



Helix Water District

February 2011

El Monte Valley Mining, Reclamation, and Groundwater Recharge Project

PROJECT DESCRIPTION

Overall Project

Helix Water District (District) is currently planning the El Monte Valley Mining, Reclamation, and Groundwater Recharge Project (Project). This project will have four major elements. The first element is surface mining 12 million tons of material over a 10-year period in El Monte Valley on land that is zoned for extractive use. The second element is groundwater recharge of up to 5,000 acre-feet per year (AFY) using highly purified recycled water with groundwater recovery at the same site in the El Monte Valley. This element of the Project would provide a new permanent drought-proof water supply for the District. The third element is reclamation of the mined lands to be reclaimed to a usable condition for beneficial alternative end uses including habitat creation/restoration, a recreational/equestrian trail network, and public access. The fourth element is restoration which would create additional natural upland and riparian habitat beyond the requirements of the reclamation. The end use restoration project requires filling the groundwater basin and managing the groundwater level to an elevation required for revegetation as part of developing the new water supply for the District. The combined mining, reclamation, and groundwater recharge project would be located in El Monte Valley on approximately 580 acres currently owned by the District. A vicinity map of the El Monte Valley and overall project is attached as **Figure 1**.

The project includes property within San Diego County Assessor Office Parcel Numbers: 392-050-43, 392-060-29, 392-150-17, 391-061-01, 391-071-04, 393-011-01, and 390-040-51. The proposed Project area within these parcels totals approximately 580 acres.

The objectives of the proposed Project are as follows:

- 1) Create a new, sustainable, drought-proof water supply of at least 4,000 AFY for the District.
- 2) Extract a portion of the sand aggregate resource (consistent with existing zoning) to help alleviate very short local supplies of Portland Cement Grade sand as identified by the State and County.
- 3) Ensure cost effectiveness of the project, while minimizing long-term rate increases to Helix Water District customers.
- 4) Improve the quality and function of the natural environmental habitats along the San Diego River.
- 5) Enhance recreational opportunities in the El Monte Valley, consistent with the San Diego River Conservancy.



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- 6) Increase use of recycled water while reducing wastewater discharges to the Pacific Ocean.

Mining

The mining project will include granting of a Major Use Permit (MUP) and the approval of a Reclamation Plan by the County of San Diego for extraction of 12 million tons of construction sand and aggregate and reclamation of the mined lands (i.e. the areas disturbed by mining activities). The requested MUP would authorize a maximum production limit of 2 million tons in any calendar year. Total material production from the site is estimated to be 12 million tons (9.2 million cubic yards). Mining would occur over an approximate 400-acre area with a maximum excavation depth of 15 feet. Approximately 230 trucks per day would exit the sites with a similar number entering the site each day. Sand excavation and trucking operations would occur approximately 250 days per year on weekdays between the hours of 7:00 a.m. to 5:00 p.m. Trucks from the site are planned to leave a staging area on the project site at the southwestern point of the property accessing El Monte Road and travel either to Highway 8 or Highway 67 to deliver aggregate. Construction is expected to begin in January 2013. At the proposed average mining rate of 1.5 million tons (1.15 million cubic yards) per year, the mining of 12 million tons of material would require approximately 8 years with one year of start up and one year to complete reclamation for a total of 10 years (i.e. to the year 2022). Thus the proposed end of mine life is approximately December 31, 2022. A map of the mining work area is shown in **Figure 2**.

The funds generated from the mining operation would provide a portion of the needed funding for the reclamation, restoration, and groundwater recharge project facilities.

Mining operations would occur generally within the central areas of the project site along and adjacent to the San Diego River. The majority of the recharge project components would be adjacent to mining operations around the perimeter. The groundwater recharge facilities would be constructed concurrently with the ongoing mining activities. Construction of the groundwater recharge facilities would occur the first two years. After the recharge facility is operational, recharge operations, mining, reclamation, and restoration would occur concurrently for another eight years (total ten years). Groundwater recharge facilities would be used to manage the current groundwater table elevations (20 to 30 feet below grade) during completion of mining. Once mining is complete, the groundwater table would be raised to support restoration. Groundwater would be used for dust control and temporary irrigation during mining operations.

The sand and gravel washing plant would be up to 10 feet wide and 25 to 30 feet tall. The sand and gravel washing plant would wash and screen material but it would not crush any material, which would minimize noise impacts. The use of settling ponds at this wet plant would minimize dust production during processing. Residual fines from the onsite washing operation would be used during reclamation of mined areas. The wet plant would either be



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located at the Staging Access Area throughout project operation or would be sited within each mining phase during project operation.

Groundwater Recharge/Recovery

The groundwater recharge element of the project would include up to 5,000 acre-feet per year of groundwater recharge using highly purified recycled water with groundwater recovery planned on this same site in the El Monte Valley. In addition, a supplemental water source would be provided by the District for blend water. Highly purified recycled water for the Project would come from Padre Dam Municipal Water District (Padre Dam) or the City of San Diego. Padre Dam is planning expansion of their Santee Water Recycling Facility. The City of San Diego is investigating expanding recycled water deliveries from their North City Water Reclamation Plant. Based on the timing of Padre Dam's expansion of their Santee Water Recycling Facility, this project was considered as the primary source of purified recycled water for the Project. Advanced treatment to produce highly purified recycled water uses microfiltration, reverse osmosis, and advanced oxidation treatment process. The advanced treatment facilities would be at Padre Dam's expanded reclamation facility. In addition, a purified recycled water pump station would be included in the facility upgrades at the reclamation facility. Depending on the City of San Diego's project, the North City Water Reclamation Plant may become a future source of highly purified recycled water for the Project. This element of the Project would provide a new permanent drought-proof water supply for the District. A map of the Groundwater Recharge work area is shown in **Figure 3**.

The groundwater recharge element of the Project is planned to include the following facilities: a purified recycled water pipeline from the Santee Water Recycling Facility to the El Monte Valley; up to 100 acres of recharge basins and/or multiple injection wells; approximately 40 groundwater extraction wells; groundwater injection and extraction pipelines in the El Monte Valley; and a connection to the existing Helix No. 2 Raw Water Pipeline. A portion of the transmission pipeline would utilize an existing pipeline (Helix No. 2 Pipeline). All facilities would require access for operation and maintenance with easements or access in public roads. All irrigation and agricultural uses of groundwater will continue. Some existing potable groundwater wells will be replaced with a new potable water supply directly piped to the user. These project facility improvements will include supplementing private groundwater wells in the vicinity of the Project with permanent water supply from Padre Dam's potable water system through a connection at El Monte Road and crossing Dairy Road and serving approximately 40 homes along a section of Willow Road near the proposed recharge basins and along El Monte Road. Property owners whose groundwater use is impacted by the project would be compensated by the District for the costs of their indoor potable water use. Construction of the groundwater recharge facilities is expected to take 2 years. Construction is expected to begin in January 2013 and continue through December 2014. An aerial map of the proposed groundwater recharge facilities is shown on **Figure 4**.



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Potential road improvements may be required, including improvements to El Monte Road adjacent to the project. The District would also need to acquire right-of-way along a portion of Fanita Parkway and Mast Boulevard in the City of Santee that is privately owned. Facilities would require access for operation and maintenance, with easements from private roads or from public roads.

As part of the project, San Diego Gas and Electric (SDG&E) would install underground electrical conduit, transformers, and meters; relocate existing transmission and distribution poles; and remove overhead facilities to supply the groundwater recharge facilities with power. The overhead electrical conduit would need to span the San Diego River. Steel poles would likely be installed for new and existing SDG&E structures. SDG&E would utilize existing staging areas and additional staging and laydown areas near SDG&E facilities.

Operationally, highly purified recycled water will be produced at the Santee Water Recycling Facility with a water quality meeting the highest standards set by the California Health Services Department. This highly purified recycled water will be pumped and transported to either recharge basins or injection wells located on the land owned by Helix Water District in El Monte Valley. This water would be blended with raw water from the Helix No. 2 Pipeline initially at a 50 percent blending ratio, but ultimately is proposed to be 100 percent highly purified recycled water. The recharge water would percolate and become part of the groundwater stored in the aquifer. The groundwater would rise as this water fills the underground basin. The groundwater level would be managed so that its elevation is near the bottom of the recontoured, rehabilitated river channel providing a source of water to the revegetated area. The pumped groundwater would be a blend of natural flow to the basin and highly purified recycled water filtered through alluvial sands. The elevation of the groundwater level in the basin would be managed to maintain a nearly full condition in this part of the aquifer. Groundwater would be extracted through a series of extraction wells. The extracted water would be blended with raw imported or local waters and treated at the R.M. Levy Water Treatment Plant.

Reclamation

A Reclamation Plan is required to be approved by the County prior to initiation of the project as required by the Surface Mining and Reclamation Act (SMARA). The Reclamation Plan would provide designated phases for the progressive rehabilitation of the mining site land form so that, when reclamation is complete, it will contain stable slopes, be readily adaptable for alternate land uses, and be free of derelict machinery, waste materials, and scrap to the satisfaction of the County. The proposed mining site land form, to the extent reasonable and practical, would be revegetated for soil stabilization, free of drainage problems, coordinated with present and anticipated future land use, and compatible with the topography and general environment of surrounding property.



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Following cessation of mining activities in each of the four mining phases, the mined area would be graded, contoured, and revegetated to meet Reclamation Plan requirements. Reclamation of the site would progressively occur in four phases such that the acreage under active excavation at any one time would be limited (**Figure 2**). As each mining phase is being reclaimed, habitat would be planted in the reclaimed areas and irrigated with water supplied from local wells until the mining of the entire site is complete. The reclaimed lands would be revegetated with native riparian and upland habitat compatible with the surrounding area. Upon completion of mining and reclamation in 2022, the mined area would be reclaimed to a condition suitable for an alternate end use including a managed groundwater supply, restored riparian/upland habitat, and recreational trail network. The final reclaimed surface would consist of a recontoured valley with side slopes generally with a gradient of 5:1, but with a maximum gradient of 2:1. The finished grade of the mining project would be designed to allow groundwater levels to be maintained within specified levels to support the restored riparian habitat.

Restoration

Once the mining project is complete including final reclamation, additional restoration of the valley would also be completed. This would result in the restoration/creation of additional riparian habitat and upland habitat beyond mining reclamation standards. An aerial map of the conceptual river restoration plan is shown on **Figure 5** and the conceptual river cross section is shown on **Figure 6**. A restoration plan will be developed which outlines the creation of restoration/creation of habitat, recreational features, including hiking/equestrian trails, trail access points, and educational kiosks. A map of the proposed trails and access road is shown in **Figure 7**. Temporary hiking and equestrian trails would be constructed and accessible during the construction and mining phase of the project.

The current vegetation on site is comprised of mostly disturbed habitat/agriculture, non-native grasslands, and invasive plant species (tamarisk) with small areas of coastal sage scrub/baccharis scrub, riparian scrub, and riparian/oak woodland. The additional restored lands would be revegetated with riparian and upland habitat to be compatible with the surrounding area. Estimated additional restoration areas will be confirmed as part of the biological resource evaluation. The groundwater recharge and recovery will be operated to maintain groundwater levels shallow enough to support a self-sustaining riparian vegetative cover.