



Outreach to Wastewater Treatment Plants in Baffin Basin

Final Report

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The views expressed herein are those of the authors and do not necessarily reflect the views of CBBEP or other organizations that may have provided funding for this project.

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Executive Summary

During the past few months, the Nueces River Authority (NRA) has worked as a contractor for the Coastal Bend Bays & Estuaries Program on the Wastewater Assistance Program to reach out to the 13 wastewater purveyors discharging to streams leading into Baffin Bay. The project was identified as needed due to (1) a history of nutrient and bacterial water quality impairments in San Fernando and Petronilla Creeks, (2) observations as a result of an aerial evaluation of the referenced creeks and (3) discussions with the staff of two utilities within the program area.

The project was designed to contact the 13 wastewater treatment systems within the area and meet with those that wish to participate. NRA contacted and offered assistance in providing a high-level assessment on operational and infrastructure needs, provide an overview of possible sources of funding for any needed improvements, and facilitate relationships between the funding sources and utility personnel.

NRA contacted and was welcomed by 10 of the 13 wastewater purveyors. NRA visited the facilities owned by the City of Bishop, City of Driscoll, Duval County Conservation & Reclamation District, Nueces County Water Control & Improvement District #5, City of Orange Grove, City of Premont, Riviera Water Control & Improvement District, Teen Challenge of Texas, and the City of San Diego Municipal Utility District #1. NRA was unable to successfully contact/visit with the Cities of Alice and Agua Dulce and Kingsville.

As a result, NRA staff has established relationships with the decision makers and staffs of the cities and utilities we contacted. In several cases, we were able to provide immediate assistance by recommending process changes to improve wastewater treatment quality and efficiencies. Several issues were discovered. The issues listed below were found to be re-occurring.

- ❖ Inability to recruit, hire and retain licensed operators for plant operations.
- ❖ Staff of the utility unfamiliar with grant and funding sources or the application processes involved.
- ❖ Consultants available to assist were expensive and required money for fees these utilities did not have funding for.
- ❖ Contact operators were being retained by several utilities and not performing at satisfactory levels.
- ❖ Systems experienced additional wear from lack of preventative maintenance.
- ❖ Collections systems were experiencing high levels of inflow during wet weather events.
- ❖ Staff at these utilities desired to comply and were worried about non-compliance and the consequences.

Based on these findings, NRA recommends the following:

1. Work with the 10 participating utilities to improve operational and maintenance management of collection and treatment systems.
2. Develop a vocational program to teach and develop utility operations personnel within the area.
3. Conduct a high-level study to determine areas where the development of regional wastewater facilities would be beneficial.
4. Develop a program to educate decision makers on the benefits of regional wastewater treatment.

5. NRA recommends a second phase of the WWTP Assistance Program to address the grant and funding issues discovered as a part of this project.

Background / Objective

This project was proposed to provide outreach and assistance to wastewater treatment plant operations and operators that discharge effluent to Baffin Bay tributaries. Baffin Bay and two of its primary tributaries, San Fernando Creek and Petronila Creek, have long documented water quality problems with bacteria and nutrients.

In 2019, under contract with CBBEP, the Nueces River Authority (NRA) performed a riparian evaluation of conditions along tributaries streams to Baffin Bay. An aerial evaluation was performed as a part of the riparian evaluation. While not the intended purpose, during the aerial evaluation some distinct water clarity and color changes were observed in the vicinity of the discharge points for municipal wastewater treatment plants.

These aerial observations led to subsequent conversations with two plant operators in the area. These operators revealed a sincere desire for non-regulatory guidance and support to address the needs for conveying and treating wastewater.

Based on this initial interest and the visual observations made during the aerial evaluation, NRA staff requested funding from CBBEP to provide outreach and assistance to wastewater treatment plant operations within the Baffin basin. The CBBEP approved the funding to:

- * Contact and work with any of the willing participants of the 13 WWTP's discharging into tributaries leading into Baffin Bay to join in water quality improvement.
- * Assess equipment and capacity needs identified
- * Identify possible funding sources to address identified needs
- * Facilitate funding relationships between WWTP personnel/municipal leadership and funding sources

NRA contacted the following 13 wastewater purveyors within the project area.

| Cities: | County and/or Other |
|--------------|---|
| Agua Dulce | Bishop ISD |
| Alice | Duval County Conservation & Reclamation Dist. |
| Bishop | Nueces County Water Control & Imp. Dist. #5 |
| Driscoll | River Water Control & Improvement District |
| Kingsville | Teen Challenge of Texas |
| Orange Grove | San Diego Municipal Utility District |
| Premont | |

The results of this effort are detailed in the next section.

Work Conducted

NRA reached out to each of the 13 wastewater purveyors in the assessment area. This section provides a summary of the meetings NRA conducted and an assessment of identified needs and recommendations for each purveyor.

City of Alice

Reached out multiple times and have not been able to contact wastewater operations personnel. NRA stopped by and left information about the outreach program. The City of Alice uses an operations contractor to operate the wastewater treatment plant. The operator is not willing to make contact.

City of Agua Dulce

October 2020 - Spoke with contract operator David Pena via phone, had 2 meetings cancelled due to COVID-19 positive test. Scheduled another meeting for January which was cancelled. The freeze in February left the contract operator behind. Attempted a fourth meeting however Agua Dulce had severe flooding issues in July and was unable to meet.

July 12, 2021 – Travis Pruski drove by the plant site. He noted an extremely small system that did not appear to be in good condition. An assessment was not conducted due to the city's contract operator choosing not to participate with the Outreach Assistance program.

City of Bishop

NRA Planner Travis Pruski and Executive Director John Byrum met with City Staff and Council, and they sincerely want to improve their facility. The City of Bishop is under a TCEQ enforcement action to improve the wastewater system. The enforcement actions are due to discharge violations of BOD and e-coli. The violations have been a reoccurring problem. NRA has been working with TWDB and TCEQ for funding for plant assessment and improvements. Awaiting notice to proceed with Category 2 of State application for grant and loan.

Needs Identified:

1. Wastewater plant needs to be properly maintained.
2. A review of operating reports revealed significant inflow during wet weather events which is contributing to the non-compliance.

Recommendations:

1. The City of Bishop needs to improve operations of the wastewater treatment plant. NRA proposed a contract to operate the facility. The City Council has voted to contract with NRA for plant operations. City Attorney is reviewing contract and NRA anticipates taking over operations on or before September 1, 2021.
2. The wastewater collection system needs to be assessed to identify locations where storm water flow is entering.
3. Prioritize and replace sewer lines with SDR 26 PVC in the areas identified in item 2 above.

Summary of NRA's Action with the City of Bishop:

October 13, 2020 – Travis Pruski met with City Secretary Cynthia Contreras and Public Works Director Panfilo Flores.

November 16, 2020 – Travis Pruski met with Mayor Tem Miller, Secretary and Public Works Supervisor on improved operational management of Wastewater Plant. Waiting on TWDB funding for wastewater infrastructure needs.

February 23, 2021 – Travis attended a City Council meeting to discuss NRA handling the day-to-day operations of the plant and funding options to make improvements.

March 31, 2021 – Travis attended a second City Council meeting to discuss wastewater operations and plant issues.

April 20, 2021 – Travis conducted a workshop with Council Members discussing contract of wastewater operations.

April 28, 2021 – Travis spoke at City Council meeting regarding using American Relief Funds (ARF) to fund repairs at wastewater plant. Timeframe of Federal Government to implement ARF funding has not been established at this time.

May 12, 2021 – City Council voted in favor of contracting with NRA for operations of their WWTP. NRA is working with the city to improve their systems and upgrade daily management procedures. Contract operations are anticipated to begin on or before September 1, 2021.

Bishop Consolidated Independent School District

Travis Pruski met with maintenance personnel responsible for the Wastewater facility operation of October 28, 2020. The facility consists of a septic tank with a drain field.

Needs Identified:

- 1) System is well maintained however has been functioning for many years.

Recommendations:

- 1) Bishop ISD needs to consider replacement of the current system.

Summary of NRA's Action with the Bishop Consolidated Independent School District:

October 28, 2020 – Petronila Elementary has Septic System.

November 15, 2020 – Travis Pruski contacted the Head Maintenance at School via phone. They have a contract with Pico engineering for operations and maintenance of their small plant. The system is well maintained and running well. It is older and could use upgrade.

July 27, 2021 – Growth in area will cause issues the future. The rural area south of Corpus Christi is rapidly being developed.

City of Driscoll

Needs Identified:

- 1) Wastewater Treatment System was not being operated properly.
- 2) Preventative maintenance was not being conducted.
- 3) City has a history of non-compliance.
- 4) Plant equipment was in poor shape.
- 5) Collection system is in poor shape. Inflow of water during wet weather is contributing to non-compliance.

Recommendations:

- 1) Plant needs to be evaluated and alternatives developed for future improvements.
- 2) Operations need to be evaluated and plant operated as required for compliance.
- 3) Collection System needs assessment to identify areas where storm water is allowed to enter. All areas identified need to be replaced with SDR 26 PVC pipe.

Summary of NRA's Action with the City of Driscoll:

October 20, 2020 – Travis Pruski conducted a meeting with City Secretary and Public Works Director. NRA worked with TWDB for funding options for plant improvements and assisted the city in settling a TCEQ enforcement action as a result of BOD, TSS, and e-coli violations. NRA is currently awaiting notice of category 2nd stage grant

application. The TCEQ agreed to resolve the enforcement action through a Supplemental Environmental Project put together and managed by the NRA.

January 27, 2021 – Travis held a meeting with the Mayor, Secretary and Public Works Supervisor to improve the operational management of Wastewater Plant.

February 11, 2021 – Travis Pruski and John Byrum had a meeting with Mayor Mark Gonzalez to finalize a contract for the NRA to take over day to day operations of the WWTP. The City Council voted to replace their contract operator with NRA and as of March 1st, NRA is operating the wastewater treatment plant. NRA is currently working with the city to improve their systems and upgrade daily management procedures.

June 16, 2021 – Travis visited wastewater plant to view operational improvements made by NRA.

July 5, 2021 – Travis and NRA Executive Director John Byrum visited with Nueces County Judge Barbara Canales and staff to discuss issues requiring immediate attention. NRA requested emergency funds from Nueces County to address those issues that the City of Driscoll is unable to fund.

July 20, 2021 – Nueces County Commissioners Court approved \$28,000 in emergency funding via an interlocal agreement with the City of Driscoll. NRA will manage the spending of the funds and assure the emergency issues are addressed.

Duval County Conservation & Reclamation District (DCCRD)

Needs Identified:

- 1) Wastewater Treatment System was not being operated properly.
- 2) Preventative maintenance is not adequate.
- 3) System has a history of non-compliance.
- 4) Plant equipment was in poor shape.
- 5) Collection system is in bad shape. Inflow of water during wet weather was contributing to non-compliance.

Recommendations:

- 1) Plant needs to be evaluated and alternatives developed for future improvements.
- 2) Operations need to be evaluated and plant operated as required for compliance.
- 3) Collection system needs assessment to identify areas where storm water is allowed to enter. All areas allowing stormwater to enter the system need to be replaced with SDR 26 PVC Pipe.

Summary of NRA's Action with the Duval Co. Conservation & Reclamation District:

October 13, 2020 – Travis Pruski met with Ernesto Sanchez, District Manager and toured the facility. Mr. Sanchez recommended a meeting where NRA could speak with the

Reclamation District Board. Meeting was cancelled due to COVID-19 positive test. New meeting set for January, however, was cancelled due to COVID-19.

November 10, 2020 – Travis Pruski drove to meeting with DCCRD. Meeting was cancelled due to lack of quorum.

November 16, 2020 – Met with Duvall County Judge Gilbert Saenz to discuss the WWTP Outreach program and how it could benefit local communities within the County.

December 1, 2020 – Presented assistance program to the Duvall County Commissioners Court.

January 7, 2021 - NRA met with Duval County Judge to discuss development of a countywide Master Infrastructure Plan. The county Judge is concerned about the local environment and sees the need for improvements. The Judge pushed the county to fund the development of a Master Infrastructure Plan to identify and prioritize needs. NRA assisted the County by developing an RFQ for the professional services to develop the Master Infrastructure Plan. In March of 2021, Duvall County contracted with CDM-Smith, a nationwide consulting engineering firm to develop the Master Infrastructure Plan.

NRA is working with CDM Smith and the County Judge on County gathering information, and gaining the cooperation of all municipal utility districts, cities, and other entities within the County. Master Plan is on schedule and is planned for completion in Spring 2022.

January 11, 2021 – Met with Council Members of City of Benavides to discuss WWTP assistance project.

February 2, 2021 – Met with Ben Lawin Public Works Supervisor and conducted a walk thru of the WWTP. It is a unique system with a giant septic tank to collect solids and utilizes 5 oxidation ponds of biological treatment prior to discharge.

February 8, 2021 – Met with Duval County Conservation and Reclamation District Board of Directors to discuss the Duval County Master Plan, and the CBBEP WWTP Assistance Project.

March 24, 2021 – Attend a meeting hosted by Congressman Vincent Gonzalez to discuss the ARF and how Duvall County would benefit. Congressman Gonzales stated the money could be used for wastewater plants and collection systems.

May 11, 2021 – Visited wastewater plants within Duvall County with CDM Smith to access plant conditions and processes. The master plan will include recommended repairs, estimated cost and funding options.

City of Kingsville

Travis Pruski has reached out multiple times and has not been able to make contact. He has also stopped by and left information about the outreach program. No response has been received.

Nueces County Water Control & Improvement District #5 / Banquette

Needs Identified:

- 1) Plant was being operated very well.
- 2) Aeration Basin at the plant is leaking through joints in the concrete.
- 3) Insufficient “free board” above the side water depth in aeration basin.
- 4) Equipment at plant and lift stations is in poor condition.
- 5) Wet weather inflow needs to be curtailed to assure compliance during rain fall events.

Recommendations:

- 1) Need immediate replacement of wastewater pumping equipment and controls.
- 2) Need to develop a plan for ongoing periodic replacement of wastewater equipment.
- 3) Need to conduct a plant assessment to develop alternatives for wastewater improvements.
- 4) Need to conduct an assessment to identify areas where wet weather flow is entering collection system. Areas identified need to be replaced with SDR 26 PVC pipe.

Summary of NRA’s Action with the Nueces Co. WCID #5

November 11, 2020 – Travis Pruski met with plant operator Raul Salazar Jr. and Mr. Billie King President of Board of Directors. He explained how NRA Executive Director John Byrum has been working with TWDB and TCEQ to find funding for wastewater plant improvements. WCID#5 is awaiting notice of 2nd stage grant application.

April 1, 2021 – Met with NWCID#5 board members to discuss wastewater plant management and TCEQ permits.

April 14, 2021 – Met again with WCID #5 to propose contract for NRA to manage wastewater plant operations.

May 24, 2021 - Board of Directors voted for NRA to manage the plant on a week to week basis until the new budget will allow for funding on an annual basis. The new budget begins on October 1st each year. NRA is currently working to improve their system operations and upgrading daily management procedures.

July 5, 2021 – Travis Pruski and NRA Executive Director John Byrum met with Nueces County Judge Canales and County staff to discuss emergency issues that WCID#5 did not have money to address.

July 20, 2021 – Nueces County Commissioner Court approved \$25,000 in emergency funding to make improvements. The money will be used to replace pumps and motors that are currently out of service. The NRA will work as a liaison between the County and WCID#5 to assure purchased equipment will meet the needs of the system. NRA staff will install the equipment.

City of Orange Grove

Needs Identified:

- 1) City's long time, experienced operator had experienced a stroke and has been unable to work.
- 2) Plant is in fair shape however it has been in operation for over 40 years. Planning for replacement should begin soon.
- 3) The collection system is allowing storm water to enter and cause problems for operations of the plant.

Recommendations:

- 1) City should seek an experienced operator to operate facility.
- 2) City should seek grant/loan from the Texas Water Development Board for planning and implementing recommended WWTP improvements.
- 3) The city should conduct an assessment of the collection system to identify areas allowing storm water to enter. These areas should be replaced with SDR 26 PVC pipe.

Summary of NRA's Actions with the City of Orange Grove:

October 14, 2020 – Travis Pruski had in person meeting with Todd Wright, City Administrator.

November 12, 2020 – Travis had a follow up meeting with Todd Wright and visited the WWTP for assessment.

January 13, 2021 – Travis and NRA Executive Director John Byrum conducted a plant assessment. System is run well. It is an older system constructed under PL92-500 through an EPA 75/25 grant in the early 80's. The city should plan for WWTP renovations/replaced soon.

Feb 1, 2021 – Travis attended a City Council Meeting to discuss options of plant management and future funding. Followed up with City Administrator via several meetings. We are working together to improve operational management strategies. NRA proposes to apply for a SRF grant to make system improvements and develop a master plan for infrastructure management. Advising them with respect to upgrades needed for the future.

City of Premont

Needs Identified:

- 1) Operational and maintenance activities at the plant need improvement.
- 2) Preventative maintenance is not satisfactory.
- 3) Collection system needs to be assessed to identify areas where storm water is entering the system.

Recommendations:

- 1) Improve operational and maintenance activities at the plant by finding another operator or conducting intensive training for the current operations personnel.
- 2) Improve preventative maintenance activities by implementing a program in accordance with equipment manufactures recommendations.
- 3) Conduct an assessment on the wastewater collection system to identify areas where storm water is entering into the system. Replace pipe in the identified areas with SDR 26 PVC pipe.

Summary of NRA's Actions with the City of Premont:

November 17, 2020 – Travis Pruski attended a meeting of the City of Premont City Council to introduce himself to council members and explain the WWTP Assistance Program.

January 12, 2021 – Travis Pruski and NRA Executive Director John Byrum met with Mayor Vargas to conduct a walk thru of the WWTP. The system is 10 years old and in fair condition, however the operations and preventive maintenance of the facility needs improvement.

Travis attended 2 subsequent city council meetings and had multiple meetings with Mayor. The city requested assistance with their wastewater budget in an effort to provide additional monies for improvements to the operational management. The mayor is dedicated and wants to improve the performance of the wastewater system. Funding is the issue. NRA proposes to assist Premont in the application for SRF grant for Master Infrastructure plan for the city. In the FY 2022 Budget, the City Staff will be asking the City Council to approve funding for an outside firm to management the operations of their Wastewater Treatment Plant.

Riviera Water Control & Improvement District

Needs Identified:

- 1) Treatment facility is 30 years old and built to previous standards.
- 2) Funding for improvements is an issue.

Recommendations:

- 1) Conduct an assessment of the existing WWTP and develop alternatives for future improvements.
- 2) Conduct an analysis on the WW collection system and develop alternatives for improvements.

Summary of NRA's Actions with the Riviera Water Control & Improvement District:

October 28, 2020 – Travis Pruski conducted a site visit of the WWTP. The system is well maintained and performing well; however, it is over 30 years old and in need of replacement. NRA plans to work with this utility to find funding to make improvements to the WWTP system.

Teen Challenge of Texas

Needs Identified:

- 1) System needs to be inspected by a qualified and licensed septic system inspector.

Recommendations:

- 1) Contract with a qualified and licensed septic system inspector to conduct annual evaluations of the facility.

Summary of NRA's Actions with the Teen Challenge of Texas:

November 12, 2020 - Visited site of this small non-profit group. 3 residential Septic Tank with leach lines that seem to be performing well. The only item recommendation for this facility is an inspection by a licensed qualified septic system inspector.

San Diego Municipal Utility District #1

Needs Identified:

- 1) Operations and maintenance at the treatment facility needs improvement.
- 2) Preventative maintenance program needs improvement.
- 3) Storm water is inflowing into the system and contributing to non-compliance.

Recommendations:

- 1) Develop standard operating procedures for proper operation of the treatment facility.
- 2) Develop and implement a preventative maintenance program that complies with equipment manufactures requirements and recommendations.
- 3) Develop a Master Plan for Infrastructure.

Summary of NRA's Actions with the San Diego Municipal Utility District #1

October 15, 2020 – Travis Pruski had a meeting with Rudy Torres, District Manager. Mr. Torres requested NRA attend a meeting with the Board of Directors.

Although the second meeting was cancelled once due to a COVID-19 positive test, the meeting was eventually held and attended by Mr. Pruski, Mr. Torres, San Diego City Manager and Duval County Judge. The group identified 2 pressing items:

1. Improvements to the management program of the wastewater system, and
2. Sewer line infrastructure throughout city is allowing the inflow of storm water which is a leading contributor to non-compliance.

November 16, 2020 – Travis met with Duval County Judge Gilbert Saenz to discuss the WWTP assistance program and the needs of his local communities.

December 1, 2020 – NRA attended Duval County Commissioner Court to introduce the program. Travis explained how the utilities and entities within the County will benefit from inclusion in the Master Infrastructure Plan. Upon completion of the plan, needs will be identified, prioritized and funding for recommended improvements will be sought. Duval County Commissioners Court voted to fund a Master Infrastructure Plan for the County and the entities within.

January 6, 2021 – Travis Pruski met with City of San Diego, Texas Mayor Araseli Bernal Litchenberger regarding City and MUD working together to with respect to infrastructure improvement projects. They agreed to coordinate projects through the Duval County Master Plan.

May 12, 2021 – Travis visited wastewater plants within Duval County with CDM- Smith, the engineering firm contracted to develop the Duval County Master Plan. Plan is due to be complete in Spring 2022. This utility will benefit greatly from the Master Plan if funds can be found to address improvements.

Recommendations

1. Work with the willing utilities to improve operational and maintenance management of collection and treatment systems. During this project, NRA found most all wastewater purveyors in the area to be caring organizations that are genuinely concerned and willing to address the management issues found to impede the treatment systems. The problem is (a) this area, as well as the entire state, is experiencing problems recruiting and retaining experienced license operators to run the water/wastewater utility systems. NRA is developing a plan with a large high school in the area, to begin a vocational program to teach and develop utility operations personnel. It is NRA's intention, to see this program begin in the 2022-23 school year which begins in August of 2022. (b) The decision makers and staffs of the purveyors in the area are good, hard-working people that care about the environment; however, they are not familiar with the process to obtain funding. Even if they were to find a source for a grants/loan, the application process is more than most people within this area can complete and follow through the approval process.
2. Work with various utilities in the project area to develop a mindset of regional wastewater facilities. This area would benefit from the development of one or more regional treatment facilities. The re-occurring problem found through this project is the lack of operational, process, and preventative maintenance management. The development of one or more regional treatment facilities throughout the area could lead to immediate improvements in water quality through (a) less discharge points, (b) better quality treatment of wastewater, (c) the pooling of resources to maintain one plant in one location instead of various plants throughout the area. A program to educate decision makers about a regional approach to wastewater treatment is the first step in this process. NRA will investigate the implementation of this effort and pursue it within the next 4 to 6 months. NRA plans to investigate the specifics of where regional facilities would provide benefits to the local utilities, cities, as well as the streams leading into Baffin Bay.
3. NRA recommends a second phase of the WWTP Assistance Program to address the grant and funding issues discovered as a part of this project. NRA proposes to work within the project area and assist up to 5 wastewater purveyors with grant/loan applications. As a part of the enabling statute, NRA can provide financing options, one of which is "conduit financing" which enables an entity to use NRA as the means to obtain financing for projects. This method allows an entity to carry the debt as an operation and maintenance item within their annual budget, and avoid any required approvals needed when obtaining a capital improvement loan. NRA's staff is experienced with the application process of obtain grant/loan monies and proposes to apply that experience to this project.

NRA appreciates the opportunity to work with the professional staff of the CBBEP and we are thankful to be selected to be a partner. We look forward to a continued partner relationship on future projects.