

Marana High Plains Effluent Recharge Project

The **Marana High High Plains Effluent Recharge Project (MHPERP)** is a demonstration recharge project developed by the Pima County Regional Flood Control District (PCRFCFD) in cooperation with the Bureau of Reclamation (BOR), Arizona Water Protection Fund (AWPF), Cortaro-Marana Irrigation District (CMID) and the Town of Marana (TOM). The project is located along the south bank of the Santa Cruz River in Section 33 of Township 11 South, Range 11 East in the Avra Valley sub basin of the Tucson Active Management Area. It is one component of a regional water resource, flood control, environmental protection and enhancement, and recreation program (the Northwest Tucson Active Management Area Replenishment Program) that is sponsored by more than a dozen local, state and federal entities.

MHPERP is designed to investigate the feasibility of recharging treated effluent into the local groundwater aquifer, while simultaneously investigating wildlife habitat opportunities associated with recharge facilities. Overall objectives of the project include the following:

- To recharge up to 600 acre-feet of water per year while determining what infiltration rates can be maintained in basins having side slopes vegetated with emergent plants and riparian trees, and in basins fully vegetated with native shrubs and grasses tolerant of periodic inundation;
- To provide trails, literature and interpretive signs describing the project operation;
- To revegetate the area outside the recharge basins with plants that will improve wildlife habitat value and which, once established, could survive if recharge activities cease;
- To characterize wildlife, aquatic macroinvertebrates, and vegetative resources associated with an important effluent-dominated stream; and
- To identify and monitor any biological effects that may result from establishing other habitat types that are now rare to the area (e.g., marsh, grassland), and increasing the aerial extent of riparian vegetation.

Sources of the effluent for MHPERP are discharges from the Roger Road and Ina Road Wastewater Treatment Plants into the Santa Cruz River. The discharged effluent flows about 10 to 15 miles before reaching a pre-existing berm constructed of streambed materials, that diverts a portion of it into the “oxbow” channel. The “oxbow” channel is a remnant channel of the Santa Cruz River before the 1983 Flood. The diversion maintains the riparian vegetation along the “oxbow” channel, and protects it from scouring during floods. The effluent then flows about one mile down the oxbow channel before reaching a constructed wetwell from which two non-clogging submersible pumps convey it into an equalization basin. The equalization basin is used to provide a more constant source of effluent for recharge and to help serve as a settling basin for removing particulate materials that could clog the recharge cells. From the equalization basin, the effluent passes through an isolation valve into the main distribution line, which feeds into four recharge cells through motorized valves. The total recharge area for the facility is approximately four acres.

PCRFCFD holds both an Underground Storage Facility Permit (USFP) and an Aquifer Protection Permit (APP) for this facility. The project assists infiltration of effluent into the aquifer and also creates a more lush riparian environment than what existed before the project was constructed.



PROJECT AREA FOOTPRINT