

**Metropolitan Domestic Water Improvement District
Board of Directors Meeting**

February 10, 2014

Effluent Reuse Update

Synopsis

The Board of Directors is requested to discuss with staff the District's efforts to deliver its effluent to the Cortaro-Marana Irrigation District.

Background

The District is entitled annually through an Intergovernmental Agreement with the City of Tucson to about 2,200 acre-feet of treated effluent. One potential use for the supply is a Cortaro-Marana Irrigation District (CMID) gravity flow pipeline that historically carried treated effluent north from the Ina Road Wastewater Treatment Facility to CMID's canal east of I-10 (Figures 1 and 2). The effluent used by CMID was owned by Pima County. The CMID and Pima County effluent delivery agreement ended 17 years ago when CMID and Pima County could not reach agreement on a new price for using the effluent and the Arizona Department of Water Resources' (ADWR) decision to not count Pima County's effluent as eligible for recharge credits.

The District became interested in using CMID's effluent pipeline to earn 100% recharge credits on the District's effluent supply. The District was successful in documenting to ADWR that the District's effluent was never stored at CMID's Groundwater Savings Facility (GSF) when Pima County delivered effluent to CMID. Thus, ADWR amended the District's water storage permit at CMID's GSF to include effluent storage and earn recharge credits.

CMID and the District executed an effluent storage agreement that provides the District with exclusive access to any of CMID's pipeline capacity. Subsequently, the Bureau of Reclamation has expressed interest in expanding this project so that Reclamation's SAWRSA effluent can be utilized by CMID.

South Pipeline Ownership and Status

CMID owns an effluent delivery pipeline on CMID property and granted easements. The effluent delivery system was constructed in two parts. A south section located at the Ina Road Wastewater Treatment Facility (south of Ina Road) was constructed by Pima County on County land to replace an earlier CMID irrigation canal that needed to be relocated by Pima County for an expansion of the Ina Road Landfill. CMID owns land north of Ina Road for the pipeline joining to CMID's canal.

The south pipeline where CMID was granted an easement by Pima County has been disconnected and repurposed by the construction of the new Tres Rios Water Reclamation Facility. The effluent holding pond and the irrigation canal feeding the pond are now used by Pima County Regional Water Reclamation Department for capturing storm water. CMID is negotiating with Pima County Regional Water Reclamation Department for a new easement and the replacement of the pipeline and holding pond by Pima County. The holding pond is needed for CMID to have steady flows in their main canal. The District and the Bureau of Reclamation have supported CMID on Pima County Regional Water Reclamation Department replacing the needed easement and infrastructure by attending meetings with Pima County Regional Water Reclamation Department and expressing the District's desire for quick restoration of the effluent delivery infrastructure.

A meeting is scheduled with Pima County Regional Water Reclamation Department on February 3, 2014 between CMID, the District, and Bureau of Reclamation. The outcome will be shared at the District Board of Directors meeting. CMID, the District and Bureau of Reclamation plan to present to Pima County Regional Wastewater Reclamation Department three pipeline alignments for consideration. One of the options is to put in place a temporary above ground pipeline, so the District can begin effluent deliveries this year. The Bureau of Reclamation has developed two alignments for below ground permanent pipelines. One option is by gravity flow and the other would require installation and operation of a high volume/low head booster pump. Those plans are attached.

North Pipeline Integrity and ADOT Road Construction

Two main questions exist regarding the pipeline north of Ina Road. The first issue is whether the north pipeline was in adequate condition to deliver effluent after 17 years of not being in use. The second issue is the upcoming Arizona Department of Transportation expansion of I-10 and the Ina Road intersection.

Regarding the integrity of the north pipeline, the CMID pipeline is made of non-standard water industry materials (sections of unreinforced concrete culvert pipe). In late 2012, the Bureau of Reclamation (BOR) contracted with ProPipe to video the condition of the north pipeline. ProPipe was able to video 50% of the north pipeline but debris in the pipeline halted ProPipe from completing its survey work. The BOR reviewed the video survey and determined the remaining sections needed to be videoed to fully assess the usability of the north pipeline.

The District completed the cleaning and video assessment of CMID's northern pipeline in 2013 per the Board of Directors direction. A collapse or blockage was found in the I-10 right of way possibly due to the installation of the Ina Road exit sign by ADOT. CMID met with ADOT on October 17, 2013 to discuss the needed repair. ADOT agreed at the meeting to schedule and conduct a field inspection (pot holing) with CMID present to ascertain if ADOT was responsible. ADOT's inspection on November 12, 2013 did find the installation of the exit sign did breach CMID's pipeline and was filled with concrete during the construction of the exit sign foundation. From January 7-15, 2014, ADOT's contractor removed the concrete filled portion of the pipeline and replaced it with ductile iron pipe.

Based on the age and condition of the north pipeline, relining the pipeline is considered prudent to avoid liability issues and minimize water losses. Based on the District's storage agreement with CMID, the District is responsible for any repairs or improvements to CMID's pipeline needed prior to operation. The District Engineer obtained cost information on pipeline relining from Pima County. His estimate for relining the northern pipeline is \$800,000. The District's payback period from recharge credit sales to recoup the relining work would be 3 to 5 years depending if effluent delivery system is gravity flow or if a small lift station must be included.

Relining the pipeline in the near future would most likely not be advisable since the District has learned that ADOT may need to remove the northern half of CMID's north pipeline. During the ADOT repairs, the District became aware of ADOT's acceleration of its project to widen I-10 between El Camino Del Cerro Road to Ina Road and ADOT's upcoming construction of an overpass intersection for Ina Road. ADOT is studying whether the northern half of CMID's north pipeline will need to be converted to a siphon because ADOT wants to reroute a storm water drainage way (Figure 2). ADOT also informed CMID that the I-10 work has been moved up to year 2015, so ADOT can expend federal grant monies. CMID, the District, and Bureau of Reclamation are attending the utility design and coordination meetings to keep abreast of ADOT's plans and advise ADOT on the project's impacts to the District.

Next Steps

For the CMID effluent pipeline to resume operation, Cortaro Water Users Association (CWUA) and the District must complete the following tasks on Table 1.

Table 1. Project Tasks

| South Pipeline | | | |
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| <i>Tasks</i> | <i>Entity Responsible</i> | <i>Cost and Schedule</i> | <i>District Role</i> |
| Selection of New CMID Easement and Negotiations on South Pipeline Replacement | Pima County Regional Water Reclamation Department and Cortaro Water Users Association | Unknown until new pipeline alignment selected by PCRWRD and engineering design completed | Encourage PCRWRD and CWUA to complete negotiations. If negotiations fail, then District must decide whether to fund project. |
| IGA between CMID and Pima County | PCRWRD and CWUA | N/A | Support IGA at County Supervisors Meeting |
| Design and Construction | Pima County Regional Water Reclamation Department | BOR estimates between \$600,000 to \$900,000 | Support CMID and PCRWRD with technical review and construction oversight. Apply for WIFA grant |
| North Pipeline | | | |
| <i>Tasks</i> | <i>Entity Responsible</i> | <i>Cost</i> | <i>District Role</i> |
| Pipeline Relining Design and Construction | District | \$800,000 | Provide funding, construction oversight |

Conclusions

The District has been proactive in working with CMID as a way to utilize its effluent and obtain 100% credit. Unfortunately, the success of this effort involves more parties than only the District and CMID. To complicate the overall project, the CMID pipeline is divided into the north and south section with their own unique issues.

Negotiations have resumed between Pima County Regional Water Reclamation Department and Cortaro Water Users Association. The District and the Bureau of Reclamation are participating in the discussions for Pima County Regional Water Reclamation Department to provide CMID with a new easement and replacement pipeline. Until a permanent pipeline can be built, the District will request a temporary above ground pipeline, so effluent deliveries can begin this year. If Pima County rejects funding the replacement pipeline, the District must decide whether to fund the new infrastructure. The Bureau of Reclamation estimates the cost is between \$600,000 and \$900,000.

CMID's northern pipeline is now obstruction free but ADOT's construction along I-10 in 2015 may disrupt its use. In addition, relining the north part of the northern pipeline would be an unwise expense if that section of the pipeline is replaced due to ADOT's construction plans. If a temporary southern pipeline can be installed, the existing north pipeline could be used for a short-term basis, which would allow the District to accrue credits. Once ADOT's impacts to the northern pipeline are known along with their timeframe, the District would then need to consider relining the north pipeline at the estimated cost of \$800,000. This expense could be recouped in three years through the In-Lieu fee on effluent deliveries wheeled to CMID.

Staff Recommendations

Staff recommends that the Board of Directors discuss the various aspects of the effluent reuse project with CMID. Staff recommends that the District continue to support CMID in its efforts to negotiate with Pima County as well as ADOT's construction plans. The District ought to delay expenditures of funds to reline the north pipeline until ADOT's design plans are finalized. In the meantime, staff recommends pursuing a temporary pipeline and pump until a permanent pipeline can be constructed.

No formal action is necessary. The Board is requested to provide direction regarding staff's efforts with this project.

Respectfully submitted,

I concur with the recommendation.

Respectfully submitted,

Warren Tenney
Assistant General Manager

Joseph Olsen, P.E.
General Manager