

Regional Optimization Master Plan— Major Construction Is Underway

FY 2008/09 was a major milestone in the Regional Optimization Master Plan (ROMP) program, with the start of construction on the Plant Interconnect and Water Reclamation Campus Solar Project. Mike Gritzuk, Department Director, provided monthly updates to the Committee on the current status of the ROMP.

The ROMP includes the Ina WRF upgrade and expansion project, which will increase the capacity of this facility to 50 million gallons per day (mgd) and also convert the existing water treatment processes at Ina to the Bardenpho process to reduce nitrogen and phosphorus levels. The ROMP also includes the new Water Reclamation Campus with a new 32 mgd Bardenpho treatment process. The final element of the ROMP is the Plant Interconnect, which will convey flows from the Roger Road WRF service area to the Ina Road WRF. Upgrades for regulatory requirements are to be operational and in compliance with ADEQ requirements at the Ina Road WRF by January 30, 2014 and at the Roger Road WRF by January 30, 2015.

The ROMP budget is now established at \$720 million. The Department's intent is to complete all of ROMP within that budget.

ROMP status as of June 30, 2009:

- **Ina Road WRF Upgrade/Expansion:** This project just crossed the 30% design milestone. The project is on schedule. All project design and features at this point are frozen. The detailed design process begins now.

The next milestone is the 60% design level and is expected to be reached in November.

- **Plant Interconnect:** The Notice to Proceed has been issued to the Construction Manager At-Risk, Sundt-Kiewit. The project is under construction and on schedule. This project is partially funded by a \$10 million loan from Water Infrastructure Funding Authority (WIFA). \$2 million of that loan principal will be forgiven as part of the American Recovery and Reinvestment Act (ARRA) stimulus funds.
- **Water Reclamation Campus:** Five proposals were submitted. The selection committee is reviewing the qualification statements and a short list of recommended entities is being developed. The short list will go to the Board of Supervisors.



◀ Plant Interconnect Construction



RWRAC Chair's Message

The Regional Wastewater Reclamation Advisory Committee was established in 1986 to provide advice and guidance to the Pima County Regional Wastewater Reclamation Department on policy and financial issues, as well as to provide information and education on wastewater issues to the community. This Annual Report for FY 2008/09 documents the activities of the Committee and the Department in support of these goals.

The Committee and the Department worked together in FY 2008/09 to develop the 2008 Financial Plan, which was approved by the Board of Supervisors in February, 2009. This Financial Plan established the necessary rate increases to continue to fund the operations and maintenance activities of the Department as well as to finance the Capital Improvement Program expenditures.

In other major activities, four members represented the Committee on the City/County Water and Wastewater Infrastructure, Supply and Planning Study during the year. Phase 1 of the Study began April 1, 2008 and consisted of a series of water and wastewater topics presented every two weeks between June and October 2008 and then five major workshops from November to February, 2009. The Phase 1 Report for the Study was published in May 2009 and is available through a link on the RWRAC website www.pima.gov/wwm.

The Committee has also been closely monitoring the progress of the System-wide Odor Control Plan. A description of the innovative OdoWatch® system installed at the Roger Road WRF is included in this Report. In addition, the Committee requested briefings from staff on the issues of "emerging contaminants" in water and wastewater and the status of take-back programs for pharmaceuticals (unused medications) and personal care products.

The RWRAC Committee looks forward to continuing its close working relationship with the Department on the implementation of the ROMP program, the development of the FY 2009/10 Financial Plan and the safe and effective operation of the regional wastewater system.



Adam R. Bliven

Adam Bliven, P.E., Chair



Sheila Bowen

Sheila Bowen, P.E.,
Vice Chair

Odor Control Program

Staff presented periodic Odor Control Program updates to the Committee, including the innovative installation of the OdoWatch® system that has been deployed at the Roger Road WRF.

Staff advised that the Department was the first utility in the United States to purchase the OdoWatch® system. The OdoWatch® system cost the Department \$185,000. Real-time and historical monitoring and weather data and odor plume maps are served by the system, which carries a performance guarantee from the company. The OdoWatch® system validation was completed in June. The Environmental Protection Agency (EPA) conducted an environmental technology verification of the OdoWatch® 2.0 system at their Advanced Monitoring Systems Center in order to facilitate the recommendation and justification for other utilities. The OdoWatch® system at the Roger Road WRF may be involved in EPA's field verification tests.

The e-nose is the odor sensor portion of the OdoWatch® system, which both identifies and quantifies odors. For example, an odor plume and its strength can be determined to emanate from digesters rather than primary clarifiers. While an e-nose can be located anywhere on the facility, typically it is located adjacent to an odor source. To provide a comprehensive monitoring system at the Roger Road WRF, e-noses needed to be strategically placed to monitor disparate odor sources across the plant site for all wind directions. The real-time monitoring data resides on a computer at the Conveyance Division. The engineer and plant operators can observe the site's dynamic odor map and odor alerts at any time of the day.

Odor Control staff are continuing to monitor all of the odor control systems at the Department's wastewater reclamation facilities and the conveyance system. The Department continues to pursue continuous improvement to make the system more affordable, efficient and effective.

OdoWatch monitoring unit at the Roger Road WRF



Solar Projects



Groundbreaking ceremony for the Roger Road WRF Solar Project on August 12, 2009

Staff informed Committee members that the Roger Road WRF was selected as the site for the County's first solar project under Master Agreements with the Solon Corporation and SunEdison, which were instituted in August 2008. The Department selected the Solon Corporation to install solar equipment on 10 acres of land north of the Roger Road WRF. This project is being performed under a power purchase agreement (PPA) and a solar licensing agreement (SLA) with Solon. Once installed, the equipment will generate approximately 1 megawatt (MW) of solar power. Under the PPA, the contractor will own the equipment and the County will lease the contractor the land under the SLA. The power generated will then be sold by Solon to the Department at a specified amount per kilowatt hour (kWh). The cost of this additional power will be included in the Department's regular utility bill, so there is no capital involved.

In addition, the Department is in the procurement process for its own solar project. Requests for Proposals for multiple RWRD sites have been received and are being evaluated by a selection committee. One proposal is for a thermal energy solar recovery project at the northern end of the existing Roger Road facility. Thus, there may be solar projects on both the northern and southern ends of the campus. There is also a possibility of solar energy projects at the Ina Road and Corona de Tucson WRFs.

In summary, the Department is looking for ways to use solar power and other renewable energy sources to lower its costs. The Department supports the County Sustainability Action Plan. This solar project is the first step that will meet the over-arching sustainability goal—15% of energy used by all County facilities must come from renewable energy sources by 2025.

Director's Message

The RWRAC Committee and the Department are entering a very challenging period.

The Department must continue to operate and maintain 11 treatment facilities and 3,400 miles of conveyance while accomplishing the regulatory mandated schedule for the ROMP with the significant financial obligations and increased financial and construction responsibilities of the ROMP.

The ROMP Program moved ahead rapidly this year. The Program is on schedule and on budget. The planning and design for the \$41 million Plant Interconnect was completed and a Notice to Proceed with construction was issued on May 18, 2009. Additional milestones in the planning and design of the upgrade and expansion at the Ina Road WRF were achieved as well. The planning for the new Water Reclamation Campus is well underway, while the planning and design of the interim biosolids improvements at the Ina Facility was completed.

The System-wide Odor Control Program has been implemented. An OdoWatch® system was installed at the Roger Road WRF with multiple sensors and real-time reporting so that the gains in odor control management at the Facility could be objectively measured and maintained.

The preparation and review of the 2008/09 Financial Plan involved much staff work, the analysis of our financial consultants and the review of our Finance Department. We then incorporated the feedback and recommendations from our RWRAC Committee and, through the Committee, from the public. The end result was the Board of Supervisors approval of significant rate increases, which enable the Department to establish a sound revenue stream and funding framework for the challenges ahead.

The accomplishments shown in this Annual Report to the Board of Supervisors demonstrate the positive support and communication between the Department and the Committee throughout FY 2008/09. The Department looks forward to continued support and assistance from the Committee in FY 2009/10 and thanks each individual member for his/her dedication and energy.



Michael Gritzuk, P.E., Director

Capital Improvement Program

The Committee was advised that the FY 2008/09 Capital Improvement Program had expended over \$75 million on treatment and conveyance projects. The single largest project was the Avra Valley WRF Biological Nutrient Removal Oxidation Ditch (BNROD) 4.0 MGD expansion. This project replaced the existing 2.1 WRF with an upgraded and expanded facility utilizing ultra violet (UV) disinfection and filtration, which is permitted at A class water for aquifer recharge. The total cost of the project over several years was \$56 million.



*Avra Valley WRF
clarifiers and
BNROD*



Santa Cruz Interceptor, Phase 2

Other CIP projects completed or underway in 2008/09 included the completion of the Biolac facility and subsequent UV disinfection and filtration at the Marana WRF, construction of Phase 2 of the Santa Cruz Interceptor, continued Large Line rehabilitation and construction projects, as well as several Roger Road and Ina Road WRF rehabilitation projects.

2008/09 Financial Plan

On February 17, 2009, the Board of Supervisors accepted the Department's FY 2008/09 Financial Plan and also approved the Financial Plan's Scenario C. Scenario C includes \$1.50 increases in the base Service Fee (which is currently \$6.82 per month) in March 2009 and January 2010, as well as 12.75% increases in the volumetric fee in March and July 2009, and January 2010.

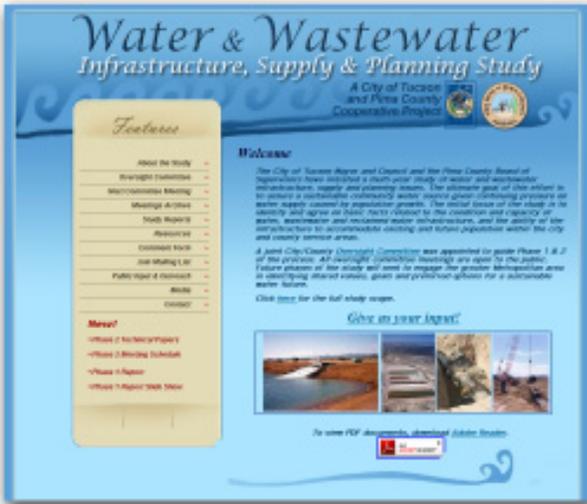
Staff also informed Committee members that the Board of Supervisors approved Scenario C with the caveat that the Department will review its financial position relative to connection fee permits and revenues. The Department will return to the Board in December 2009 to revisit the potential for connection fee increases in January 2010.

The Board of Supervisors were pleased that the Department recommended a modification to the Sewer Out-

reach Subsidy (SOS) Program to include the base Service Fee. After the proposed modification to the SOS Program and the base Service Fee, residents most in need of assistance would actually pay less of a monthly sewer bill after all of the rate increases through January 2010. Staff also reported that the Department made a commitment to the Board to work with the Pima County Community Action Agency to make the SOS Program more user friendly.

The Board of Supervisors also directed the Department to actively pursue Federal Stimulus Package Funding. Staff met with Water Infrastructure Finance Authority (WIFA) executives and presented approximately \$98 million of CIP projects. The Department is continuing to work to secure some of these federal funds.

Joint City/County Study—Planning for a Sustainable Water Future



Website of the Water Study includes reports, technical papers and presentations

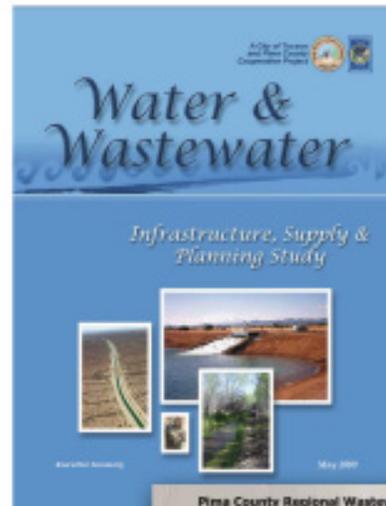
and Water Planning, Population Growth Follow-Up (Jim Barry), Growth, Urban Form and the Cost of Infrastructure, City/County Water Conservation, Stormwater Harvesting, Water for the Environment, Riparian Protection, Reclaimed Water, Conservation (Water Casa), City/County Consolidated Drought Management Plan, and Riparian Protection. Interdisciplinary teams of City/County staff are working collaboratively to develop this series of technical papers, which are posted as available on the Study website.

In summary, Phases 1 and 2 are generating an enormous body of work that examines a broad range of critical water resource management and land use planning issues in a novel way. This collaborative dialogue between City and County staff and the public is leading to innovative, coordinated strategies for planning for a sustainable water future.

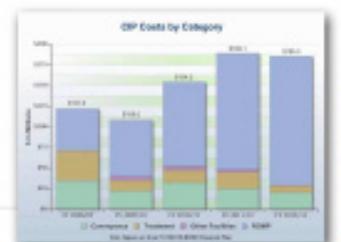
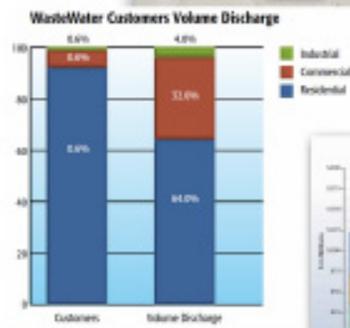
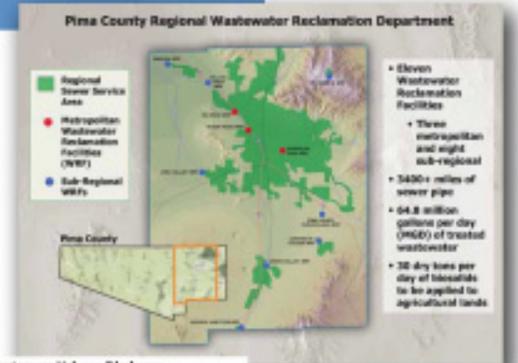
Staff provided monthly updates on the joint City of Tucson/ Pima County study of water sustainability. Initiated in April 2008, the City/County Water and Wastewater Infrastructure, Supply and Planning Study (Study) is a multi-year effort to plan for a sustainable water future in light of continued pressures on water supplies from population growth. The City of Tucson Mayor and Council and Pima County Board of Supervisors adopted a joint scope of work for the Study, which describes five phases beginning with a focus on the City of Tucson and Pima County's water and wastewater service areas. Questions posed by the Scope include: "What are the critical factors that must be considered in planning for a sustainable water future?" and "What choices can we make today that will maintain or enhance quality of life for all and balance human, environmental and economic needs for water?" A 12 member citizen oversight committee was appointed to guide Phases 1 and 2 of the Study. Meeting notices are widely publicized and broad participation is encouraged. For complete information visit the study website: www.tucsonpimawaterstudy.com.

The Phase 1 report, completed in May 2009, provides concrete facts about the condition and capacity of the water and wastewater infrastructure and water supplies and identifies a range of critical planning factors that should be considered in planning for a sustainable water future.

In Phase 2 of the Study, which is now underway, these themes are being explored in depth through a series of 13 technical papers currently under development. These papers include: *Additional Water Resources*, *Water Quality*, *Water as an Economic Resource (Tucson Regional Water Coalition)*, *Cost of Growth*, *Integrating Land Use*



Phase 1 Report of the Water Study includes detailed information about the condition and capacity of wastewater infrastructure in Pima County



Industrial Wastewater Control Program

Staff informed Committee members that the Industrial Wastewater Control (IWC) section runs the County's Pretreatment Program. IWC was formed in 1982 as a result of the Federal Clean Water Act. IWC operates under the Industrial Wastewater Ordinance (Chapter 13.36 of Pima Code). This Ordinance applies to industries that discharge into the County's sewer system and it outlines specific limits on what can be discharged to the sewer system. In 1991, the Ordinance was amended to adopt the pretreatment program changes implemented by the Environmental Protection Agency, which required the IWC to develop an enforcement response plan. IWC is currently developing an amendment to the Ordinance to include a fat, oil and grease program.

The IWC Ordinance applies to discharges of non-domestic wastewater. IWC issues specific industrial wastewater discharge permits to industries that have specific discharge limits. Regulated industries include vehicle washing and repair, photo developing, schools and hospitals, food service facilities, metal plating facilities, grocery stores, seepage haulers, etc.

This permit gives the permittee authorization to discharge industrial wastewater to the sewer system, but includes some limits/liabilities. Permits are for five

years and require the permittee to conduct self-monitoring. If they have any violations there are some notification requirements. If permittees fail notification requirements, they receive a penalty. Legal actions include the ability to assess a penalty (Pima County Code 13.36) up to \$25,000 per day for each violation.

In 1991, the Department developed its Enforcement Response Plan that identified how it would handle violations of its Pretreatment Program. Penalties may include a non-judicial settlement agreement or a judicial complaint or consent decree. Negotiated settlements are put up for public comment on the agendas for Board of Supervisors meetings. After 30 days, the settlement goes back to the Board for ratification.

Staff informed Committee members that grease management has become a big problem for the Department and IWC. When a stoppage occurs, the County's Risk Management Department gets involved because there are typically claims against the County. IWC investigates these claims, as the County wants to recoup some of those costs from industry. The new Fat, Oils and Grease Program will have procedures to minimize fat, grease and oils from entering drains.

Pharmaceutical Take-Back Program

Staff informed Committee members that many communities are implementing take-back programs for pharmaceutical and personal care products. The three main drivers are to prevent prescription drug abuse (predominantly among teenagers), to prevent accidental poisoning, and to prevent damage to the environment and the water supply from disposal into the sewer system. There are 24 take-back programs throughout the United States. The Compliance and Regulatory Affairs Office (CRAO) completed a comprehensive research survey of 21 take-back programs in the U.S., Europe, Australia and Canada to see the structure and common elements.

Regulatory obstacles impede take-back programs in the U.S. These include the Drug Enforcement Agency's (DEA)

Controlled Substances Act, which imposes strict regulations on who can dispense and receive medications. Currently only law enforcement agencies can receive controlled substances - they cannot be taken back by pharmacies in the U.S. The Resource Conservation and Recovery Act (RCRA) standards dictate that all controlled substances must be disposed of through a witnessed incineration by either a pharmacist or law enforcement. Postal restrictions prevent consumers mailing controlled substances back to any collection site. These regulations are preventing the implementation of take-back programs in the U.S. However, administrative and legislative proposals on the national level are now being advanced to provide reasonable options for the safe disposal of unused medications without the tight restrictions on controlled substances. The National Pharmaceutical Dialog meetings, hosted by pharmaceutical companies, provide a forum to identify obstacles and ascertain options for take-back programs.

In addition to the survey of take-back programs, the Department has aggressively worked to organize a stakeholder group of over 20 jurisdictions, agencies and community groups to develop principles and practices for a comprehensive community-wide plan for the safe disposal of unused medications through take-back programs. The stakeholder group is adding new members each month and this planning will continue in FY 2009/10.



Public Outreach for the Take-Back Program

Regional Wastewater Reclamation Advisory Committee

In FY 2008/09, the Committee was pleased to welcome three new members: Jim Barry, appointed by the Citizens' Water Advisory Committee; Bill Katzel, who was appointed by Ray Carroll; and ex-officio member Jeff Biggs, Director, City of Tucson Water Department. Two members left the committee: John Sawyer and John Carhuff.



The RWRAC Committee touring Roger Road WRF in October 2008

The Regional Wastewater Reclamation Advisory Committee (RWRAC) was established by the Pima County Board of Supervisors in 1986 to act as its official advisory body on wastewater management matters. As the regional sewerage management agency for most of Eastern Pima County, the Regional Wastewater Reclamation Department provides wastewater collection, treatment and disposal services.

The RWRAC is charged with advising the Department on program and policy decisions, as well as short- and long-term operating capital program funding needs and the annual Financial Plan. The Committee holds monthly meetings to accomplish these functions. During the last fiscal year, the RWRAC discussed and acted upon a number of issues of importance to Pima County as described in this report.

District 1

Barbee Hanson
Corey Smith

District 2

Sheila Bowen, Vice
Chair
Armando Membrila

District 3

Adam Bliven, Chair
Brad DeSpain

District 4

John Carlson
Bill Katzel

District 5

Ann Marie Wolf
Rob Kulakofsky

Citizens' Water Advisory Committee

Jim Barry

Pima Association of Governments Environ- mental Planning Advisory Committee (EPAC)

Marcelino Flores

AZ Water (formerly the AWPCA)

Mark Stratton

Ex-Officio

Mike Gritzuk, P.E.,
Director, RWRD
Jeff Biggs, Director,
Tucson Water

Treatment Division

The Committee was advised that, in addition to planning and design activities for the ROMP program during the year, the Treatment Department management and staff had actively encouraged employee innovation and fiscal responsibility. As a result, several recent projects and initiatives completed were from Department-originated ideas.

- **Ina Road Centrate Line.** The centrate line from the centrifuge to the headworks had been plugging up over the years. Staff believed it was struvite buildup. It would cost approximately \$750,000 to replace the line. A portion of the line was cut open and the blockage was cleaned. Cleanout ports were installed along the line. The cost was less than \$50,000.
- **Oxygen Plant.** There were problems with the quantity and quality of oxygen. The only option was to buy liquid oxygen to supplement the process at an additional cost of \$2,300 per day. A long term fix was to replace the media at the oxygen plant. An employee went online and found the original 1970 patent for the process. He discovered an adjustment in the patent that no one had ever heard of before. The savings was

about \$1 million.

- **Natural Gas Transporting.** The Department is currently on a sales contract with Southwest Gas but will be switching to a natural gas transporting contract to take advantage of a \$700,000 per year savings due to the current low natural gas market rate.
- **Multi-Skill Program.** Operating and maintenance employees will be cross-trained, allowing the employee to control their own career development. Employees progress at their own rate based on their own motivation and career development goals. This provides significant labor cost savings and more motivated employees. There will be a pilot program at the Ina Road facility for the fiscal year FY 2009/10. Ina Road will be run by 28 people instead of 40.

In addition, for the last five years all eligible treatment plants have received platinum, gold or silver awards from the National Association of Clean Water Agencies (NACWA). This is recognition of excellence in wastewater treatment as measured by compliance with permit requirements.

Wastewater Management Advisory Committee Activities

July 2008 – June 2009

August 2008 The Committee learned that the Department awarded the design contract for the Ina Road WRF upgrade and expansion project to CH2MHill. The committee received the Odor Control Quarterly Report, which indicated significant reductions in odor system-wide and reported that the Odor Control Management Program is now in place. The Committee received a presentation on Pharmaceuticals in Wastewater Supply from the Compliance and Regulatory Affairs Office.

September 2008 The Committee received an update on Department staffing levels. Despite a County-wide hiring freeze, the Department has been able to fill critical positions and maintains industry standard staffing levels.

October 2008 *The Committee unanimously voted to approve a joint RWRAC/CWAC meeting to be briefed on the Phase 1 Report of the Water Infrastructure, Supply and Planning Study.* The Committee learned that the Department's consultant, Greeley and Hansen, recommended the design-build-operate (DBO) method for the ROMP. DBO includes a design consultant, a contractor and a private operating entity for the facility. After the Department conducted extensive evaluation of that method, the Department accepted that recommendation as it was the most cost-effective. Major factors included low cost on life cycle cost and maximum transfer of risk from the owner to the consortium, creating an incentive for the entity to perform. *The Committee voted to approve and submit an Ordinance Amendment, adding the Director of Tucson Water to sit as an ex officio member of the Committee.* The Committee took a tour of Roger Road facility.

November 2008 Committee members were updated on the Pima Association of Governments 208 Amendments for the ROMP and the Marana Designated Management Agency. In addition, the Committee was informed about the preparation for the 2008/09 Financial Plan and the details of various rate models. *The Committee voted unanimously to make a recommendation on rate increases to the Board of Supervisors.*

December 2008 The Committee was given an update on safe disposal methods of pharmaceuticals and personal care products. In addition, the committee was updated on the Industrial Wastewater Control, a pretreatment program run by the County which monitors what is discharged into the sewer system and maintains an enforcement response plan.

January 2009 *The Committee voted to recommend a rate scenario in which there would be and increase in the base Service Fee of \$1.50 in March 2009 and January 2010, as well as 12.75% increase in the volume fee in March and July 2009, and January 2010.*

The Committee also voted to accept the Financial Plan and forward it to the Board of Supervisors. The Committee participated in a joint public meeting with the Citizens' Water Advisory committee for a presentation of the Draft Phase 1 Report of the City/County Water & Wastewater Study.

February 2009 The Committee was updated on two major solar power projects.

March 2009 The Committee was updated on the Department's installation of the OdoWatch® system, an odor detection system. The Department is the first in the nation to use the system for wastewater odor detection.

April 2009 The Committee learned that the Department had received \$2 million principal forgiveness loan from the Water Infrastructure and Finance Authority of Arizona as part of stimulus funds from the American Recovery and Reinvestment Act.

May 2009 The Committee discussed the impact of the Board of Supervisor's decision to not have a bond election in 2009. In addition, the Committee learned that Certificates of Participation would be sold as a bridge measure.

June 2009 The Committee was briefed on the Department's participation, along with the City of Tucson Water Department and the Pima County Flood Control/Stormwater Department, in a grant funded project awarded to the Electric Power Research Institute/Water Environment Research Foundation. Pima County was one of two national representatives chosen to look at holistic approaches to water, wastewater and stormwater planning which are innovative, sustainable and organic.

Regional Wastewater Reclamation Advisory Committee Fiscal Year 2009/10 Meetings

August 20, 2009

February 18, 2010

September 17, 2009

March 18, 2010

October 15, 2009

April 15, 2010

November 19, 2009

May 20, 2010

December 17, 2009

June 17, 2010

January 21, 2010

Agendas and minutes are available on the Regional Wastewater Reclamation Advisory Committee web page:

www.pima.gov/wwm/programs/rwrac

General Regional Wastewater Reclamation Department activities can be viewed on the Department's website:

www.pima.gov/wwm

Regional Wastewater Reclamation Advisory Committee meetings are generally held on the third Thursday of every month, in the Pima Association of Governments' 5th floor conference room, Transamerica Building, 177 North Church Avenue, Tucson.

Committee Coordinators:

Ed Curley 740-6500 (ed.curley@pima.gov)

Diana Hofsdal 740-6552 (diana.hofsdal@pima.gov)