compliance, threatens water supply, and does not meet IEUA's objectives. Therefore, the No Action alternative is not considered to be a feasible alternative by IEUA.

The three alternatives identified above were evaluated by IEUA as part of a feasibility study prepared for the California Proposition 1 Water Storage Investment Program (WSIP). As part of this feasibility study, each alternative was evaluated for economic feasibility, technical feasibility, environmental feasibility, financial feasibility, along with constructability and an evaluation of how each alternative met the planning objectives identified by IEUA, as described above. Based on this evaluation, the CBP was identified as the preferred alternative. The CBP has been thoroughly vetted through WSIP and found to be a feasible project.

3. Description of the Preferred Alternative

The CBP was selected as the preferred alternative since it is the only alternative that meets the objectives previously identified above.

Under the CBP, various program facilities were examined including the location of the AWPf, the number and locations of injection and extraction wells, the external sources of recycled water supply, the connections for pump-in to Metropolitan's water distribution system, and the ratio of direct pump-in to Metropolitan to in-lieu injection. The major components of the preferred combination are PUT facilities (i.e., those that recharge recycled water into the Chino Basin) and TAKE facilities (i.e., those that extract groundwater) for the CBP:

- **PUT facilities:**
 - 15 MGD AWPf located at IEUA's RP-4
 - 16 injection wells (12 active, 4 on standby)
 - Associated pipelines (~23 miles) and pump stations (2)
- **TAKE facilities:**
 - 17 extraction wells
 - Associated pipelines (~27 miles), connections/turnouts (4), pump stations (2), and storage tank (5 million gallons)

4. Project Schedule

The CBP is currently in the planning and pre-final design phase. As shown in Figure 3, the planning activities included in this grant include development of agreements, environmental documentation, compliance and permitting activities, and pre-final design activities. Program management related to these planning activities will be performed concurrently over the planning period. Final design of the CBP components will follow a staggered schedule. Design of PUT components will begin in 2023 and continue into 2024. Design of TAKE components will occur between 2024 and late 2025. The bid process and construction will be initiated following final design. Major milestones for the project are included on Figure 3.

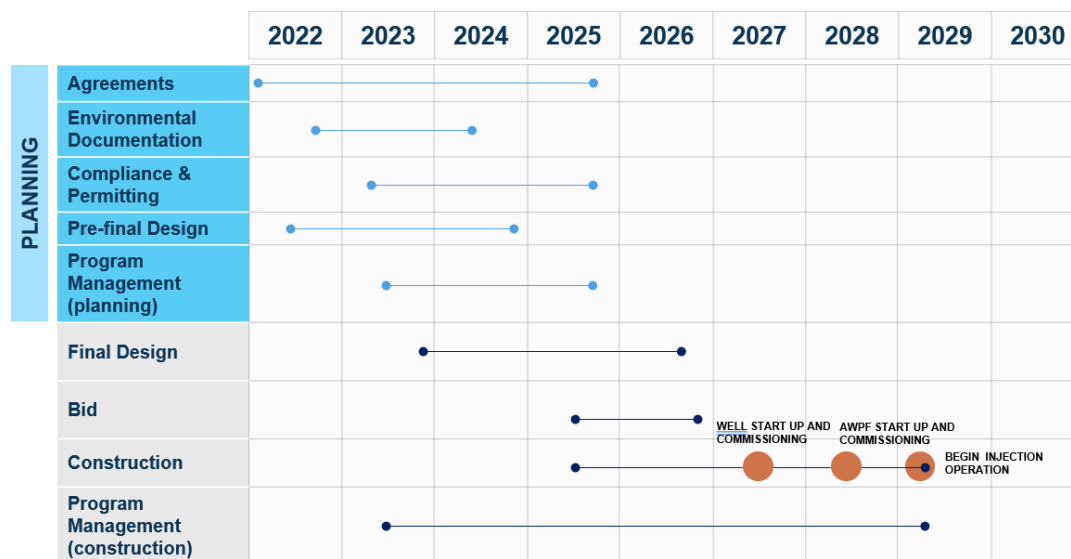


Figure 3: Project Schedule

Evaluation Criterion 2 - Stretching Water Supplies (20 points)

1. Reducing the Need for New Non-Recycled Water Supplies

As described further under Criterion 3, IEUA has a National Pollutant Discharge Elimination System (NPDES) permit that governs TDS concentrations in recycled water effluent. Analysis performed by IEUA indicates that, without taking action, TDS limits for recycled water direct use and groundwater recharge may be exceeded within 10-years. In the event of non-compliance, assets would become stranded and IEUA would need to replace recycled water, which currently accounts for 20 percent of their water supply portfolio, with more expensive and/or less reliable sources such as imported water. Through implementation of an AWPf, the CBP secures recycled water as a resource within the region, reducing the need to secure new non-recycled water supplies.

2. Alleviating Pressure on the Existing Water System

As previously discussed, IEUA supplies water to the region through the Chino Basin and surrounding basins, local surface water from creeks, recycled water produced locally, and imported water. IEUA receives 45 percent of its water supplies from groundwater, 32 percent from imported water, 10 percent from recycled water, 10 percent from desalter product water, and 3 percent from stormwater and other local sources. A description of how existing water supplies will be impacted by the project are provided below.

Groundwater: Groundwater quality poses a significant threat to local water supply reliability, which can be compounded as other supplies currently used for blending, such as imported water,

become less reliable. Further, groundwater supply is likely to be adversely impacted by climate change induced temperature increases and drought. The CBP will enhance groundwater levels and groundwater quality by recharging 15 TAFY of low TDS recycled water. Additional information on how the CBP will improve groundwater quality can be found in Criterion 3.

Imported Water: As described in Criterion 1, the reliability of imported water is expected to decrease as a result of climate change. The CBP will allow more optimal management of a new local source of water that will reduce TDS concentrations to meet water quality requirements for the continued use of recycled water within the Chino Basin and improve groundwater storage and recovery operations, thus reducing dependence on imported water.

Recycled Water: IEUA's recycled water program has a number of benefits, including increasing use of the climate resilient water supply, enhancing groundwater quality, and reducing dependence on imported water. The continuation of this program and the realization of these benefits hinges on compliance with regulatory TDS limits. The CBP will improve recycled water quality by reducing the TDS concentration of the AWPFF effluent by 100 mg/L, which will help maintain compliance for the long-term and improve recycled water reliability. Additional information on how the CBP will improve recycled water quality can be found in Criterion 3.

3. How the Project Alleviates Regional Challenges

The CBP will reduce reliance on imported water, enhance groundwater quality, and provide a source of emergency water supply that the region can use during emergency events.

Reducing Reliance on Imported Water Supplies: The reliability of imported water supply has been severely impacted by recent extreme drought conditions. IEUA typically receives 30 percent of its supplies from the SWP. In recent years, DWR has reduced allocations for requested SWP supplies as a direct result of drought conditions. In 2021, the initial allocation for the second time in recorded history was 0 percent, with only limited water made available for unmet human health and safety needs. The final allocation for 2021 was ultimately increased to 5 percent as a result of precipitation volumes but was followed by another 5 percent allocation in 2022. Climate change is expected to continue to significantly impact the timing and characteristics of snowpack, on which the SWP system depends.

Recycled water is not subject to the variable seasonal rainfall, snowpack conditions, and drought that impact imported water supplies. This project enhances the existing recycled water system and enables IEUA to use more of this reliable resource within the region, reducing reliance on imported water supplies. The CBP will provide a new average annual recycled water supply of 15 TAFY. As a result of the project, communities in the IEUA service area will enjoy access to increased water supplies that are much more resilient to future droughts and climate change.

Alleviating Declining Groundwater Quality: The management of TDS is one of the primary water quality concerns in the Chino Basin. Use and recharge of recycled water in the Chino Basin hinges on compliance with a TDS limit of 420 mg/L. Current recycled water TDS concentrations are around 460 mg/L and requires being blended with imported water for groundwater recharge. Under the CBP, the effluent TDS concentration from the AWPFF will be reduced by 100 mg/L. This low-TDS recycled water will be piped directly to the injection wells for groundwater recharge, which will help ensure water quality objectives are met and local groundwater is sustainable.

Improving Emergency Water Supply during Natural Disasters: Given the great distances that imported water supplies travel to reach the Inland Empire, the region and the infrastructure that delivers the supplies are vulnerable to interruptions along hundreds of miles of aqueducts, pipelines, and other facilities. Unplanned or catastrophic occurrences may halt the supply of

these imported supplies, which represents over 30% of IEUA's water supply portfolio. New water stored by the CBP in the Chino Basin will enhance emergency response water supply availability for IEUA and other participating agencies during crises such as prolonged drought, or catastrophic events or other infrastructure failure that limits delivery of imported water supplies. The CBP would include provisions to provide stored water in the Chino Basin under emergency conditions to local agencies or regionally by utilizing Metropolitan's water distribution system.

4. Potential of the Project to Create Additional Flexibility to Drought

Alternative water supply sources are more vulnerable to droughts. In comparison with the other primary supply sources of IEUA (local surface water, groundwater, and imported water), recycled water is the least vulnerable to drought. Local surface water and imported supplies are dependent on precipitation and temperature. Both are significantly influenced by dry years and extended droughts. Groundwater recharge from surface water sources is negatively impacted by warmer temperatures caused by climate change that increase water loss through evapotranspiration, reducing the amount of water available to naturally recharge from creeks and streams. Dry years and prolonged droughts will increase the pressure on all other supply sources.

Recycled water is more drought resilient than other supply sources. Recycled water is more drought resilient as the volume of wastewater does not change significantly during different seasons of the year or from year to year. This is because it is produced from indoor water uses which do not change significantly with changes in weather. As a result, recycled water supplies do not decrease significantly during periods of drought. The use of recycled water therefore makes the region's water supplies more resilient to future dry years and extended droughts.

Evaluation Criterion 3-Environment and Water Quality (20 points)

1. Potential of the Project to Improve the Quality of Surface Water and Groundwater

Groundwater: The primary water quality constituent of concern in the Chino Basin is the management of TDS. IEUA must comply with TDS ambient groundwater quality objectives along with TDS limits specified in their groundwater recharge requirements from the Regional Water Quality Control Board to continue using recycled water in the region. In particular, ambient water quality in the Chino Basin along with groundwater recharge are limited to a TDS concentration of 420 mg/L, while TDS concentrations in recycled water effluent, which are governed by IEUA's NPDES permit, are limited to 550 mg/L.

Increasing TDS levels in recycled water have been exacerbated by climate change, conservation, and episodic periods of drought over the last twenty years. In 2015, there was a period where every month was setting a record-high recycled water TDS concentration. As a result, recycled water TDS approached the maximum effluent limit for recycled water (550 mg/L) in 2015, prompting IEUA to evaluate TDS trends in the region. The TDS evaluation demonstrated that TDS concentrations in recycled water are steadily increasing, and drought conditions and water conservation activities were exacerbating TDS concentrations. IEUA anticipates that recycled water recharge will increase by 23 percent between 2020 and 2045. As IEUA continues to recharge recycled water, and lower-TDS imported water that is used for blending with recycled water becomes less reliable, TDS concentrations in the Chino Basin are likely to rise.

Integral to the CBP is an AWP that will reduce the effluent TDS concentration by 100 mg/L, improving groundwater quality through the recharge of this recycled water. Furthermore, the lower TDS recycled water will be injected upgradient of locations in the basin where TDS concentrations hover at and above 2,000 mg/L. This will promote migration of the high TDS groundwater to a desalter well system to remove the TDS from the basin.

Surface water: Recycled water in the region is used in part to meet IEUA’s discharge obligation of 17 TAFY to the Santa Ana River. The Santa Ana River also has a TDS discharge limitation of 550 mg/L. Along with improving the groundwater quality of the Chino Basin, the CBP will also improve the quality of the Santa Ana River by discharging low-TDS recycled water.

2. Potential of the Project to Improve Effluent Quality

As discussed above, IEUA evaluated TDS trends in the region in 2015 as a result of TDS concentrations nearing the NPDES permit limit of 550 mg/L. As part of this evaluation, IEUA analyzed future TDS concentrations for recycled water using statistical modeling techniques. This analysis suggested an average increase in TDS of 1.36 mg/L which would result in IEUA exceeding their permit limit by 2034. As previously noted, the CBP’s AWPf will reduce effluent TDS concentrations by 100 mg/L.

3. Potential of the Project to Improve Flow Conditions in a Natural Stream Channel

The CBP will provide statewide benefits through a water exchange with the SWP. The CBP would include a regional pipeline connecting CBP potable water facilities to the region to provide for up to 30 TAFY of in lieu use of CBP supplies, as well as connections to Metropolitan with the ability to pump up to 10 TAFY of CBP potable supplies into Metropolitan’s water distribution system. This in-lieu and direct pump-in use of CBP water supplies would allow the CBP to make 40 TAFY available to Metropolitan in drier years in exchange for the same amount of supply delivered by the SWP. In return, 40 TAFY that would otherwise have been exported to Metropolitan would be stored in Lake Oroville and used together with Delta carriage water savings to enhance instream flows in the Feather River.

This exchange element would be in operation during the first 25 years of the CBP, administered through agreements with DWR, CDFW, and Metropolitan. Over the 25-year period, 375,000 acre-feet of water would be available in Lake Oroville for ecosystem improvement in the Feather River. After the 25-year period, the full 15 TAFY of CBP supply would be available for local use, providing a new local water supply for the region.

4. Potential of the Project to Restore or Enhance Habitat for Non-listed Fish and Wildlife Species

By continuing to prioritize habitat restoration and enhancement as part of its mission, the CBP has the potential to make a lasting positive impact on the health and well-being of non-listed fish and wildlife species. Currently, excess treated water from Rialto is discharged into the Santa Ana River. During summer, the canal heats the water causing water discharge to the river as hot as 90 °F. The temperature spikes within the river are detrimental to native fish and promote the invasion of non-native species. The Santa Ana River Multi-Species Habitat Conservation Plan has documented that significant ecological benefits to the river will accrue if recycled water discharges from the Rialto are reduced during warmer summer months while also maintaining minimum in-stream flow requirements. By diverting Rialto’s recycled water from the Santa Ana River to IEUA during the summer months, the CBP will reduce adverse effects on native species and enhance habitat in the Santa Ana River.

5. Potential of the Project to Provide Water for Federally Listed Threatened/Endangered Species

The CBP water exchange will encompass a capacity to use this new local water supply to support an exchange of 50 TAFY “call” for water in dry and critical years, for up to three consecutive years, that would be delivered from Lake Oroville to be used to enhance instream flows in the Feather River, providing ecosystem benefits during an extended dry period. Releases of this magnitude equate to an increase of instream flows in the low flow channel of the Feather River

by 2,500 cubic feet per second (cfs) per day (baseflow is approximately 800 cfs). These releases would be designed to improve the survival rate of emigrating juvenile spring-run Chinook salmon. The proposed ecosystem benefit also pledges to work with resource agencies to alter the location of spring-run Chinook smolt releases to a point further upstream. This would increase natal imprinting which in turn decreases adult stray rates upon return. While the releases will target spring-run Chinook salmon other federally listed species would also benefit. Specifically, pulse releases would provide migratory cues for steelhead, increase forage opportunities for rearing steelhead and green sturgeon, increase access to floodplain habitat, and decrease predation by nonnative species. These benefits are specifically identified in federal planning documents as priority recovery actions to improve habitat and survival rates for these federally listed species.

This exchange element will be in operation during the first 25-years, administered through agreements with DWR, CDFW, Metropolitan, and other project partners. The total exchange commitment is 375,000 acre-feet at the end of the 25-year period. Afterwards, this water will be available for local use, therefore reducing dependence on imported water, improving water quality, and providing a new local water supply for the Basin.

6. Potential of the Project to Provide Indirect Benefits

In addition to the ecosystem and water quality benefits discussed above, the project will also improve groundwater levels and reduce subsidence, reduce wildfire risks, and improve water supply resiliency.

Reduce wildfire risks by preventing dryness and providing adequate water for firefighting:

Drought conditions can result in decreased soil moisture, causing vegetation to dry out and increasing risk of wildfires. Studies have indicated that wildfires are more likely to occur in the project area in the future because of climate change. This project aims to utilize climate-resilient recycled water to diversify its water supply. By providing adequate water to the landscape, the project will reduce the dryness of vegetation during droughts as well as enhance the supply of water for firefighting.

Water Supply Resiliency: According to California's Fourth Climate Change Assessment Report, changes in precipitation and snowpack (especially Eastern Sierra snowpack) will affect water availability in watersheds that provide imported water to the region. Additionally, climate change-induced temperature increases, and droughts are likely to adversely affect groundwater storage in the basin. Moreover, given the great distances that imported supplies travel to reach the Inland Empire, the region is vulnerable to interruptions along hundreds of miles of aqueducts, pipelines, and other facilities associated with delivering the supplies to the region. IEUA's imported water supply is delivered through the Rialto Feeder and alternative options for delivery of imported supplies are not available for IEUA and its agencies. Additionally, earthquakes and other natural disasters can damage this infrastructure, resulting in water supply interruptions. Recycled water is the region's most climate resilient water supply because the amount of water available is not affected by dry years. By enhancing recycled water and groundwater recharge programs, this project will reduce dependence on imported water and enhance regional water supply reliability and resilience. The CBP will also enhance the resilience of groundwater quality by utilizing advanced water treatment and recharging high-quality recycled water.

Evaluation Criterion 4 - Department of the Interior Priorities (15 points)

1. Climate Change and Impacts on the Region

Climate change is expected to result in warmer summer temperatures in California. Due to warmer temperatures, evaporation increases, resulting in decreased surface waters and drier soils

and vegetation. Thus, periods with low precipitation become drier than they would be under cooler conditions. The California Fourth Climate Assessment states that “future increases in temperature, regardless of whether total precipitation goes up or down, will likely cause longer and deeper California droughts, posing major problems for water supplies, natural ecosystems, and agriculture.” More frequent, severe, and long-lasting droughts are already becoming apparent. Recently, the 2012–2016 California drought led to the most severe moisture deficits in the last 1,200 years and a 1-in-500-year low in Sierra snowpack.

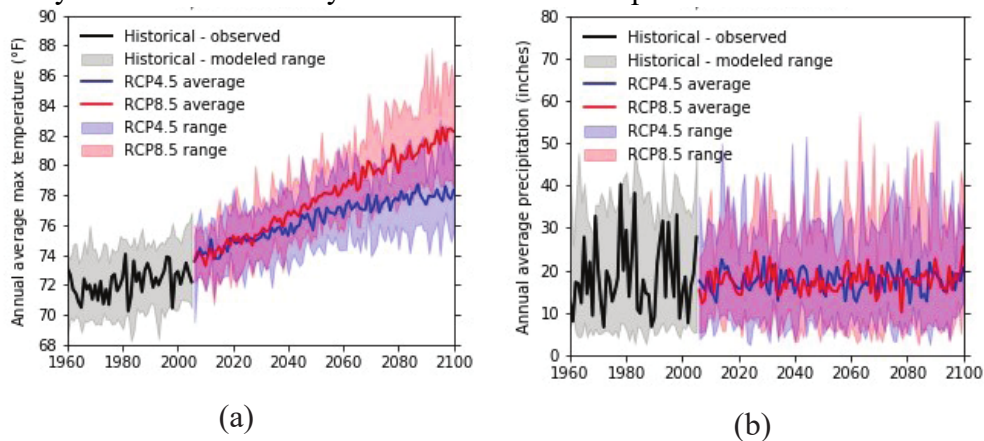


Figure 4: Historical and projected climate of the LA region (a) annual average maximum temperature, and (b) annual average precipitation. Source: California Fourth Climate Assessment.

Projected Changes in Regional Precipitation & Temperatures: Regional temperatures in the IEUA service area, and indeed across California, are projected to increase as a result of climate change. Figure 4 illustrates the historical and projected future annual average maximum temperatures and annual average precipitation in the Los Angeles region based on RCP4.5 and RCP8.5 emission scenarios. Under RCP4.5 scenario, temperatures will increase approximately 4.4 degrees F by mid-century (2035-2064) and 5.5 degrees F by the end of the century (2070-2099). Similarly, under RCP8.5 scenarios, temperatures will increase approximately 5.3 degrees F by mid-century and 9.1 degrees F by the end of the century (Figure 4(a)). On the other hand, compared to the region's large historical variability, model projections indicate small changes in mean precipitation (positive or negative) (Figure 4(b)). It is expected that dry and wet extremes will both increase in the future, despite small changes in average precipitation. In the late 21st century, there is a possibility that the frequency of extremely dry years will double or more in southern California.

Projected Changes in Regional Drought: Climate studies have indicated that the extremely dry conditions will continue to occur in Southern California under future conditions. CAL-Adapt (cal-adapt.org), which was jointly developed by the University of California, Berkeley, the California Energy Commission, and the California Strategic Growth Council, provides historical and projected drought durations in California.

A multi-scale drought index, the Standardized Precipitation-Evapotranspiration Index (SPEI), was used to identify, monitor, and analyze future droughts. A SPEI reflects the combined impact of potential evapotranspiration and precipitation deficits on soil moisture. Drought duration is calculated by using the number of months in a year with a SPEI ≤ -1 . For San Bernardino County, CA, during the baseline historical period (1961-1990), the duration of the drought was estimated as ~6 days. Per California’s Fourth Climate Change Assessment, the average drought duration is projected to increase by 18-days at mid-century (2035-2064) and 21-days by late

century (2070-2099) under medium emission RCP4.5 scenarios compared to the historic baseline period. Using high emission RCP8.5 scenario, the average drought duration is projected to increase by 24-days at mid-century and by 39-days by late century.

Climate Change impacts on demand and supply: More intense storm events and the changing frequency and duration of drought years are becoming evident throughout the State. This makes future water supplies available to the region more uncertain, particularly imported water supplies. The Eastern Sierra's snowpack is expected to decrease as a result of climate change in the future. This will result in a reduction in the availability of imported water during the late summer and early fall. Furthermore, more frequent occurrences of high temperatures and low precipitation will result in a decrease in groundwater recharge and streamflow.

High temperatures and low precipitation will increase the evaporative demand in the region. IEUA developed a regional water demand forecast model as part of their 2015 Integrated Resources Plan (IRP). By 2040, IEUA estimates that one dry year could increase demand by 5.6%. A longer period of dry weather (3-years) could increase demand by 8.9%.

2. How Will the CBP Help Combat the Climate Crisis in the Region?

Climate change will likely lead to a reduction in the availability of imported water supplies and a decrease in local surface and groundwater supplies. Additionally, frequent and more intense droughts can result in increased salinity levels in the topsoil and aquifer, adversely impacting groundwater quality. Moreover, considering the current hot, dry conditions of this region, increases in temperatures may result in a significant increase in water demand.

Recent droughts in the IEUA service area have forced strict restrictions on water use for local communities. For the IEUA service area, drought response measures such as increasing groundwater pumping and restricted water use are not sustainable in the long term. Further, local water agencies are required to enhance their water treatment processes to maintain compliance with drinking water standards. The added costs of sourcing and treating water are passed on to the community in the form of water price increases. *Water rate hikes are more detrimental to disadvantaged communities than to wealthier communities.* As climate change increases the uncertainty of other water supplies, recycled water becomes an increasingly important resource. The CBP aims to provide flexibility during future extended droughts that are expected to affect the region because of climate change.

The CBP will help mitigate the adverse effects of climate change on the regional water supply and water quality, as well as on the ecosystem of Northern California.

- Overall, the CBP will improve regional sustainability and resiliency of the water supply in the Chino Basin by utilizing recycled water sources that are independent of climate change and the variability of California hydrology. Therefore, IEUA will become less reliant on imported water supplies that are vulnerable to climate change. Furthermore, the CBP will reduce the need for water use restrictions during droughts, reduce the need for drought-related water rate hikes, and reduce the burden placed on disadvantaged communities during droughts.
- The AWPf integral to the CBP will reduce effluent TDS concentrations by 100 mg/L. As previously noted, compliance with TDS limits governs the future use of recycled water, thus this project will help to ensure the use of this reliable resource into the future. By recharging this high-quality recycled water, the CBP will also enhance groundwater quality.
- Moreover, the CBP will also provide benefit to ecosystems in northern California during dry and critical dry years by reserving a volume of water in Lake Oroville that would normally be conveyed to southern California.

3. Disadvantaged Communities

The goal of the E.O. 14008 Justice 40 initiative is to provide 40 percent of federal overall benefits of certain Federal investments flow to disadvantaged communities that are marginalized, underserved, and overburdened by pollution. Portions of the IEUA service area qualify as disadvantaged based on the following measures as outlined in E.O. 14008 Justice 40 initiative:

Indicator A and B. Low income, high poverty, and high unemployment

The most recently available GIS-based income data for the entire IEUA service area indicates that over 12% of the households in the IEUA service area live below the Federal Poverty Guidelines as of 2018. However, this value may not accurately reflect the levels of poverty in the IEUA service area since California has a higher cost of living than other states. The CalEnviroScreen tool developed by the California Office of Environmental Health Hazard Assessment (OEHHA) indicator sets the poverty line at twice the federal poverty level to account for the actual cost of living cost in California. Using the CalEnviroScreen definition, approximately 32.5% of people in the IEUA service area were living below California poverty level in 2018.

As of 2020, over 85% of census tracts in the IEUA service area have average per capita incomes less than \$35,384 (the 2020 US Average).

In 2018, the average unemployment rate across census tracts in the IEUA service area was 5.69%. As a function of the entire population of IEUA, the average unemployment rate was 5.54%, which is significantly higher than the nationwide 2018 average of 3.8%.

Indicator C and D. Racial and ethnic residential segregation and Linguistic isolation

As of the 2020 U.S. Census, the population for San Bernardino County was 2,181,654, more than half of whom are Latino. It is the fifth-most populous county in California and the 14th-most populous in the United States.

The US Census Bureau reported in 2018 that the IEUA service area is composed of 58.65% Hispanic and Latinx communities. The San Bernardino 2020 Community Health Report reported that in 2019, the Cities of Ontario and Fontana were comprised of 70.6% and 71.4% Hispanic residents, respectively, where 51.3% of households in these two cities spoke Spanish primarily at home.

Indicator G. High transportation cost burden and/or low transportation access

California gas price have been recorded as the highest in the nation. Current gas prices in the state average to around \$4.60 per gallon as compared to the US average of \$3.40 as reported by American Automobile Association (AAA). An alternative to driving is taking public transit. OmniTrans is the public transit agency serving the San Bernardino Valley that offers affordable, reliable, and safe transportation. Select communities in the IEUA service area also offer other limited forms of public transportation (for example, the City of Fontana offers a ride sharing program for senior citizens limited to Monday through Friday from 8:00AM to 5:00PM). Given high gas prices and limited access to transportation, these factors further economic stresses for portions of the IEUA service area.

Indicator H. Disproportionate environmental stressor burden and high cumulative impacts

Portions of the IEUA service area experience high levels of air pollution due to the high concentration of vehicle traffic on major roadways and highways including Interstate Highway I-15. These areas include the cities of Fontana, Ontario, Upland, Rancho Cucamonga, and Chino. For example, according to the CalEnviroScreen tool, the City of Fontana ranks in the 86th percentile of communities with high levels of environmental pollution including Ozone (97%), PM 2.5 (89%), Lead in Housing (81%), Diesel Particulate Matter (79%), Toxic Releases (76%)

and exposure to contaminated cleanup sites (73%). Exposure to pollution can affect the long-term health of residents and can increase the financial burden on low-income communities who have limited access to healthcare.

Indicator I: Limited water and sanitation access and affordability

According to the US Drought Monitor, San Bernardino County has reported drought conditions ranging from moderate to exceptional drought. The drought emergency throughout San Bernardino County and the state of California has resulted in recent water restrictions limiting outdoor water use to one day a week effective as of June 1, 2022.

Indicator J. Disproportionate impacts from climate change

The Federal Emergency Management agency (FEMA) national risk index is an indicator of disproportional climate change. At a national level, the FEMA measures the level of risk by examining the expected annual loss, social vulnerability, and community resilience. San Bernardino County is rated at 54.40 as compared to the California average of 28.10 and national average of 10.60. As such, San Bernardino County is categorized as very high since the county is nearly 5 times higher than the average of national hazard risk.

Tribal Benefits – the project does not directly serve and/or benefit a tribe, improve water management for an Indian Tribe, support Tribal resilience to climate change and drought impacts or provide or Tribal benefits.

Evaluation Criterion 5—Watershed Perspective and Stakeholder Involvement (15 Points)

1. Will the Proposed Project Implement a Regional or State Water Plan or an Integrated Resource Management Plan? Explain.

The CBP combines various projects that will allow the region to meet the needs identified in the regional planning efforts conducted by IEUA in conjunction with its member agencies. These regional planning efforts enable IEUA to better prepare for the region’s future water needs. Each planning report is backed by technical studies and supporting documentation to ensure regional planning efforts are well informed. Through these planning documents IEUA has identified future needs that the agency must meet in order to continue its track record of providing reliable, clean, and sustainable water to the region.

The CBP is designed to address the critical needs identified by these planning efforts, including developing local supplies to reduce dependency on uncertain imported water supplies; strengthening the region’s water supply portfolio to be more resilient to the impacts of climate change on water reliability; implementing needed advanced water treatment to help meet TDS regulatory limitations into the future; and provide environmental benefits to natural populations and habitats.

As previously discussed in Criterion 3, IEUA neared their NPDES permit limit for TDS in 2015 and subsequently performed an evaluation that demonstrated that TDS concentrations in recycled water were steadily increasing, as drought conditions and water conserving activities were exacerbating TDS concentrations. IEUA considering these findings as it was completing its 2015 IRP. IEUA identified that an AWPf would be needed as part of its long-term IRP implementation, and along with local partners, developed long-term plans to implement the AWPf with various new infrastructure to increase resiliency and sustainability of regional water to help meet future needs. Furthermore, the new infrastructure was packaged into the CBP and are addressed in IEUA’s ten-year forecast (TYF) Capital Improvements Plan. The CBP provides an opportunity to implement critical long-term project components of these plans, addressing local, regional, and potentially statewide and federal water resources management issues.

The CBP helps mitigate future water shortages by providing a local alternative to imported water supplies from the SWP and provides a subsurface reserve of groundwater for local use. This enhances the current reliability of local groundwater supplies for a rapidly growing population and is an integral part of local water supply planning.

2. Will the Proposed Project Help Meet the Water Supply Needs of a Large Geographic Area, Region, or Watershed? Explain.

IEUA has developed a diverse portfolio of water supplies within IEUA's service area. As previously noted, the region relies on groundwater from the Chino Basin and other basins (Cucamonga, Rialto, Lytle Creek, Colton, and the Six Basins groundwater basins), local surface water from creeks originating in the San Gabriel Mountains, recycled water produced locally, and imported water from the State Water Project via Metropolitan.

Recycled water is an increasingly essential resource for the region particularly with the uncertain future of imported water supplies due to climate change and environmental factors. Recycled water is the region's most climate resilient water supply because the amount of water available is not affected by dry years. Today, recycled water makes up approximately 20 percent of IEUA's water supply portfolio and hundreds of millions of dollars have been invested into the regional recycled water program.

The CBP is designed to help the region move beyond traditional water management practices and into a new era of water use optimization. The project is widely viewed as a progressive project that provides a reliable and resilient water supply to southern California while also providing much needed environmental benefits to northern California. The CBP promotes proactive investment in managing the water quality of the Chino Basin and in meeting regional water supply reliability needs in the face of climate change, while leveraging California's interregional plumbing system and the Chino Basin's future potential for water recycling to produce benefits to local, State, and federal interest.

The CBP provides 15 TAFY in local supplies which can be used to augment the region's water supply portfolio. The CBP would enhance the use of recycled water at a local level through new regional pipelines enabling greater access to recycled water. The CBP expands groundwater storage and provides a new source of water (advanced treated recycled water) that increases operational flexibility, local and state-wide benefits, and reduces impacts to the local groundwater basin. Local groundwater supplies are enhanced through the installation of injection wells for storing the recycled water, and additional extraction wells through the installation of new wells and wellhead treatment systems that would bring existing out-of-service wells back online. The recycled water that is banked in the groundwater system can be used to augment the water supply portfolio during unplanned or catastrophic events. The CBP will be developed to provide flexibility to regional and local water operations, particularly during future extended droughts expected as climate change continues to impact California.

3. Will the Proposed Project Promote Collaborative Partnerships to Address Water-Related Issues? Explain. Describe Stakeholder Involvement in the Project Planning Process.

The development of the CBP, from the original IRP planning documents, has been driven by stakeholder meetings with local retail and wastewater agencies to identify regional priorities and needs. By increasing additional available groundwater supplies in the adjudicated Chino Basin through increased water recycling and storage, and then dedicating a like amount of water for environmental flow purposes, the CBP provides a compelling example of a collaborative, conjunctive use storage project.

The CBP will strengthen partnerships among local agencies that participate in the project and offer an opportunity for local agencies to coalesce around the future of the Chino Basin. Today, the CBP partners include CVWD, FWC, Metropolitan, City of Rialto, and JCSD. Stakeholder engagement continues with the larger region and CBP supporters (see response to prompt below). The proposed CBP is also uniquely designed to deliver public benefits including a highly reliable, dedicated environmental water supply to benefit Bay Delta instream flows, as well as enhance water supply reliability and improve water quality for water users in Southern California. Partnerships between local agencies, Metropolitan, DWR, CDFW, and the U.S. Bureau of Reclamation (Reclamation) will also be essential to the success of the project and offer a framework for future improved collaboration.

Consistent with Governor Newsom’s Water Resilience Portfolio Initiative, responsible public water agencies across California, like IEUA and its CBP Program, are adding resiliency to meet their future water needs by diversifying their water management portfolios through investment in a variety of water use efficiency and supplemental local supply programs and projects.

4. Will the Proposed Project Include Public Outreach and Opportunities for the Public to Learn About the Project? Explain.

The CBP is meant to address the rising demand for urban water and the increasing drought conditions that are projected to drive unmet water demands up to 21 percent higher by 2040. IEUA has developed the CBP in collaboration and participation with 6 partner agencies and 15 supporters including regional agencies, cities, non-profits organizations, and community service organizations. IEUA understands the need for effective communication and intends to continue its robust multi-year outreach program, which includes the following:

- Actively engaging with interested parties and CBP partners through one-on-one meetings, presentations to special committees and boards, workshops, correspondence letters, news briefs, and web postings.
- Joint outreach to provide policy-related leadership and to develop broad regional coalitions, statewide and national partnerships, and help secure needed policy changes and agreements. For instance, an Ad Hoc Committee was formed to develop regional perspectives on the California’s Governor’s executive order to develop a resilient water portfolio for California. The Ad Hoc Committee discussed their findings with local and state leaders.
- Participation in and support of annual conferences, such as the Association of California Water Agencies (ACWA) conferences.
- Regular engagement with trade groups, such as the Building & Construction Trades Council of San Bernardino and Riverside Counties and the Southwest Mountain States Regional Council of Carpenters.
- Engagement with local businesses, council, environmental, and community groups through a “road show” presentations, website, and monitored questions and answers hotline.

Project Budget

Funding Plan

In 2018, IEUA was conditionally awarded \$206,900,000 for the CBP by the California Water Commission (CWC) through the Water Storage Investment Program (WSIP). This award was increased for inflation in 2022 to \$215,265,405. Requests for “early” funding were to be made in the application process. However, in July 2020, the CWC approved emergency regulations to allow a second round of early funding applications for those projects that had not received early funding previously. Emergency regulations were approved and IEUA made an early funding

request to the CWC in April 2021 in the amount of \$8,919,000, or 4 percent of their conditional award. A funding agreement was subsequently executed between IEUA and CWC in the amount of \$8,919,000 in March 2022. This early funding serves as the non-Federal cost share for this grant application. The early funding agreement between the CWC and IEUA is provided in lieu of a letter of funding commitment.

[Letters of Commitment](#)

As described above, the early funding agreement between the CWC and IEUA is provided in lieu of a letter of funding commitment.

[Budget Proposal](#)

The summary of non-federal and federal funding sources is provided in Table 3 and the total projects costs are summarized in Table 4. The total estimated cost for the planning and pre-design activities included over the October 31, 2023, to October 31, 2025 planning period is \$11,373,412, of which IEUA is committed to providing \$8,530,059 as a non-federal match. Project funding will be provided by IEUA as described under the funding plan. Funding from other sources other than Reclamation will not be requested.

Table 3: Summary of Non-Federal and Federal Funding Sources

Funding Sources	Amount
Non-Federal Entities	
1. IEUA	\$8,530,059
Non-Federal Subtotal	\$8,530,059
REQUESTED Reclamation funding	\$2,843,353

Table 4: Total Project Costs

Source	Amount
Costs to be reimbursed with the requested Federal funding	\$2,843,353
Costs to be paid by the applicant	\$8,530,059
TOTAL Project Cost	\$11,373,412

[Budget Narrative](#)

The budget narrative can be found in the Budget Detail and Narrative spreadsheet attached to this application.

[Required Permits or Approvals](#)

IEUA has extensive experience working with agencies that have jurisdiction over individual projects constructed in the region. Agencies that IEUA anticipates will have jurisdiction over the CBP and the associated permits/approvals are provided below:

- Title 22 engineering reports for recycled water use (for the City of Rialto, WRCRWA, and IEUA)

Summary			
6. Budget Object Category	Total Cost	Federal Estimated Amount	Non-Federal Estimated Amount
a. Personnel	\$886,195		
b. Fringe Benefits	\$459,839		
c. Travel	\$0		
d. Equipment	\$0		
e. Supplies	\$0		
f. Contractual	\$7,681,200		
g. Construction	\$0		
h. Other Direct Costs	\$0		
i. Total Direct Costs	\$9,027,234		
i. Indirect Charges	\$2,346,178		
Total Costs	\$11,373,412	\$2,843,353	\$8,530,059
	Cost Share Percentage	25%	75%

- An update to IEUA's, the City of Rialto's, and WRRCWA's waste discharge requirements
- Section 1707 water rights changes (DWR, Metropolitan, IEUA)
- SWRCB Division of Drinking Water groundwater replenishment reuse project permit (IEUA)
- Section 408 permit with U.S. Army Corps of Engineer
- Permits to construct and operate with the South Coast Air Quality Management District
- Service agreements with Southern California Edison
- Permits with Los Angeles County Sanitation District for brine discharge
- Petroleum line cross permits and railroad crossing licenses
- Encroachment and traffic control permits with cities, counties, and Caltrans

IEUA is in the process of developing a permitting plan and regulatory strategy for the CBP and its components. This permitting plan and regulatory strategy will further refine the major required permits/approvals for the CBP along with the associated timing and schedule requirements.

[Official Resolution](#)

See Attachment 1 for a signed, certified copy of Resolution No. 2023-2-1.

[Letters of Support](#)

IEUA has included five letters of support with this application, shown in Attachment 2:

- City of Rialto
- Cucamonga Valley Water District
- Fontana Water Company
- Jurupa Community Services District
- Metropolitan Water District of Southern California

[Overlap or Duplication of Effort Statement \(recommended\)](#)

There is not any overlap between the proposed project and any other active or anticipated proposals or projects in terms of activities, costs, or commitment of key personnel. The proposal submitted for consideration under this program is not in any way duplicative of any proposal or project that has been or will be submitted for funding consideration to any other potential funding source—whether it be Federal or non-Federal.

[Uniform Audit Reporting Statement \(recommended\)](#)

IEUA was required to submit a Single Audit report for the most recently closed fiscal year. The Employer Identification Number associated with that report is 95-6004609. The Single Audit report is available through the Federal Audit Clearinghouse website.

[Conflict of Interest Disclosure Statement \(recommended\)](#)

No actual or potential conflict of interest exists at the time of submission. IEUA will continue to take appropriate steps to avoid conflicts of interest in its responsibilities under or with respect to Federal financial assistance agreements. IEUA will continue to establish and enforce internal controls that include procedures to identify, disclose, and mitigate or eliminate identified conflicts of interest. IEUA will notify the Financial Assistance Officer in writing of any conflicts of interest that may arise during the life of the award, including those that have been reported by subrecipients.

Attachment No. 1: Resolution

RESOLUTION NO. 2023-2-1

THE BOARD OF DIRECTORS OF THE INLAND EMPIRE UTILITIES AGENCY*, SAN BERNARDINO COUNTY, CALIFORNIA, AUTHORIZING THE INLAND EMPIRE UTILITIES AGENCY TO PASS A RESOLUTION AUTHORIZING ENTERING INTO A FUNDING AGREEMENT UNDER THE WATERSMART: WATER RECYCLING AND DESALINATION PLANNING PROGRAM WITH THE U.S. DEPARTMENT OF INTERIOR - BUREAU OF RECLAMATION AND DESIGNATING A REPRESENTATIVE TO EXECUTE THE FINANCIAL ASSISTANCE AGREEMENT, AND ANY AMENDMENTS THERETO

WHEREAS, the United States Department of the Interior, Bureau of Reclamation under the WaterSMART Water Recycling and Desalination Planning Grant Program will make funding available to qualifying applicants; and

WHEREAS, the Board of Directors of the Inland Empire Utilities Agency has identified projects that exemplify the objectives of the Water Recycling and Desalination Planning Program; and

BE IT RESOLVED, that the Inland Empire Utilities Agency is hereby authorized to enter into a financial assistance agreement under the Water Recycling and Desalination Planning Program; and

BE IT RESOLVED, the General Manager has reviewed and supports the application being submitted; and

BE IT RESOLVED, that the General Manager, or his designee(s), is hereby authorized and designated to sign, for and on behalf of the Agency, the funding agreement for the Water Recycling and Desalination Planning Program and any amendments thereto; and

BE IT RESOLVED, that the General Manager, or his designee(s), is hereby authorized and designated to represent the Agency in carrying out the Agency's responsibilities under the funding agreement, including certifying invoices and disbursement requests for Project costs on behalf of the Agency and compliance with applicable state and federal laws.

BE IT RESOLVED, that the Inland Empire Utilities Agency is capable of providing the amount of funding and/or in-kind contributions specified in the grant application funding plan;


BE IT RESOLVED, that the Inland Empire Utilities Agency will work with the Bureau of Reclamation to meet established deadlines for entering into a cooperative agreement, and;

BE IT RESOLVED, that IEUA's Board of Directors hereby adopts Resolution No. 2023-2-1 on this 15th day of February, 2023.



Marco Tule
President of the Inland Empire Utilities Agency*
and the
Board of Directors thereof

ATTEST:



Jasmin A. Hall,
Secretary/Treasurer of the Inland Empire
Utilities Agency* and of the Board of
Directors Thereof

Attachment No. 2: Letters of Support



City of Rialto *California*

February 21, 2023

United States Bureau of Reclamation (USBR)
Financial Assistance Operations Section
Attn: NOFO Team
P.O. Box 25007, MS 84-27133
Denver, CO 80225

Re: Letter of Support for Inland Empire Utilities Agency (IEUA)
Water Recycling and Desalination Planning Grant

Dear Bureau of Reclamation:

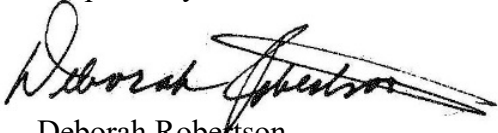
The City of Rialto is pleased to support the Inland Empire Utilities Agency (IEUA)'s application for the USBR Water Recycling and Desalination Planning Grant. The Grant provides critical funding for the Chino Basin Advanced Treated Recycled Water, Storage, and Production Project for the development of the Chino Basin Program (CBP).

The CBP is a water exchange banking program that treats and stores currently inaccessible, unused local recycled water supplies in the regional groundwater basin to increase water reliability for CBP participating agencies and their partners. This program is receiving partial funding from the California Water Commission in recognition of the public benefits that will accrue by implementing the CBP, including ecosystem improvement, water quality improvement, and emergency response. The CBP will develop local infrastructure, including a 15 million gallon per day Advanced Water Purification Facility for indirect potable reuse injection wells to store 15,000 acre-feet of water each year, extraction wells, and conveyance facilities. Together, this new infrastructure will support the region's long-term local resiliency by increasing operational flexibility and reliability.

The City of Rialto looks forward to continuing our long history of cooperation and collaboration as we seek to bring the CBP to fruition.

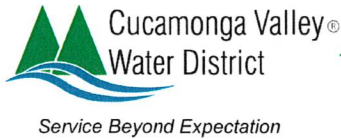
Thank you for your consideration, should you have any questions regarding my support, please feel free to contact me at (909) 820-2689.

Respectfully,

A handwritten signature in black ink, appearing to read "Deborah Robertson", with a long horizontal flourish extending to the right.

Deborah Robertson
Mayor

cc: Shivaji Deshmukh, General Manager, IEUA
Elizabeth Hurst, Chino Basin Program Manager, IEUA



10440 Ashford Street, Rancho Cucamonga, CA 91730-2799
P.O. Box 638, Rancho Cucamonga, CA 91729-0638
(909) 987-2591 Fax (909) 476-8032

John Bosler
Secretary/General Manager/CEO

February 15, 2023

Bureau of Reclamation
Financial Assistance Operations Section
Attn: NOFO Team
P.O. Box 25007, MS 84-27133
Denver, CO 80225

To Whom it May Concern:

Cucamonga Valley Water District is pleased to support the Chino Basin Advanced Treated Recycled Water, Storage, and Production Project for the development of the Chino Basin Program (CBP). Collaborating on projects and agreements to develop regional water supplies and benefits for the Chino Groundwater Basin is essential, and we continue to seek new opportunities to help maximize the availability and beneficial use of limited water supplies.

The CBP is a water exchange banking program that treats and stores currently inaccessible, unused local recycled water supplies in the regional groundwater basin to increase water reliability for CBP participating agencies and their partners. This program is receiving partial funding from the California Water Commission in recognition of the public benefits that will accrue by implementing the CBP, including ecosystem improvement, water quality improvement, and emergency response. The CBP includes developing local infrastructure, including a 15 million gallon per day Advanced Water Purification Facility for indirect potable re-use, injection wells to store 15,000 acre-feet of water each year, extraction wells, and conveyance facilities. Together, this new infrastructure will support the region's long-term local resiliency by increasing operational flexibility and reliability.

We support IEUA's application for the USBR Water Recycling and Desalination Planning Grant as this will provide critical funding in support of the on-going planning and design of the CBP. The CBP will help to support the region's resiliency and growth through the development of a new, local water supplies. We look forward to continuing our long history of cooperation and collaboration as we seek to bring the CBP to fruition.

Sincerely,

John Bosler
Secretary/General Manager/CEO

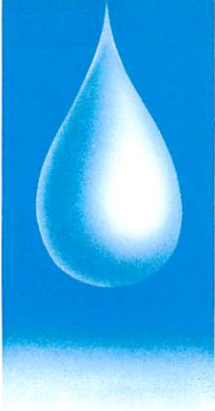
Randall James Reed
President

Mark Gibboney
Vice President

James V. Curatalo, Jr.
Director

Kevin Kenley
Director

Jimmie Moffatt
Director



FONTANA WATER COMPANY

A DIVISION OF SAN GABRIEL VALLEY WATER COMPANY

15966 ARROW ROUTE • P.O. BOX 987, FONTANA, CALIFORNIA 92334 • (909) 822-2201

February 16, 2023

Bureau of Reclamation
Financial Assistance Operations Section
Attn: NOFO Team
P.O. Box 25007, MS 84-27133
Denver, Colorado 80225

Subject: Letter of Support
IEUA Application for USBR Water Recycling and Desalination
Planning Grant

To Whom It May Concern:

Fontana Water Company is pleased to support the Chino Basin Advanced Treated Recycled Water, Storage, and Production Project for the development of the Chino Basin Program (CBP). Collaborating on projects and agreements to develop regional water supplies and benefits for the Chino Groundwater Basin is essential, and we continue to seek new opportunities to help maximize the availability and beneficial use of limited water supplies.

The CBP is a water exchange-banking program that treats and stores currently inaccessible, unused local recycled water supplies in the regional groundwater basin to increase water reliability for CBP participating agencies and their partners. This program is receiving partial funding from the California Water Commission in recognition of the public benefits that will accrue by implementing the CBP, including ecosystem improvement, water quality improvement, and emergency response. The CBP includes developing local infrastructure, including a 15 million gallon per day Advanced Water Purification Facility for indirect potable re-use, injection wells to store 15,000 acre-feet of water each year, extraction wells, and conveyance facilities. Together, this new infrastructure will support the region's long-term local resiliency by increasing operational flexibility and reliability.

Fontana Water Company supports IEUA's application for the USBR Water Recycling and Desalination Planning Grant as this will provide critical funding in support of the on-going planning and design of the CBP. The CBP will help to support the region's resiliency and growth through the development of a new, local water supply. We look forward to continuing our cooperation and collaboration as we seek to bring the CBP to fruition.

Very truly yours,

Josh Swift
Vice President – Operations

JMS:bf



Board of Directors

Lupe R. Nava, President
Bart Moreno, Vice President
Betty Folsom, Director
Anthony Herda, Director
Kenneth J. McLaughlin, Director



February 15, 2023

Bureau of Reclamation
Financial Assistance Operations Section
Attn: NOFO Team
P.O. Box 25007, MS 84-27133
Denver, CO 80225

Re: Support for Inland Empire Utilities Agency's (IEUA) Chino Basin Advanced Treated Recycled Water, Storage, and Production Project

To Whom It May Concern,

On behalf of Jurupa Community Services District (JCSD), I am pleased to support the Inland Empire Utilities Agency's (IEUA) Chino Basin Advanced Treated Recycled Water, Storage, and Production Project for the development of the Chino Basin Program (CBP). JCSD is a public agency providing services to over 130,000 people within the cities of Eastvale and Jurupa Valley. Established in 1956, JCSD's services include water, wastewater, streetlights, graffiti abatement, and parks and recreation.

Partnering on projects and agreements to develop new regional water supplies while optimizing benefits for the Chino Groundwater Basin is essential. Furthermore, these types of projects align with JCSD's vision of seeking new opportunities and evolving to maximize the availability and beneficial use of limited water supplies.

The CBP is a water exchange banking program that treats and stores currently unused local recycled water supplies in the regional groundwater basin to increase water reliability for agencies participating in CBP and their partners. This program is receiving partial funding from the California Water Commission in recognition of the public benefits that will be realized through its implementation. These benefits include, but are not limited to, ecosystem improvement, Chino Basin water quality improvement, and emergency response. The CBP will develop local infrastructure, including a 15 million gallon per day Advanced Water Purification Facility for indirect potable reuse, injection wells to store 15,000 acre-feet of water each year, extraction wells, and conveyance facilities. Together, this new infrastructure will support the region's long-term local resiliency and growth by developing a new local water supply recovery program that will increase operational flexibility and reliability.

JCSD strongly supports IEUA's application for the USBR Water Recycling and Desalination Planning Grant, as this will provide critical funding in support of the ongoing



planning and design of the CBP. We look forward to continuing our long history of partnership as we seek to bring the CBP to fruition.

Thank you for considering JCSD's support of IEUA's application. If you need any additional information, please contact Jesse Pompa, Director of Engineering and Water Resources, at JPompa@JCSD.us.

Sincerely,

A handwritten signature in black ink, appearing to read "Chris Berch", with a long horizontal flourish extending to the right.

Chris Berch, P.E.
General Manager



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

February 16, 2023

Bureau of Reclamation
Financial Assistance Operations Section
Attn: NOFO Team
P.O. Box 25007, MS 84-27133
Denver, CO 80225

To Whom it May Concern:

The Metropolitan Water District of Southern California (Metropolitan) is pleased to support the Chino Basin Advanced Treated Recycled Water, Storage, and Production Project for the development of the Chino Basin Program (CBP) as submitted by the Inland Empire Utilities Agency (IEUA), a member agency of Metropolitan. Collaborating on projects and agreements to develop regional water supplies and benefits for the Chino Groundwater Basin is essential, and we continue to seek new opportunities to help maximize the availability and beneficial use of limited water supplies.

The CBP is a water exchange banking program that treats and stores currently inaccessible, unused local recycled water supplies in the regional groundwater basin to increase water reliability for CBP participating agencies and their partners. This program is receiving partial funding from the California Water Commission in recognition of the public benefits that will accrue by implementing the CBP, including ecosystem improvement, water quality improvement, and emergency response. The CBP includes developing local infrastructure, including a 15 million gallon per day Advanced Water Purification Facility for indirect potable re-use, injection wells to store 15,000 acre-feet of water each year, extraction wells, and conveyance facilities. Together, this new infrastructure will support the region's long-term local resiliency by increasing operational flexibility and reliability.

Metropolitan is supportive of IEUA's application for the USBR Water Recycling and Desalination Planning Grant as this will provide critical funding in support of the on-going planning and design of the CBP. The CBP will help to support the region's resiliency and growth through the development of a new, local water supplies. We look forward to continuing our long history of cooperation and collaboration as we seek to bring the CBP to fruition.

Sincerely,

A handwritten signature in black ink that reads "Brad Coffey". The signature is written in a cursive, slightly slanted style.

Brad Coffey
Manager, Water Resource Management

AS:sff

Congressional Districts for IEUA Service Area

US Congressional Districts 28, 33, 35, 40

Applicant Name: Inland Empire Utilities Agency
Areas affected by Project:

1. State of California
2. County of San Bernardino
3. City of Chino
4. City of Upland
5. City of Ontario
6. City of Montclair
7. City of Rancho Cucamonga
8. City of Fontana