



## **CAPITAL IMPROVEMENT PROJECTS**

### **Ina Road Water Pollution Control Facility Expansion is Operational**

The Ina Road Water Pollution Control Facility 12.5 million gallons a day (mgd) expansion has been completed and began treating sewage on July 17. Staff is becoming well-skilled in the new treatment process which achieves reduction in nitrogen concentration levels as required by the Arizona Department of Environmental Quality (ADEQ). The new \$90 million facility also incorporates a state-of-the-art odor control system. Staff has successfully met ADEQ's 60-day start up phase and will submit data to ADEQ to obtain the necessary final operating permit.



Ina Road Expansion – New Headworks

### **Treatment Plants Updates**

Corona de Tucson Wastewater Treatment Facility - Construction of the expansion project at Corona de Tucson (1.0 mgd expansion) continues, with the project anticipated to be completed in early 2007.

Marana Wastewater Treatment Facility - Construction of the first phase of the 2.0 mgd expansion program continues, with the addition of 0.5 mgd of capacity anticipated to be completed in November 2006. Construction of the additional 1.5 mgd of capacity will begin in early 2007.

Avra Valley Wastewater Treatment Facility - Construction of the additional 1.0 mgd expansion program continues, with the availability of an addition of 0.2 mgd of capacity anticipated to be completed in November or December 2006. The full 1.0 mgd expansion will be completed by April 2007. Additionally, the engineering team is working to design an additional expansion. The department anticipates construction of the 4.0 mgd expansion to begin in early 2007.

### **Carrillo Sewer Rehabilitation Project**

The Carrillo sewer rehabilitation project is underway in the neighborhood south of the Tucson Community Center (Barrio Viejo). Outreach efforts to the community have resulted in the department's response to residents' concerns about potential damage due to vibrations from equipment and other construction activities. Very early in the project, the department arranged for a subcontractor to image each building in the area to document its condition. The department has also implemented procedures to reduce vibrations to the greatest extent possible. Initial point repairs are being made, and a temporary employee has been hired to perform outreach to the neighborhood. Because the streets are so narrow in this historic section of Tucson, access to properties and parking are significant issues. To this end, the department's outreach coordinator has worked with the Tucson Convention Center, the San Cosme Church and the Sonoran Glass Arts Academy to provide nearby parking for area residents and workers when they do not have direct street access to their homes or work sites. She has spent many hours explaining to the residents and workers in the area about different activities that are taking place (i.e.: imaging of structures and point repairs). She will also inform neighbors when larger sections of streets must be excavated and when the cured-in-place piping activities will be implemented. (Cured-in-place piping will occur in the second phase of this project and will result in the loss of sewer service to residents and some businesses on a temporary basis.) The outreach coordinator has been and will be in constant contact with neighborhood residents, business owners, and the Carrillo School. The department has already received several compliments about its outreach efforts. This is especially important in light of the fact that complaints about past construction projects have been voiced by those who live and work in the area.



Carrillo Sewer Rehabilitation Project

# **OPERATIONAL EFFORTS**

## **Roach Control**

Hot weather increases the number of sewer roach complaints the department receives because roaches seek cooler environments outside the sewer when the temperatures inside the sewers heat up. Past history has shown that once cooler weather returns, the number of roach complaints will substantially diminish. In November 2006, the department's vector control contractor will have been working for a full year, and half of the system (which contains over 60,000 manholes) will have been treated. When the hotter summer weather returns in May 2007, about 75% of the system will have been treated. Based on the results we have experienced to date, this should result in a significant decrease in the number of summertime complaints. During the months of July, August and September of this year, the department received between 60 to 100 calls each week on its vector control hotline. Two staff members with retrofitted trucks responded. Calls come in from all areas of the metropolitan area. Staff works to cluster responses to such calls in a logical and efficient manner; however, this practice sometimes left certain areas of the county waiting longer than the target of four weeks to treat the manholes in areas where roaches had been reported. Due to a cool spell in mid-September, temperatures had decreased to the point that roach calls had diminished to about 25 per week. With two staff members responding to fewer calls, requests for service are now being handled within one to two business days.

The insecticide that both the vector control contractor and the department use when responding to individual complaints is effective for a period of two years. At the end of the two year spray schedule, the contractor will repeat the original spray schedule. The contractor is also required to return to manholes that have been treated if a complaint is lodged after they have been sprayed. (This re-check of treated manholes is done at no cost to the department.) To date, in all those instances, the manholes have been found to be free of live roaches. It is believed that such complaints are the result of natural desert roaches and bugs that residents mistake for sewer roaches. The department is developing an informational brochure that will discuss the presence of a variety of roaches and bugs common in Pima County. This brochure will be made available to the public.



Infested Manhole



Manhole After Treatment

## **Odor Control Program**

The consultant the department retained to assist with the development of a system-wide odor control program is in the process analyzing the department's sanitary sewerage conveyance system and wastewater treatment facilities. One of the first products the consultant will produce is a recommendation of odor control interventions that will be relatively easy and inexpensive for the department to expeditiously implement. While these recommended improvements will not solve all the odor problems, they will provide some odor relief early on in the development of the overall odor control program.

The first two meetings of the Odor Control Citizen's Involvement Committee (CIC) were held on August 21, and September 26. This committee is widely representative of the community at large.

The system-wide holistic odor control plan will be presented to the Board of Supervisors in the spring of 2007. CIC comments and input will be included in that report.

## **Sanitary Sewer Overflows Result from July and August Rain Events**

The significant rain events that occurred in late July and early August resulted in an increased number of sanitary sewer overflows (SSOs) during the third quarter of this year. Infiltration and inflow of rainwater from those events resulted in 26 SSOs. This compares with fourteen SSOs that occurred during July and August in 2005. Crews worked around the clock to mitigate the damage caused by these unusual climactic events, which were so forceful that news accounts reported that they caused changes to Sabino Canyon at a level that has not been seen in 10,000 years.

These events triggered a declaration of a flood emergency in Pima County by the Board of Supervisors, a declaration of a flooding emergency by Governor Napolitano, and the release of funds by FEMA after a similar presidential declaration.

It is not known whether the department will be penalized for the SSO events; ADEQ is investigating and considering what if any actions to take against the department. (It is possible that the presidential declaration may be considered when ADEQ makes a decision regarding fines for these overflows.)

Communities that officially adopt a Capacity Management Operations and Maintenance (CMOM) program typically are allowed to direct funds toward areas that improve their performance as opposed to paying fines to regulatory agencies. The department is currently applying for approval of its CMOM program from ADEQ.

# ADMINISTRATIVE CONCERNS IMPACTING CIP AND OPERATIONS

## Connection Revenues Decreasing

For the first two months of this fiscal year, the department has collected approximately \$6.2 million dollars in connection fee revenues compared to approximately \$10 million collected during the same period in FY 2005/06. This represents a 38% decrease. If this trend continues throughout the fiscal year, the department estimates it will collect approximately \$25.7 million in connection fees, or approximately \$12.4 million less than the adopted budget of \$38.1 million in connection fee revenues. This reduction in revenue limits the department's ability to fund capital improvements with System Development Funds and highlights the fact that one-time revenues should be used for one-time expenses and should not be used to fund ongoing operations and maintenance activities.



## Staff Shortages

The department has been experiencing a very difficult time filling certain technical positions. Engineers, engineering assistants and engineering technicians have been particularly hard to hire. Currently fourteen engineering positions are vacant, with some positions remaining vacant for more than a year. The department's inability to fill these positions has resulted in a lack of resources to address effectively a number of important issues and projects. For example, in the conveyance area, odor control activities have experienced delays. Additionally, when new odors in the conveyance system become problematic (and the usual steps such as cleaning or flushing lines do not solve the problem), the lack of appropriate staffing to troubleshoot the problem and develop solutions may lead to unresolved odor issues. The department's ability to implement a CMOM program and to achieve ISO 140001 certification is also compromised as engineering support is required for both CMOM and ISO certifications.

In addition to the impact on conveyance system operations, the inability to recruit engineers requires that our project managers work on a greater number of projects. The lack of engineers has resulted in the delay of preliminary work that will be required to get certain CIP projects underway in the next one to two years. Without Project Managers for these important bond and system development fund projects, the department's ability to implement them is jeopardized. With fourteen out of 26 engineer positions unfilled, the vacancy rate is more than 50 percent. Additionally, the department has staff shortages in Engineer Assistant positions that can perform many functions that free senior engineers to perform project management. With a large number of bond projects requiring implementation, the department needs to fill vacancies to oversee these important and critical projects.

Finally, the department is also faced with a critical shortage of field inspectors. These inspectors ensure that newly constructed public sewer lines meet department standards and will operate properly, safely, and in an environmentally sound manner in both the near and distant future.

## **MAJOR FUTURE CONSIDERATIONS**

### **Speedway Consent Decree Closed Out (*Regulatory Concerns*)**

On August 30, 2006, the State of Arizona terminated the Speedway consent decree which was issued on June 15, 2005. It is common for consent decrees to remain in effect for much longer periods; there have been instances in which communities have been required to operate under consent decrees for up to ten years. In a period of only fourteen months, the county fulfilled all the requirements of the consent decree. These requirements included the payment of a \$500,000 penalty; the purchase of 166.32 acres of environmentally sensitive properties under a Supplemental Environmental Project at a total cost of \$910,000; and the payment of stipulated penalties of \$20,000 for four sanitary sewer overflows.

Although the consent decree has ended, Pima County continues to be vulnerable to the imposition of penalties of up to \$27,500 per day, per contaminant for each SSO. To diminish exposure to such penalties, the department has applied for a permit under the Aquifer Protection Permit (APP) that will give the department a degree of protection from penalties if a Capacity Management Operations and Maintenance (CMOM) program is implemented as a component of the APP.

Although the consent decree has been closed out, the county continues to be involved in Class and Mass Action suits filed by some residents in the Barrio Hollywood neighborhood. The Pima County Attorney's office is managing these cases with outside legal counsel and is exploring settlement options.

**Consent Decree Termination Order**

**THE SUPERIOR COURT OF THE STATE OF ARIZONA  
FOR MARICOPA COUNTY**

<p>STATE OF ARIZONA, <u>ex rel</u>, STEPHEN A. OWENS, Director, Arizona Department of Environmental Quality,</p> <p style="text-align: center;">Plaintiffs,</p> <p>vs.</p> <p>PIMA COUNTY WASTEWATER MANAGEMENT DEPARTMENT</p> <p style="text-align: center;">Defendant.</p>	<p>Case No: CV2005-009671</p> <p style="text-align: center;"><b>ORDER REGARDING THE STATE'S RULE 60(a) MOTION TO VACATE AND SUBSEQUENT MOTION TO DISMISS</b></p> <p style="text-align: center;">(Non-classified Civil)</p> <p style="text-align: center;">(Assigned to the Hon. Thomas Dunevant, III)</p>
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The Court, having considered Plaintiff's Rule 60(a) Motion to Vacate the Court's 10 December 2005 Order to Dismiss and Subsequent Motion to Dismiss, and for good cause appearing,

**IT IS HEREBY ORDERED** that the Court's dismissal of this matter on 10 December 2005 was a clerical error and is therefore vacated.

**IT IS FURTHER ORDERED** that this case is dismissed pursuant to the State's Satisfaction of Judgment and Motion to Terminate Consent Decree which was filed with the Court on 25 July 2006.

DONE IN OPEN COURT this 30<sup>th</sup> day of Aug, 2006

HON. THOMAS DUNEVANT III

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The Honorable Thomas Dunevant, III  
MARICOPA COUNTY SUPERIOR COURT

## Regional Optimization Master Plan

The Engineering firm retained to assist in the development of the Regional Optimization Master Plan (ROMP) has been working with PCWMD, Tucson Water, and other stakeholders as we analyze a variety of alternatives for the future conveyance and treatment of wastewater in Pima County. The primary purpose of the ROMP is to develop a plan to meet ADEQ's regulatory requirement to reduce nitrogen concentrations in discharged effluent.

During the months of July, August, and September, the ROMP team focused on a number of treatment options that would allow the department to achieve denitrification levels that will be in compliance with our regulatory discharge permits. After detailed analysis of approximately 20 options, the team of engineers, operators, technicians, and stakeholders narrowed the alternatives to three. Those three options were studied in even greater detail, and on September 26, the team arrived at the following preferred option:

- 1) The existing Roger Road Plant will be decommissioned and a new advanced treatment facility will be constructed in the vicinity of the existing plant.
- 2) The new treatment facility will treat up to 32 million gallons a day (mgd) of sewage and will meet all Aquifer Protection Permit (APP) requirements. (The capacity of the existing Roger Road plant is 41 mgd.)
- 3) The Ina Road treatment facility will be expanded to treat 50 mgd of sewage and will meet all APP requirements. (The capacity at the Ina Road Plant is 37.5 mgd.)
- 4) The nitrogen removal process that was selected for both facilities is known as the Bardenpho process. The Bardenpho process has a long-proven track record for nitrogen removal under various influent and operating conditions.
- 5) Planning level cost estimates reveal that the capital costs for this plan will be in excess of \$320 million. This preliminary figure does not include engineering, legal, construction management or administrative costs, nor does it include cost escalations during the regulated nine-year implementation period for the program. Other costs that are not included in the \$320 million figure are required infrastructure such as road work, SCADA centers, a laboratory, etc.

The scenario of constructing a new treatment plant at Roger Road was not the least expensive scenario. Preliminary cost figures showed that rehabilitation and retrofitting of the current plant might be less expensive. However, these figures did not take into account the very real potential for unknown complications that inevitably would arise when attempting to retrofit a 56 year-old plant with obsolete and aging infrastructure. While unknown problems inevitably exist, they cannot be predicted with specificity; however, if retrofitting the existing Roger Road facility were contemplated, a risk analysis

would have to be factored into the decision-making process and undoubtedly would eliminate this option. The monies that would be required to deal with construction/rehabilitation problems that cannot be identified up front, while simultaneously trying to treat sewage flows to permit requirements poses a substantial risk. Additionally, the very real potential of not meeting permit requirements while treating sewage with an infrastructure that is undergoing major construction could lead to significant permit violations which are detrimental to the environment and would subject the department to potential penalties and fines discussed earlier in this report.

Now that a preferred option and process have been selected, a final and even deeper analysis is being performed to assure that the capacity and treatment process alternatives are in fact the best environmental and financial options for the community. The selection of this option also opens the door for the recently discussed sports complex, environmental enhancement project, and economic development along the I-10 corridor and in nearby neighborhoods. This option also lends itself to a “water campus” concept which will provide bird watching opportunities, natural park environments, and the development of an education center. The riparian habitat that is already established would draw more visitors because the effluent would be cleaner and infrastructure proposed by Pima County Natural Resources Parks and Recreation would draw the public and other visitors to the site.



Roger Road Outfall – Riparian Habitat To Be Preserved/Enhanced