



AUGUST - SEPTEMBER 2008  
PHASE II CHINO BASIN FACILITIES  
IMPROVEMENT PROGRAM

Program Description

The Chino Basin Facilities Improvement Program (CBFIP) was a joint effort of the Chino Basin Watermaster (CBWM), the Chino Basin Water Conservation District (CBWCD), the Inland Empire Utilities Agency (IEUA), and the San Bernardino County Flood Control District (SBCFCD). This Program, winner of The American Society of Civil Engineers (ASCE) project award, increased the annual recharge of storm, imported, and recycled water to the Chino groundwater basin and reduce long-term maintenance costs.

Phase II of the CBFIP is Grant Funded through the California Department of Water Resources with matching funds from IEUA and CBWM. Phase II comprises the following recharge improvements:

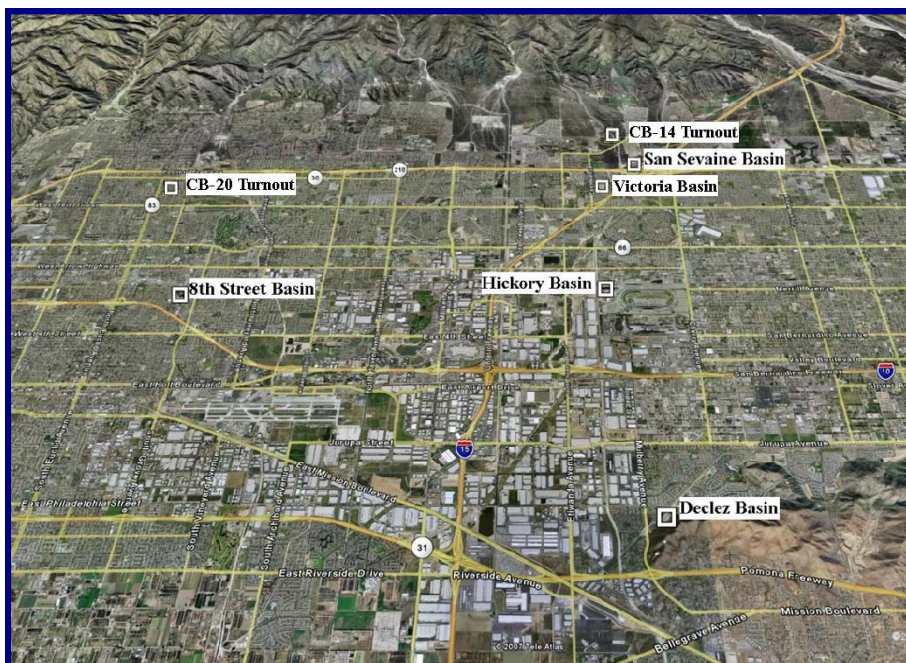
- Construction of new monitoring wells and lysimeters to monitor recycled water recharge operations
- Upgrading the capacity of MWD turnout CB-14 on the Rialto Feeder for imported recharge water
- Construction of a new turnout on the Rialto Feeder (CB-20) to provide imported water to 8th Street Basin
- Improvements to conservation berms at four storm water retention basins to increase recharge of storm water
- Improvements to the SCADA system to improve operation of the recharge facilities
- Evaluation of equipment for cleaning the basins without dewatering and drying basins.

Key Highlights:

- Improvements will capture an additional 2,000 AF of storm water annually for recharge to the Chino Groundwater Basin.
- Improvements will result in lower maintenance costs for the berms.

Project Purpose:

The purpose of the project is to expand the storm, recycled and imported water recharge capacity, which increases annually the overall replenishment of the Chino Basin.



Project Participants:

- Inland Empire Utilities Agency (Contracting Agency)
- Chino Basin Watermaster
- California State Department of Water Resources

Project Team:

- Design: Kennedy/Jenks Consultants, Wildermuth Environmental, Inc. Tetra Tech Inc.
- Project Management: IEUA
- Construction Management: IEUA
- Construction Inspection: Wildermuth Environmental, Inc.

**Phase 2A – Monitoring Wells and Lysimeters**

The monitoring wells were installed at RP-3 Basin, Declez Basin, Eight Street Basin (2), and Brooks Basin (2), and Lysimeters were installed at RP-3 Basin, Declez Basin, Eight Street Basin, and Brooks Basin in anticipation of receiving recycled water for recharge operation.

- Phase 100% Complete
- Construction Completed

**Phases 2B – Basin SCADA Improvements**

The SCADA improvements within San Sevaine, Lower Day, Upland, Brooks, and Turner Basins include new communication towers and controls, automation of gate controls, installation of flow and level sensors, and various hardware and software upgrades to enhance operation and system security. A majority of the improvements will be done by Norstar Plumbing and Engineering while the hardware and software improvements will be done by IEUA staff.

- Phase 40% Complete
- Completion Date: December 31, 2008

**Phase 2C – New MWD Turnout (CB-20) / 8th Street Basin Pipeline**

This project includes a construction of a new turnout from the MWD's Rialto Feeder and pipeline construction to increase imported recharge water to the 8th Street Basin. The installation of a high performance butterfly valve was installed by Mike Bubalo Construction and completed in April 2008 during MWD's scheduled feeder shut-down. The remaining construction was awarded to Norstar Plumbing and Engineering. Norstar's construction activity started on April 2008

- Phase 40% Complete
- Completion Date: December 31, 2008

**Phase 2D – MWD Turnout Expansion at CB-14**

The construction project is the expansion of an existing turnout on MWD's CB-14 and surface pipeline improvements from CB-14. The installation of a high performance butterfly valve was completed by Mike Bubalo Construction on April 2008 during MWD's scheduled pipeline shut-down. The remaining construction was awarded to Norstar Plumbing and Engineering. Norstar's construction activities started on April 2008.

- Phase 40% Complete
- Completion Date: December 31, 2008

**Phase 2E – Recharge Basin Berm Heightening, Hardening, and Outlet Improvements**

The following basins that have shown significant washout of the berm's spillways are San Sevaine, Hickory, Declez, and 8th Street Basin. These improvements will prevent berms from washing out during storm events by raising and hardening the berms and improving existing outlet structures. The Construction Contract was awarded to Landmark Site Contractor. Declez Basin Construction is in progress. To follow are Hickory and 8th Street Basin. The San Sevaine Basin is awaiting final environmental approval due to existing endangered habitats, the San Bernardino Kangaroo Rat and Coastal California Gnatcatcher.

- Phase 55% Complete
- Construction Completion Date: October 15, 2008

**Phase 2F – Montclair Basin Inlet**

The design evaluation of constructing an inlet structure in the San Antonio Channel near Montclair Basin did not prove to provide immediate benefits. Current recharge operations and the above SCADA Improvements will provide the ability to increase recharge flow. This improvement will be deferred when the benefits are more cost effective. The available funds under this project was allocated into the other recharge improvements.

- Phase 100% Complete
- Design Evaluation completed

**Phase 2G – Wet Basin Cleaning Development**

Current cleaning practices necessitate dewatering and drying the basin so that earth moving equipment can enter the basin to remove accumulated silt. This practice reduces the quantity of water that can be recharged at that basin. Initial studies of wet basin cleaning technology concluded the technology to be that more costly than current methods. This phase was completed at the initial study. The remaining project funds was allocated into the other recharge improvements phases.

- Phase 100% Complete
- The initial study completed



Proposed Communication Tower



Valve installed at CB-14



Construction Concrete Spillway at Declez



Construction of Berm No. 1 at Declez

## Project Financing

■	DWR Grant	\$5.2500 Million
■	IEUA Local Share	\$2.625 Million
■	CBWM Local Share	<u>\$2.625 Million</u>
■	Total Project	\$10.500 Million

## Project Budget Summary

Project Activity	Budget*	Cost to Date	Projected	Total Project Cost
Phase 2A - Monitoring Wells and Lysimeters	\$ 1,615,980	\$ 1,615,980	\$ -	\$ 1,615,980
Phase 2B - Basin SCADA Improvements	\$ 1,467,900	\$ 118,330	\$ 1,349,570	\$ 1,467,900
Phase 2C - New MWD Turnout (CB-20)	\$ 2,813,390	\$ 1,084,448	\$ 1,632,249	\$ 2,716,697
Phase 2D - MWD Turnout Expansion	\$ 2,090,930	\$ 810,706	\$ 1,280,224	\$ 2,090,930
Phase 2E - Recharge Basin Berm Improvements	\$ 2,341,800	\$ 576,844	\$ 1,764,956	\$ 2,341,800
Phase 2F - Montclair Basin Inlet	\$ 120,000	\$ -	\$ -	\$ -
Phase 2G - Wet Basin Cleaning Development	\$ 50,000	\$ -	\$ -	\$ -
<b>Total Phase II</b>	<b>\$ 10,500,000</b>	<b>\$ 4,206,308</b>	<b>\$ 6,026,999</b>	<b>\$ 10,233,307</b>