



San Saba River Streamflow Restoration Project

Menard County Water Control & Improvement District #1 (MCWCID)
Category A Applicant

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Technical Project Description

The Menard Canal begins approximately 3.7 miles west of Menard and presently runs about 6 miles in length before terminating into the San Saba River on the eastern edge of town. The average slope along the length of the canal is roughly 0.11% or 5.8 feet/mile.

There are four parts of the conveyance improvement and streamflow restoration project to complete the first 2.5 miles of the Menard Canal. These parts are described below.

Phase 1: Headgate @ Diversion Point

The project involves construction of a new concrete gate structure at the point of diversion (POD) from the San Saba River. The new structure will include a sediment/debris trap to reduce the amount of large gravel, trash, and debris from entering the pipe. It will also include a new headgate and automated data acquisition on the diversion amount. This component of the project is being funded in part by the Texas Water Development Board (TWDB) through their Agriculture Water Conservation Grant Program and will be completed independent from the WaterSmart grant. The environmental compliance and design phase has been approved by TWDB, and construction for this headgate is scheduled to begin September 2023.

Phase 2: First Mile Piping

This project component would replace the first roughly 4,000 feet of the currently unlined Menard Canal with a 30" HP Storm pipe, roughly 500 feet downstream from the POD. This stretch of canal is where the majority of losses occur. Once the pipe is installed, it will be covered with fill material. The headgate will control the flow into the first mile piping, and a second gate at the end of the pipe will control the flow to the next section of the canal.

Phase 3: Restoration and Re-sloping Improvements to the Menard Canal

This project component includes re-sloping, re-shaping and partially fill the next mile of unlined canal to create a narrower width (10-foot top) channel profile and brought to grade. The canal will have flow control from the gate at the end of the pipe, and an additional gate will be installed at the end of Phase 3 and beginning of the Phase 4 piping project.

Phase 4: Holifield Piping

Following the mile of re-sloped canal, an additional approximately 2,000 feet of the canal will be piped to provide maximum conservation benefit and improve the area where losses occur. This portion of the project, known as the Holifield Pipe, has reported to have major losses (Referenced in Appendix A: Feasibility Study). Once the pipe is installed, the canal will be covered with fill material. A gate would be installed at the beginning and end of the Holifield pipe for control of flow. A debris screen and sediment trap would be added to the beginning of the pipe.

FIGURE 1 OVERALL IMPROVEMENT PLAN - PHASE 1 THROUGH 4



Labor costs include clearing and grubbing the canal section, surveying of the site, engineering design, environmental review and permitting, and installation of the materials. After project completion, ongoing maintenance will occur to inspect and clear accumulated debris in the trap in front of the head gate in order to prevent clogging of the pipe as well as build-up of debris in the canal. In addition, any new trees or vegetation that may sprout up along the canal should be removed. Finally, as funding becomes available, the remaining sections of the canal below the project reach will be cleared and grubbed of debris and vegetation to allow flow of water through the entire six-mile length.

Evaluation Criterion

A – Project Benefits

Sub-Criterion A.1 – Benefits to Ecological Values

Please explain how the project will benefit ecological values that have a nexus to water resources or water resources management, including benefits to plant and animal species, fish

and wildlife habitat, riparian areas, and ecosystems that are supported by rivers, streams, and other water sources, or that are directly influenced by water resources management.

The upper San Saba River extends 52.8 miles from above historic Fort McKavett (located at the Schleicher/Menard County line) downstream to the FM road 1311 bridge crossing just below the town of Menard. This reach is in a rural setting about 150 miles west (and slightly north) of Austin, TX. Adjacent riparian lands in the upper San Saba are privately owned and predominately in agricultural use. As shown in Figure 1. above, the proposed project is located in the middle of the upper San Saba, just upstream of the town of Menard. The upper San Saba is influenced by drought, low flows, and affected by ongoing agricultural activities and development (including groundwater withdrawals and surface water diversions) that result in diminished flows, sedimentation, and water quality degradation. The proposed project benefits multiple ecological values, including the following:

- San Saba River Streamflow
- Water Quality
- Aquatic Habitat

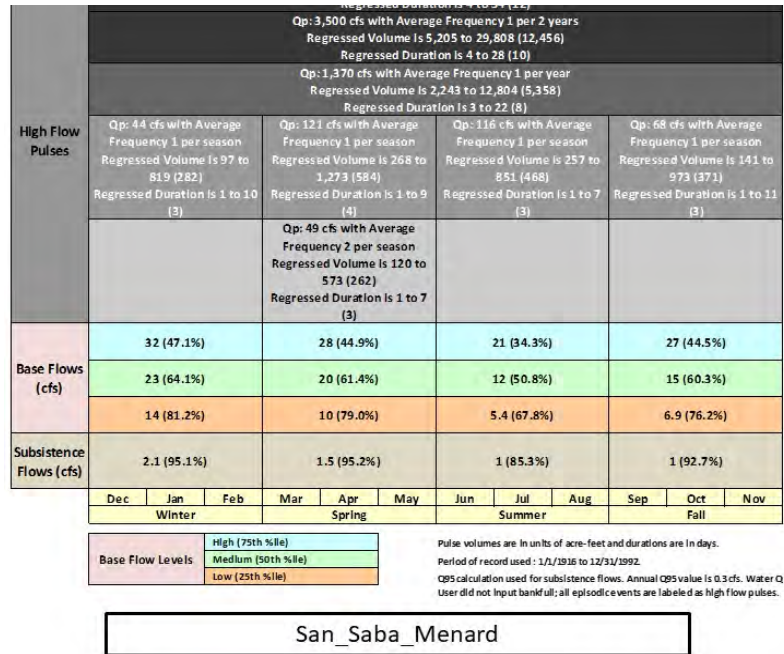
Will the project improve watershed health in a river basin that is adversely impacted by a Reclamation water project? If the project will benefit aquatic or riparian ecosystems within the watershed (e.g., by reducing flood risk, reducing bank erosion, increasing biodiversity, or preserving native species), explain the extent of those benefits (i.e., magnitude and geographic extent). Estimate expected project benefits to ecosystems and provide documentation and support for this estimate, including a detailed explanation of how the estimate was determined.

The primary ecological value for the proposed project is increased San Saba River streamflow, thus improved habitat for a number of aquatic species of conservation concern in the project area that rely on healthy environmental flow conditions including the Colorado roundnose minnow (*Dionda* sp.) , Guadalupe bass (*Micropterus treculii*), Texas shiner (*Notropis amabilis*), as well as four state-threatened species of freshwater mussels, namely, Texas Pimpleback (*Cyclonaias petrina*), False Spike (*Fusconaia mitchelli*), Texas Fatmucket (*Lampsilis bracteata*), and Texas Fawnsfoot (*Truncilla macrodon*), that are all proposed for protection under the Endangered Species Act. Flow remaining instream under this project will sustain discharge below the point of diversion maintaining wetted habitat, riverine connectivity, and creating refugia during periods of low-flow by improving water quality and reducing thermal stress. Even under a maximum use scenario for all other water rights in the San Saba basin, the size and seniority of the MCWCID water right would result in the 1.5 cfs of water left instream benefiting up to 4 miles of proposed critical habitat downstream of the point of diversion.

Enhanced streamflow will result from reduced water diversions, which have historically occurred year-round, but peak during the irrigation season from late March through mid-October. Low flows in the San Saba River near Menard, TX normally occur in late summer and early fall, coinciding with high irrigation water demand and withdrawals. The Hydrology Based

Environmental Flow Regime table demonstrates the frequency, magnitude and duration of various ecologically significant flow metrics including Subsistence Flows—the minimum streamflow needed during critical drought periods to maintain tolerable water quality conditions and to provide minimal aquatic habitat for the survival of aquatic organisms.

FIGURE 2 SAN SABA HYDROLOGY BASED ENVIRONMENTAL FLOW ANALYSIS



Comparative analysis of hydrologic periods representing pre-post development periods for the San Saba River at USGS gage 08144500 at Menard, TX show a decrease in seasonal base flow values of up to 37%. The project would result in an increase in 1.5 cfs of water left instream contributing to baseflow and representing the vast majority of the subsistence flow values for the year and creating a more reliable supply of water for downstream aquatic habitat for approximately 4 miles, including proposed critical habitat for the Texas fatmucket and Texas pimpleback mussel species.

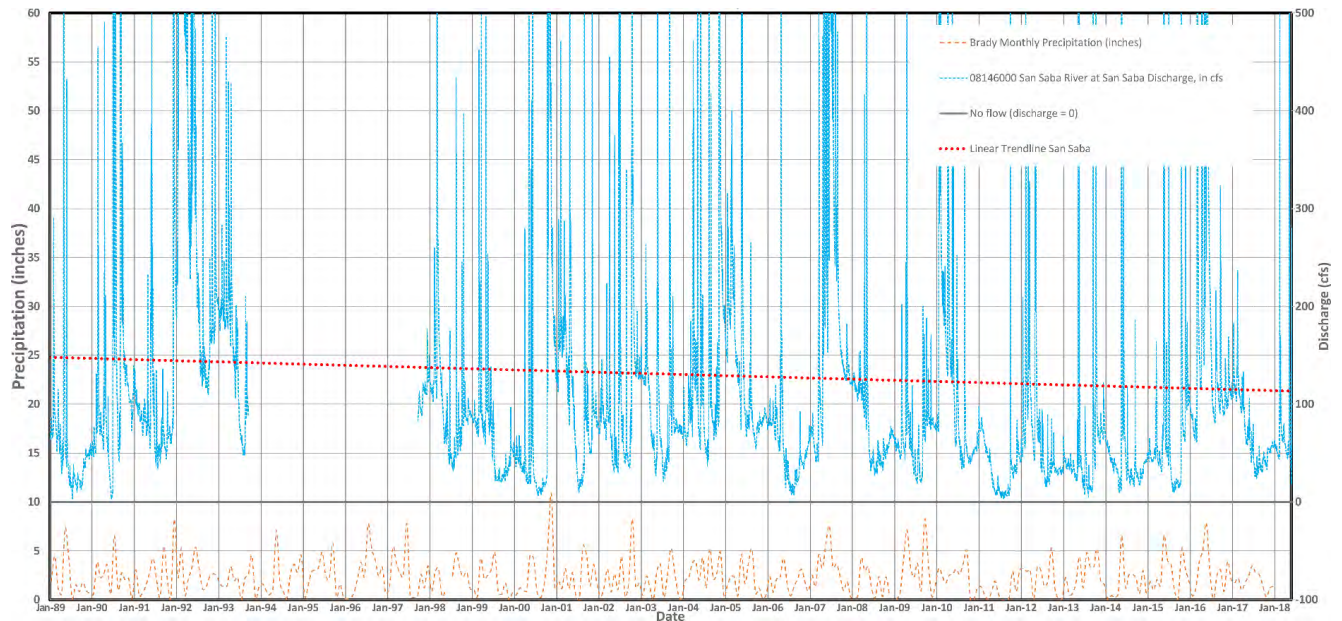
If the project will benefit specific species and habitats, describe the species and/or type of habitat that will benefit and the status of the species or habitat (e.g., native species, game species, federally threatened or endangered, State listed, or designated critical habitat). Describe the extent (i.e., magnitude and geographic extent) to which the project will benefit the species or habitat, including an estimate of expected project benefits and documentation and support for the estimate.

Within the San Saba River, withdrawals of groundwater and surface water coupled with periods of extended drought have resulted in low flow conditions dewatering of sections of the river. These low flow conditions and dewatering causing reduced connectivity are threatening

imperiled species, including Texas fatmucket, Texas pimpleback, False spike, and Texas fawnsfoot which are all State threatened species. The Texas fatmucket and Texas pimpleback are currently under consideration for Federally Endangered status, and the Texas fawnsfoot is under consideration for Federally Threatened status.¹ Elevated water temperatures due to low-flow conditions are anticipated to be the primary contributing factor in the decline of these species, and recent research identifying thermal tolerances of glochidia (larval) and juvenile life stages for the species for Texas fatmucket suggest LT05 30.8°C/LT50 32.5°C (lethal temperature resulting in 5% and 50% mortality) thresholds have been exceeded up to 36.9% on the San Saba River near Menard, TX in the past few years (2017-2019).² This project will provide 1.5 cfs of increased flow in the stretch of river proposed for critical habitat for the species providing increased base and subsistence flows and protecting and reducing thermal stress downstream of the diversion point. These flows will also support aquatic habitat for other species of conservation concern including the Guadalupe bass, Colorado Roundnose minnow, headwaters catfish, and Texas shiner.

Will the project address drought conditions or drought-related impacts on water supplies, habitat, species, or the ecosystem as a whole?

FIGURE 3 SAN SABA BASIN PRECIPITATION AND DISCHARGE TREND 1990-2018



The climate in the Menard, TX is considered semiarid to subtropical-subhumid with long, hot summers and cool winters. Annual rainfall varies, with late spring and early fall months being the wettest and late fall and summer months receiving very little rain and prone to drought. As

¹ The effect of dewatering on freshwater mussel community structure and the implications for conservation and water policy: A case study from a spring-fed stream in the southwestern United States (Randklev 2018)

² Using upper thermal limits of *Lampsilis bracteata* (Texas fatmucket) from the North Llano and San Saba rivers, Texas to inform water management practices in the Edwards Plateau (Goldsmith et al. 2022)

a result, the river is characterized by long periods of low flow and short, high-magnitude discharges during heavy rainfall events. Figure 4 shows San Saba River discharge and precipitation with a trendline illustrating a decrease in baseflow over the last 30 years. In addition, TNC analysis of pre and post development periods for the USGS gage at Menard, TX demonstrated seasonal baseflow reductions of up to 37%. In 2018, analysis of gauge data showed that dewatering of parts of the San Saba during drought are in-part driven by ground water pumping combined with surface water diversions below Menard, TX. The proposed project would dedicate 1.5 cfs of San Saba flow throughout the year protecting habitat downstream of the diversion point and providing a reliable source of water to mitigate the impacts and shocks of drought.

What is the extent of the proposed project that would reduce the likelihood of listing or would otherwise improve the status of the species?

This project will reduce irrigation water diversions by at least 1.5 cfs providing benefits to base flows, riverine connectivity and protection the thermal regimes supportive of aquatic habitat. Baseflow recommendations based on flow-ecology relationships of Texas fatmucket identified dropping below 10.59 cfs for a duration of 12 days to be lethal. Additional flow provided through the project will enhance baseflow reducing temperatures, thermal stress, and provide refugia for Texas fatmucket and Texas pimpleback especially during periods of drought. These benefits will extend into known mussel beds and proposed critical habitat improving and increasing the probability of species survival and potentially reducing the likelihood of listing.

Sub-Criterion A.2 – Quantification of Specific Project Benefits by Project Type

The proposed irrigation canal improvement project will save an estimated 1,990 acre-feet per year of water. This is based on engineering feasibility study performed by Ambiotech in 2019, the canal experienced an approximate 50% loss over the first 2.5 miles of canal.³ Based on recent USGS data 2008-2019, diversions on average have been 3,981 acre-feet/year, applying a 50% loss factor for those diversions would result in losses of 1990 acre-feet. In exchange for funding assistance for the canal project MCWID is committing the majority of those conserved water savings, 1,100 acre-feet to instream use for a 30 year-term enhancing instream habitat downstream of the POD for a stretch of 4 miles. This would leave MCWID with 3,790 acre-feet for diversion and or lease for instream uses under their existing water right.

The water that will be conserved by piping and improvements is currently lost to seepage and evapotranspiration. This seepage water often flows onto surface lands adjacent the canal at times creating hazardous conditions within pastures and on roads on neighboring ranches.

Texas Commission on Environmental Quality (TCEQ) developed Environmental Flow Recommendations for the Colorado River Basin, including consideration of flows on the San Saba, in 2012⁴. The considered standards identified flow requirements for Base/Subsistence

³ Preliminary Feasibility Assessment for Improvements to the Menard Canal

⁴ BBEST Report

and High Flow Pulses for various gages including the San Saba to mimic natural flow regimes supporting ecologically sound environment. Flows regimes recommended for the San Saba were not being attained under current water management scenarios, and strategies to address flow deficits were identified. Since 2017, TNC has been working with MCWCID on development of voluntary water right transactions to protect streamflow and address baseflow deficits in the San Saba River basin. In 2019 TNC was able to assist MCWCID in legally amending their water right add instream use as a beneficial use to their water right allowing them to identify a portion of the water right to be legally protected for fish and wildlife benefit. TNC subsequently leased a portion of the districts water right to enhance flows on the river during drought periods. Conserved water resulting from this project will be used for instream flow and TNC and MCWCID will demonstrate the water has been put to instream use by monitoring water diversions into the canal and reporting annual water use to TCEQ.

Critical to the project rationale, the 4,890 cfs of Menard Canal water rights remain valid and are transferable through TCEQ to meet other water use demands (potentially including out of basin uses). It is far better for the future resilience of local ranchers, the town of Menard, and the San Saba River if the existing rights remain with (and are utilized through) a restored Menard Canal.

By restoring the efficiency and functionality of the head gate and conveyance system, Menard Canal water right holders will receive a reliable supply of surface water for gravity-fed irrigation. This improved supply reliability will allow for reductions in more expensive groundwater pumping currently used by the water right holders to irrigate their fields. Further, as a result of the system improvements, they will not need to divert their entire water right and thus have agreed to dedicate a substantial portion of the water savings to instream use on the San Saba for 30 years. More specifically, in exchange for public financing of system improvements, the irrigators have agreed to restore 1.5 cfs to the river for the agreed upon 30-year term.

This restored flow, protected instream on the San Saba and delivered to the Menard Canal POD, will ensure provision of future benefits for mussel habitat (both upstream and downstream), including protection from predation and improved water quality. This enhanced flow will be particularly important during dry periods when the Menard Canal water right can be satisfied but mussel habitat conditions are vulnerable. Given the relative seniority of the Menard Canal water right to other upstream San Saba rights, the full volume of water is modeled to be available at the POD 80% of the time.

Completion of the project will restore irrigation flows to agricultural users with rights to water in the Menard Canal delivered to irrigators much more efficiently with reduced losses from seepage and evaporation. This will enable water to flow through the length of Menard Canal, rewatering what is referred to as “the Ditch” as it passes through the town of Menard. In 1986, as part of the Texas Sesquicentennial Celebration, local residents created a “Ditch Walk” through town as a tourist attraction. Several unique sites line the ditch as it meanders through town, welcoming visitors to take a walk back in time. This attraction, which has been dormant due to reduced flow conditions for nearly a decade, will be revitalized as a result of the project.

Water losses along the canal have been an issue for some time (as is typical of many earthen irrigation canals) as supported in a 1953 canal seepage investigation conducted by the U.S. Geological Survey. The report estimated an annual average flow in the canal of 14.6 cfs based on data collected between March 1924 and September 1953 and losses approaching 50%. The loss was attributed to both seepage and transpiration due to the growth of large trees within the banks of the canal.

More recent USGS data from the period between 2008 to 2019, excluding a data gap between 2013 to 2018, reveals a much lower annual average flow rate of 5.5 cfs. A gain/loss study conducted by USGS in the summer of 2014 showed 100% losses over the entire length of the canal, which at that time approached 10 miles. The length of canal currently managed by Menard County WCID, roughly 6 miles, experienced an approximately 50% loss over the first 2.5 miles of canal based on this study and only another 5-10% loss over the next 2 miles of canal. Based on this information, potential improvements to restore flow in the canal focused on the first 2.5-mile stretch of the canal from the diversion point from the San Saba River.

A minimum of 1,100 acre-feet of the conserved water resulting from the project will be dedicated to instream flow. TNC assisted the district in adding *instream* use as a recognized beneficial use to their water right in 2021. As a project commitment the district plans on managing and claiming at least 1,100 acre-feet of their water right for instream flow. TNC will assist in monitoring the benefits of non-diversion in the reach below the POD.

Flow remaining instream under this project will provide increased discharge maintaining wetted habitat and riverine connectivity, creating refugia by increasing water quality and reducing thermal stress on these and other aquatic species during times of low flow and drought conditions. Aquatic species of conservation concern in the project area that rely on healthy environmental flow conditions including the Colorado roundnose minnow (*Dionda* sp.) , Guadalupe bass (*Micropterus treculii*), Texas shiner (*Notropis amabilis*), as well as four state-threatened species of freshwater mussels, namely, Texas Pimpleback (*Cyclonaias petrina*), False Spike (*Fusconaia mitchelli*), Texas Fatmucket (*Lampsilis bracteata*), and Texas Fawnsfoot (*Truncilla macrodon*), that are all proposed for protection under the Endangered Species Act.

This section of river is currently proposed as critical habitat for multiple species of freshwater mussels, the overall impact and benefit to habitat as a result of the project can be estimated by calculating the portion of conserved water as a result of the project and the linear distance downstream that conserved and dedicated water would be expected to travel. Estimates of losses within the section of canal proposed for repair are 50%, with average flow in the section averaging 5.5 cfs annually. With up to 1,990 acre-feet of water potentially conserved as a result of the project, MCWID is committing to dedicate 1,100 acre-feet (55% of estimated conserved water) of their annually permitted water right for instream and environmental flow. As a result of the project, that dedicated instream water would remain in the river past the MCWID POD and, even under a scenario where all water rights are diverted at their maximum, it's habitat enhancement and impact would be measured more than 4 miles downstream.

Drought conditions in the San Saba River result in increased frequency of low flow events. Drought results in drying of mussel habitats and desiccation of exposed mussels. Such low flows during drought can exacerbate thermal regimes exceeding thresholds for survival. The Texas fatmucket (*Lampsilis bracteata*), Texas pimpleback (*Cyclonaias petrina*) are proposed for Federally Endangered status and Texas fawnsfoot (*Truncilla macrodon*) is proposed for threatened status by the USFWS. This project would directly provide an increase in instream flow of 1.5 cfs to a 4 mile stretch below the POD creating an increase in aquatic habitat and decreasing the impacts of thermal stress on the species. The project will improve the status of the two species and provide much needed water reliability for future drought conditions.

B - Collaborative Project Planning & Stakeholder Support

Water users in the San Saba River have historically been in dispute over the drivers of water scarcity in the basin and never in agreement on solutions to address the issue. Drought conditions often exacerbate these clashes putting upstream water users under regulatory scrutiny for both ground and surface water use. The voluntary dedication of more than 20% of the largest surface water right in the upper basin is expected to ease tensions and serve as a model for collaborative watershed agreements that can address future scarcity for both people and nature.

The project is a result of close and continued collaboration between MCWCID (water user) and TNC (a stakeholder with diverse interests). TNC has been working with MCWCID for more than 5 years researching the connection between surface and groundwater resources in the region and attempting to identify opportunities for intervention to address conservation priorities as well as mitigate conflict between water users. Through close coordination and partnerships with Texas Parks & Wildlife, USFWS, and Texas A&M NRI, TNC has been able to identify reaches of the river where addressing current and future water use can have meaningful impact on the long-term health of the river.

Describe the strategy or plan that supports your proposed project. When was the plan or strategy prepared and for what purpose? What types of issues are addressed in the plan? For example, does the plan address water quantity issues, water quality issues, and/or issues related to ecosystem health or the health of species and habitat within the watershed?

The project is supported by three primary strategies and plans and informed by recent academic research specific to the San Saba River basin. The first is the USFWS proposal to list six Central Texas mussel species, including the Texas fatmucket and Texas pimpleback, as threatened under the ESA. The proposed listing specifically and repeatedly asserts that flow is a limiting factor for mussel habitat and that all six mussel species need flowing water for survival. One of the primary management activities prescribed for restoration of critical mussel habitat is moderation of ground and surface water withdrawals to maintain adequate flows. Further, recent research has established that flows on the San Saba at Menard to support Texas fatmucket survival should not drop below 10.59 cfs for more than 12 days to prevent

conditions where lethal temperatures can result in mussel mortality. USFWS asserts that special management is necessary to maintain adequate flows, and the proposed project would enhance 4 mi of protection of proposed critical habitat.

The second plan is TCEQ's 2011 Environmental Flow Regime Recommendations Report⁵ that provided consensus based environmental flow regime recommendations for the San Saba. The Bay and Basin Exert Science Team (BBEST) developed the report for consideration as a part of the development of Environmental Flow Regulations for Texas river systems. The BBEST, as part of the Colorado River basin multi-stakeholder interest SB3 Environmental Flows Planning Process,⁶ considered all available scientific data in formulating these recommendations including a review of historic flows, aerial photography, soils, riparian vegetation, wetlands, water quality, and biology identified relationships between flow and aquatic ecology for the San Saba River. Rapid assessments of fish habitat-flow relationships based on channel measurements and fish biology were conducted for selected sites, relationships between flow and stream channel maintenance were evaluated, and historic flows were analyzed using Hydrology-based Environmental Flow Regime (HEFR) Analysis to support environmental flow regimes. Flow recommendations from this report can be used as a bench-mark for establishing necessary base and subsistence flows for the protection of a sound ecological environment at the project site. Using a drainage area ratio approach to adjust the HEFR Analysis from the report to the site at Menard, TX shows that low baseflow recommendations for summer months would be 11.88 cfs.

The last is TPWD's Environmental Flow Information Toolkit (EFIT). EFIT is a decision support tool built by The Texas Parks and Wildlife Department to aid in developing strategies for the protection and restoration of natural flow regimes and water levels in Texas aquatic systems. Driven by end-user recommendations and feedback, the toolkit is comprised of interactive dashboards, analytical tools, data and publications designed to identify opportunity areas for environmental flow mitigation efforts. The interactive geospatial platform of dashboards incorporates multiple data sources and integrated statistical models to serve critical information on water use, hydrologic alteration, and environmental flow targets to meet conservation objectives. EFIT served as the leading decision support tool for environmental flow practitioners and stakeholders to communicate and collaborate more effectively to achieve voluntary environmental flow protection and restoration strategies. Utilizing the tool, TNC identified the Hydrology Based Environmental Flow Regime (HEFR) Analysis to inform "target flows", the amount, rate and frequency of streamflows or freshwater inflows needed to support sound, natural ecological environments at the project site shown in the table below.

⁵ BBEST Environmental Flow Regime Recommendations Report (TCEQ 2011)

⁶ [Senate Bill 3 \(SB3\) process for environmental flows in order to determine environmental flow standards for all of the major river basins and bay systems in Texas.](#)

High Flow Pulses	Qp: 6,540 cfs with Average Frequency 1 per 5 years Regressed Volume is 9,120 to 52,371 (21,855) Regressed Duration is 4 to 34 (12)																																		
	Qp: 3,500 cfs with Average Frequency 1 per 2 years Regressed Volume is 5,205 to 29,808 (12,456) Regressed Duration is 4 to 28 (10)																																		
	Qp: 1,370 cfs with Average Frequency 1 per year Regressed Volume is 2,243 to 12,804 (5,358) Regressed Duration is 3 to 22 (8)																																		
	Qp: 44 cfs with Average Frequency 1 per season Regressed Volume is 97 to 819 (282) Regressed Duration is 1 to 10 (3)	Qp: 121 cfs with Average Frequency 1 per season Regressed Volume is 268 to 1,273 (584) Regressed Duration is 1 to 9 (4)	Qp: 116 cfs with Average Frequency 1 per season Regressed Volume is 257 to 851 (468) Regressed Duration is 1 to 7 (3)	Qp: 68 cfs with Average Frequency 1 per season Regressed Volume is 141 to 973 (371) Regressed Duration is 1 to 11 (3)																															
	Qp: 49 cfs with Average Frequency 2 per season Regressed Volume is 120 to 573 (262) Regressed Duration is 1 to 7 (3)																																		
Base Flows (cfs)	32 (47.1%)			28 (44.9%)			21 (34.3%)			27 (44.5%)																									
	23 (64.1%)			20 (61.4%)			12 (50.8%)			15 (60.3%)																									
	14 (81.2%)			10 (79.0%)			5.4 (67.8%)			6.9 (76.2%)																									
Subsistence Flows (cfs)	2.1 (95.1%)			1.5 (95.2%)			1 (85.3%)			1 (92.7%)																									
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	Low (25th %ile)																																		

Pulse volumes are in units of acre-feet and durations are in days.
Period of record used: 1/1/1916 to 12/31/1992.
Q95 calculation used for subsistence flows. Annual Q95 value is 0.3 cfs. Water Q
User did not input bankfull; all episodic events are labeled as high flow pulses.

San_Saba_Menard

Was your strategy or plan developed collaboratively? Who was involved in preparing the plan? Was the plan prepared with input from stakeholders with diverse interests (e.g., water, land, or forest management interests; and agricultural, municipal, tribal, 16 environmental, recreation uses)? What was the process used for interested stakeholders to provide input during the planning process? If the plan was prepared by an entity other than the applicant, explain why it is applicable.

The proposed listing of Central Texas mussel species was prepared by USFWS scientists.

TCEQ’s Environmental Flow Legislation (SB3) created a public process for soliciting input from scientists and stakeholders. Each area of the state has a Stakeholder Committee made up of people from diverse interest groups and an Expert Science Team, appointed by the Stakeholder Committee, made up solely of technical experts. Each Bay/Basin Stakeholder Committee (BBASC)—considered their Science Team’s recommended environmental flow regime, along with policy considerations, and developed their own set of recommendations about flow protection standards. The Stakeholder Committees also developed methods, or “strategies,” to help meet the flow recommendations. For areas where sufficient unallocated water isn’t available, these strategies could include options such as incentives to improve water-use efficiency with saved water left in the stream, the dedication of treated wastewater to environmental flow purposes, or the purchase or donation of existing water rights.

In 2014, a Great Plains LCC-supported assessment helped identify conservation actions that would benefit 28 priority fish species in rivers and streams of the Great Plains. The assessment also identified eight watersheds critical to the preservation of regional, native fish diversity.

Using this assessment as a starting point, the Great Plains LCC and the Southeast Aquatic Resource Partnership launched an ambitious project in 2015 to develop multi-species, watershed based conservation assessments and science strategies throughout the Great Plains. In 2016, the Great Plains LCC and Texas Parks & Wildlife Department held a series of watershed based workshops with regional managers to gather feedback on priorities for native fish communities and identify science needs to help guide potential conservation actions. The feedback from these meetings was what developed into TPWD's Environmental Flow Information Toolkit (EFIT), a project to develop a publicly available web-based geospatial platform to identify priority flow protection and restoration opportunity areas within the Brazos, Canadian, Colorado and Red River Native Fish Conservation Areas (NFCAs) was one of the chose project.

Is one of the purposes of the strategy or plan to increase the reliability of water supply for ecological values? Describe how the plan or strategy provides support for your proposed project. Does the proposed project implement a goal or need identified in the plan? Describe how the proposed project is prioritized in the referenced plan or strategy.

Both TPWD and USFWS have been supportive of the utilization of environmental water transactions, including irrigation efficiency and conserved water dedication projects to address environmental flow needs of Texas rivers including the San Saba. TNC has been collaborating with both these organizations to help define specific flow recommendations for species of conservation concern and the BBEST Report and TPWD's EFIT tool illustrate specific flow recommendations for the protection of fish and wildlife resources.

This project is complimentary to the ongoing flow restoration efforts of non-profit organizations such as TNC that have been working with individual irrigators to develop forbearance agreements that dedicated water for instream flow and build drought resilience for agricultural producers. To date, TNC has transacted more than 500 acre-feet of surface water rights in the San Saba basin to provide environmental flow protections.

C – Stakeholder Support

Describe the level of stakeholder support for the proposed project. Are letters of support from stakeholders provided? Are any stakeholders providing support for the project through cost-share contributions or through other types of contributions to the project?

MCWCID has received eight letters of support representing various groups and interests. These support letters are attached in this application. Of the stakeholder support, The Nature Conservancy has pledged in-kind support for their time and expertise in monitoring performance measures and characterizing the ecological benefits of restoring the Menard Canal.

Explain whether the project is supported by a diverse set of stakeholders, as appropriate, given the types of interested stakeholders within the project area and the scale, type, and complexity

of the proposed project. For example, is the project supported by entities representing agricultural, municipal, Tribal, environmental, or recreation uses? Is the project supported by entities responsible for the management of land, water, fish and wildlife, recreation, or forestry within the project area? Is the project consistent with the policies of those agencies?

The project activities proposed are supported by a diverse group of stakeholders. These supporters and their roles are the following:

Mrs. Jean Wright – irrigator and landowner adjacent to the Menard Canal

Menard County – Local County Government, recreational use, tourism

Menard Chamber of Commerce and Industrial Development Board – recreational and tourism interest

Menard County Soil & Water Conservation District – agricultural and environmental interest

Presidio de San Saba Restoration Corporation and Menard County Historical Commission – Historical interest as the Menard Canal was constructed in the mid-1700s

Texas Parks and Wildlife Department– environmental interest. TPWD’s mission is to manage and conserve the natural and cultural resources of Texas and to provide hunting, fishing and outdoor recreation opportunities for the use and enjoyment of present and future generations.

Menard County Underground Water District – Local government, environmental interest

Texas-The Nature Conservancy – environmental interest. This project is complimentary to the ongoing flow restoration efforts of non-profit organizations such as TNC that have been working with individual irrigators to develop forbearance agreements that dedicated water for instream flow and build drought resilience for agricultural producers

Texas Water Development Board – financially supporting by collaborating with MCWCID by awarding \$65,900 to install a new headgate at the point of diversion for the Menard Canal. The Texas Water Development Board’s mission is to lead the state’s efforts in ensuring a secure water future for Texas and its citizens. TWDB is responsible for setting goals to plan for the state’s water resources and to provide financial services for water planning and data collection.

This support is significant as it demonstrates a diverse range of interests in the project. As demonstrated in the letters of support, the local community relies on this historic canal as a tourist attraction. The portion of the canal that runs through the town, including in front of the Menard County Courthouse, has been a source of community pride for decades. Additionally, the letters of support demonstrate the concern of in stream flows for agricultural and environmental interests. The support brings diverse stakeholders together to find an alternative solution to instream flow for the ecosystem while maintaining the water needed to maintain the agricultural nature of area.

Is there opposition to the proposed project? If so, describe the opposition and explain how it will be addressed. Opposition will not necessarily result in fewer points.

While project partners do not anticipate opposition, any conflict that arises would be addressed through direct and transparent communication of the project goals and plans.

D – Readiness to Proceed

Describe the implementation plan for the proposed project. Include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates. This may include, but is not limited to, design, environmental and cultural resources compliance, permitting, and construction/installation.

Menard County Water Control & Improvement District #1 (MCWICD) is capable of proceeding with the project upon entering into a financial assistance agreement. MCWICD has already been awarded a Texas Water Development Board (TWDB) Agricultural Conservation Water Grant to complete the installation of the new headgate, debris screen, and sediment trap located approximately 500 feet from the point of diversion. The environmental and permitting portion of the TWDB grant has been approved, and construction is scheduled for September of 2023. MCWICD has started the process of designing the next three phases of the project and will continue to complete the design while this grant application is being considered. The Nature Conservancy has partnered with MCWICD for more than 5 years researching the connection between surface and groundwater resources in the region and attempting to identify opportunities for intervention to address conservation priorities, and has pledged volunteered time to address monitoring and review benefits of this project.

MCWICD is eager to begin this project. Below is a table of the Proposed Project Schedule:

TASK	Start Date	Duration
Prepare Bids for Headgate	March 2023	2 months (pre-award)
Project Bid & Award for Headgate	May 2023	2 months (pre-award)
Order Materials	July 2023	6 months (pre-award)
Headgate Construction & installation	September 2023	4 months (pre-award)
Finalize contract with Reclamation	January 2024	2 months
Bid for Engineering Services	January 2024	2 months
Environmental Compliance	April 2024	6 months
Engineering Design	April 2024	8 months
Permit Acquisition	August 2024	6 months
Prepare Bids for Construction	January 2025	2 months
Project Bid & Award	March 2025	2 months
Order Materials	May 2025	6 months
Project Construction	November 2025	8 months
Monitor & Reporting	January 2026	Ongoing

Schedule:

Phase 1: Headgate Project

The Headgate Project will begin construction September 2023 (independent and prior to WaterSmart grant). The headgate is estimated to be complete in January 2024.

Phases 3-4: Piping & Improvements to the Menard Canal

Design and environmental compliance phase will begin January 2024 to October 2024. MCWCID will retain a qualified engineer through a competitive bid in January 2024. While MCWCID has preliminary designs from the 2021 Feasibility Study completed by Ambiotech Engineering Group, final plans will be prepared by December 2025. The permitting phase will begin August 2024 through February 2025. Engineer Design will begin in April 2024 and will finalize the designs needed to begin construction. The Construction Phase will begin with bidding in January 2025 and complete the project in July of 2026. The construction of Phase 2-4 will begin in November 2025 and should take 8 months to complete. The construction phase includes clearing and grubbing along the Canal, dirt work in the Canal to prepare for piping and re-sloping, and installing all necessary pipe, gates, and debris screens. The last phase of the project is monitoring and recording the instream benefits.

Permits and Approvals

The project activities will not include in channel activities in the San Saba River. Project activities will be limited to in the Menard Canal, and therefore MCWCID does not anticipate the need for permits and approvals for working in a waterway. The Corps (or if applicable, other federal funding agency) will review the project under Section 106, which requires federal agencies to evaluate the effects of their undertakings on historic properties in consultation with the State Historic Preservation Officer (SHPO) and Native American Tribes. This process will use supporting documentation developed by the MCWCID and additional documentation for the project areas not yet surveyed. The Corps will make determinations of NRHP-eligibility for any potential historic properties, and a determination of project effects. MCWCID contacted Reclamation Environmental Protection Specialist, Trent Parish, to review possible compliance on November 2, 2022. Mr. Parish explained that any species of concern within the river will need a USFWS to review, and other compliance measures. MCWCID also met with Alexander Shane with the Texas Historical Commission on November 2, 2022, to discuss Section 106 of the National Historic Preservation Act. MCWCID has reviewed local permits and approval requirements and do not believe there are any needed at this time. MCWCID does not anticipate any new policies or administrative action required to implement the project. The proposed budget includes \$25,000 for environmental and cultural compliance.

Engineering & Design Work

Preliminary work began in March 2021 with the completion of a feasibility study along the 2.5 mile study area of the Menard Canal. Preliminary design work has been completed internally, creating the 4 phases needed to complete the project activities. Contracted engineering design will be completed for Phases 2 through 4 as described in the Technical Description in January 2024 including the clearing and grubbing, dirt work, and project design and management.

Access to Land or Water Source where Project is Located

MCWCID has access to the proposed project location. MCWCID owns the Menard Canal and the

water rights for the project. The MCWCID purchased the 4,890 acre-feet of surface water rights and the Menard Canal in 2016. While there are easements in place to access portions of the Menard Canal through private property, access gates were included in the budget to alleviate this need. These access gates will be installed along the Canal to cut down travel time and private property entry, alleviating the need for additional easement access.

Is the project completely or partially located on Federal land or at a Federal facility?

The project is not on federal land or at a federal facility.

E – Performance Measures

The primary objective of this project is to reduce irrigation water conveyance losses so that less water is diverted from the San Saba River and is kept instream for fish and wildlife benefit. All irrigation diversions into the Menard Irrigation Canal are metered with real time data available online(<https://waterdata.usgs.gov/monitoringlocation/08143990/#parameterCode=00065&period=P7D>). Based on engineering feasibility study performed by Ambiotech Engineering Group in 2019, the canal experienced an approximate 50% loss over the first 2.5 miles of canal. With average diversions (2000-2022) of 3,900 acre-feet the estimated maximum loss for the system is approximately 1,900 acre-feet annually. While some losses will still occur, due to evaporation etc. canal piping and lining for the first 2.5 miles is anticipated to eliminate the majority of losses and MCWCID is committing 1,100 acre-feet conserved water to instream as a beneficial use—managed for the benefit of fish and wildlife resources. To quantify the actual benefit of the efficiency improvements MCWCID will partner with TNC to prepare annual water use reports and verify compliance with irrigation water diversion reductions.

In addition to increased instream flow benefits, the new headgate diversion structure will also eliminate the need for annual gravel removal at the point of diversion that has the potential to contribute to increased sediment that impacts and degrades water quality for downstream fish and wildlife habitat—including known mussel beds.

In addition to water use reporting, TNC in coordination with conservation partners and Texas Parks & Wildlife, will conduct baseline monitoring in the first year of project implementation to characterize the instream habitat conditions and perform biological monitoring to quantify populations presence/abundance of species of conservation concern. Subsequent monitoring will be done in the 5th year after project implementation to characterize any response or changes that have occurred because of the project.

MCWID will use a combination of streamflow monitoring and accounting of diversions within the canal after project completion to demonstrate compliance and conserved water benefit to the San Saba River. TNC has offered to assist MCWID in evaluating instream benefits of reduced diversions by taking streamflow measurements in the 4-mile section below the POD that the project will benefit as well as biological monitoring in year one and in year 5 to compare project benefits. Streamflow measurements below the POD will be in addition to existing annual

monitoring that TNC is already performing to track compliance of other environmental water transactions in the subject reach. Measurements into and within the canal will help to demonstrate annual compliance with MCWID's water right diversions and quantifying and accounting for the instream dedication.

5-year monitoring activities for the project will focus on contractual compliance of MCWID water use under the commitment to restore 1,100 acre-feet of conserved water and characterization of presence/absence of species of conservation concern in the reach adjacent the POD. Flow monitoring within the canal and below the POD to characterize benefits to the stream. Compliance monitoring activities will happen on an annual basis at minimum and will include tracking and reporting of diversion data and annual TCEQ water use reports as well as field inspections at the POD as needed (under reduced diversion operations). These data will be used to verify that MCWID diverted no more than 3,790 acre-feet in any given year, that at minimum 1,100 acre-feet was put to beneficial instream use and will assist in determining system efficiencies and return flow benefits.

Flow monitoring within the canal and below the POD will assist in characterizing the project benefits in terms of improved efficiencies in the canal system as well as the stream flow and habitat benefits to the receiving stream below the POD. TNC will assist the MCWID in providing annual streamflow measurements below the POD to quantify the volumetric benefits and will provide additional monitoring under reduced diversion operations. These monitoring activities will include discharge measurements and photo points and will take place at minimum on an annual basis.

F – Presidential and DOI Priorities

Climate Change: E.O. 14008

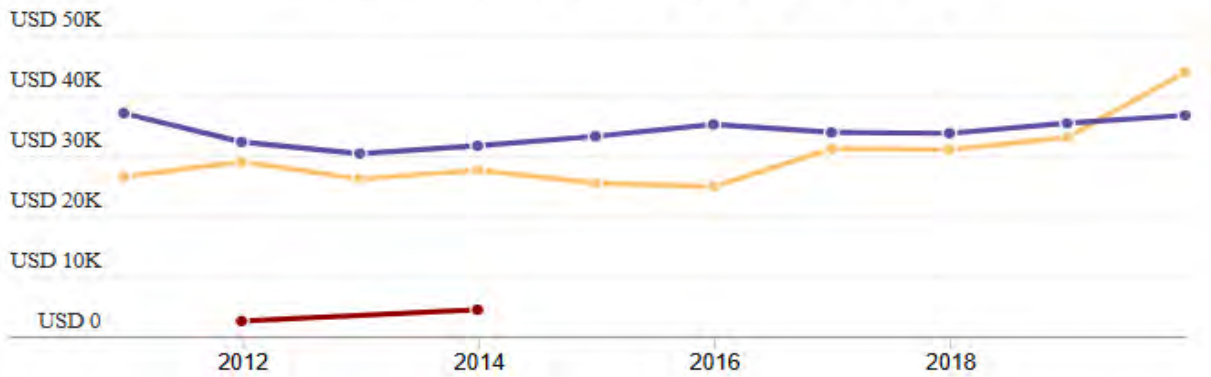
How will the project build long-term resilience to drought? How many years will the project continue to provide benefits? Estimate the extent to which the project will build resilience to drought and provide support for your estimate.

The project will increase the long-term resilience of the San Saba River to drought through dedication of 1,100 acre-feet/year of water to instream flow in response to periodic drought in Central Texas. The drought resilience benefits resulting from the project will last for a term of 30 years.

Disadvantaged or Underserved Communities: E.O.13985

The Menard Canal is located in Menard County, Texas. Menard is defined as a disadvantaged or historically underserved community. According to the U.S. Census Bureau, Menard County has a total population of 1,962 in 2020. According to the US Census, the Texas median household income in 2021 is \$67,321, while in Menard County the median household income in 2021 is \$40,341. The 2020 US Census reported Menard County having 19.4% persons in poverty (<https://www.census.gov/quickfacts/fact/table/menardcountytexas,TX/PST045222>).

Median household income by race in Menard



Data from census.gov via Data Commons

The project has the potential to provide a much need influx of funding to restore the historic irrigation canal, reconnecting the cornerstone of the cultural heritage of the town and providing revenue through an increase in tourism and recreation.

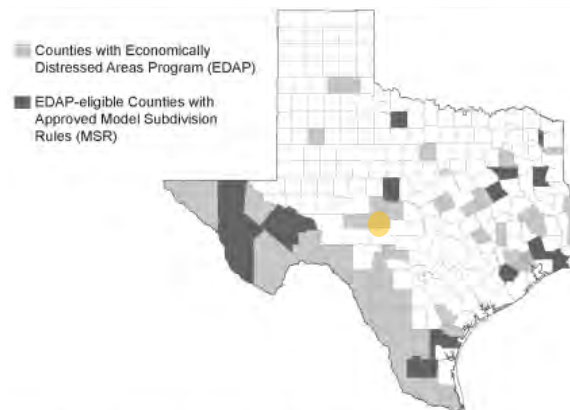
The proposed project will directly benefit agricultural producers in Menard County with access to the Menard Canal by creating a more efficient and drought tolerant water supply.

The project indirectly benefits the community due to the new water supplies for recreational use, water quality benefits to the entire service area, and economic growth opportunities.

This project will have economic benefits for the community by:

1. The creation of jobs to construct the infrastructure
2. A climate-resilient water supply that will enable to continuation of local agriculture and the households that it supports
3. This project will dramatically increase the efficiency and reliability of irrigation water supply for the local agriculture community.

TEXAS COUNTIES IN ECONOMICALLY DISTRESSED AREAS OR WITH MODEL



NOTE: All counties listed as containing EDAP-funded projects have also adopted MSRs.
SOURCE: Texas Water Development Board.

Menard County

Menard, Texas 76859

Buck Miller

Sheriff
325-396-4705

Christy Eggleston

County & District Clerk
325-396-4682

Tim Powell

Tax Assessor-Collector
325-396-4523

Tami Russell

County Treasurer
325-396-2748

Luke Davis

County Attorney
325-396-0866

Brandon Corbin

County Judge
325-396-4789



206 East San Saba Avenue
PO Box 1038
Menard, TX 76859

Frank Davis

Commissioner, Precinct 1

Jay Cunningham

Commissioner, Precinct 2

Edward Keith

Commissioner, Precinct 3

Tyler Wright

Commissioner, Precinct 4

Stacy Lawler

Justice of the Peace
325-396-2239

Lee R. Callan

Constable
325-456-2597

To Whom it May Concern:

Please accept this letter as a show of support for the Bureau of Reclamation Environmental Water Resource Projects WaterSMART Grant submitted by our local Water District. As you will see Menard County has a strong history, which includes the Historic Ditch which ran through our community for over a century. This unique feature was a source of community pride, which now has become an eyesore as it falls into disrepair.

Restoring the water flow to the historic ditch would provide a boost to the recreational draw that the Ditch Walk once provided, and give the 10,000 passenger vehicles that pass through Menard each day a reason to stop and support our local economy.

Thank you in advance for your time and consideration. If there is anything further my office can supply to support this project, I trust you'll let me know.

Sincerely,

A handwritten signature in blue ink, appearing to read "Brandon Corbin".

Brandon Corbin, MBA, MS, PHR

Menard County Judge

countyjudge@co.menard.tx.us

(325) 396-4789

To Whom it May Concern:

Please accept this letter as a show of support for the Bureau of Reclamation Environmental Water Resource Projects WaterSMART Grant submitted by the Menard County Water Control & Improvement District #1. The historic irrigation canal, locally referred to as 'The Ditch' has a strong history, which ran through our community for over a century. This unique feature was a source of community pride, which now has become an eyesore as it falls into disrepair.

As the Executive Director for the Chamber of Commerce as well as the Menard Industrial Development Corporation (EDC), I see firsthand the economic and tourism harm done by not having the Ditch flowing. People come into the Chamber office several times a week to take our "Ditch Walk" tour and inquire about why there is no water in The Ditch. The Ditch walk tour is a map which has tourists walk the ditch, learn about its history through a brochure I hand out and also a walk through downtown with all of its historical buildings. It is a huge eye sore for tourism when people come to see its history and learn about what an amazing thing it is and then there is no water in it. We would not treat our Presidio or our Fort this way, or any "landmark" in which we are trying to preserve its history, in our community. Menard is an economically challenged community already. We have high poverty rates, one of Texas' highest rated. Anything we can do to generate revenue through tourism should be high on our priority list. We have so much history in our community that people flock to; the ditch being one of those things.

I personally own a newly reconstructed, historical wedding venue on the ditch and know how much it would benefit our business to have it running. Brides, grooms, families could take pictures in front of it and around it, as well as it being a lovely feature on the property. We are asked about it being empty on almost every tour I give of the property. Currently it is an eye sore on our property as well.

The trees that it has watered for many, many years are dying all along the ditch. It looks as if our community doesn't care about one of our treasured landmarks, which could not be further from the truth! I do not know anyone in our community who doesn't want it running, if for no other purpose but how beautiful it looks in the middle of our town. It really is in my opinion a necessity. It waters the trees on its banks, it is where deer and all kinds of wildlife use as a source of water, and it esthetically looks nice. Lastly, but not least, it honors the men who put so much effort and hard labor into building it.

Piping the first mile will provide a much-needed modification to The Ditch, allowing water to reach the irrigators who depend on it for their crops.

Restoring the water flow to the historic ditch would provide a boost to the recreational draw that the Ditch Walk once provided and give the 10,000 passenger vehicles that pass-through Menard each day a reason to stop and support our local economy.

Thank you in advance for your time and consideration. If there is anything further, I can supply to support this project, I trust you'll let me know.

Sincerely,

A handwritten signature in cursive script that reads "Cherry Swindell". The signature is written in black ink and is positioned below the typed name "Cherry Swindell".

To Whom it May Concern:

I am writing to urge support for the Bureau of Reclamation Environmental Water Resource Projects WaterSMART Grant submitted by the Menard County Water Control & Improvement District #1.

As a landowner on the Menard Irrigation Canal, locally known as the "Ditch", I have seen the flows through the Ditch diminish over the past decade, in part due to the deterioration in the structure, which allows a lot of seepage, and in part from the loss caused by the extensive amount of rehydration of the alluvium necessitated following regulatory shutdowns of the canal.

The subject grant will provide for installing pipe in the canal in those sections which historically have shown the most seepage losses, thereby conserving a considerable amount of water for flow in the river.

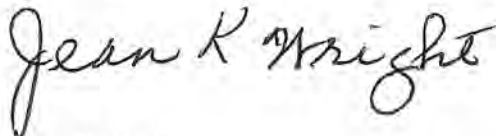
The Ditch company has owned approximately one-half of the total water rights in the county, which have now been purchased by the Menard County Water Control and Improvement District #1. In the past nearly 45% of all crop irrigation in the county has depended on the irrigation canal and the diminution in flows was a major impetus for the sale of the water rights to the District.

Further, the Ditch has a very important local and State history, having been constructed by the Spaniards before Texas became a state and Mexico became an independent country. It has run through our community since 1756, a strong source of community pride, and has now become an eyesore as it falls into disrepair.

Restoring the water flow to the historic ditch would provide a boost to the recreational draw that the Ditch Walk once provided and give the 10,000 passenger vehicles that pass through Menard each day a reason to stop and support our local economy.

Thank you in advance for your time and consideration. If there is anything further I can supply to support this project, please let me know.

Sincerely,



Jean K. Wright
2052 WFM 2092
Menard, Texas 76859

March 22, 2023

Terrell T. Kelley
Chairman, Menard County Historical Commission
President, Presidio de San Saba' Restoration Corporation
PO Box 1592
Menard, Texas 76859

To Whom it May Concern:

I am writing to urge support for the Bureau of Reclamation Environmental Water Resource Projects WaterSMART Grant submitted by the Menard County Water Control & Improvement District #1.

Since Spanish Colonial times, agriculture has been the economic heartbeat of Menard County and it remains so today. Water is the vital lifeblood which flows through our county, giving life and making agriculture possible. Because of the historic irregularity of rain in West Texas, the development of viable agriculture requires dependable, consistent alternative water to supplement what nature provides. In 1757, when the Spanish first arrived here to establish a major colony, a top priority was therefore the construction of an irrigation system harnessing the waters of the San Saba. The dam and canal (acequia) constructed by the Spaniards to support both the fort (presidia) and the mission four miles downstream are clearly shown in the 1767 map drawn by Nicolas de Laffora.

In 1874, a hundred years after the Spanish returned to San Antonio, Anglo Texan settlers began to bring the acequia back to life, incorporating large portions of it into a new system which eventually extended over ten miles and provided water to about 2,000 acres of farmland, all without the use of pumps. This economically transformed the San Saba River valley. According to the original 1874 charter, the irrigation system enabled "mills for grinding grain, sawing lumber, mechanical and agricultural purposes..." Agricultural crops included "cotton, oats, potatoes, sweet potatoes, melons, and garden truck (fruits and vegetables). In fact, we could raise anything that grows in this part of Texas." An "average of two bales of cotton per acre" was also reported. At one time, two or three gristmills and a cotton gin operated along the canal. Menard County agriculture was so robust that Menard was a major contender as the site for Texas Technological College which was established in Lubbock in 1925.

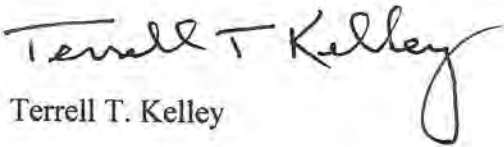
The Menard County Underground Water District's mission is to protect and preserve the groundwater resources in Menard County. Menard County is known for its abundant springs and therefore highly connected groundwater and surface water resources. Locally known as the "Ditch", we have seen the flows through the Ditch diminish over the past decade, in part due to the deterioration in the structure, which allows a lot of seepage, and in part from the loss caused by the extensive amount of rehydration of the alluvium necessitated following regulatory shutdowns of the canal. These losses are a detriment to both the ecology relying on the surface water, but also the groundwater users.

The subject grant will provide for installing pipe in the canal in those sections which historically have shown the most seepage losses, thereby conserving a considerable amount of water for flow in the river.

Restoring the water flow to the historic ditch would provide a boost to the recreational draw that the Ditch Walk once provided and give the 10,000 passenger vehicles that pass through Menard each day a reason to stop and support our local economy.

Thank you in advance for your time and consideration. If there is anything further, I can supply to support this project, please let me know.

Sincerely,

A handwritten signature in black ink that reads "Terrell T. Kelley". The signature is written in a cursive style with a large, looping "y" at the end.

Terrell T. Kelley



MENARD COUNTY SOIL AND WATER CONSERVATION DISTRICT NO. 215

P. O. BOX 665, MENARD, TEXAS 76859 – PHONE (325) 396-4708

To Whom it May Concern:

The Menard County Soil and Water Conservation District Board of Directors is committed to supporting the Menard County Water Control and Improvement District #1 for the Bureau of Reclamation Environmental Water Resource Projects WaterSMART Grant and is offering this letter of recommendation in support of this grant. The members of this board are long-standing landowners and operators in Menard County and realize the value of the historic irrigation canal to agriculture in Menard. The historic irrigation canal, locally referred to as the “Ditch” has a strong history of running through Menard County for over a century, supplying water for trees in our Veterans’ Memorial Park as well as irrigation access for local landowners. The Ditch dates back to 1757. This unique feature has been a source of community pride but has now become an eyesore as it falls into disrepair. The agriculture industry is Menard’s primary economic resource, and the Ditch has been a part of that industry. The Ditch provides water for trees, livestock, crops, and wildlife. It has been used for irrigation purposes and is an asset to the ag industry in general. Agriculture provides jobs for people in Menard County. This grant would go a long way toward repairing the damage caused by the Texas Commission on Environmental Quality’s untimely destruction of the historic Ditch and its associated water flow. Water and water rights are critical to the leading economic generator for agriculture and business survival in Menard County.

Piping the first mile will provide a much-needed modification to the Ditch, allowing water to reach the irrigators who depend on it for their crops.

Restoring the water flow to the historic ditch would not only be a positive step forward to helping agricultural needs, but also provide a boost to the recreational draw that the Ditch Walk once provided and give 10,000 passenger vehicles that travel through Menard each day a reason to stop and support our local economy.

Thank you in advance for your time and consideration. If there is anything further the Menard County SWCD can supply to support this project, please contact us at 325-396-4708 or menardcounty@swcd.texas.gov

Sincerely,

Menard County Soil and Water Conservation District

Benny Kothmann, Chairman of the Board

MENARD COUNTY UNDERGROUND WATER DISTRICT

Chairman: Sheridan Duncan Vice-Chairman: Jay Kothmann Secretary: Dick Winters
Director: Mark Blau Director: Jim Wright

To Whom it May Concern:

I am writing to urge support for the Bureau of Reclamation Environmental Water Resource Projects WaterSMART Grant submitted by the Menard County Water Control & Improvement District #1.

The Menard County Underground Water District's mission is to protect and preserve the groundwater resources in Menard County. Menard County is known for the abundant springs and therefore highly connective groundwater and surface water resources. Locally known as the "Ditch", we have seen the flows through the Ditch diminish over the past decade, in part due to the deterioration in the structure, which allows a lot of seepage, and in part from the loss caused by the extensive amount of rehydration of the alluvium necessitated following regulatory shutdowns of the canal. These losses are a detriment to both the ecology relying on the surface water, but also the groundwater users.

The subject grant will provide for installing pipe in the canal in those sections which historically have shown the most seepage losses, thereby conserving a considerable amount of water for flow in the river.

The Ditch company has owned approximately one-half of the total water rights in the county, which have now been purchased by the Menard County Water Control and Improvement District #1. In the past nearly 45% of all crop irrigation in the county has depended on the irrigation canal and the diminution in flows was a major impetus for the sale of the water rights to the District. Without the Ditch being utilized efficiently, we see more and more irrigators moving to groundwater wells, causing a concern of well interference and stress of our resources.

Further, the Ditch has a very important local and State history, having been constructed by the Spaniards before Texas became a state and Mexico became an independent country. It has run through our community since 1756, a strong source of community pride, and has now become an eyesore as it falls into disrepair.

Restoring the water flow to the historic ditch would provide a boost to the recreational draw that the Ditch Walk once provided and give the 10,000 passenger vehicles that pass through Menard each day a reason to stop and support our local economy.

Thank you in advance for your time and consideration. If there is anything further, I can supply to support this project, please let me know.

Sincerely,



Sheridan Duncan, DVM

Menard County Underground Water District
P.O. Box 1215
Menard, Texas 76859
325-396-3670



Life's better outside.®

March 23, 2023

Re: "Environmental Water Resources Menard County Water Control Improvement District #1 San Saba River Flow Restoration Project"

Commissioners

Arch "Beaver" Aplin, III
Chairman
Lake Jackson

Dick Scott
Vice-Chairman
Wimberley

James E. Abell
Kilgore

Oliver J. Bell
Cleveland

Paul L. Foster
El Paso

Anna B. Galo
Laredo

Jeffery D. Hildebrand
Houston

Robert L. "Bobby" Patton, Jr.
Fort Worth

Travis B. "Blake" Rowling
Dallas

Lee M. Bass
Chairman-Emeritus
Fort Worth

T. Dan Friedkin
Chairman-Emeritus
Houston

David Yoskowitz, Ph.D.
Executive Director

Dear Review Committee,

This letter is to express the Texas Parks and Wildlife Department's (TPWD) support of the proposal, "Environmental Water Resources Menard County Water Control Improvement District #1 San Saba River Flow Restoration Project". This project aligns with TPWD's mission to manage and conserve the natural and cultural resources of Texas and TPWD's goals to restore hydrologic conditions to support healthy aquatic ecosystems; encourage the voluntary transfer of water rights to appropriate water trusts; and to protect and assist in the recovery of threatened, endangered and high priority species.

TPWD's Water Resources Program has worked across the Department and with external partners on issues related to instream flows and will continue to strive to find partnerships that lead to the benefit of the state's natural resources. Providing 1,100-acre feet/year (acft/yr) to the San Saba River has the potential to benefit a number of important aquatic organisms including five state threatened freshwater mussels which are now pending review and/or are candidates for listing under the Endangered Species Act, and the Guadalupe Bass, the State Fish of Texas.

The Nature Conservancy Water Resources staff have added value to collaborative projects with the TPWD in the past and we look forward to continuing to support the work that they are doing in Texas. Thank you for your consideration of "Environmental Water Resources Menard County Water Control Improvement District #1 San Saba River Flow Restoration Project".

Sincerely,

Marty Kelly
Water Resources Program Coordinator

March 23, 2023

Subject: WaterSmart Grant Submission

To Whom It May Concern,

I'm writing to express The Nature Conservancy's support for the Menard County Irrigation District No.1 (MCWCID) funding proposal for the FY23 WaterSmart Environmental Water Resources Projects grant opportunity.

The Nature Conservancy (TNC) has been working with partners such as Texas Parks & Wildlife Department (TPWD), United States Fish & Wildlife Service (USFWS) and academic institutions developing research and collecting data to inform the understanding of ground-water surface water interactions and the impact of climate change on water scarcity and species conservation within the San Saba River basin.¹ The San Saba River, a major tributary of the Colorado River situated on the Edwards Plateau, has been increasingly impacted by severe and prolonged drought conditions as well as groundwater and surface water withdrawals. These conditions have led to reduced streamflow, increased water temperatures and intermittent reaches of the river resulting in degraded aquatic habitat and conflict between water users. These water scarcity conditions have not only garnered regional and local attention but have required regulatory intervention to water management and ultimately led to conservationists labeling the San Saba River as one of the most endangered rivers in the United States.²

The San Saba River watershed supports a unique set of aquatic faunal groups due to karst aquifers, springs, and high gradient stream networks. There are a number of aquatic species of conservation concern in the project area that rely on healthy environmental flow conditions including the Colorado roundnose minnow (*Dionda* sp.) , Guadalupe bass (*Micropterus treculii*), Texas shiner (*Notropis amabilis*), as well as four state-threatened species of freshwater mussels, namely, Texas Pimpleback (*Cyclonaias petrina*), False Spike (*Fusconaia mitchelli*), Texas Fatmucket (*Lampsilis bracteata*), and Texas Fawnsfoot (*Truncilla macrodon*), that are all proposed for protection under the Endangered Species Act.³

The influence of streamflow on these aquatic mussels is pervasive, shaping habitat, governing growth, survivorship and reproduction. Because of this, dewatering caused by prolonged drought conditions, human-induced activities, or both, can result in mussel losses either directly through stream drying or indirectly as low flows combined with elevated water temperatures cause sublethal effects that eventually exact mortality. In the reach of the San Saba River where the project is located, ongoing

¹ [Imperiled Central Texas Mussels Bring Conservation Focus to the San Saba River \(USFWS, 2021\)](#)

² [America's Most Endangered Rivers® 2013 \(American Rivers, 2013\)](#)

³; [Endangered Species Status With Critical Habitat for Guadalupe Fatmucket, Texas Fatmucket, Guadalupe Orb, Texas Pimpleback, and False Spike, and Threatened Species Status With Section 4\(d\) Rule and Critical Habitat for Texas Fawnsfoot \(US Federal Register Vol. 86, No. 163 2021\)](#)

surface and alluvial aquifer groundwater withdrawals, in combination with severe drought conditions have resulted in reduced streamflow that has impacted both water quantity as well as water quality conditions that threaten current and future survival of these species.

TPWD's Environmental Flow Information Toolkit which serves as a resource for identifying areas of hydrologic alteration and developing flow restoration targets, shows that the San Saba River at Menard, TX has a subsistence flow target ranging from 1-2.1 (cfs) or 724-1520 acre-feet annually. Subsistence flows are defined as the minimum streamflow needed during critical drought periods to maintain tolerable water quality conditions and to provide minimal aquatic habitat for the survival of aquatic organisms.⁴ While these are not the ideal conditions for streamflow on the river, TNC uses the volumetric target of 1520 acre-feet/year, or 2.1 cfs as the minimum flow target that can add to base flow protection of aquatic species in all years and provide specific drought refugia for drought conditions this section of the San Saba River.

To restore and enhance streamflow on the San Saba River and provide critical habitat for species of conservation concern, TNC has been working with private landowners as well as the MCWCID on the development of Environmental Water Transactions (EWT) that increase the quantity and quality of flows—with a goal of protecting enough of the surface water rights to maintain 2.1 cfs at Menard, TX year-round. EWT are a conservation tool that provide a financial incentive to water right holders to leave water in stream when its needed most for aquatic habitat. These voluntary transactions improve farm resilience in times of drought by offering the producer an alternative use for their water. Leasing their water to TNC through an EWT provides agricultural producers a source of income and the option to rest a portion of their irrigable lands.⁵ Through these EWT agreements TNC has contracted 252 acre-feet per year for environmental flow protection on the San Saba River to date. As proposed, the MCWCID project would result in the dedication of 1,100 acre-feet annually for instream flow restoration for the next 30 years. This single commitment would result in the protection of more than 1.5 (cfs) of streamflow year-round, representing the majority of the flow target necessary to maintain water quality and habitat for the survival of aquatic organisms in this section of the San Saba River.

The San Saba River is a unique system with complex hydrology and home to an incredible diversity of aquatic species that are currently under threat due to long-term drought and water withdrawals. TNC and our partners are working in the basin to develop the data and science necessary to inform sustainable water management, as well as innovative strategies and solutions that will improve the health of the river and the viability, and resiliency of the agricultural community that depend on it. At 4,890 acre-feet/year, MCWCID has the largest water right allocation in the river basin and as such is a vital partner in the management of the river and development of long-term solutions to protecting its flow. The proposed project would dedicate 22% of the MCWCID water right (1,100 acre-feet/year) over the next 30 years, providing significant environmental flow protections and habitat for the species of conservation concern. TNC strongly supports this proposal as it provides as unique opportunity for win-win outcomes that both protect biodiversity of the San Saba River and lead to economic benefits for the people of Menard, TX.

⁴ [Texas Environmental Flows Information Toolkit: Hydrology Dashboard](#)

⁵ [Texas Water Markets Review \(Garmany, 2022\)](#)

Sincerely,



Kyle Garmany
Water & Agriculture Program Director
TNC-Texas

**Resolution to Authorize the Application and Commit Financial and
Legal Obligations for a Bureau of Reclamation – Water Smart Grant
Environmental Water Resources Projects**

WHEREAS the District desires to control the flow of water from the San Saba River into the canal and to reduce seepage and evaporation from the canal and to provide engineering plans and drawings to implement those recommendations; and

WHEREAS part of the initial phase of the plan will be to pipe roughly the first mile for the purpose of controlling and reducing seepage out of the canal; and

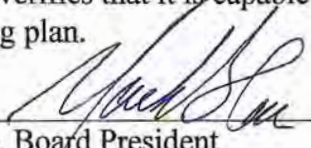
WHEREAS the District has insufficient funds to implement the plan and will need to obtain outside funding; and


WHEREAS the District Board of Directors certifies that it has the legal authority to enter into an agreement for financial assistance under the Bureau of Reclamation's Water Smart Grant for Environmental Water Resources Projects and reviewed and supports the application.

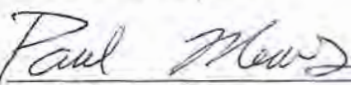
WHEREAS the District Board of Directors is capable of providing the match requirement for such grant, and intends to work with the Bureau of Reclamation to establish deadlines for entering into the cooperative agreement,

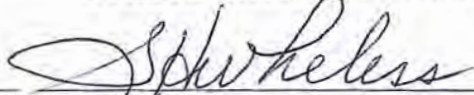
NOW, THEREFORE, BE IT RESOLVED THAT

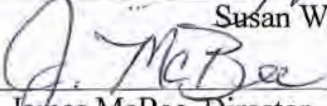
- 1) The District is hereby authorized to submit an application to the Bureau of Reclamation for an Environmental Water Resources Projects Grant for the fiscal year 2023; and
- 2) The District Manager, Meredith Allen, is authorized to submit the application on behalf of the District and perform all reasonable and necessary action in support of the application, and, if approved by the Bureau of Reclamation, to perform the terms and conditions of the award of money from the Environmental Water Resources Projects Fund; and
- 3) The District verifies that, if approved, the grant will supplement rather than provide the entire funding for the proposed project; and
- 4) The District verifies that it is capable of providing the financial contribution as specified in the funding plan.


Mark Blau, Board President


Debra Roberson, Vice-President


Paul Mews, Secretary


Susan Wheless, Director


James McBee, Director