

REGIONAL WASTEWATER RECLAMATION ADVISORY COMMITTEE

ANNUAL REPORT



FISCAL YEAR 2019/2020



RWRAC Mission....

To review and make recommendation on policies and regulations relating to wastewater reclamation; the Department's short and long range capital improvement needs; proposals concerning rate structure formulation; and proposed State and Federal legislation relating to wastewater reclamation issues; and to support and sponsor community programs and projects to provide information and education to the community regarding wastewater reclamation in Pima County.



FROM THE DIRECTOR

Jackson Jenkins, *Director*

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

The Regional Wastewater Reclamation Department (RWRD) is dedicated to upholding the Department's Mission Statement.

The Regional Wastewater Reclamation Advisory Committee (RWRAC) received monthly updates during the past year on a variety of topics that demonstrated RWRD's commitment to its Mission Statement. Unfortunately, the unprecedented challenges that came about as a result of the global pandemic preempted public meetings and our monthly meetings with RWRAC were suspended starting with the March 2020 meeting.

Despite the disruption in the meeting schedule, the RWRAC was updated and discussed important topics such as the consolidation of some staff early in the fiscal year, new technologies that could help with operational efficiencies, the Financial Rate Workbook and the 5-Year Capital Improvement Plan. The Committee also received presentations on the Per- and Poly- fluoroalkyl (PFAS) contaminant issue, Long Range Planning, Odor Control Program, and an update on the Sonoran Institute's Living River project. Presentations were also made by the Department's Deputy Directors to update the Committee on current operations for Treatment, Conveyance, and Technical Service and Engineering Divisions. Challenges the Department is facing with the disposal of biosolids was also reviewed with the RWRAC. The CIP Sub-Committee met in December to discuss the 5-Year Capital Improvement Project Plan and review the current capital improvement projects in more detail.

In the early months of 2020, we began to hear

more about the novel coronavirus and the impact it was having on public health. We were receiving day-to-day, sometimes hour-to-hour updates on this thing called COVID-19 and ways to keep employees and the public safe. I am proud of how the staff of RWRD stepped up to this challenge, making sure we had a strong Continuation of Operations Plan (COOP) in place, ensuring there were enough supplies, personal protective equipment, and disinfectant materials on hand to continue with critical operations. Under direction from the Pima County Board of Supervisors, all public meetings, including advisory committee meetings, were to cease effective March 17, 2020. When the governor instituted the Stay-At-Home Order on March 31, 2020, some RWRD staff were asked to stay home, but many employees were needed for the critical function of operating the wastewater treatment facilities, ensuring the pipelines and critical infrastructure remained operational, and performing the required testing for permit compliance. RWRD employees stepped up to be among the front-line workers doing their job to keep this critical service to the health and well-being of the public functioning. I am truly thankful to work for such a great utility and the entire staff of the Department for the tremendous job they do. I also appreciate each RWRAC member's commitment and dedication to this committee. I look forward to RWRD and the RWRAC getting back together to continue to work collaboratively on the issues and projects in the coming year.



FROM THE CHAIR

Corin Marron, *Chair*

The RWRAC was established in 1986 to provide support and guidance to RWRD on policy and financial issues, as well as to provide information and education on wastewater issues to the community. As Ambassadors to the Pima County Board of Supervisors, we serve in the public's best interest and seek information related to issues and projects that impact the community.

The Committee heard presentations from each of the Division Deputy Directors to be kept current on day-to-day operations, on-going projects, process improvements and key performance indicators tracked by each area. **Jeff Prevatt, PhD**, Deputy Director of Treatment, covered the on-going projects aimed at reducing energy, chemical usage, and long-term costs at the August 22, 2019 meeting. On October 24, 2019, **Jaime Rivera**, Deputy Director of the Conveyance Division, covered the odor control program, the CCTV program, and other initiatives being undertaken by his group. At the January 23, 2020 meeting, **Eric Wieduwilt**, Deputy Director of Technical Services and Engineering, presented an overview of his section's staffing and highlighted their functions in lab testing, regulatory compliance, field engineering and flow metering and modeling for the utility's capacity capabilities.

The CIP Sub-Committee met in December 2019 to review the County's Integrated Infrastructure Plan and the 5-Year Project Plan that RWRD uses to budget for the maintenance, upgrades, design and construction of the Department's infrastructure that serves the community. The full Committee was presented with the information in January 2020, and voted to support the Department's 5-Year CIP Plan.

In February the Committee reviewed the draft of the Financial Plan and the Rate Workbook. **Michelle Campagne**, Director of the Finance and Risk Management Department, informed the Committee that the latest debt issuance was at the lowest interest rate the County had experienced in over 20 years. This was, in part, due to RWRD's financial plan and yearly debt defeasance payments. The rating ratio for the Department remains above 1.3. The Finance Department would not be recommending any rate increases for RWRD for the 2021 fiscal year.

During the course of the year, **Jackson Jenkins**, Director for RWRD kept the Committee informed of other important happenings in the Department, including staffing consolidations, budget review, progress of on-going construction projects, and new challenges facing the Department in disposing of biosolds. The Committee heard two different presentations on the impact of PFAS contaminants in the wastewater influent and effluent streams, and asked to be kept informed as this topic is under study by the University of Arizona.

The Committee's last meeting for the fiscal year was in February 2020. Unfortunately, the COVID-19 pandemic resulted in the County cancelling all public meetings and advisory committee meetings in the effort to stop the spread of the virus and to protect the health of the staff, public and committee members. I appreciate all the Committee was able to accomplish during the abbreviated meeting schedule for the year. I look forward to reconvening in the fall of 2020 and getting back to our key role in working with RWRD and supporting their essential work for the residents of Pima County.

PROJECT HIGHLIGHTS AND NEWS

Throughout the past year, the Committee was updated on various projects undertaken by the Regional Wastewater Reclamation Department (RWRD) to improve their processes, reduce costs, maintain core infrastructure, and employ innovative technologies. The Committee also learned of several challenges the Department is facing that could impact the way services are delivered and potentially increase some costs.

New Innovations/Technologies

Jeff Prevatt, PhD, Deputy Director of the Treatment Division, gave a presentation at the August 22, 2019 meeting to update the Committee on new technologies that were planned in his Division. He pointed out the destruction that struvite causes to the pipes, filters, pumps and other infrastructure within wastewater. Struvite is a mineral composite that is currently controlled by adding ferric chloride to the treatment process. The Department spends approximately \$655,000 a year on ferric chloride and ferric is corrosive and causes damage to the pipes. The Department is planning on implementing a struvite abatement project that will stop the formation of struvite by removing magnesium and phosphorus. A 5-week pilot test was conducted using a new technology developed by Nuresys with very positive results. The new process will reduce costs for the Department in ferric chloride usage and in damage to the pipes and other infrastructure. The new process also produces a phosphorus-rich pellet that could be used as a source of fertilizer, and potentially generate some revenue. The Department expects to begin using this struvite abatement technology by the end of the fiscal year.

Another wastewater treatment process innovation the Department is studying is anammox. Anammox are bacteria that have been recently discovered that are very efficient at removing ammonia under anaerobic conditions. Under the current treatment process, pumps are used to aerate the wastewater treatment tanks to keep the bacteria alive and working. This takes a lot of energy and results in about 60% of the electricity that is used in Treatment. Anammox process could significantly decrease the amount of electricity needed to remove the ammonia and save the Department money.

Renewable Resources – Biogas Project

The Committee was informed on another new technology being adopted by the Department known as the Biogas Project. In his August presentation, **Jeff Prevatt, PhD** indicated that, as a byproduct of the biosolids being digested during the treatment process, biogas is released. Biogas contains about 60% methane. Traditionally, some of the biogas has been burned in the boilers at the Tres Ríos Water Reclamation Facility, but the vast majority was flared into the atmosphere as a waste product. Flaring of this gas contributes to greenhouse gases and wastes the energy within it.



Above: A view of struvite build-up within the pipeworks.

Below: Schwing Bioset filters using the NuReSys process for struvite abatement installed at the Tres Ríos WRF.



This biogas can be cleaned of carbon dioxide and water and other contaminants and it becomes renewable natural gas (RNG). This “new” product, RNG, can be sold and injected into the Southwest Gas pipeline for transport to the end user. The use of RNG reduces greenhouse gas emissions and global warming. This process supports part of the Department’s commitment in our Mission Statement to be responsible stewards of the environment and to employ renewable resources. The RNG will be sold primarily for transportation uses. The sale of the RNG and the environmental attributes will provide a new source of revenue for the Department.

PROJECT HIGHLIGHTS AND NEWS

Challenges

The Committee also had discussions on the challenges that RWRD is facing and what actions the Department is taking to mitigate the impact. A fairly new topic that has arisen is Per- and Poly-fluoroalkyl Substances (PFAS). PFAS are man-made compounds used in many consumer products that are non-stick, non-stain, and water and oil resistance. The PFAS compounds are also used in firefighting foam and some food packaging materials. **Mark Brusseau, PhD**, Professor University of Arizona gave a presentation to the Committee in the September 2019 meeting that reviewed the history of the PFAS compounds, what products they are used in, how they are released into the environment, and the potential impact to human health. Although wastewater treatment does not produce or add any PFAS compounds, PFAS is present in both the influent and effluent of wastewater and is also present in biosolids. One of the concerns with PFAS in the wastewater industry is the potential of the compounds being released into the groundwater or into other bodies of surface water. Biosolids that are disposed by applying them to agricultural land could also release the PFAS compounds into the ground. RWRD took a proactive approach to the issue and ceased disposing of biosolids through agricultural land application and instead started hauling the waste to state approved, lined landfills. This method of disposal is more expensive and may increase biosolids handling by \$2 million per year.

Pima County commissioned a report by the University of Arizona's College of Public Health regarding their study and findings of PFAS in Pima County environment. **Barbara Escobar**, Program Manager for RWRD's Compliance and Regulatory Affairs Office, presented the report to the Committee at the February 2020 meeting. RWRD is



Permit & Regulatory Compliance Specialist Courtney Kaufman and Permit & Regulatory Compliance Officer Jason Grodman gathering a ground sample to test for PFAS chemicals. Proper sampling technique is critical to eliminate any contamination in the sample.

also working with the University to conduct further research and studies of PFAS levels in the agriculture lands within Pima County.

Annual Grease Collection and Recycling Event

On January 4, 2020 we collected a new record high of 9,900 pounds of Fats, Oils, and Grease (FOG). That was 1,200-pounds more than the previous year 2019. Since the event's inception, we have collected 65,514 pounds of the community's FOG!

Right: RWRD employees (L to R) Civil Engineering Assistant Sr. Tom Meehan, Purchasing Warehouse Supervisor Henry Rodriguez, Permit & Regulatory Compliance Coordinator Mike Silva, Deputy Director Eric Weiduwilt, Project Manager David Badger, P.E., and Deputy Director Jaime Rivera lend a hand at the Annual Grease Collection and Recycling Event.



RWRAC MEETING HIGHLIGHTS: JULY 2019 - JUNE 2020

July 2019: No meetings were held.

August 2019: The August meeting began with a Director's Update. The RWRAC was informed of County Administration consolidation action that affected RWRD's Geographical Information System (GIS) and the Staff Development and Training Section. Some positions were absorbed into the Information Technology Department and Human Resources Department, while some remained within RWRD.

Jeff Prevatt, PhD Deputy Director, provided a Treatment Division update where he updated the Committee on several ongoing projects: Nuresys (a struvite abatement process), Side-stream deammonification using Anammox and the Biogas Project.

September 2019: **Mark Brusseau, PhD**, Professor University of Arizona presented on Per- and Poly-fluoroalkyl Substances (PFAS). The relation to PFAS and wastewater and biosolids was discussed. Various studies and test results were reviewed as well as potential health risks. Regulations on these contaminants are in development. RWRD continues to monitor the topic.

Director **Jackson Jenkins** updated the RWRAC with the overall statistics for the Department. He reviewed RWRD's mission statement and the six pillars of departmental focus. He also informed the Committee that RWRD's Special Use Agreement with the Forest Service has been amended to remove the 77 connection limit and increase the treatment capacity per day maximum from 12,500 to 15,000 gallons at the Mt. Lemmon treatment facility.

Jaime Rivera, Deputy Director, presented an update on the Conveyance Division. He provided an overview of Gravity, the CCTV Program, CIP, Pump Systems, and the Odor Control Program. Mr. Rivera highlighted the importance of technology, both in its ability to make the Division more efficient and for monitoring purposes. In addition, equipment in the Division is updated and replaced to insure the capacity to complete work orders is not disrupted. Two of the three CCTV vans have been replaced and the third van is under procurement this fiscal year. This has decreased downtime and added the capability of inspecting smaller pipes in the system.

October 2019: Director Jenkins began the meeting with the Director's Update. He shared the "Top Project" award received by the CIP Group. The Award was for the Sabino Creek Pump Station and was awarded by the *Water & Wastewater Digest*. The *Fiscal Year 2018/19: By The Numbers Report* and the *Living River* reports were distributed to the Committee.

Mirela Hromatka, a Senior Planner with RWRD, gave a presentation regarding the Department's long-range planning for capacity. Projects under design,

projects under construction and the planning of future projects were all highlighted.

Jaime Rivera, Deputy Director, updated the Committee on the Conveyance Division's Odor Control Program. He explained how sewer odors occur and why there is a need to control these odors. The different ways in which RWRD addresses these odors were also discussed. One step the Division is taking is to replace the Granulated Activated Carbon (GAC) with biofilters. Biofilters have a high removal efficiency and lower maintenance and operation costs. Other cost improvements within the odor control program is the use of Thioguard (magnesium hydroxide) at some stations which will help to lower chemical costs and the fine tuning of chemical dosage by monitoring tank level readings electronically.

November 2019: No meetings were held.

December 2019: The CIP Subcommittee held a meeting to review the Five-Year CIP Plan. The projected budget for the CIP Program is \$45 million for each year for a total of \$225 million over 5 years.

Adam Bliven, Program Manager with RWRD, detailed the Five-Year Plan and highlighted the sections of Pima County's Integrated Infrastructure Plan that covered RWRD's projects. The CIP Subcommittee unanimously voted to express support for the FY 2020/21 CIP Five-Year Plan with the intention that an updated version of the CIP Plan and budget will be presented the full Committee in the future.

Director Jenkins began the full committee monthly meeting with an update on various topics. RWRD consolidated its administrative positions. This consolidation took place at a Division level with the goal of improving cross-training and efficiency. Director Jenkins also explained how RWRD rebuilt an old Schwing Pump and put it into commission for dewatering the biosolids. This pump has been more efficient and needs less maintenance than the current pumps which are reaching the end of their life cycle.

Lisa Starks, Program Coordinator for RWRD gave a brief update on the Grease Collection and Recycling Event scheduled for January 4th. A new song commissioned for the grease campaign was debuted.

January 2020: Due to the recent publicity regarding the presence of PFAS in drinking water, Director Jenkins explained in his report to the Committee that RWRD has taken a proactive approach in regards to its biosolid disposal. RWRD is now disposing of biosolids in a lined landfill. This change went into effect at the beginning of the 2020 calendar year, and will continue until more research studies are conducted and information obtained. This change will challenge our current budget, as landfill disposal is more costly than land application. Budget savings in other areas

RWRAC MEETING HIGHLIGHTS: JULY 2019 - JUNE 2020

will go towards covering the additional biosolid disposal costs.

The CIP Subcommittee reported on their December 2019 meeting to the full Committee. Mr. Bliven also presented the Five-Year CIP Program to the full Committee. The Committee, in a unanimous vote, supported the Department’s Five-Year CIP Program and budget as presented.

Eric Wieduwilt, Deputy Director, gave a presentation on the Technical Services and Engineering Division. He updated the Committee on how the Division supports the activities of the Department and external customers. He also reviewed how flow monitoring and modeling helps the Department stay on top of capacity needs for the system and long-term planning.

An update on the 15th Annual Grease Campaign was presented. Over nine thousand pounds of grease was collected during the event and there was a record number of participants that visited the six collection sites set up around the metro Tucson area.

February 2020: Director Jenkins informed the Committee that both the Twin Peaks and Fairgrounds Capital Improvement Projects were near completion. The Fairgrounds gravity sewer project will allow for the lagoon treatment facility to be decommissioned and allow for growth and expansion in the area. RWRD has opened the process for a permanent biosolids landfill contract. The Department is looking into additional portable dewatering equipment for the Schwing Project while the pumps are being switched. The dewatering equipment will create a biosolid concentration acceptable for the landfill.

Director Jenkins also informed the Committee during the Safety Share how the Department is reminding all employees to wipe down and clean their work areas each week and to take extra precautions during this cold and flu season. He stated that staff had been reviewing the Continuity of Operations Plan (COOP) to insure we would be able to continue operations during times of disaster or other unexpected work outages.

A Living River, the report published by the Sonoran

Institute and Pima County, was presented to the Committee. **Claire Zugmeyer**, an Ecologist with the Sonoran Institute, distributed this report to members and highlighted the continued improvement of the Santa Cruz River’s health.

Barbara Escobar, Program Manager with RWRD, reviewed the findings of the *Environmental Toxic Substance Assessment* on PFAS that was commissioned by Pima County. Ms. Escobar explained the importance of future PFAS / Biosolid studies and a final report on the PFAS Biosolids 2020 Study is expected to be available in the fall of 2020.

The Director of the Finance and Risk Management Department, **Michelle Campagne**, presented the 2020 Rate Workbook. The Rate Workbook includes \$40 million of debt that was recently sold. This debt issuance was at a 1.0165% interest rate and is the lowest we have seen in over 20 years and is a result of our financial plan and yearly debt defeasance. The rating agency ratio for the Department remains above 1.3. Ms. Campagne also reported that there are no rate increase recommendations at this time, the debt service is expected to remain around \$65 million per year and the CIP is planned at \$45 million a year with \$5 million being completed under the Pay-As-You-Go financing strategy. The financial analysis of the Department shows a positive outlook.

The Committee was informed of the upcoming retirement of **Chuck Wesselhoft** who has served as the County Attorney’s representative at the RWRAC meetings. **Victoria Buchinger** was introduced as she will be taking over Mr. Wesselhoft’s duties.

March 2020: No meetings were held.

April 2020: No meetings were held.

May 2020: No meetings were held.

June 2020: No meetings were held.

NOTE: *On March 17, 2020, as concerns regarding the coronavirus continued to rise, and the health and welfare of the community was the primary focus, the Chairman of the Board of Supervisors and the County Administrator cancelled all Pima County Boards, Commissions and Committee meetings until further notice.*

REGIONAL WASTEWATER RECLAMATION ADVISORY COMMITTEE MEETINGS: FY 2020/2021

August 27, 2020
September 24, 2020
October 22, 2020

November 19, 2020
December 17, 2020

January 28, 2021
February 25, 2021
March 25, 2021

April 22, 2021
May 27, 2021
June 24, 2021

General Regional Wastewater Reclamation Department activities can be viewed on the Department’s website: www.pima.gov/wastewaterreclamation

To view agendas and minutes from the Regional Wastewater Reclamation Advisory Committee visit the Department’s website and click on the right sidebar button:

Boards, Commissions & Committees

Regional Wastewater Reclamation Advisory Committee meetings are held monthly on the fourth Thursday (with the exception of July, November, and December due to the holidays) at 8:00 a.m., at the Water Campus, 2955 W. Calle Agua Nueva, Tucson. **Times and dates are subject to change.**

Committee Coordinator: Marla Berry - Phone: (520) 724-6647, Email: marla.berry@pima.gov

DEPARTMENT AWARDS

RWRD is proud of the important work it contributes to the community and has been recognized nationally, statewide, and locally for its excellence and groundbreaking impact. The following are the awards received for FY 2019/20:

AZ Water Association:

- PW Crew Supervisor Arturo Aguillon received the *Operations Supervisor of the Year Award* for Large Systems.
- Pima County Sustainable Action Plan for County Operations received the *Outstanding Sustainability Program Award* in the Sustainability Category.

National Association of Clean Water Agencies:

- *Gold Peak Performance Award* went to Avra Valley WRF for excellence in permit compliance.
- *Gold Peak Performance Award* went to Agua Nueva WRF for excellence in permit compliance.



David Badger, P.E. pictured with his Design-Build Institute of America award.

- *Gold Peak Performance Award* went to Tres Ríos WRF for excellence in permit compliance.
- *Platinum Peak Performance Award* went to Mt. Lemmon WRF for excellence in permit compliance.
- *Platinum Peak Performance Award* went to Green Valley WRF for excellence in permit compliance.

Water and Waste Digest and Industrial Water and Waste Digest:

- The Sabino Creek Pump Station and Force Main Project was awarded the *2019 Top Project and Crystal Award*.

Metropolitan Pima Alliance:

- The Twin Peaks/Blue Bonnet Sewer Project was selected for the *Common Ground Award*.

Design-Build Institute of America:

- RWRD Project Manager **David Badger, P.E.** received the *2019 Distinguished Leadership Award* in the Young Professional Category.

Pima County Geographic Information Systems (GIS):

- RWRD GIS Booth "*Flow Control Dashboard*" was awarded First Place in the Best Booth Category at the 2019 GIS Fair.

The Water Council:

- The Tres Ríos Water Resource Facility Energy Reduction Roadmap was awarded 3rd Place in the *2019 Leaders Innovation Forum for Technology Intelligent Water Systems Challenge*.

REGIONAL WASTEWATER RECLAMATION ADVISORY COMMITTEE MEMBERS

The Regional Wastewater Reclamation Advisory Committee (RWRAC) was established by the Pima County Board of Supervisors in 1986 to act as its official advisory body on wastewater management matters. Each appointed member serves a four (4) year term.

Ally Miller District 1	Ramón Valadez District 2	Sharon Bronson District 3	Steve Christy District 4	Betty Villegas District 5
Steve Foley Scott Oldendorph**	Armando Membriola* Mark Taylor***	John Lynch* Claire Zucker	Bill Katzel Charles Matthewson***, Vice Chair	Rob Kulakofsky Ann Marie Wolf**
Citizens' Water Advisory Committee		Arizona Water Association		Ex-Officio
Jean McLain		Asia Philbin**		Jackson Jenkins, Director, RWRD
Environmental Planning Advisory Committee				Timothy Thomure, Director, Tucson Water
Corin Marron*, Chair				

* Financial Subcommittee member ** Capital Improvement Program Subcommittee member