



STRATEGIC PLAN

FY 14/15 - FY 18/19



PIMA COUNTY
WASTEWATER RECLAMATION

MESSAGE FROM THE DIRECTOR

Today our community and our department are reaping the benefits of having invested in state-of-the-art wastewater treatment infrastructure. As a result of completing the Regional Optimization Master Plan (ROMP) in 2014, we are now producing extremely high-quality reclaimed water at all of our wastewater treatment facilities. Reclaimed water is a growing, renewable water resource for the community that can be put to beneficial reuse and can offset demand for limited, non-renewable groundwater resources. Pima County Regional Wastewater Reclamation Department (PCRWRD) is committed to contributing to our community's sustainable water future through optimizing opportunities for reclaimed water reuse. Additionally, PCRWRD is pursuing exciting opportunities to partner with the academic community, other water utilities, and the private sector to advance research and identify innovative solutions for future water quality, and regulatory and sustainability issues. Our commitment to sustainability also includes a focus on optimizing processes to reduce chemical and energy consumption and increase energy and resource efficiency.

Moving into the post ROMP era, PCRWRD is poised to continue investing in its aging infrastructure. A major investment in rehabilitating the sewer conveyance system is programmed over the next five years. These projects, and our operations in general, will be implemented in the spirit of creating a zero-accident safety culture and applying the best practices demonstrated in the ROMP for value engineering and efficient project delivery.

People – employees and customers – are other top strategic priorities. Achieving our vision to be an industry leader means creating a best-in-class workplace where innovation is encouraged; contributions are recognized; and employees grow their skills and feel a sense of commitment to excellence. Happy employees lead to happy customers. We are expanding our ability to provide excellent customer service by increasing our use of results-oriented continuous improvement methods that generate measurable improvements in the timeliness, quality and efficiency of our service delivery.



In short, we are in a shining moment in our institutional history. This updated Strategic Plan provides a roadmap for building on our prior successes and creating an even brighter future for Pima County residents and the environment over the next five years.



Jackson Jenkins
Director, PCRWRD

OUR VISION

To be an industry leader in the management and sustainability of the water reclamation cycle and other renewable resources.

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STRATEGIC PLAN OVERVIEW

OUR MISSION

To protect the public health, safety and the environment by providing quality service, environmental stewardship, and renewable resources.

The Pima County Regional Wastewater Reclamation Department (PCRWRD) Strategic Plan is the product of a collaborative process to create a shared vision for building upon our current strengths as we address our future opportunities. The planning process engaged senior managers at four separate sessions over the past year during which the team reflected on what we are doing and how we can do it better. An employee satisfaction survey and biannual all-staff meetings (“Pillar Talks”) also provided input from employees department wide. This input, coupled with the department’s budget planning, performance measurement, and continuous improvement efforts, help define the direction of our organization and charts a course of action over the next five years.

Planning strategically in an environment of change and uncertainty requires flexibility. As such, this is a living document and will be updated annually to respond to the immediate needs of our community, while also ensuring that our mission to protect public health, safety, and the environment through quality service, environmental stewardship, and renewable resources is fulfilled.

THE SIX PILLARS OF OUR ENTERPRISE

PCRWRD has six areas of strategic focus which are termed “Pillars”:

- The Employees Pillar sets the strategic direction for creating a positive work environment where employees can thrive. Internal staff training, communications, knowledge management, employee development, and teamwork are facets of the Employee Pillar.
- The Compliance Pillar provides the strategic framework for achieving compliance with a complex array of regulatory requirements. Permitting, lab testing and analysis, and industrial wastewater control functions fall within the scope of this Pillar.
- The Safety Pillar establishes the department-wide strategies, goals and standards for becoming a zero-accident safety culture. Safety functions are also conducted within each Business System in alignment with the department-wide strategic objectives and standards.
- The Customers Pillar seeks to advance customer satisfaction internally and externally. Proactive public engagement, communications and feedback are key strategies of this Pillar.
- The Financial Pillar ensures fiscal responsibility to the public and rate payers. It provides strategic guidance for budget planning and management.
- The Sustainability Pillar establishes department-wide guidance for sustainability procedures and employee training on “green” workplace practices. Additionally, it provides strategic direction for major department and county-wide programs, such as Energy Management, Water Resources Management and Resource Recovery and Reuse.

There are three operational areas that comprise PCRWRD's Core Business Systems:

- The Growth and Development Business System includes the construction and repair of infrastructure to serve existing and future customers, as well as growth planning in coordination with all regional jurisdictions.
- The Conveyance Business System includes the operations, maintenance, and rehabilitation of the sewer pipes, pumps, and manholes; and
- The Treatment Business System includes the operations and maintenance of the wastewater reclamation facilities.

Each Pillar and each Core Business System is discussed in separate sections of the Strategic Plan. Each section provides a description of the vision, goal, opportunities, major projects and programs, community benefits, and key performance indicators.

GETTING TO RESULTS

What gets measured gets done. PCRWRD is committed to this philosophy and has established a scorecard of key performance indicators to drive performance results throughout the organization. PCRWRD measures success in each of the Pillars. Performance measures are also established in each of our Core Business Systems to better align our operations with the strategic focus of the Pillars.

Continuous improvement is embedded in everything we do. A process-based and systematic approach to continuous improvement is being employed to enhance our ability to get to measurable performance results. The methodology involves employee collaboration and team work to define standardized procedures, performance goals, opportunities, and action plans for improving processes. Process performance measures are established to ensure staff at all levels of the enterprise have a shared and tangible goal to work towards.

The PCRWRD Strategic Plan serves as a decision support tool to identify and resolve problems, anticipate challenges ahead, and keep us on course. They are a work in progress and will be further refined to provide an ever sharper tool for achieving measurable results and for aligning resources with our vision and goals.

EXECUTIVE TEAM MEMBERS

Jackson Jenkins

Director

John Sherlock

*Deputy Director,
Treatment Division*

John Warner

*Deputy Director,
Conveyance Division*

Eric Wieduwilt

*Deputy Director,
Engineering Division*

Jennifer C. Coyle

*Manager,
Special Assistance Office*

Laura Hagen Fairbanks

*Manager,
Community Relations Office*

Jing Luo

*Manager,
Sustainability Office*

Rita Mercer

*Manager,
Safety Office*

Jeff Prevatt

*Manager,
Compliance & Regulatory
Affairs Office*

Jaime Rivera

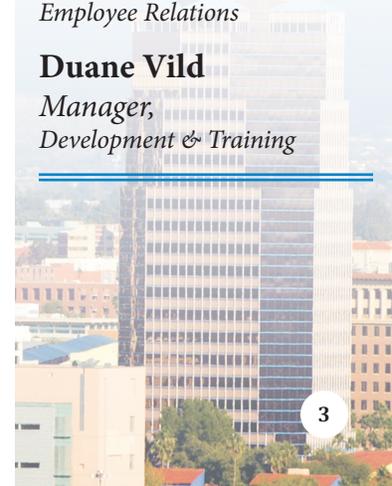
*Manager,
Capital Improvement Program*

Judy Scrivener

*Manager,
Employee Relations*

Duane Vild

*Manager,
Development & Training*



ABOUT WASTEWATER RECLAMATION

BOARD OF SUPERVISORS

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Chair

District 3

Ally Miller

District 1

Ramón Valadez

District 2

Ray Carroll

District 4

Richard Elías

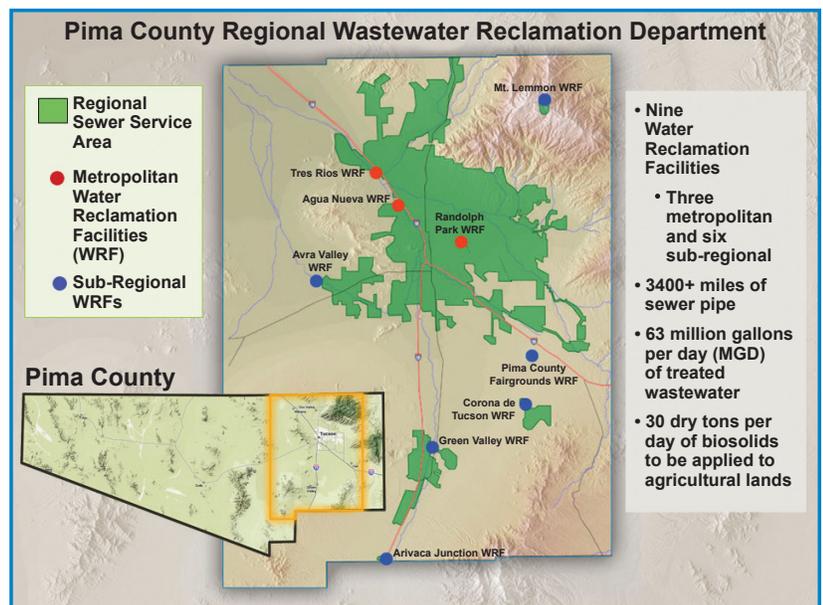
District 5

PCRWRD operates and maintains the second largest wastewater reclamation system in Arizona. Approximately 500 employees, working primarily in the areas of wastewater treatment, conveyance, and growth and development, serve 259,883 customers. PCRWRD's treatment operations consist of nine wastewater reclamation facilities processing more than 65 million gallons of wastewater every day across a 700-square mile service area. Its conveyance system consists of 3,400 plus miles of pipes, 73,000 manholes and clean-outs, and 27 lift stations. PCRWRD's engineering services oversee the construction of new facilities to serve growth and development in compliance with regulatory requirements, design specifications, and codes.

Pima County is authorized to own and operate the regional sewer system by Arizona Revised Statutes §11-264. The federal Clean Water Act (CWA), established to protect surface waters, governs the operation of this system by employing a variety of regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways and to help finance municipal wastewater treatment facilities. The wastewater treatment function is primarily covered under Section 208 of the CWA which requires that a framework be established to coordinate treatment on a regional basis.

The department provides 97% of Pima County's total sewage treatment capacity and is the Designated Management Agency (DMA) for the county, as recognized in the Area-Wide Water Quality Management Plan (the "208 Plan"). In Pima County, the Arizona Pollutant Discharge Elimination System (AZPDES) governs effluent quality for surface discharge standards and the Aquifer Protection Program (APP) for aquifer discharge standards.

The department operates financially as an enterprise fund. Ratepayers provide 87% of PCRWRD revenues. Approximately 12% of PCRWRD revenues come from development-related sources: connection fees (9%) and capital contributions (2.7%). Regular operations and maintenance (O&M) expenditures are funded through these revenues. For its Capital Improvement Program budgets, PCRWRD relies heavily on revenue bonding. Funding for large projects is secured through the sale of sewer revenue bonds, obligation bonds, and public infrastructure loans. As a result, the department is required to maintain and finance its operations in compliance with covenants to the bond purchasers and the public financing authorities.

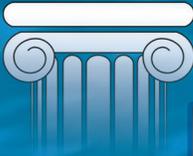




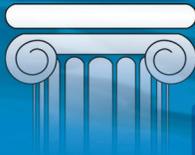
EMPLOYEES



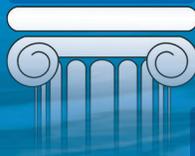
COMPLIANCE



SAFETY



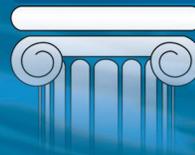
CUSTOMERS



FINANCIAL



SUSTAINABILITY



ENTERPRISE PILLARS

OUR GOAL

To develop a collaborative, team-oriented workforce that is fully trained, fairly compensated, empowered, and accountable with clearly defined career paths for a changing work environment.

VISION FOR THE FUTURE

Today and into the future, PCRWRD makes investing in its staff a priority. Our employees are a critical priority and the department strives to become a best-in-class workplace that attracts and retains highly qualified and dedicated employees. The vision for the future is one in which employees are excited to be part of an environment where innovation is encouraged and appreciated, and where their contributions are recognized. In this dynamic environment, employees feel a sense of commitment to excellence and are motivated to grow their skills and apply their talents. Collaboration is a key element of the PCRWRD employee vision.

Key elements for becoming a best in class workplace include:

- The continuous development of formal programs to develop individual employees' skills and support their professional growth. Training programs for managers and supervisors emphasize the skill-sets needed to create transformational leaders who engage employees.
- The continuous improvement and strategic planning processes engage employees in creating clear, tangible goals and provide a sense of direction, purpose, empowerment and belonging.
- The understanding of processes and customer requirements supports knowledge management and consistent training.
- Multiple forums for two-way dialogue allow employees to be heard and expectations and recognition to be communicated.
- The provision of safe, secure facilities and adequate tools and resources are critical for a successful workplace.

OPPORTUNITIES

Training

PCRWRD is preparing its workforce to meet future challenges and changes resulting from technological advancements, turnover, diversity and multi-generational factors. Incorporating modern learning methods (e.g. simulation) that motivate employees to learn new skills and enhance employee productivity is key to the department's success. Preparing employees to assume leadership roles in the department is critical to successful succession planning, and is dependent on the expansion of programs to develop and train learning groups as well as individual employees.

Knowledge Management

Capturing knowledge and making it accessible for future employees is a priority. As the "baby boomer" generation continues to age, the department is experiencing increasing numbers of retirements. Within the next five years, 36.5% of PCRWRD's workforce will be eligible to retire.

Culture Change

PCRWRD recognizes that employee development is essential to PCRWRD operations. To this end, the department fosters an organizational culture that is collaborative, team oriented and skilled in process management. Developing these organizational qualities is necessary to strengthen communications, reduce "silo-effects," and

encourage employees to engage in continuous improvement. When the culture encourages employees to feel ownership of their work areas and processes, they are motivated and better able to achieve our visions and goals.

MAJOR PROJECTS AND PROGRAMS

Training

PCRWRD will establish Learning Groups for each work unit and will focus resources on the individual needs of each group. The department will also implement Project Management training to improve the efficiency of projects and improve collaboration among Project Managers. Administrative employees will be able to take advantage of an Administrative Services Training Program that will be designed to increase efficiency and collaboration among those who serve in these types of positions. To improve the Operations and Maintenance (O&M) Training Program, RWRD will develop O&M Team lead positions that will result in proper leadership in this job category and provide necessary leadership to team members.

An incident Command System tabletop training exercise will bring together employees from a variety of sections and divisions who will need to collaborate and work closely together in the event of an emergency.

To ensure employee training is documented and tracked, the department will implement a learning management software program. In addition to documenting and tracking employee development and training, this program will be able to generate reports on staff's participation in these efforts.

Leadership Development

To develop the department's leadership, PCRWRD must foster team building among senior managers and Executive Team members to improve communications, productivity and collaboration. To this end, RWRD will provide professional development for the Executive Team and senior management through coaching services. In addition, the department needs to develop a change management program to address the challenges of the impending retirements of numerous "baby boomer" employees.

Evaluation and Assessment

Computer skills, communication skills and other essential skillsets are critical to the fulfillment of PCRWRD's mission and vision. To this end, the department will conduct assessments of the necessary skillsets among its staff, and evaluate what types of training and development activities are needed.

Employee Communications

"Pillar Talks" are Biannual open forums held at a variety of work sites. The Pillar Talks provide opportunities for employees to communicate one-on-one in a casual setting with the director. In addition, the director has an open-door policy. Any department employee can schedule a meeting with him to discuss issues or concerns without fear of retribution.

Performance Plans and Appraisals provide the opportunity for private, one-on-one meetings between employees and their supervisors. During these sessions, feedback



EMPLOYEES PILLAR

KEY PERFORMANCE INDICATORS

- Vacancy Rate
- Absenteeism Rate
- Turnover Rate
- Number of Promotions
- Percent Overtime
- Percent of Required Performance Plans and Appraisals Issued
- Training Hours per Employee

is provided and discussion and planning for the development/improvement of skills and responsibilities take place.

Management Review Meetings attended by senior management are held three times a year. During these large group meetings, senior staff members monitor key performance indicators, discuss business opportunities, and update the Strategic Plan.

The Annual Strategic Planning Retreat is attended by a broad group of supervisory management, and executive-level employees. This retreat is held at the beginning of the fiscal year, and provides for the review of the strategic plan which will guide department efforts over the course of that year.

In fiscal year 2014/2015, an employee satisfaction survey will allow the department to track improvements or declines in employee satisfaction. The results of the survey will be compared against results from a 2012 survey of managers and a 2013 survey of all employees. Survey results will be used to measure progress and identify areas of continuing concern. PCRWRD also communicates with its workforce through the monthly employee newsletter The Pipeline. The newsletter, which is distributed to all staff, provides information about departmental activities, successes and challenges.

Strategic Planning

The PCRWRD Strategic Plan is updated annually and serves as a decision support tool that is used to work through problems and anticipate challenges ahead. The Plan measures performance and focuses resources on clearly defined goals and priorities within the six foundational Pillars (Employee, Compliance, Safety, Customers, Financial and Sustainability), and the three Core Business Systems (Growth and Development, Conveyance and Treatment).

Continuous Improvement

The formal Continuous Improvement Program currently implemented in the Conveyance and Growth and Development Business Systems will be expanded to the Treatment Business System. This will include training in process management skillsets and establishment of cross-functional teams to define and improve processes through use of process mapping methodology. Critical operational information is referenced on process maps providing both a training tool and a knowledge retention tool. This methodology also fosters collaborative problem solving, communication, empowerment and accountability through the use of a "Plan-Do-Check-Act" approach.

BENEFITS

Long term benefits of the department's commitment to the Employees Pillar include:

- Improved employee morale and job satisfaction;
- Increased employee retention;
- Increased cooperation, communication, and team work;
- More collaborative problem solving and shared decision-making;
- Improved trust; and
- Improved employee and operational performance.



COMPLIANCE PILLAR

VISION FOR THE FUTURE

Nearly a decade ago, Pima County launched planning efforts for the Regional Optimization Master Plan (ROMP) to comply with state environmental standards at the Ina Road and Roger Road Water Reclamation Facilities (WRFs). Through that process, it was decided that instead of rehabilitating the Roger Road WRF, that the facility should be replaced. The facility that replaced the Roger Road WRF has been named the Agua Nueva WRF. The Ina Road WRF was renamed the Tres Ríos WRF. With substantial completion of both facilities in 2013, the Arizona Department of Environmental Quality's (ADEQ) environmental requirements have been met.

The vision now includes continued efforts to build on prior successes at improving the quality of our discharges that sustain flow in the Santa Cruz River and the quality of recycled water produced at Pima County's regional and sub-regional facilities. PCRWRD will continue to be an industry leader in taking innovative approaches to meeting environmental regulatory objectives. Future work will enhance and maintain the rapport and professional respect we have developed with key regulatory agencies.

The future Water and Energy Sustainability Center ("Water Campus") will also continue to provide opportunities to address future water quality and sustainability issues for the entire community.

OPPORTUNITIES

Disinfection Enhancements

Disinfection is the most critical step in the treatment process for ensuring protection of public health. This process also presents the greatest challenge for maintaining compliance, especially when chlorination is the method of disinfection. Chlorination requires careful management because of daily sampling requirements. Numerous chemical interactions also require keen attention. In addition to daily monitoring of disinfection parameters (E. coli & fecal coliforms), PCRWRD must keep surface water discharges free of chlorinating agents, maintain adequate dissolved oxygen levels, and prevent excessive formation of disinfection by-products such as Trihalomethane (THM).

Fairgrounds WRF

The Fairgrounds WRF is a small, 20,000 gallons per day (on a monthly basis average), evaporative/percolation lagoon facility that operates under a general permit. Upgrades to this facility are problematic since any improvements would necessitate a nutrient removal process. Additionally, the sporadic nature of flows makes biological treatment difficult, if not altogether impossible. A possible solution would involve diversion of flow from the Fairgrounds WRF to a nearby interceptor or to the Corona de Tucson WRF.

Corona de Tucson WRF

Despite producing high-quality denitrified water, the Corona de Tucson WRF does not have an engineered disinfection system. Instead, it relies on soil aquifer treatment. Unfortunately, this method can result in false exceedances and is prone to interferences caused by inclement weather. For these reasons, the department has plans to install a more traditional disinfection process.

OUR GOAL

To ensure continuous compliance with regulatory requirements and participate in the dialogue of emerging regulatory issues.



COMPLIANCE PILLAR

Biological Nutrient Removal

A common complication of the biological nutrient removal process is the increased potential for forming THMs when using chlorination for disinfection. PCRWRD evaluated two options for THM control: THM formation prevention and post-formation stripping. THM formation prevention is being tested at the Tres Ríos WRF and so far is proving viable for larger WRF facilities. Post formation stripping also proved viable, but it is better suited for small-facility flows where pumping costs are lower.

Industrial Wastewater Control Program

Each year, the Industrial Wastewater Control (IWC) program employees conduct over a 1,000 samples at a variety of businesses and organizations in Pima County. The sampling serves to ensure discharges into the sanitary sewer system are in compliance with Pima County's pre-treatment ordinance. Sampling also determines if the organizations are meeting monitoring requirements and environmental permit requirements. Compliance inspections were conducted at over 700 permitted and non-permitted facilities last year. IWC issues 30-50 Notices of Violations (NOV) each year to users. There is an opportunity to work more closely with commercial and industrial users to reduce the number of NOV issued annually.

Research and Education Partnerships

With the completion of the Water and Energy Sustainability Center expansion, the University of Arizona (UA) will provide staff and students from the Agricultural and Life Sciences Department to conduct research on the next generation of treatment technology. This is an opportunity to prepare for the anticipated new regulatory requirements for such things as emerging contaminants and other predicted changes to federal and state regulations. Additionally, there is an opportunity to partner with the City of Tucson, the UA, and the private sector firm CH2M Hill to study advanced oxidation treatment for direct potable reuse.

MAJOR PROJECTS AND PROGRAMS

Biological Nutrient Removal

An official report on the pilot project to test the use of THM formation prevention at the Tres Ríos WRF will be completed by the end of 2014. Following the release of the report, a scope of work will be developed for a project to be implemented at the facility.

Disinfection Enhancements

Last year, the Compliance and Regulatory Affairs Office (CRAO) held detailed discussions with the Arizona Department of Environmental Quality (ADEQ) to establish optimal sampling locations at the Corona de Tucson WRF to provide more reliable and accurate readings. These discussions led to a detailed evaluation of our point of compliance monitoring. As a result, CRAO is currently developing a scope of work to provide disinfection using a precast chlorine contact basin at the Corona de Tucson WRF. A hydrostatic tank will be repurposed from the decommissioned Roger Road WRF and will be incorporated into the service water system at the Corona de Tucson WRF.



Trihalomethanes Formation Prevention at Tres Ríos WRF

PCRWRD is designing a full-scale THM mitigation pilot for large-scale operations such as the Tres Ríos WRF, in which a portion of the high strength ammonia-laden centrate will be used to create chloramine and thereby minimize THM formation.

Total Residual Chlorine

Compliance with Total Residual Chlorine (TRC) limits can be problematic because the extremely low Arizona Pollutant Discharge Elimination System (AZPDES) permit limit of eight milligrams per liter is below the practical detection limit of the approved methodologies. If the laboratory is able to detect it, the facility is immediately in non-compliance with the regulatory limit. To address this challenge, PCRWRD worked closely with the Western Coalition of Arid States (WESTCAS) to develop a strategy that allows for the monitoring of sulfite, a component in the dechlorinating agent, in lieu of TRC monitoring. Stoichiometry dictates that if sulfite exists in solution, then all of the residual chlorine is effectively neutralized. As a result, maintaining a residual concentration of sulfite demonstrates full compliance with the residual chlorine permit limit. With ADEQ's concurrence, a study period has been incorporated into Agua Nueva WRF's AZPDES permit with projected completion in FY 2014/15.

Water Quality Research

To better understand the impacts of improved water quality on infiltration rates and other environmental changes in the wetland/riparian areas of the Santa Cruz River, PCRWRD is partnering with Pima County Regional Flood Control District and Pima County Office of Sustainability and Conservation in the Living River Project. This project is funded through a grant from the Environmental Protection Agency.

Recharge and Groundwater Storage at Sub-Regional WRFs

In an effort to maximize recharge and groundwater storage, PCRWRD is looking to recharge reclaimed water from sub-regional facilities, where possible. Corona de Tucson, the only sub-regional WRF with a groundwater storage permit, has served as a proving ground enabling PCRWRD to enhance operational efficiency and increase recharge credits. PCRWRD is now looking to build on this success and secure permits for two more facilities.

- **Avra Valley WRF** – As part of the Avra Valley WRF expansion to a capacity of 4 million gallons a day, the percolation basins were emptied, excavated deeper and reconfigured to maximize future recharge infiltration. A pre-application meeting was held with the Arizona Department of Water Resources (ADWR). A groundwater storage permit application will be submitted in 2014 with groundwater recharge credits beginning to accrue in 2015. With a potential recharge capacity of over 1,400 acre-feet annually, these credits add to the county's long-term storage account at ADWR. This stored water can be recovered throughout the Tucson Active Management Area and be used to offset groundwater pumping. Credits also can be sold or exchanged for property, easements, or anything else of value.
- **Green Valley WRF** – The Green Valley WRF currently operates a biological nutrient removal process and an older aerated lagoon system. Water discharged from the Green Valley WRF is recharged off site. This discharge generated



COMPLIANCE PILLAR

KEY PERFORMANCE INDICATORS

- Number of non-compliance events
- Number of Sanitary Sewer Overflows (SSO) per mile of conveyance pipeline
- Number of SSOs per year

over 1,100 acre-feet of recharge credits in 2013. Recently, PCRWRD held a pre-application meeting with ADWR and expects to complete facility and basin modifications in 2015. A groundwater storage permit application seeking approval for storage of up to 2,335 acre-feet a year will be submitted to ADWR in calendar year 2014.

SHARP Constructed Recharge Project

In 2011, Pima County and the City of Tucson entered into an inter-governmental agreement for a joint constructed recharge project known as the Southeast Houghton Area Recharge Project (SHARP). A Joint Recharge Oversight Committee (JROC) was formed with city and county administrative and technical staff to supervise and review the project activities. With JROC direction, the selected design firm (CH2MHill) is prepared to proceed with design and ADEQ/ADWR permitting tasks. Once completed, Pima County will use this facility for recharging the balance of its metropolitan reclaimed water in a constructed rather than managed facility. In this manner, the county will receive 100% credit for the reclaimed water that reaches the aquifer in this favorable up-gradient location. PCRWRD can wheel reclaimed water to the site through Tucson Water's reclaimed water delivery system.

Evaluation of Conditions at Mt. Lemmon WRF

The Mt. Lemmon WRF is a small facility operating under a general permit that serves a very small population of users in the Summerhaven community. PCRWRD is planning to shut down the Mt. Lemmon WRF in order to perform a comprehensive condition evaluation. The evaluation will result in a decision to 1) renovate the facility, 2) shut down the facility for an extended period and haul the community's wastewater for treatment at one of the department's metropolitan facilities, or 3) replace the old plant with a new state-of-the-art facility that will serve the needs of the community for the foreseeable future.

BENEFITS

Long term benefits of the department's commitment to the Compliance Pillar include:

- Meeting regulatory compliance and decreasing permit non-compliance;
- Reducing the risk of fines, penalties and adverse publicity associated with late or inaccurate agency reports, noncompliance events, and improving public perception;
- Maintaining permit compliance schedules and budgets;
- Improving accessibility, timeliness and accuracy of environmental information;
- Monitoring trends in a proactive manner;
- Improving communication and feedback;
- Creating accurate and secure records and reports;
- Increasing accountability in new regulations;
- Increasing goodwill, flexibility, and cooperation from regulatory agencies; and
- Increasing infiltration rates at managed recharge projects.



VISION FOR THE FUTURE

PCRWRD places a major emphasis on safety throughout the organization. A strong Safety Pillar ensures that working conditions at all facilities are safe and up to standards; that employees are trained and accountable for consistently implementing safe protocols and procedures; that safety data is consistently monitored; and that the Safety Program is continuously improved.

PCRWRD's vision is to have a "zero accident" safety culture. To achieve this vision over the next five years, the department will develop a standardized Department Safety Plan in collaboration with a broad cross section of employees to guide departmental policies and procedures. An expanded Safety Training Program will also be designed and implemented to ensure consistent understanding of and commitment to implementing the Safety Plan goals. Creating a safety culture in which every employee embraces safety as part of his or her daily job is paramount to achieving the vision. Developing transformational leadership skills and a collaborative approach to identifying safety hazards, hazard control mechanisms, preventions, and corrective actions are key objectives for creating a safety culture.

OPPORTUNITIES

Procedures

The definition of consistent standards and procedures (e.g. lock out tag out [LOTO], confined space entry, etc.) across the department is critical to achieving measurable performance results.

Safety Plan

There are many facets to safety that span the entire organization. Field staff and office staff all face safety challenges. A plan to address the policies, goals and procedures for safety among different employees in different working conditions is essential to achieving the vision of zero accidents.

Safety Culture

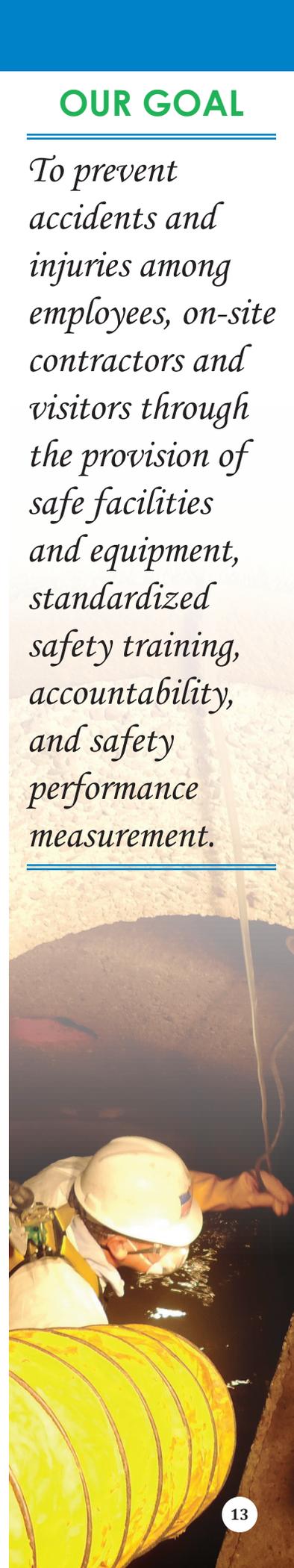
To ensure adoption of department-wide safety policies, goals, and procedures, a Safety Plan that is owned by the many people who will implement it is needed. Collaboration among a broad cross section of subject matter experts in defining program goals, needs, procedures and solutions is essential to the successful implementation of the Safety Plan and the creation of a department-wide safety culture.

Training

Training is needed to facilitate a change in culture that ensures that safety is embraced by everyone. Supervisors in particular play a key role in mentoring their employees.

OUR GOAL

To prevent accidents and injuries among employees, on-site contractors and visitors through the provision of safe facilities and equipment, standardized safety training, accountability, and safety performance measurement.



KEY PERFORMANCE INDICATORS

Number of recordable injuries



MAJOR PROJECTS AND PROGRAMS

Safety Net Committee Phase I

The department Safety Committee and certain subject matter experts will collaboratively develop the Safety Plan and will track leading and lagging safety indicators. They also will perform safety reviews.

Safety Plan

The Safety Plan will incorporate a safety mission, safety values and safety rules. Intranet access and standardized programs will provide information on such topics as Fall Protection, Confined Space Entry, Hot Work, ARC Flash, Job Hazard Analyses (JHA), Forklift, Work Zone/ Traffic, Lock Out Tag Out, Hazardous Communication, Contractor Safety, and others.

Development of these programs includes conducting annual program reviews, controlled documents, and standardized compliance documentation.

Specialized Trainings

Specialized trainings are being developed for supervisors who act as safety coaches and are subject matter experts in their unique areas of responsibility.

Safety Culture Promotion

Communication tools to promote a safety culture will include the Intranet, department-specific posters, articles in the employee newsletter (*The Pipeline*), safety committees, and regular safety meetings.

Standardized Safety Inspection Reporting

Standardized baseline reporting for employee and supervisor safety inspections will be implemented. Inspection reports are a leading indicator of the safety program's performance.

Job Hazard Analyses

Job Hazard Analyses define the safety controls needed for job task hazards. Pertinent safety requirements, such as supervisory inspections, will be implemented department wide. An effort to automate reporting and inspection requirements through work orders is underway and will promote increased efficiency and consistency of safety procedure implementation.

BENEFITS

Long-term benefits of the department's commitment to the Safety Pillar include:

- Awareness of safety hazards;
- Prompt corrective actions;
- Effective safety audits and inspections; and
- Reduced numbers of incidents and accidents.

An organization that focuses on safety sends the message that its employees are valued. This, in turn, can attract high quality applicants and support retention of the existing workforce.

CUSTOMERS PILLAR

VISION FOR THE FUTURE

The department's ratepayers deserve exceptional customer service through positive, respectful, responsive, and effective interactions. Focusing on customer satisfaction is a component of good governance and is a PCRWRD priority.

The Customer Service vision is founded on these guiding principles:

- **Service-oriented** – We listen and respond, in a timely and complete fashion, to our customers and prioritize their satisfaction as we do our work.
- **Results-focused** – We establish community-driven goals, measure our performance and report to the public on our successes in meeting those goals.
- **Innovative** – We are creative; we learn from experiences and results; and we seek new, innovative, efficient and effective ways to serve the public.
- **Quality workforce** – We develop and empower PCRWRD's most valuable asset, our employees.
- **Public engagement** – We promote robust public engagement that informs, involves, and empowers people and communities.

The vision for the next five years is to increase customer satisfaction through continuous improvement and enhanced two-way communications. This will involve gaining a better understanding of customers' needs and embedding measurable customer satisfaction goals and customer feedback loops into the continuous improvement of our operations. Enhancing internal employee capacity to respond to customer needs and solve problems is also a key component of PCRWRD's commitment to increasing customer satisfaction. Improving public access to information and awareness about PCRWRD's products, services and the benefits of infrastructure investments are other priorities.

PCRWRD also will examine how internal customers receive the information and services they need from co-workers. The timely receipt of accurate information, documents, and other work products provides the necessary tools for all employees to complete their work in a productive manner.

OPPORTUNITIES

Customer Service Key Performance Indicators

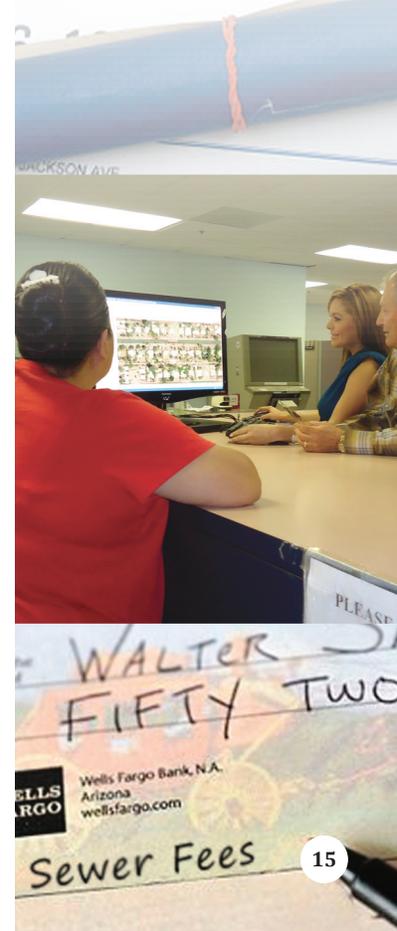
PCRWRD has a wide diversity of products, services and customers (internal and external). Therefore, it is not possible to prescribe a single customer service measurement tool or methodology that could be used by all PCRWRD processes.

Public Participation and Engagement

Open and transparent government entities focus on encouraging public participation and engagement through the use of social media. PCRWRD must seek new ways to solicit public input and increase collaborative opportunities. The department anticipates continued public demand to learn about Pima County's regional wastewater reclamation and user fees in person, online, and at public events.

OUR GOAL

To enhance customer and stakeholder trust, confidence and service through timely, accessible and accurate information; while striving for a better understanding of stakeholder and customer needs; while improving processes.



CUSTOMERS PILLAR

KEY PERFORMANCE INDICATORS

Number of sewer connections per month

Continuous Improvement

To achieve the vision for increased customer satisfaction, PCRWRD must openly receive customer feedback through a variety of feedback mechanisms. The department must then consider how to put customer-generated suggestions and recommendations into practice.

MAJOR PROJECTS AND PROGRAMS

Customer Satisfaction Performance Indicators

Continuous improvement methods being implemented in PCRWRD business systems include development of process-based customer satisfaction performance measures and feedback loops for internal and external customers.

Communication Channels, Methods, and Tools

In an effort to improve public education and access to current and accurate information, the department will explore a number of different communication tools. The following communication tools will be expanded or explored: bill inserts and other printed material, social media, targeted outreach events, and the department's website.

Standardized Training

A standardized customer service training program will be implemented to provide training on proper communication protocols for staff and contractors who interact with the public. In addition, training also will be provided to foster positive and productive communication between department sections and divisions, and with other county departments.

BENEFITS

Long-term benefits of the department's commitment to the Customers Pillar include:

- Increased customer satisfaction;
- Increased public awareness about ROMP, our business, rates, water quality; and the relationship between the water cycle and the wastewater treatment process;
- Increased awareness of how the community benefits from system improvements funded by sewer user fees;
- Improved customer service including timely response to requests for information from internal and external customers;
- Increased access to accurate information; and
- Improved understanding of customer needs and concerns.



VISION FOR THE FUTURE

Fiscal responsibility is vital to all employees and is of major importance to the public and rate payers. PCRWRD demonstrates fiscal responsibility to its ratepayers and the Board of Supervisors (BOS) by seeking adequate funds to meet expenses, managing available funds and resources efficiently, and utilizing technology to enhance and optimize business operations while decreasing overall operating costs.

A key activity for achieving Financial Pillar goals and objectives is the development and monitoring of PCRWRD's annual Financial Plan and Budget. In the last strategic planning cycle, the need to improve PCRWRD's budget planning process was addressed through development of a consistent process for budgeting. The effort to establish consistent procedures and identify opportunities for improvement will continue over the next strategic planning cycle. With each division monitoring its own budget, consistent reports, forecasts, and financial updates can be provided to the BOS. This process is a useful tool that helps divisions to stay within their approved budgets.

The ROMP was the largest and most complex public works program ever undertaken in the history of Pima County. The original budget for the ROMP was \$720 million. As the projects were developed during the design and construction phases, there were opportunities to reduce costs through value engineering or project delivery approaches. As a result, the total cost of the ROMP Program is forecasted to be about \$605 million, for a total cost savings of \$115 million below the original budget.

In spite of substantial rate increases that were necessary to fund the improvements, upgrades and expansion, Pima County's rates are still well within the mid-range for sewer utilities nationally.

The application of best practices for value engineering and efficient project delivery was key to the successful delivery of the ROMP. The continued application of best practices is the key to strengthening PCRWRD's Financial Pillar. To this end, continuous improvement methods recently implemented in the Capital Improvement Program (CIP) system have resulted in action plans and process performance metrics. Implementation of these continuous improvement action plans and ongoing monitoring of process metrics will contribute to a strong Financial Pillar.

OPPORTUNITIES

Advantage Financial Management System

An on-going challenge for the Financial Pillar is the need for increased accountability and the availability of effective tools. It will be critical that the Advantage Financial Management System (AMS) provides accurate and timely information to PCRWRD if the department is to improve its forecasting and overall budget management and coordination.

Staff Needs and Requirements for Success

An emphasis on staff accountability in budget management is and will continue to be addressed through unit-level monthly budget forecasting meetings. The use of AMS, especially by managers, will be imperative to the success of these meetings. To increase success, dedicated financial support staff should be allocated to each division. A comprehensive continuous-improvement program is being applied throughout

OUR GOAL

To maintain financial responsibility by ensuring allocated funding sources are adequate to meet expenses and available funds and resources are managed efficiently.



FINANCIAL PILLAR

KEY PERFORMANCE INDICATORS

- Percent of O&M budget spent
- Percent of CIP budget spent
- Percent of budgeted revenues collected

the Capital Improvement Program (CIP) system. This program will support project managers' ability to accurately project budgets and complete project commitments during the years the projects are scheduled and forecasted.

Operational Efficiency Through Technology

There are ongoing efforts pending through the county's Information Technology Department (ITD) to integrate work-order management systems in the Treatment and Conveyance Divisions with AMS. These efforts are aimed at reducing the time needed for manual or duplicate inputs. Fully utilizing technological opportunities and extending these technologies to mobile applications will enable PCRWRD to increase its operational efficiency and yield significant cost reductions over the life of these systems and tools.

MAJOR PROJECTS AND PROGRAMS

Annual Financial Plan Project

PCRWRD divisions will lead the development of an annual Financial Plan in coordination with the Pima County Finance and Risk Management Department. The plan will set forth expected revenue needs sufficient to meet anticipated expense requirements. PCRWRD will strive to deliver industry-leading service without increasing its user or system fees beyond industry-median levels, nor anymore than necessary.

Budget Management Program

Once the Financial Plan is set and approved, PCRWRD divisions will spend only what is necessary, and with good fiscal management will not exceed their budgets. Such efforts will require monthly reviews of expenditures and accurate projections of costs through the end of the Fiscal Year. It also will require accessible and accurate financial data.

Continuous Improvement of the Budget Planning & Capital Improvement Programs

Process Improvement Action Plans and monitoring key performance indicators at the process, system, and enterprise levels are critical for continuous improvement. Key performance indicators are monitored at monthly meetings with the director and the deputy directors and at quarterly management review meetings. Additionally, where systems and their sets of interlocked processes are defined and measured, process and system metrics will be monitored regularly.

BENEFITS

Long-term benefits of the department's commitment to the Financial Pillar include:

- Greater levels of performance and production as contemplated by annual budget plans;
- Improved bond ratings which in turn enable the department to invest in needed infrastructure improvements;
- Enhanced regulatory compliance through better capacity to fund infrastructure improvements;
- Public recognition by ratepayers that they receive quality services as good value for their fee payments; and
- Continued protection of the environment and the public health.

VISION FOR THE FUTURE

PCRWRD's vision for being a leader in sustainability involves optimizing processes; recovering and reusing resources from treatment operations; and advancing employee participation in green workplace practices.

Over the next five years, PCRWRD will focus increased efforts on process optimization to reduce chemical and energy consumption and increase energy/resource efficiency. Improving the ability to beneficially recover and reuse treatment byproducts, such as biogas and biosolids, is another priority focus for the future.

The end product of the treatment process (high-quality reclaimed water) is now considered the region's primary, growing renewable water resource. Put to beneficial use in landscaping, aquifer augmentation and environmental enhancement, reclaimed water can help to offset this region's reliance on limited, non-renewable groundwater resources. The Department is committed to advancing Pima County's vision and adopted policies for a sustainable water future through maximizing beneficial use of its reclaimed water resources.

Another key component of the PCRWRD Sustainability Pillar vision is the department's staff. Creating a green culture among employees is a department priority. Over the next five years, PCRWRD will continue to invest in sustainability training and encourage employees to reduce, reuse, and recycle; maximize the use of environmentally friendly products; and create a healthy and pleasant workplace. Such activities advance the goals of the Pima County Board of Supervisors' Resolution on Sustainability (first adopted in May 2007, and again in June 2014). These activities adhere to the 2014 Sustainable Action Plan for Pima County Operations

OPPORTUNITIES

Reclaimed Water Use

Although there has been a long history of some reclaimed water being reused in Pima County, for far too long, the discharge of reclaimed water into the Santa Cruz River was considered to be a disposal method for a waste product. However, due to the sustained drought and growing population in the region, reclaimed water is no longer seen as a waste product, but instead is considered a water resource. Since the completion of the ROMP, the improved quality of the treated water produced at PCRWRD facilities has increased opportunities to beneficially reuse this reclaimed water resource. PCRWRD views maximizing reuse and recharge of recycled water produced at our facilities as a critical opportunity. Other Pima County departments including Transportation, Flood Control, Parks & Recreation and Stadium District rely on a cost-effective supply of recycled water for maintaining operations. PCRWRD supports increased use of Pima County's recycled water to replenish the aquifer, sustain environmental restoration projects and irrigate county facilities.

OUR GOAL

To minimize chemical and energy consumption in operations, maximize use of renewable water and energy, and maximize resource recovery to benefit the environment and the community.



SUSTAINABILITY PILLAR

Energy Conservation and Renewable Energy

Energy is a big part of PCRWRD's overall operating costs. Water reclamation facilities and pump stations in particular are highly energy intensive. From 2000 to 2014, most of PCRWRD's wastewater reclamation facilities have been expanded and upgraded to produce a higher quality of reclaimed water. Inevitably, the department's energy demand has increased. (In general, PCRWRD spends over \$6 million in energy costs a year.) However, through the ROMP, old and inefficient facilities and equipment have been replaced or decommissioned. As a result, overall efficiency has increased significantly.

An effective energy management program is critical. Through optimizing treatment and maintenance processes; using solar energy where appropriate; and increasing the use of biogas to offset the energy requirements and greenhouse gas emissions, the department has achieved increased energy efficiency.

Culture Change

While most employees support efficient use of resources, increased education and positive reinforcement of "green" behaviors can boost staff's motivation to act more sustainably. As employees learn more about the department's green purchasing procedures, recycling efforts, and health and wellness programs, they become motivated to live and work more sustainably. When they receive recognition for their own efforts, that motivation increases.

MAJOR PROJECTS AND PROGRAMS

Energy Management/Optimization Program

The purpose of the Energy Management/Optimization Program is to maximize the use of energy resources and energy-related assets, thus reducing both energy costs and consumption. Two major projects scheduled for completion in the next five years include the Facility Energy Audit for all sub-regional facilities and solar energy projects at the Green Valley WRF, Corona de Tucson WRF, and Avra Valley WRF. Procedures for managing utility accounts and monthly energy usage reports for all facilities will also be developed.

Strategic Plan for Effluent Utilization

A Strategic Plan for Effluent Utilization is being developed. Other water resource management activities to be implemented over the next five years include:

- Addressing the needs for sustainable flows in the Santa Cruz River;
- Offsetting groundwater use with reclaimed water at county facilities where feasible;
- Enhancing, restoring and maintaining riparian areas;
- Replenishing the aquifer and accruing long-term storage credits; and
- Coordinating implementation of the Water and Wastewater Infrastructure Supply and Planning Study Action Plan for Water Sustainability (2011-2015).

Culture Change: The PCRWRD “Green Team”

PCRWRD has established an award-winning Green Team composed of employees representing every work area throughout the department with a focus on and a commitment to Green Purchasing, Waste Reduction, Communication of green alternatives and practices, Health and Wellness, and Sustainability Training. In the next five years, the Green Team will continue to develop sustainability training programs; foster awareness; recognize waste reduction, reuse and recycling efforts; and evaluate progress through surveys. Additionally, the team will launch new programs such as the “No Styrofoam Campaign”, “Keep Lights Off Program,” and the department’s “Bike Program”.

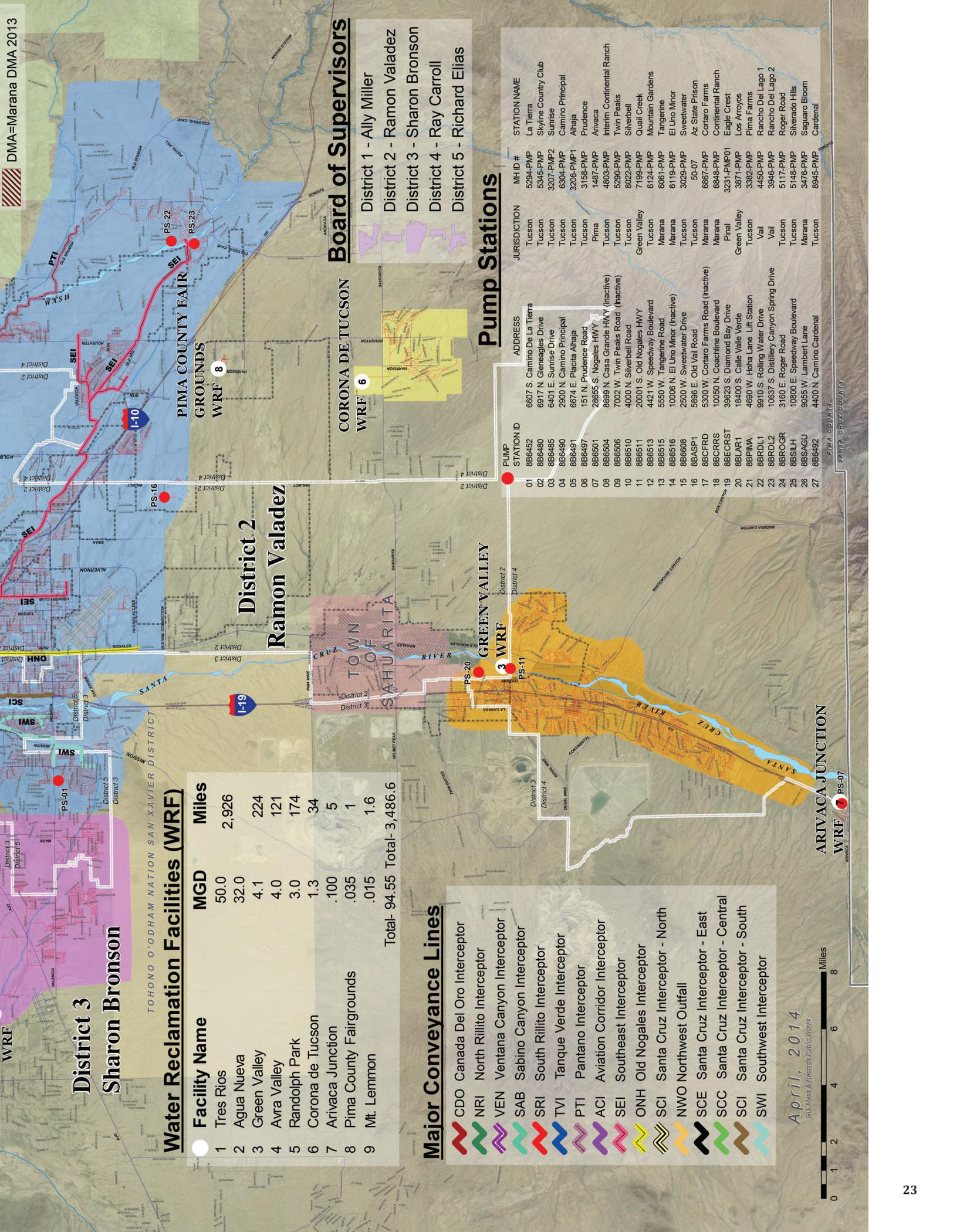
BENEFITS

Long-term benefits of the department’s commitment to the Sustainability Pillar Include:

- The development and implementation of a comprehensive sustainability program can increase the uses for reclaimed water;
- The reuse of reclaimed water promotes economic development, social well-being, and environmental protection;
- The water needs of current generations can be met without compromising the ability of future generations to meet their own needs; and
- The availability of high-quality reclaimed water eases the strain on potable water supplies, especially in light of on-going drought and population increases.

KEY PERFORMANCE INDICATORS

- Reduction of PCRWRD Unit Energy Consumption
- Increase in percentage of the Energy Produced from Renewable Energy Sources
- Increase in percentage of Recycled Print Paper Purchased
- Reduction in the number of Small Purchases (\$250 or less)
- Increase in percentage of Environmentally Friendly Products Purchased



District 3 Sharon Bronson

Water Reclamation Facilities (WRF)

Facility Name	MGD	Miles
1 Tres Rios	50.0	2,926
2 Agua Nueva	32.0	
3 Green Valley	4.1	224
4 Avra Valley	4.0	121
5 Randolph Park	3.0	174
6 Corona de Tucson	1.3	34
7 Arivaca Junction	.100	5
8 Pima County Fairgrounds	.035	1
9 Mt. Lemmon	.015	1.6
Total-	94.55	3,486.6

Major Conveyance Lines

- CDO Canada Del Oro Interceptor
- NRI North Rillito Interceptor
- VEN Ventana Canyon Interceptor
- SAB Sabino Canyon Interceptor
- SRI South Rillito Interceptor
- TVI Tanque Verde Interceptor
- PTI Pantano Interceptor
- ACI Aviation Corridor Interceptor
- SEI Southeast Interceptor
- ONH Old Nogales Interceptor
- SCI Santa Cruz Interceptor - North
- NWO Northwest Outfall
- SCE Santa Cruz Interceptor - East
- SCC Santa Cruz Interceptor - Central
- SCI Santa Cruz Interceptor - South
- SWI Southwest Interceptor

Board of Supervisors

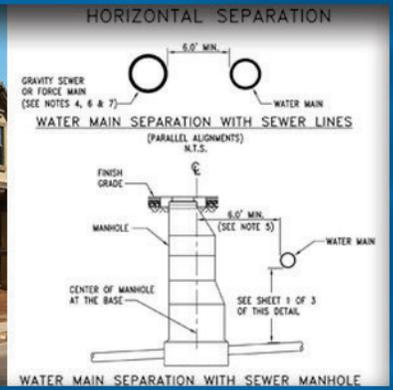
- District 1 - Ally Miller
- District 2 - Ramon Valadez
- District 3 - Sharon Bronson
- District 4 - Ray Carroll
- District 5 - Richard Elias

Pump Stations

PUMP STATION ID	ADDRESS	JURISDICTION	MH ID #	STATION NAME
01	6607 S. Camino De La Tierra	Tucson	5294-PMP	La Tierra
02	6917 N. Gleneagles Drive	Tucson	5345-PMP	Skyline Country Club
03	6401 E. Sunrise Drive	Tucson	3207-PMP2	Sunrise
04	2900 N. Camino Principal	Tucson	6304-PMP	Camino Principal
05	6674 E. Placita Alhaja	Tucson	3206-PMP1	Alhaja
06	151 N. Prudence Road	Tucson	3158-PMP	Prudence
07	28655 S. Nogales HWY	Pima	1487-PMP	Arivaca
08	8898 N. Casa Grande HWY (Inactive)	Tucson	4803-PMP	Interim Continental Ranch
09	886506	Tucson	5293-PMP	Twin Peaks
10	4000 N. Silverbell Road	Tucson	8022-PMP	Silverbell
11	20001 S. Old Nogales HWY	Green Valley	7199-PMP	Quail Creek
12	4421 W. Speedway Boulevard	Tucson	6124-PMP	Mountain Gardens
13	5550 W. Tangerine Road	Marana	6061-PMP	Tangerine
14	10006 N. El Uno Minor (Inactive)	Marana	6119-PMP	El Uno Minor
15	2500 W. Sweetwater Drive	Tucson	3029-PMP	Sweetwater
16	5898 E. Old Vail Road	Tucson	50-07	Az State Prison
17	5300 W. Cortaro Farms Road (Inactive)	Marana	6867-PMP	Cortaro Farms
18	10050 N. Coachline Boulevard	Marana	6848-PMP	Continental Ranch
19	39623 S. Diamond Bay Drive	Pinal	3231-PMP01	Eagle Crest
20	18400 S. Calle Valle Verde	Green Valley	3871-PMP	Los Arroyos
21	4690 W. Hohn Lane Lift Station	Tucson	3382-PMP	Pima Farms
22	9910 S. Rolling Water Drive	Vail	4450-PMP	Rancho Del Lago 1
23	10637 S. Distillery Canyon Spring Drive	Vail	3946-PMP	Rancho Del Lago 2
24	3160 E. Roger Road	Tucson	5117-PMP	Roger Road
25	10800 E. Speedway Boulevard	Tucson	5148-PMP	Silverado Hills
26	9055 W. Lambert Lane	Marana	3476-PMP	Saguaro Bloom
27	4400 N. Camino Cardenal	Tucson	8945-PMP	Cardenal

April, 2014
GIS Maps & Records Public Works





CORE BUSINESS SYSTEMS

GROWTH & DEVELOPMENT • CONVEYANCE • TREATMENT

GROWTH & DEVELOPMENT

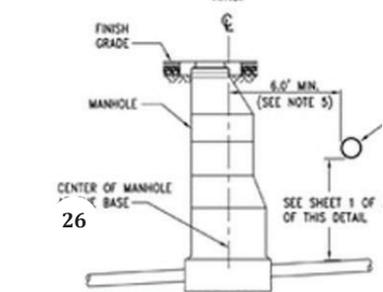
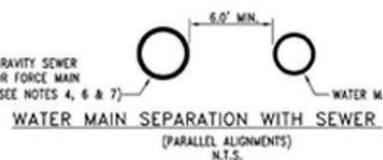
OUR GOAL

Provide planning and engineering solutions to help ensure safe, efficient and sustainable water reclamation infrastructure for our customers.

SEWER PE



HORIZONTAL SEPARATION



VISION FOR THE FUTURE

Continuous improvement is the road map for documenting processes, evaluating their strengths and weaknesses, and then mapping a path to improve their quality, efficiency, and effectiveness. The vision of the PCRWRD Growth and Development Business System is to create a highly automated, customer-focused, and streamlined set of planning and engineering processes that seamlessly and cost-effectively support the department's Conveyance and Treatment Divisions and the development community.

Processes that are clearly defined and consistently followed are essential elements of this vision. To this end, process owners and users must fully understand internal and external customer requirements for the timeliness and quality of services. In addition, customers must fully understand and have access to all departmental standards and requirements for building safe, effective, and sustainable infrastructure. Measurable goals for customer satisfaction, timeliness, and quality of processes are necessary for on-going continuous improvement.

Additionally, advancing this vision requires timely and regular forums for two-way communication with development stakeholders to keep them fully informed of current standards and requirements for the construction of sewer infrastructure. These on-going communication forums also will provide an opportunity for customer feedback to ensure the department understands and is responsive to the needs, values and concerns of the development community.

Other priorities for the future include improving the accuracy and reliability of the hydraulic model. This will not only support on-going compliance, but will enhance the department's ability to plan responsibly for growth. A state-of-the-art records management system that is linked to spatial data and made easily accessible to internal and external customers is also a high priority.

OPPORTUNITIES

Constant Change

PCRWRD is challenged with the need to continually change its development review processes and to expedite turnaround times in order to meet developer (stakeholder) expectations. Continuous improvement involves measuring all processes including timeliness and quality of service for stakeholders; timeliness is exceptionally critical to the development community. PCRWRD oversees the development of new sewer infrastructure that eventually becomes an asset that is owned and maintained by Pima County. As such, PCRWRD is concerned about balancing quality with speed of review. Simultaneously, the department cannot lose sight of its mandate to protect the environment, the public health and public safety while also meeting its fiduciary responsibility for Pima County assets. Building a streamlined development review process that has clear and logical steps for consistent application is a strategic objective for the PCRWRD Planning and Engineering Division over the next five years.

Capacity Projections

A well-calibrated hydraulic model is critical to meeting the ever-changing capacity needs of our system. Changing conditions including new sewer connections, changes in population, increased water conservation, implementation of water conservation technologies, drought management, etc. require constant adjustments and modifications to a hydraulic model that will ensure the needs of our stakeholders are met.

MAJOR PROJECTS AND PROGRAMS

Regional Planning

The update to the 2006 Metropolitan Facility Plan will incorporate the significant changes of the last eight years. Completion of the update is scheduled for June 2015. Other ongoing regional planning efforts include: Pima County Comprehensive Plan (Pima Prospers), Pima Association of Governments (PAG) Environmental Planning Advisory Committee, PAG Population Technical Advisory Committee, Sahuarita General Plan, and the Sahuarita East Conceptual Area Plan.

New Development Planning

Current conveyance capacity augmentation studies include the Southeast Interceptor Study and Design, the Aerospace Corridor Sewer Study and the UA Future Growth Analysis. Additionally, stakeholder workshops and meetings will be conducted to ensure requirements are understood and areas of new development are identified.

Development Capacity Tracking

The tracking of development capacity is achieved through the Wastewater Capacity Program (WCP). Once the hydraulic model is calibrated, the WCP will be updated.

Hydraulic Modeling

The hydraulic model provides critical capacity assessment which is required by ADEQ for planning purposes. The model is currently being calibrated and should be completed by December 2014. This is the third round of calibration since 2006. The first calibration was finalized in 2008 and relied on Transportation Analysis Zone data. The second calibration occurred in 2012 and relied on water data.

System Flow Metering

Between 2008 and 2010, the flow metering section underwent a comprehensive evaluation by an outside consultant. New Operations and Maintenance procedures were developed for metering equipment and Quality Assurance/Quality Control procedures for the flow data were established. The current calibration will use the refined flow data for the first time. The flow metering section is now fully staffed, and it is anticipated that meters will be deployed in Green Valley during the fall of 2014 in preparation for a calibration effort of this system in early 2015. In addition, the Kino Inflow/Infiltration study area will continue to be assessed to determine the



GROWTH & DEVELOPMENT

effectiveness of manhole inserts in preventing excessive infiltration of rainwater into the sanitary sewerage conveyance system.

Continuous Improvement

In 2014, development processes were defined and evaluated, and opportunities for improvement were identified. These efforts have provided a foundation for the implementation of process improvements over the next five years to decrease review times and increase customer satisfaction. Internal and external stakeholders will enjoy the benefits of the department's continuous process improvement activities, and will encourage ongoing efforts in this area.

Connection Fee Collection

This process was changed dramatically in 2012, and a more defined, transparent process is being honed as additional changes are implemented as needed.

Design Standards

In December 2012, the Planning and Engineering Division produced the Standard Specifications and Details for Construction and the Engineering Design Standards. A committee of staff and external stakeholders is participating in the annual update of the manual. The newest update will be completed by June 2015 and will include formatting standards for development-financed sewer plans as well as other minor improvements to PCRWRD standards.

Inspection of Construction

The Field Engineering Section provides inspection services for private development and utility-funded construction projects. This section also provides construction management services in conjunction with the CIP project management personnel. By January 2015, the Field Engineering Section anticipates completion of at least two internal training programs to educate and promote consistency among the inspection staff. Inspection services will also be expanded to water reclamation facility projects while maintaining our level of service to our existing customers.

Engineering Evaluations

Recently, PCRWRD engineers and planners have prepared numerous assessments and analyses including pump station assessments, design variance reviews, low flow sewer studies, and possible sewer alignments. Engineering and Planning will continue to support all aspects of PCRWRD operations and new development.

Records Management

The initiation of an electronic Document Management System (eDMS) using digitized PCRWRD Treatment and Conveyance documents has completed Phase I implementation. The scope of documents included in Phase I were Treatment and Conveyance construction as-builts, surveys, and real property records. Phase II of this project is currently underway and will include additional document integration for ROMP construction as-builts and sewer connection cards.



Geographic Information Systems Mapping Support

Several Geographic Information Systems (GIS) products have undergone initial development to support PCRWRD Capital Improvement Project, Engineering Service Unit, and the Development Liaison Unit sections. A web-based map project (ArcOnline) has been developed to indicate the status and location of CIP and Job Order Contract (JOC) work. These PCRWRD CIP/JOC layers are combined with project data from other jurisdictions' transportation departments CIP project data. This data will be used by Utility Coordination staff to cross reference and coordinate multi-agency CIP activities.

Real property documents will be used to develop a GIS layer indicating the location of easements which correspond to or are dedicated to PCRWRD. Two GIS layers are also under development to indicate and correlate the locations of parcel property rezonings and sewer capacity request allocations for the purpose of planning support

The Seven-Step Model for Continuous Improvement

The Seven-Step Model for Continuous Improvement is a tool for ensuring quality assurance in all development processes. This methodology will be applied on an on-going basis. Focus will be placed on the assessment of newly developed and existing processes; assurance that the processes are being implemented and improved; and that established metrics are providing meaningful information and measurements. Monitoring of Metrics will take place on a regular basis.

Process and System Improvement Plans

Plans for process and system improvements will be developed and implemented in the Engineering Division.

Land and Permit Management Project

The Land and Permit Project is a public works software integration project being led by ITD and Development Services. All PCRWRD development-related processes will be represented in the software. Staff is now involved in an 18-month development process to convert our work processes into a more efficient electronic tool.

Ordinance Revisions and Updates

Ordinances will be revised and updated as needed to meet the changing needs of the development community and the community at large.

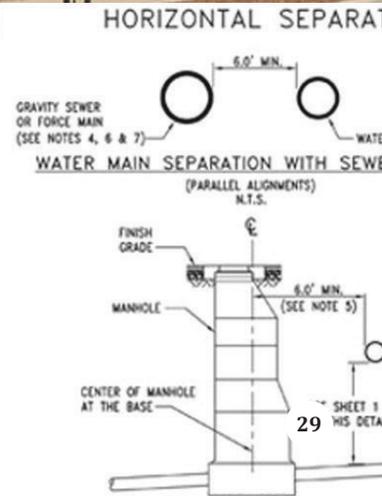
BENEFITS

- Enhancement of the department's functions;
- Increased efficiency of employees' efforts; and
- Increased resources to launch new programs and projects.

KEY PERFORMANCE INDICATORS

- Connection Fee Revenue
- Average Review Times for Preliminary Sewer Layout, Type III Capacity, and Sewer Improvement Plan
- Reduction of Red Cloud* total count

**Business opportunity*



CONVEYANCE

OUR GOAL

Provide quality service, pollution prevention, and public health and safety protection for current and future generations of Pima County residents.

Enhance the sustainability of our community and our associated lifestyle through operations and maintenance of the Conveyance System.

VISION FOR THE FUTURE

The vision for the Conveyance Business System includes maintaining its current status as an industry leader in low sanitary sewer overflow incident rates. This single indicator of success is a measurable result of the commitment to seamless customer service, regulatory compliance, and a proactive sewer maintenance program.

Staff is committed to working together to ensure coordinated, flexible, timely, and innovative responses to changing needs. Integrating the Conveyance Capital Improvement Program (CIP) functions into the Conveyance Business System in 2013 provided a critical step forward enabling a more cohesive approach to project delivery. Project managers are now involved at the outset in project prioritization, scoping and scheduling to ensure the timely allocation of resources according to projects' needs. The vision for the future involves further evolution of this kind of integrated approach to conveyance system maintenance and management. For example, partnering with the county's central Project Management Office will foster a more balanced and cross-departmental allocation of resources for timely CIP project delivery.

With the completion of all major components of the ROMP, the department is focusing its attention on the repair and rehabilitation of the conveyance system. Just as aging treatment facilities required repair and rehabilitation, reaches of the aging sanitary sewer system also are in need of repair and rehabilitation. The extensive Conveyance Rehabilitation Program planned over the next five years will support the community's capacity for economic development and growth and PCRWRD's vision to be an industry leader. The Conveyance Business System will build upon this momentum to ensure adequate annual revenue streams for on-going, proactive system maintenance and rehabilitation. This vision for infrastructure investment also includes the incorporation of state-of-the-art odor control and safety and environmentally-friendly features.

Finally, advancements in Closed Circuit Television (CCTV) technology will be used to identify hot spots in need of repair, improved prioritization, and scheduling of rehabilitation projects before failures occur. This in turn, will reduce budget allocation for emergencies.

OPPORTUNITIES

Equipment Downtime and Proactive Equipment Replacement

Equipment downtime is a major challenge to the efficient and effective maintenance of the sewer system. There is an opportunity to work in partnership with the Pima County Fleet Services Department to improve understanding of PCRWRD's need for timely and cost-effective repairs, reliability of service, and a "green" equipment replacement program.

Added Capacity

Additional capacity is needed to serve future customers and fix bottlenecks in the system. Projected population growth in the southeast area and urban infill in central areas of Tucson are examples of locations where system capacity augmentation is needed.



Repair and Replacement of Aging Infrastructure

To avoid system failure, the department must meet the challenge of repairing and replacing aging infrastructure. There is an opportunity to build on the momentum created with the ROMP to adequately fund the CIP and O&M budgets and to close the funding gap that has previously resulted in a lack of adequate investment in infrastructure maintenance and rehabilitation.

Capacity Management Operations and Maintenance

Maintaining compliance with Capacity Management Operations and Maintenance (CMOM) regulations will remain a priority and an on-going opportunity.

Facility Renovation and Expansion of Old Facilities

The renovation and expansion of the work space for the Conveyance Division's field crews and pump station staff are needed to provide adequate and appropriate workspace for these employees.

MAJOR PROJECTS AND PROGRAMS

Closed Circuit Television Assessment

Closed-Circuit Television (CCTV) Services provide a sub-surface assessment of sewer pipes. On a daily basis, CCTV activities provide data on existing conditions and maintenance needs of the community's sewer infrastructure. The department is on track to complete the state-mandated televised recording of the entire conveyance infrastructure by December 2016. Following that, the CCTV program will continue to televise the entire system over the next 10 years in compliance with ADEQ's Capacity Management Operations and Maintenance (CMOM) requirements. This data feeds the annual development of the CIP and Sewer Maintenance Programs fostering proactive and cost-effective maintenance of Pima County's wastewater conveyance system. The use of CCTV decreases disruptions to sewer service and traffic flow that would occur if other types of assessment had to be used.

Continuous Improvement

Since 2007, the Conveyance Business System has implemented a rigorous, systematic and collaborative continuous improvement program that is consistent with national best management practices, including but not limited to ISO 9001 standards. In 2013, the CIP functions were incorporated into the Conveyance Business System's organizational structure, and a major continuous improvement effort to define and improve the efficiency and effectiveness of the CIP processes was implemented. Over the next five years, the comprehensive continuous improvement methods implemented to date (and now embedded in the CIP subsystem) will be continued and enhanced. Key activities will include conducting annual reviews of all processes; maintaining up-to-date process maps that define work flows and requirements; training staff on the use of the process maps to ensure consistency; identifying and resolving opportunities for improvement; and monitoring performance metrics for the timeliness, quality and cost effectiveness of all processes.



KEY PERFORMANCE INDICATORS

- SSO Incident Rate
- Rodder / Vector Production
- Budget Tracking
- Work Order Rates
- Odor Complaints
- Vector Complaints



Conveyance CIP: Rehabilitation Program

The purpose of the Conveyance Rehabilitation Program is to manage system assets through repairs, linings or replacements to mitigate expensive and potentially catastrophic events that could result in public exposure to raw sewage and sewer service disruption. Over the next five years, approximately \$109 million will be expended on projects system wide. Examples of major conveyance rehabilitation projects include the North Rillito Interceptor, the South Rillito West Central Interceptor, and the Continental Ranch Regional Pump Station. Additionally, a large number of smaller JOC projects also will be completed over the five-year planning horizon.

Conveyance CIP Augmentation Program

The purpose of the Conveyance CIP Augmentation Program is to provide needed capacity to serve future customers and fix bottlenecks in the system. Several major projects are planned over the next five years: Southeast Interceptor Project, Aerospace Corridor and Speedway/UA Augmentation Project. Implementation of these projects will enhance the overall reliability of the conveyance system, provide service to new customers, and ensure PCRWRD's compliance with federal guidelines for CMOM.

Wastewater Pumping Systems Rehabilitation Program

Over the next five years, approximately eight pump station projects will be completed at a cost of about \$9.2 million. Some pump stations will be rehabilitated while others will be taken off line after conversion to a gravity-feed system. Efforts to bring old systems up to current design standards will incorporate advanced odor control and energy efficient technologies. Many safety features, such as improving safe access (self-opening hatches) and installing safety equipment (safety nets, rails, and eye wash stations) will be included. Force main route studies are a major component of these projects and minimization of environmental impacts will play a critical role in decision making.

Sewer Maintenance Program

The purpose of this program is to implement preventative maintenance protocols to support a fully functional and efficiently maintained conveyance system. A well-maintained system ensures regulatory compliance and the protection of the public health, protection of PCRWRD workers, and protection of the environment. To this end, investments will be made in new combo trucks to replace ones that have exceeded their useful life. A growing partnership with Pima County's Fleet Services Department will result in proactive and timely vehicle maintenance. On average, in the next five years, 350 miles of sewer pipes will be cleaned annually.

BENEFITS

- Reduce Sanitary Sewer Overflow (SSO) incident rates;
- Maintain compliance;
- Increase energy efficiency;
- Reduce odor complaints;
- Increase safety of Conveyance Division employees;
- Contribute to PCRWRD's vision to be an industry leader; and
- Support Pima County's goals to sustain community growth and economic vitality.

VISION FOR THE FUTURE

As a result of the Regional Optimization Master Plan (ROMP), Pima County is now an industry leader in using state-of-the-art technology to produce exceptionally high-quality reclaimed water and other treatment byproducts that can be beneficially reused.

As the population grows, PCRWRD is now poised to not only meet future capacity demands and regulatory requirements, but to produce a growing renewable water resource. This improved resource is better suited for a number of applications, including: outdoor irrigation via the City of Tucson's reclaimed water system, recharge of depleted underground aquifers, and use in environmental restoration purposes. As a result, over the next five years, the Treatment Business System will contribute to community-wide water resource sustainability by offsetting the demand for limited potable water resources through the production of high quality reclaimed water.

Treatment operations also result in other resources that can be recovered for beneficial reuse. Over the next five years, PCRWRD will optimize its ability to recover byproducts from its treatment operations. Plans are in place to partner with the private sector to capture and sell biogas to regional and national markets for beneficial reuse. This project will be economically beneficial to the county and will help reduce the carbon footprint of wastewater treatment processes. The department also will continue to use biosolids in land applications. A side stream treatment program to recover nutrients and use them for agricultural purposes, and an Energy Management Program to address the rise in energy usage associated with the new innovative treatment technology, are also on the horizon.

Additionally, the Treatment Business System's vision will continue to use advancements in technology to foster system reliability at the lowest cost in the context of continually changing regulatory requirements. This vision includes zero non-compliance events over the next five years leading to receipt of the highest possible recognition – the "Platinum Award" – for regulatory compliance. It also includes developing systems, processes and standard operating procedures that support consistency and process optimization throughout the treatment system.

OPPORTUNITIES

Repurposing Roger Road WRF

There is an opportunity to repurpose the 46- acre Roger Road WRF which has been decommissioned as part of the ROMP. This facility is located on prime real estate close to the center of Tucson and could become a valuable asset to Pima County and the community. Opportunities to repurpose the site in conjunction with achieving other Pima County goals, such as expansion of linear parks and green open spaces, and utilizing renewable resources for multi-beneficial purposes, need to be researched. The challenge will be to repurpose this site in a cost-effective manner.

Resource Recovery

There is an enormous opportunity to contribute to a cleaner environment through

OUR GOAL

Provide clean and safe water for beneficial use in the reclaimed water cycle, generate biosolids products that can be beneficially utilized, and beneficially use a renewable gas product, while protecting the public health, safety and the environment, while also meeting all regulatory requirements mandated by state and federal agencies.



recovery and reuse of treatment byproducts in a cost effective manner. For example, biogas byproducts generated during wastewater sludge treatment include methane and carbon dioxide. When these greenhouse gases are released to the atmosphere they contribute to climate change and other environmental issues. Since the 1970s, PCRWRD has beneficially used a significant portion of the biomethane produced at the Tres Ríos and the old Roger Road facilities by generating electricity through on-site combined heat and power (CHP) cogeneration facilities. These CHP facilities were closed during the ROMP implementation due to their ages, inefficiencies, high air pollutant emissions, and high operational and maintenance costs.

Meaningful Performance Indicators

To validate the effectiveness and efficiency of operations, meaningful performance indicators are necessary. Such indicators result in the identification of areas needing improvements. In addition to establishing meaningful performance indicators, the department must collect and report data that can identify baselines, establish performance improvement goals, track progress, and identify opportunities for improvement.

Training

The move to modern, highly-automated technology has created a critical need to re-train the workforce to successfully operate and monitor the new processes. Additionally, staff acceptance of new processes and cultivation of attitudes and capacity for continuous improvement are needed.

Succession Planning

In the Treatment Division, 90% of employees in leadership roles are eligible to retire. As such, knowledge management will be a significant challenge over the next five years.

Uncertainty

Various socio-economic and political factors may affect how PCRWRD operates its business in the future. For example, the energy market is evolving and rate structures are multi-dimensional. As a result, energy costs are changing and unpredictable. The challenge will be to find the best rates and the right mix of energy resources to optimize our operations. In addition, the Biosolids Management Program may be vulnerable to potential losses of agricultural lands to urbanization. Changes in public acceptance, loss of a viable contractor, and/or loss of political support for the current disposal method are other variables that may affect the long term reliability of the existing Biosolids Management Program.

Treatment Byproducts

Struvite is a byproduct of the treatment process that creates an extremely hard chemical compound which can interfere with equipment operation. It is currently being treated with Ferric Chloride which is expensive and requires special handling. An opportunity to harvest nutrients from the side stream and avoid the need for use of this chemical is being explored.

Optimizing Technology

The ever changing nature of technology results in the challenge to evaluate solutions and manage change in the most cost effective manner. There is an opportunity, for example, to optimize technology to advance Reliability Centered Maintenance (RCM). RCM ensures the replacement of equipment and parts before they fail, by ensuring they are available in advance. To this end, PCRWRD needs to improve its ability to identify critical assets, prioritize repairs, and manage its equipment maintenance program more efficiently. The challenge is to integrate the county's asset management tool (Maximo); the county's financial management tool (Advantage Management System [AMS]) and the department's facilities management system (Supervisory Control and Data Acquisition [SCADA]) so the three systems interface smoothly and efficiently. The successful interface of these tools can enable PCRWRD to shift from a manual and paper-based system, to a more efficient electronic system for tracking and documenting equipment repairs, labor spent, warranty, and life cycle costs. RCM also affects inventory control and the department's ability to optimize its spare parts inventory to support leaner, "just-in-time" operations.

MAJOR PROJECTS AND PROGRAMS

Biogas Sale and Utilization Project

PCRWRD is developing a Biogas Sales and Utilization Project to clean biogas to pipeline quality; inject it into a commercial natural gas pipeline; and sell it to a premium market through a third-party Design, Build, Finance, Own and Operate arrangement. Plans are underway to put biogas in a pipeline for external companies to market. Ultimately, the external companies will want all of our gas and more. To this end, they would like to add technology to our digesters to enhance gas production for economic viability. PCRWRD staff has made great progress in bringing together the UA, local community experts, multi-government stakeholders, authorities at the national level, and other interested parties to investigate reuse options for other biogas byproducts, including carbon dioxide.

Biosolids Management Program

The Tres Ríos WRF is the centralized biosolids treatment location. All the Class B biosolids generated by the department is currently used in local agricultural land applications. The current program is one of the most cost-effective programs in the nation. However, to avoid dependency on one outlet and/or contractor, and to achieve long-term reliability, PCRWRD is looking at ways to diversify its biosolids products and outlets. Over the next five years, the department will evaluate technology options, develop a marketing plan and launch a pilot project to produce Class A biosolids. Regulatory changes will be monitored and opportunities to diversify biosolids products through Class A treatment may become a viable option for the department in the future.

Capital Improvement Program or Smaller Projects/Equipment and Machinery Purchases

The Treatment Business System's CIP program is focused on proactive equipment





replacement to prevent equipment failures and maintain compliance. Over the next five years, approximately \$5 million will be invested in small projects and equipment purchases. These investments will address regulatory compliance commitments and safety improvements, such as fall prevention, confined space entry, job safety analyses, and equipment-related needs. Key projects include sludge screening, ARC Flash Study/Compliance, lighting protection, process piping improvement, and replacement of aging electrical equipment and improvements to process water. Additionally, a potential project to expand the Green Valley WRF may also be implemented.

Dynamic Wastewater Treatment Modeling Program

Process modeling is one of the most powerful tools available for use in optimization of a facility. A well-calibrated model can be used to evaluate process capacities, operational changes and process changes. In addition to being used for optimization projects, dynamic wastewater treatment modeling is well suited for: 1) Investigating the impacts of changing to a different operational strategy prior to implementation; 2) Studying the impact of internal recycle rates, anoxic zones, and anaerobic zones on nitrification, denitrification and overall treatment levels; 3) Evaluating the effects of taking specific unit processes out of service with the goal of minimizing energy usage while maintaining treatment levels; and 4) Determining the effect on plant performance if a rain event occurs while aeration tanks or clarifiers are taken out of service.

Electronic Rounds Using IntelTrac

Implementation of electronic rounds is a major project in the Process Control Program. The Process Control Program has two primary purposes: 1) To ensure that operations are performed according to plan; and 2) To continuously monitor, evaluate, and improve our processes in order to efficiently meet safety, environmental and cost objectives. IntelTrac will enable stranded assets to be linked to our SCADA system replacing the current manual (paper) method. IntelTrac hand-held devices will digitally log data that is currently documented on paper. This digital data can then be added to SCADA. This will increase identification of problems and our capacity to respond to them in a timely manner. Data collected on our stranded assets also will feed into the Reliability Centered Maintenance System.

Job Hazard Analyses

The Treatment Division Safety Program is designed to promote safe work practices and to prevent workers from accidents and illnesses. The program includes four basic elements: 1) Management and employee involvement; 2) Worksite Job Safety Analysis; 3) Hazard Prevention and Control; and 4) Safety and Health Training. A project to conduct Job Hazard Analyses will include the identification of hazards and related mitigation measures for all assets. This information will then be uploaded into Maximo. This project will be implemented over the next five years, will increase safety performance and efficiency, and will result in a measurable standard.

Managing Work Orders Using Maximo

Managing work orders with Maximo is a major effort of the ongoing RCM program. This effort focuses on systematic, cost-effective maintenance strategies to address dominant causes of equipment failure. The Maximo Asset Management System is used to manage work orders, assets and inventory and to reduce down-time while minimizing repair costs. To improve this process, Maximo Work Orders will be enhanced by using two additional systems: EZMaxMobile for field mobile applications and SCADA/Maximo interface for live reliability-based data. Through EZMaxMobile, field staff will have access to bar code scanning and picture uploads. In addition, generation/management of work orders, asset inventory, and purchasing-related transactions will be available to staff in the field. Some of the many benefits of this multi-faceted project will include reduced equipment down-time, improved operational efficiency, planned maintenance schedules, and extended equipment life cycle.

Inventory Control, Purchasing and Asset Management Project

Through the RCM, inventory control, purchasing and asset management will be optimized by using Maximo data to calculate reorder points. This process will be supported by real-time inventory transactions using EZMaxMobile and barcode scanning. Asset management will be enhanced by using EZMaxMobile for asset data collection in the field. This process will be augmented by using Maximo asset tags with barcodes for easier asset identification. Benefits will include improved recordkeeping, lower on-hand inventory costs, improved spare parts inventory, and enhanced accuracy of information.

Research and Technologies

Ongoing projects in the area of Research and Technologies are:

- Collaboration with the UA for the new lab expansion;
- Trihalomethane control using centrate to reduce chemical use; and
- Grant-funded research with the Water Energy Research Foundation and the City of Chicago. The research project is entitled “Sustainable Struvite Control Using Residual Gas from Digester Gas Cleaning Process.”

Supervisory Control and Data Acquisition

Supervisory Control and Data Acquisition (SCADA) systems are computerized/electronic systems that enhance automation at the wastewater treatment facilities and monitor flows in the sanitary sewer system. Over the next five years, upgrades will be completed at the Tres Ríos, Avra Valley, Corona de Tucson, and Green Valley WRFs. New construction will also be completed at the Agua Nueva WRF. A robust SCADA system permits efficient operations, automation, and process control to enhance management and day-to-day maintenance routines for improved equipment and system life-cycle performance. The SCADA system replaces manual collection of data and log books with electronic records. The new SCADA system allows the plants to be operated and maintained efficiently and effectively. It also provides monitoring of security conditions 24/7 via centralized monitoring and



KEY PERFORMANCE INDICATORS

- Total influent flows per month by facility
- Amount/cost of chemicals and electricity used in treatment process
- Cost / man hours for maintenance
- Beneficial utilization of biogas and biosolids (renewable resources)
- Inventory and asset control
- Energy Usage of the WRFs
- Energy Usage of PCRWRD Pump Stations
- Energy Usage of PCRWRD buildings
- Energy Supplies from Different Sources
- Unit energy consumptions at each WRF
- Dry tons of biosolids beneficially used
- Biogas produced versus beneficially utilized

control of the entire PCRWRD wastewater system, including treatment plants and pump stations. In addition to promoting the goals of crime prevention and security awareness, the SCADA and security program advance PCRWRD goals for excellent customer service and the protection of employees and visitors.

Security Master Plan Implementation Program

The Security Master Plan is a blueprint for developing a robust security program and constructing security enhancements to protect PCRWRD staff and assets, and provide continuity of service to our customers. Over the next five years, PCRWRD will be implementing physical security enhancements at the Avra Valley WRF, the Water Energy and Sustainability Center (WESC), Tres Ríos WRF, Green Valley WRF, Corona De Tucson WRF, and Sub-Regional Facilities Administrative Office. While all the upgrades are being implemented, the Security Office will be mobilizing security training, developing procedures, performing on-site investigations of security incidents, and monitoring dispatch and security activities for PCRWRD facilities, (e.g. security alarms and video). Implementing physical security enhancements at PCRWRD facilities will help to achieve a strong “culture of security” in which the entire staff takes active roles in safeguarding against external or internal threats.

Side Stream Treatment Project

Side stream flows in wastewater treatment processes contain high concentrations of nutrients that are 30-40 times stronger than constituents in raw wastewater influent. Currently, side stream flows are returned to the headworks where they are mixed with influent and are sent back through the wastewater treatment process. They increase the amount of energy needed to treat wastewater. However side streams can be treated separately, and nutrient recovery from side stream treatment can result in the recovery of phosphate-rich nutrients. These nutrients can then be turned into agricultural fertilizers. A feasibility study was conducted to evaluate side stream treatment options including struvite recovery based on economic, environmental and social criteria. As a result, PCRWRD is pursuing a sustainable and cost-effective way to manage and recover phosphate-rich nutrients from the side stream. Upon completion, this effort will reduce energy costs at the Tres Ríos WRF and will result in a marketable, reusable product that will generate revenue for PCRWRD.

BENEFITS

- Automated processes;
- Optimization of energy usage;
- Increased employee productivity through reduced costs; and
- Beneficial use of the renewable resources generated in treatment process.

APPENDICES

GROWTH & DEVELOPMENT MILESTONES

PROJECT/PROGRAM	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19
SYSTEM GROWTH PLANNING <ul style="list-style-type: none"> Regional Growth Planning New Development Planning Development Capacity Tracking Hydraulic Modeling System Flow Metering 	Master Plan Update Completed Southeast Interceptor Study Completed	Hydraulic Model Calibration Completed			
NEW DEVELOPMENT MANAGEMENT <ul style="list-style-type: none"> Fee Ordinance Update Project Land and Permit Management (LPM) Project 	Fee Study Completed (Raffelis) for Fee Ordinance Update	Public Input Process Completed for Fee Ordinance Update LPM Conversion Completed	Fee Ordinance Update Completed		
SEWERAGE ENGINEERING <ul style="list-style-type: none"> Standards Development Inspection Services Engineering Services 	Design Manual Updated		Inspection Program Expanded to Treatment		
GIS MAPS AND RECORDS <ul style="list-style-type: none"> Records Management GIS Support 	Launch eDMS Phase I; Prepare for eDMS Phase II				
CONTINUOUS IMPROVEMENT	Streamline Development Capacity Tracking	95% of Process Control and Boundary Issues Resolved	Red Cloud Resolution (on-going)		
	Annual Verifications Conducted for All Processes				
	Regular Monitoring of Metrics Established	New Process Improvement Plans Developed			
	Release and Control All Processes	Implement Land and Permit Management	Process Maps Updated		
	Evaluate Maps Relative to Each Pillar and Update Red Clouds, Metrics, Process Improvement Plans	Streamline System			

CONVEYANCE MILESTONES

PROJECT/PROGRAM	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19
CCTV SERVICES	550 Miles Televised	550 Miles Televised	350 Miles Televised	350 Miles Televised	350 Miles Televised
CONTINUOUS IMPROVEMENT	Release and Control CIP Maps				
	Training of Other Internal Users (in Other Divisions) Linked to Process Maps				
	Training of External Departments Linked to Process Maps				
	Monthly Metrics Review Meetings and System and Process Owners				
	Semi-Annual Process Improvement Plan Implementation Review				
	Semi-Annual Business Review (System and Process Owners)				
	\$15 M estimated JOC expenditures				
CONVEYANCE CIP: REHABILITATION (\$109M OVER 5 YEARS) • JOC: Job Order Contracts		South Rillito West Central Interceptor Completed	North Rillito Interceptor Completed		Continental Ranch Regional Pump Station Completed
CONVEYANCE CIP: AUGMENTATION (\$41M OVER 5 YEARS)	Southeast Interceptor (SEI) Design; Planning Studies Initiated for Aerospace Corridor and Speedway/UA Augmentation	SEI Construction Begins			SEI Completed
WASTEWATER PUMPING SYSTEMS REHABILITATION	Arivaca, Cardinal and Principal Pump Stations Scheduled for Construction	Silverbell and La Tierra Pump Stations Scheduled for Construction	State Prison Pump Station Scheduled for Construction		Silverado Pump Station Scheduled for Construction
SEWER MAINTENANCE PROGRAM	Rod / Vactor 200 Miles Per Month of Sewer Cleaning				

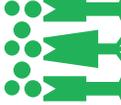
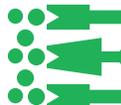
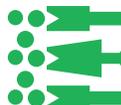
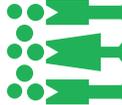
TREATMENT MILESTONES

PROJECT/PROGRAM	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19
BIOGAS SALE AND UTILIZATION PROJECT	Award Contract	Start Construction	Complete Project		
BIOSOLIDS MANAGEMENT	Technology & Market Research Progress Report Developed		Marketing Plan Developed	Acquire and Implement Technology	Class A Production
	Complete Land Inventory Study for Biosolids Land Application		Acquire Agricultural Land (1000 acres)		
CIP - SMALLER PROJECTS	Sludge Screening Complete	Process Piping Improvement Complete	Possible Green Valley WRF Expansion		
	ARC Study / Compliance	Replacement of Old Electrical Equipment			
	Lightning Protection	Process Water Improvement			
CONTINUOUS IMPROVEMENT	Participate in Process Mapping of Global Processes	Start Process Mapping of 3.04 Production System	Analyze Opportunities for Improvement	TBD	TBD
		Monitor Metrics	Release and Control maps		
		Release and Control Maps	Resolve 95% of Process Control & Boundary Red Clouds		
		Annual Verifications Conducted for All Processes			
DYNAMIC WASTEWATER TREATMENT MODELING	Model of Tres Ríos WRF Implemented / Staff Trained Using a Simulator	Use a Model to Develop Scenarios for Energy Management, Staffing, Cost Reductions, Enhanced Treatment, etc. and Implement Continuous Improvement Based on Model Results	Continue to Monitor and Continuously Improve		
SIDESTREAM TREATMENT PROJECT	Start Procurement	Award Contract		Complete Project	

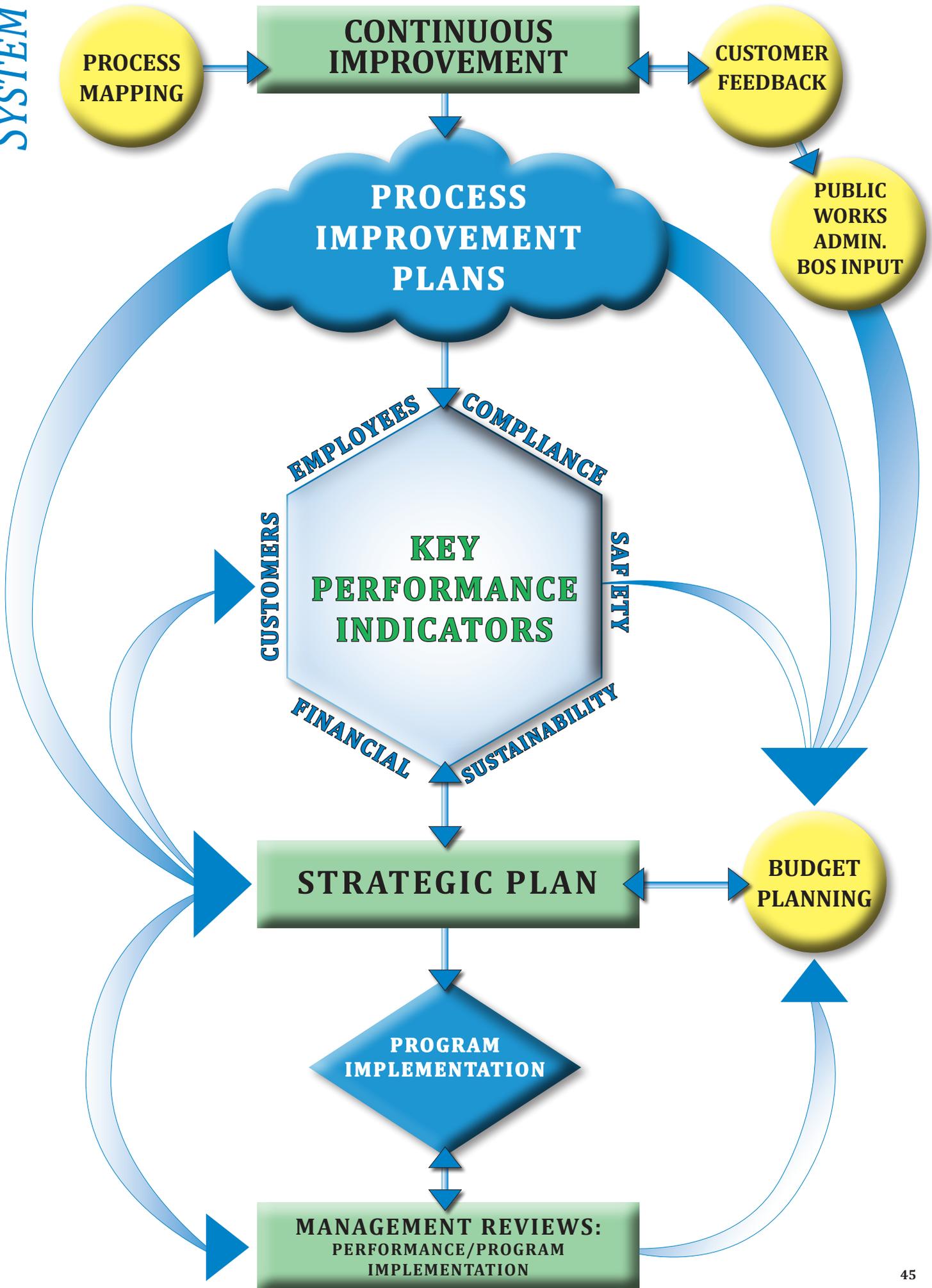
TREATMENT MILESTONES

PROJECT/PROGRAM	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19
ELECTRONIC ROUNDS USING INTELTRAC PROJECT	Complete Tres Ríos WRF & Sub-Regional Facilities (Paperless)	Analyze Other Mobile Devices and Wireless Opportunities (e.g. Use of Tablets)	Continuously Improve Based on New Technology		
INVENTORY CONTROL, PURCHASING AND ASSET MANAGEMENT PROJECT	Develop Standard Operating Procedures for Inventory Control	Asset's Spare Parts Identification	JIT (Just In Time) Inventory Implementation	On-hand Inventory Optimization	Monitor KPIs and Make Adjustments
			Consignment Inventory Implemented		
JOB HAZARD ANALYSES (JHA)	Start Collecting Data	Complete Data Collection	Upload JHA into Maximo to Attach to Work Orders		
MANAGING WORK ORDERS USING MAXIMO PROJECT	Deploy EZ Max Mobile	Load Job Plans for Preventative Maintenance	Implement RCM	Job Hazard Analyses Loaded into Maximo	Monitor KPIs and Make Adjustments
		Launch SCADA / Maximo Interface			
SCADA MASTER PLAN IMPLEMENTATION PROGRAM	Tres Ríos WRF/ Avra Valley WRF Implemented	Corona de Tucson WRF and Green Valley WRF Implemented	Mt. Lemmon WRF Implemented		
SECURITY MASTER PLAN IMPLEMENTATION PROGRAM	Physical Security Completed at Green Valley WRF, Corona de Tucson WRF and Sub-Regional Facilities Administrative Offices, Conveyance Facility and Continental Ranch Regional Pump Station	Initiate and Complete Physical Security Expansion at WESC for Agua Nueva WRF and Mt. Lemmon WRF	Continuous Improvement on Physical Security at All PCRWRD Facilities		

STRATEGIC PLANNING SCHEDULE

DIMENSION	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
REVIEW AND UPDATE STRATEGIC PLAN												
BUDGET PLANNING												
ADOPT BUDGET												
ADOPT STRATEGIC PLAN												
PILLAR TALKS												
PERFORMANCE REVIEWS / MANAGER RETREATS												
ANNUAL STRATEGIC PLANNING RETREAT												

INTEGRATED STRATEGIC SYSTEM





PIMA COUNTY

WASTEWATER RECLAMATION

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