

TMDL Implementation Status for the Lower San Antonio River Watershed

Date of Status Report: December 2021, Year 3

I-Plan Approval Date: August 8, 2018

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Abbreviations

BMP - Best Management Practice

TCEQ-CRP - TCEQ Clean Rivers Program

LID - low impact development

TCEQ-WQS - TCEQ Water Quality Standards

NRCS - (USDA) Natural Resources Conservation Service

TPWD - Texas Parks and Wildlife Department

OSSF - on-site sewage facility

TSSWCB - Texas State Soil and Water Conservation Board

QAPP - Quality Assurance Project Plan

TWS - Texas Wildlife Service

SARA - San Antonio River Authority

USDA - U.S. Department of Agriculture

SSO - sanitary sewer overflow

WWTF - wastewater treatment facility

SWCD - Soil and Water Conservation District

SWQMIS - Surface Water Quality Monitoring Information System

Management Measures

Management Measure 1: Develop and implement conservation plans in priority areas of the watershed and educate landowners on appropriate stocking rates and grazing plans.

Responsible Parties	Schedule of Implementation	Implementation Milestone	Status
Local stakeholders, AgriLife Extension, TSSWCB, NRCS, Karnes SWCD #343, Goliad SWCD #352, Wilson County SWCD #301	<p>Year 1: Promote existing conservation programs. Develop 15 conservation plans in the affected watershed. Pursue funding for education programs and financial assistance.</p> <p>Year 2: Continue promotion of existing conservation programs. Develop 15 conservation plans within the watershed. Secure funding for education campaign. Initiate education campaign.</p> <p>Years 3 - 5: Continue promotion of existing conservation programs. Develop an additional 45 conservation plans in the TMDL watershed. Deliver six education programs. Assess overall strategy for implementation.</p>	<p>Years 1 - 5: Annually report on the number of conservation plans developed, the number of landowners contacted, the number of educational materials developed, and the number of educational programs delivered.</p>	<p>In 2021, the following milestones were achieved in the LSAR (Goliad and Karnes Counties) basin:</p> <ul style="list-style-type: none"> ▪ 575 landowners contacted ▪ 53 conservation plans completed ▪ 21,672 acres in developed plans ▪ 29 active contracts that encompass 9,470 acres ▪ Seven education and outreach programs were delivered

Management Measure 2: Remove and manage feral hogs.

Responsible Parties	Schedule of Implementation	Implementation Milestone	Status
<p>TWS Feral Hog Abatement Program, AgriLife Extension, Local Stakeholders, SARA, County wildlife associations, USDA, TPWD</p>	<p>Year 1: Contact landowners. Submit proposals for educational programs and local assistance. Continue existing methods and report as appropriate.</p> <p>Year 2: Secure funding for education and local assistance. Develop and disseminate educational materials. Begin providing assistance to landowners locally. Continue contacting landowners. Continue to remove feral hogs and report activity.</p> <p>Years 3 - 4: Continue contacting landowners. Continue disseminating education materials. Provide educational programs. Continue providing local assistance. Continue to remove feral hogs and report activity.</p> <p>Year 5: Continue contacting landowners. Continue to disseminate educational materials. Provide educational programs. Continue providing local assistance. Continue removing feral hogs and reporting activity. Assess strategy for the next phase of implementation.</p>	<p>Year 1: Successful development and submittal of an educational program proposal for feral hog management. Successful submittal of a proposal for local assistance. Remove 1,500 feral hogs from the TMDL watershed.</p> <p>Year 2: Secure funding for educational program. Secure funding for local assistance. Initiate education program. Remove 1,500 feral hogs from TMDL watershed.</p> <p>Years 3 - 4: Track on the number of materials developed and disseminated and the number of persons reach through education. Remove an addition 3,000 feral hogs from the TMDL watershed.</p> <p>Year 5: Track on the number of materials developed and disseminated and the number of persons reach through education. Remove 1,500 feral hogs from TMDL watershed.</p>	<p>Goliad County has now been awarded the State Hog-Out Challenge grant twice.</p> <p>SARA provides support (up to \$2,400 per year) for operations and maintenance of Goliad Wildlife Management Association's Boar Buster hog trap. Additionally, SARA loaner gates are still being utilized by landowners in Wilson and Goliad counties.</p> <p>In 2021, Goliad Wildlife Management Association and its members removed a total of 1,260 hogs. In addition, one education program was delivered, and a survey conducted using helicopters/horseback/ATVs determined that there is a density of one hog for every 34 acres.</p>

Management Measure 3: Identify, prioritize, and remediate OSSFs.

Responsible Parties	Schedule of Implementation	Implementation Milestone	Status
<p>OSSF owners, City of Kenedy, Karnes City, City of Goliad, Karnes County, and Goliad County</p>	<p>Year 1: Pursue funds for additional personnel. Pursue funds for education. Pursue funds for OSSF repairs or replacements. Identify priority areas for inspections.</p> <p>Develop OSSF tracking tool. Begin contacting OSSF owners.</p> <p>Years 2 – 5: Secure funding for additional personnel. Secure funding for education. Secure funding for OSSF repairs or replacements. Initiate educational programs. Repair and replace OSSFs. Continue tracking OSSF owners. Inspect one percent of estimated OSSFs each year.</p>	<p>Year 1: Develop and submit proposal to fund OSSF assistance and/or education programs and develop OSSF tracking system.</p> <p>Years 2 – 5: Two percent of OSSF owners contacted each year. One percent of OSSFs inspected each year. Secure funding for personnel and OSSF assistance and incentives. Initiation of education programs. Maintenance of OSSF tracking system. Replace six OSSFs every year.</p>	<p>An update was not received prior to the meeting; however, information was given about available AgriLife Extension in-person and virtual workshops.</p>

Management Measure 4: Coordinate efforts to reduce SSOs, stormwater inflow and infiltration, and WWTF contributions, and advocate for proper operation and maintenance of sewer lines.

Responsible Parties	Schedule of Implementation	Implementation Milestone	Status
<p>Falls City, City of Goliad, Karnes City, City of Kenedy, South Central Water Company, City of Runge, City of Nordheim, City of Poth, TCEQ, and AgriLife Extension</p>	<p>Year 1: Evaluate the option of treating effluent to meet half of permitted bacteria limits. Pursue funding for education programs.</p> <p>Year 2: Televising of wastewater lines and identifying upgrades needed at WWTFs.</p> <p>Years 3 – 5: Effluent will be treated to meet half the permitted limit for bacteria (if feasible). Education programs will be developed and delivered (as funding allows).</p>	<p>Year 1: Ability to meet half the permitted bacteria limits in treated effluent evaluated. Pursued grant opportunities and/or education programs.</p> <p>Year 2: Televised wastewater lines and identified upgrades at WWTFs; improved O&M of sewer lines.</p> <p>Years 3 – 5: Treated effluent limits not exceeding half permitted effluent limits for bacteria. Developed and delivered education.</p>	<p>The City of Kenedy WWTP reported six SSOs between February and July 2021, which were all remediated by the City. The SSOs that occurred on February 28 and May 25, 2021 were a result of routine jetting and inspection for hotspot areas to reduce SSO recurrence. Additionally, the City of Goliad reported one SSO in December 2020, which was subsequently remediated.</p> <p>According to EPA’s ECHO site, none of the WWTFs in the watershed discharged over the permitted limit for <i>E. coli</i> (126 cfu/100mL) since the meeting for calendar years 2019 and 2020.</p>

Management Measure 5: Restore and repair riparian zones, emphasize protection of riparian zones, and advocate for educational and outreach materials.

Responsible Parties	Schedule of Implementation	Implementation Milestone	Status
<p>Local Stakeholders, SARA, AgriLife Extension, TSSWCB, NRCS, Karnes SWCD #343, Goliad SWCD #352, and Wilson County SWCD #301</p>	<p>Year 1: Secure funding for an educational campaign and initiate the campaign. Promote existing conservation programs throughout the TMDL watershed.</p> <p>Year 2: Continue promoting existing conservation programs.</p> <p>Years 3 - 5: Continue promoting existing conservation programs. Develop two conservation plans each year in the watershed. Deliver educational programs in the watershed to encourage the adoption of conservation plans. In Year 5, assess overall progress without quantifying load reductions, and if necessary, modify existing efforts or develop a new strategy for implementation.</p>	<p>Years 1 - 2: Secure funding and implement educational programs to outreach landowners</p> <p>Years 3 - 5: Develop conservation plans in the TMDL watershed.</p>	<p>The restoration of Sulphur Creek began in 2017 and was completed in March 2018. The total project covered 1,795 linear feet. Goliad NRCS conducted follow-up site reviews at the project site in March, August, and September 2019 for the Regional Conservation Partnership Program.</p> <p>In April 2018, two local newspaper articles were published for watershed residents about riparian conservation:</p> <ul style="list-style-type: none"> ▪ Local Plants for Riparian Areas ▪ Tips for Streamside Property Owners

Management Measure 6: Promote the improved quality and management of stormwater, coordinate with new development for reducing runoff pollutants, provide education programs on stormwater management, and advocate for LID BMPs.

Responsible Parties	Schedule of Implementation	Implementation Milestone	Status
<p>SARA, Falls City, Karnes City, City of Kenedy, City of Runge, City of Goliad, City of Nordheim, City of Poth, Wilson County, Karnes County, and Goliad County.</p>	<p>Year 1: Submit a proposal to fund urban stormwater education and planning. Identify the location of urban BMP installations. Host 10 urban pollution workshops.</p> <p>Year 2: Secure funding for stormwater education and planning activities. Initiate education programs for stormwater. Develop educational materials and comprehensive stormwater assessments. Initiate the installation of BMPs if/where feasible. Host 10 urban pollution workshops.</p> <p>Years 3 – 5: Continue educational and planning activities. Complete urban BMP installation if/where feasible. Host 10 urban pollution workshops per year.</p>	<p>Year 1: Development and submittal of a proposal to fund urban stormwater education and planning. Identified locations for potential urban BMP installations, if/where feasible.</p> <p>Year 2: Secured funding for stormwater education and planning activities. Initiation of education program for urban stormwater management. Development of educational materials. Initiation of BMP installation, if/where feasible.</p> <p>Years 3 – 5: Continuation of educational and planning activities. Number of contacts made through educational activities. Completion of urban BMP installation in the LSAR watershed.</p>	<p>SARA offers rebates and grants for retrofitted and newly constructed Low Impact Development (LID) features. More information can be found on their website at Rebates San Antonio River Authority (sariverauthority.org).</p> <p>Both Goliad Elementary School (Goliad) and Roger E Sides Elementary School (Karnes City) have installed bioretention on their campuses that are treating a combined total 10,761 feet of water total and removing approximately 129 billion colonies of bacteria a year.</p> <p>On October 15, 2021, SARA provided their Condensed LID Manual to stakeholders. In addition, SARA has implemented three virtual certification courses with online exam options for LID training and may provide trainings upon request. Upcoming course information can be found on their LID Training Program page at LID Training Program San Antonio River Authority (sariverauthority.org).</p> <p>SARA presented to the River Authority’s Four-county Environmental Advisory Committee regarding stormwater infrastructure and the Resilient Rivers Blueprint.</p>

Management Measure 7: Promote the reduction of illicit dumping and proper disposal of wastes and utilize SARA’s Environmental Investigators.

Responsible Parties	Schedule of Implementation	Implementation Milestone	Status
<p>SARA, AgriLife Extension, TCEQ, Karnes County, Karnes City, City of Kenedy, City of Runge, Goliad County, City of Goliad, Wilson County, City of Poth, Falls City, and City of Nordheim</p>	<p>Year 1: Develop and submit a grant proposal in pursuit of funding for educational programs, additional personnel, and activities associated with illicit dumping mitigation. Develop a strategy for how to best reduce illicit dumping. Implement activities as resources allow. Increase the number of fines written by five percent. Reduce the number of reports of illicit dumping by five percent.</p> <p>Years 2 – 5: Secure funding for additional personnel, education programs, and/or illicit dumping implementation activities. Initiate and implement educational program.</p>	<p>Year 1: Development and submittal of a grant proposal for additional personnel and educational programs. A five percent increase in the number of fines written for illicit dumping. A five percent reduction in the number of reports/complaints to responsible parties.</p> <p>Year 2: Awarded a grant for additional personnel and educational programs. A five percent reduction in the number of reports/complaints to responsible parties from the previous year.</p> <p>Year 3 – 4: Number of educational materials and programs developed and delivered. A five percent reduction in the number of reports/complaints to responsible parties from the previous year.</p> <p>Year 5: Number of educational materials developed and disseminated. Number of education programs delivered. A five percent reduction in the number of reports/complaints to responsible parties from the previous year.</p>	<p>Between 2018 and 2021, SARA has organized 15 HHW collections in Wilson, Karnes, and Goliad counties. The following items were collected throughout the tri-county area:</p> <ul style="list-style-type: none"> ▪ 101.53 tons of HHW* ▪ 440 lbs. of pharmaceuticals ▪ 12,675 tires* ▪ 155,628 lbs. of electronic waste <p>*These numbers do not include the amount of HHW and tires that were collected as a part of the Karnes and Goliad County HHW events held in October and November 2021. SARA was still collecting information for these events at the time of the annual meeting.</p> <p>ConocoPhillips provides a trash truck program that picks up an estimated 500,000 lbs. of trash throughout the Karnes and Goliad County areas.</p> <p>SARA’s three Environmental Investigators received three complaints in the LSAR watershed: two complaints regarding water quality and one regarding a stormwater permit violation. Investigators continue to conduct camera surveillance and maintain signage as deterrents. An additional camera has been added to Branch Park to deter vandalism and other illegal activities. Investigators continue to conduct annual helicopter flights in the watershed to monitor.</p>

Management Measure 8: Coordinate and expand existing water quality monitoring in the watershed.

Responsible Parties	Schedule of Implementation	Implementation Milestone	Status
<p>SARA, TCEQ-CRP, and Stakeholders</p>	<p>Years 1-5: Conduct annual basin water quality monitoring program according to the established TCEQ-approved CRP QAPP and the Coordinated Monitoring Schedule. Transfer routine water quality data to SWQMIS three times per calendar year. Develop QAPPs for additional projects, as needed. Publish annual Basin Highlight Report that discusses water quality concerns affecting human health and aquatic health. Potential sources of pollution will be evaluated according to available water quality information. Develop additional water quality monitoring projects and funding sources, as needed.</p>	<p>Years 1 – 5: Completed annual water quality monitoring program (if funding and environmental conditions allow). Acceptance of water quality data into SWQMIS. Publication of annual Basin Highlight Report.</p>	<p>Routine watershed monitoring continues to occur as a part of the Coordinated Monitoring Schedule. Routine samples are processed and uploaded to SWQMIS as required by TCEQ-CRP. As of FY22, there are 11 water quality monitoring stations within the watershed. The station for AU 1901_03 has been temporarily dropped due to bridge construction at State Highway 239; the site will be monitored again after construction is complete. To view more information about SARA and TCEQ-CRP, or to view water quality data, go to SARA Clean Rivers Program webpage.</p> <p>SARA has continued publishing their annual basin highlight report each year. The reports can be viewed on their website at SARA Basin Reports webpage.</p> <p>At the December 2021 meeting, SARA staff went over the water quality data from the previous two Integrated Reports (IRs) and let stakeholders know upcoming information for the 2022 IR; the 2022 IR is set to be released for public comment in Spring 2022. In addition, SARA presented on “near-time” bacteria data, which looks at the bacteria sampling data over a two-year cycle versus the seven-year IR data cycle.</p>

Management Measure 9: Re-designate Cabeza Creek.

Responsible Parties	Schedule of Implementation	Implementation Milestone	Status
<p>SARA, TCEQ-CRP, and TCEQ-WQS</p>	<p>Year 1: SARA staff will conduct six field and flow sampling events at five stations. Data will be submitted to the TCEQ-CRP. TCEQ-WQS will decide if additional field and flow sampling is necessary.</p> <p>Year 2: SARA staff will conduct six field and flow sampling events at five stations if deemed necessary by the TCEQ-WQS group.</p>	<p>Year 1: Delivery of data to the TCEQ-CRP group.</p> <p>Year 2: Delivery of data to the TCEQ-CRP/WQS group if additional sampling is conducted.</p>	<p>Based on sampling data collected in Cabeza Creek, SARA submitted to TCEQ that the creek should be split from a single assessment unit (AU) into the following two AUs:</p> <ul style="list-style-type: none"> ▪ Lower Cabeza Creek: From the confluence with Segment 1901, west of Goliad, Goliad County, up to a point approximately 600 meters upstream of FM 2043. ▪ Upper Cabeza Creek: From a point approximately 600 meters upstream of FM 2043 in Goliad County, up to the upper end of the water body. <p>Cabeza Creek is anticipated to be split into two AUs (1901B_01 and 1901B_02) beginning in the 2022 Integrated Report.</p> <p>As of September 2019, SARA has continued to collect monitoring data from one station on Cabeza Creek at FM 2043 as a part of their Coordinated Monitoring Schedule. Monitoring at this location will extend through August 2022.</p>

Control Measure 1: Improve monitoring of WWTF effluent to ensure permit compliance.

Responsible Parties	Schedule of Implementation	Implementation Milestone	Status
Falls City, Karnes City, City of Kenedy, City of Goliad, and South Central Water Company	Monitoring according to permit requirements.	Annual five percent reductions in non-reported monitoring.	Information for this Control Measure was taken from the EPA ECHO website (echo.epa.gov/) and lists the past five years of compliance history for regulated facilities. In FY20-21, there were four violations identified for the following facilities: <ul style="list-style-type: none"> ▪ City of Falls City WWTP ▪ Kenedy WWTF ▪ Riddleville Street WWTF (Karnes City) Both the City of Falls City WWTP and Riddleville Street WWTF were cited for failing to send their DMR. Additionally, Kenedy WWTF has received violations associated with their compliance schedule.

Control Measure 2: Improve and upgrade WWTFs.

Responsible Parties	Schedule of Implementation	Implementation Milestone	Status
Falls City, Karnes City, City of Kenedy, City of Goliad, City of Runge, City of Nordheim, City of Poth, and South Central Water Company	<p>Years 1 – 2: Identify WWTFs with substandard bacteria treatment systems. Identify improvements that can be made in treatment and WWTF expansion needs. Pursue technical and financial assistance.</p> <p>Years 3 – 5: Begin making upgrades and improvements to WWTFs. Assess and expand capacities.</p>	<p>Years 1 – 5: Identification of wastewater bacteria treatment needs at WWTFs in the TMDL watershed. As funding allows, make upgrades and improvements to WWTFs to ensure adequate treatment of effluent</p>	No update received.