Executive Summary

The Chino Basin Desalter Authority (CDA) 2010 Urban Water Management Plan (UWMP) was prepared by the staff of the CDA and the Inland Empire Utilities Agency (IEUA) in cooperation with the staff of member agencies of the CDA. This is the second UWMP for the CDA since it was formed on September 25, 2001. CDA is a Joint Exercise of Powers Agency formed between the Jurupa Community Services District, the Santa Ana River Water Company, the Cities of Chino, Chino Hills, Norco and Ontario, Western Municipal Water District and the IEUA. The CDA purifies brackish groundwater extracted from the lower Chino Basin with the Chino 1 and 2 Desalter facilities and distributes the drinking water to member agencies. The Chino 1 Desalter commenced operation in 2001 and was expanded in 2005. The Chino 2 Desalter became operational in 2006, and is currently undergoing an expansion which is estimated to add an extra 10.5-mgd capacity to the current facility and is expected to be completed in the Spring 2011 and fully operational in 2014 with the completion of other Phase 3 Expansion project components.

Each of the six retail members of the CDA has contractual commitments to purchase water produced by the CDA. These commitments total 24,600 acre- feet per year (AFY) and is expected to increase to 35,200 AFY in accordance with the Optimum Basin Management Plan as a new Phase III expansion develops. This new expansion is sponsored by the Jurupa Community Services District, the City of Ontario and the Western Municipal Water District (WMWD), which was formally admitted to CDA membership by the CDA Board on April 2, 2009. Voting rights of each agency are proportional to their commitment to purchase potable water recovered from groundwater by the CDA facilities.

The population in the member agency service areas totaled about 525,000 in 2010 (per California Department of Finance, April 2010) and the population of this area is expected to grow to over 780,000 (or approximately 10,000 per year) people in the next twenty years. The climate of the service area is classified as semi-arid desert.

In June 2000, the Optimum Basin Management Program (OBMP) was adopted by the Chino Basin Watermaster (CBWM) and approved by the Superior Court to address water quality problems within the Chino groundwater basin and to increase and improve the water supply available from this source. The OBMP identifies groundwater recovery in the southern portion of the basin as a way to improve basin water supplies.

Groundwater in the southern portion of the Chino Basin is high in salts and nitrates. The "Maximum Benefit" Plan for managing the Chino Groundwater Basin was approved by the Santa Ana Regional Water Quality Control Board (SARWQCB) in February, 2004 as part of the Santa Ana River Basin Plan update. It provided that "hydraulic control" and groundwater quality

improvement projects could be implemented to prevent degradation of downstream Santa Ana River flows into Orange County. The lower Chino Basin area was identified as the area needing recovery and treatment of brackish groundwater with the intent to control and manage outflow of groundwater high in salts and nitrates from the Chino Basin into the Santa Ana River.

The CDA owns and operates two groundwater treatment desalination systems known as Chino Basin Desalters I and II. These facilities include 22 groundwater extraction wells, pumps and pipelines that provide water to advanced treatment facilities that include processes for pretreatment, filtration, air stripping of volatile organic compounds, ion exchange for removal of nitrates, and reverse osmosis for removal of salts. This treated water is then blended and disinfected to produce high quality drinking water that is delivered to its member agencies by a system of pipelines, pumps and reservoirs. Concentrated brine from the reverse osmosis process is discharged to the Inland Empire Brine Line (IEBL) as non-reclaimable water (NRW) and is conveyed to the Orange County Sanitation District (OCSD) for treatment and ultimate disposal in the Pacific Ocean. Brine disposal exports over 20,000 tons per year of salt out of the Chino Basin. The Chino Desalter Phase 3 expansion could increase the waste brine being delivered to the IEBL by up to 1.71-mgd from 1.62-mgd, which is the actual purchased capacity for Chino II, and an additional 0.94-mgd would be added from the Chino I facility, from a current 2.05-mgd. However, new technologies are being studied to maximize the Desalter's water production and minimize the brine rejection.

The main benefits of the CDA are:

1. It represents a reliable, local source of drinking water produced by desalination;

2. Improves water supply reliability through enhanced local supplies reducing dependency on MWD imported supplies;

3. Salt and nitrates are removed from the groundwater basin to clean up the Chino Basin; and,

4. Hydraulic control of groundwater is enhanced by the location of groundwater extraction wells. This helps prevent groundwater that is high in salinity and nitrates from "spilling over" the Chino Basin southern barrier into the Santa Ana River.

Through the interconnected pipeline delivery system with the retail water agencies, the CDA has the capability of transferring "surplus" water produced by the Desalters and to assist member agencies during emergency outages of other supplies. In cases of emergency and water shortages, the Chino Desalter serves as a stable and reliable potable water source in the Basin.

The retail members of the CDA have other sources of water (ground, surface, recycled and imported water) in addition to the recovered groundwater produced by the CDA. The cities of Chino, Chino Hills, and Ontario are located in San Bernardino County and are entirely within the boundaries of the IEUA. The Jurupa Community Services District (JCSD), the Santa Ana River Water Company (SARWC), and the City of Norco are within the Western Municipal Water District (WMWD), located in Riverside County. Both IEUA and WMWD are members of the Metropolitan Water District of Southern California (MWD) with responsibility to provide wholesale imported water to the retail agencies within their respective service areas.