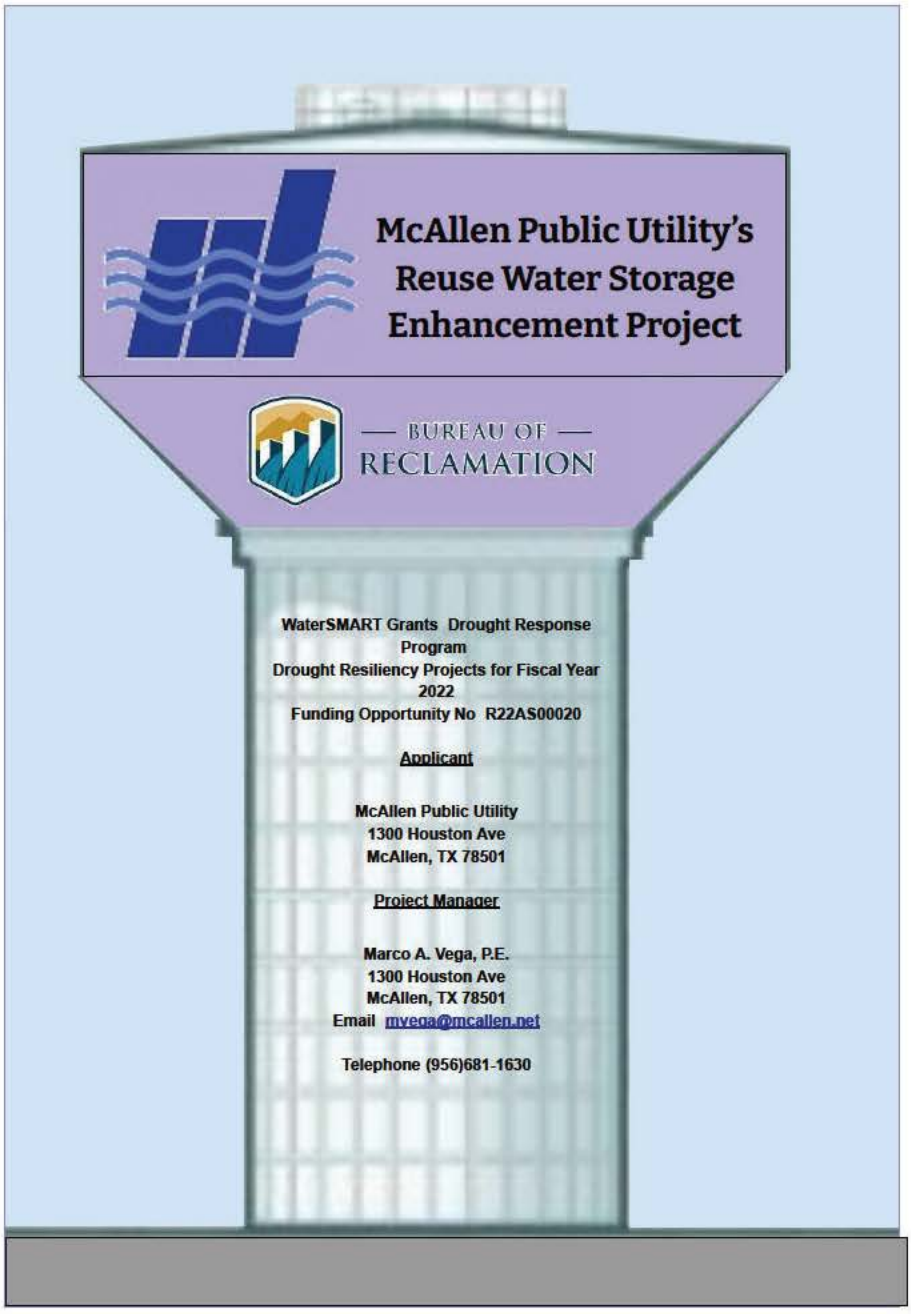

WaterSMART Grants Drought Response Program
Drought Resiliency Projects for Fiscal Year 2022
Funding Opportunity No R22AS00020

Applicant

McAllen Public Utility
1300 Houston Ave
McAllen, TX 78501

Project Manager

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Telephone (956)681-1630

Table of Contents

Mandatory Federal Forms Sent electronically via grants.gov

Attachments

- **Letters of Support**
- **Official Resolutions**
- **Engineer's Probable Opinion of Construction Costs**
- **Drought Plans**

D.2.2.4.1. Executive Summary

Date:	*October 5, 2021*
Applicant Name:	*McAllen Public Utility* *Category A Applicant*
City, County, State:	*McAllen, Hidalgo County, Texas*
Project Name:	*Elevated Reuse Water Storage Enhancement*
Project Funding Request:	*The total project cost is $ 2,851,202.50.* *McAllen Public Utility is requesting $ 1,327,305.25 in federal funds under this proposal.*

Project Summary

The Elevated Reuse Water Storage Enhancement Project will expand McAllen Public Utility's reclaimed water system to provide reuse water supply in place of potable water supply for existing landscape irrigation users in a 2,600 acre master-planned development in northwest McAllen in Hidalgo County, Texas. The project consists of the installation of a one (1) Million Gallon (MG) Elevated Reuse Water Storage Tank. The Reuse Storage Tank would reduce the demand on potable water by utilizing reuse or recycled water as an alternate source water for landscape irrigation. The proposed project will provide water savings of 1,120 Acre-Feet per Year by substituting reuse water, thus reducing the demand on the source water from the Rio Grande River.

MPU anticipates commencing design phase services on this project in the Fall of 2021 and Begin Construction in October 2022, which coincides with the start of our fiscal year. Construction is expected to be completed by September of 2023, which takes into account potential supply chain delays.

The proposed project is not located on a Federal facility.

D.2.2.4.2. Project Location

The Elevated Reuse Water Storage Enhancement Project is located in the City of McAllen, Hidalgo County Texas in an area known as the Lower Rio Grande Valley region of Texas**,** which is located at the southern tip of the state. The city limits extend south to the Rio Grande, across from the Mexican city of Reynosa. McAllen is about 70 miles west of the Gulf of Mexico and approximately ten miles from the Mexican border. The project location is at map coordinates Latitude 26°20′29″N Longitude 98°16′47″W and Load Coordinates: Latitude 26.341423 and Longitude −98.279701. The elevated storage tank will be centrally located within the master-planned community of Tres Lagos (illustrated in Page 2). The location was identified as a suitable site due to its proximity to current and future customers as well as topographical features that maximize service area.

MPU provides water and wastewater services within a 48.7 square mile area, which includes the city of McAllen and a portion of customers living in various neighborhoods of adjacent extraterritorial jurisdictions of the cities of Alton, Edinburg, Mission, La Joya and Pharr. The service area has an estimated population of 162,936, with a growth of 2.16% annually over the past decade and projected to continue to grow at least another 10% or more by 2030. McAllen faces water reliability challenges due to a semiarid climate featuring long, very hot and humid summers, and brief, warm winters. There are two distinct seasons: a wet season from May to October and a dry season from November to April. Temperatures consistently rise above 100 °F (38 °C) from June through August, with exceptionally high humidity. Drought conditions are part of the natural weather patterns as summer months do not provide much precipitation.

To this end, reclaimed water and the development of additional water supply resources will contribute greatly to drought resilience in the region.

D.2.2.4.3. Technical Project Description

McAllen Public Utility (MPU) is proposing to expand the reuse water system and provide irrigation water to conserve potable water supply. The reuse water will be utilized for landscape irrigation primarily for a master planned community that will build-out to 5,000 irrigation service connections. The proposed project includes the construction of a One (1) Million Gallon Elevated Storage Tank for Reuse water. The Elevated Tank will be a composite type of construction, which provides better life-cycle cost benefits and can be an appealing focal point for the community. Currently the irrigation demand for the community is being supplied by pumping water on demand. While the current operation of the reuse system has served well for the last three years, the reliability and flexibility of the reuse system is compromised by the lack of storage capacity. The elevated reuse water tank will provide that reliability and flexibility, especially during times of drought, power loss or system maintenance requirements. A Reuse Master Plan conducted in 2015 referenced the need of a storage tank for a reliable system and to meet demands and minimize the

use of larger pumping systems. Furthermore, the master planned community will be donating the land and the transmission line for the elevated storage tank.

The municipality has engaged a consultant for engineering professional services to undertake the design of the elevated tank and necessary components. The existing reuse infrastructure was originally designed and constructed to serve as the backbone for conveying reuse water to the proposed tank. This non-potable distribution system is the source of irrigation water for a 2,600-acre master-planned development in northwest McAllen and surrounding areas. In order to maximize efficiency of the delivery system we are proposing the construction of an elevated 1.0 MG Non-Potable Reuse Water Tower. The project will ultimately convert a total of 1,120 acre-feet of water per year to reuse water for irrigation use. Non-potable water is generated at our North McAllen Wastewater Treatment Plant (NWWTP). This facility processes a daily average flow 8 MGD with Peak Flows of 15 MGD. The Reuse Treatment Process also has a treatment capacity of 15 MGD.

D.2.2.4.4. Performance Measures

Table A1 – 1.0 MG Reuse Elevated Storage Tank Project Benefits and Performance Measures, identifies the Project benefits and performance measures. The performance of the Reuse Tank will be measured based on the estimated Reuse Water Supply needs and anticipated tank operational 12-hour cycles. Therefore, it is estimated that the tank will provide 2.87 days of capacity during average day conditions and 0.74 days of capacity during days of peak demand. Once the project is completed, tank operational data will be compiled and analyzed to determine the accuracy of the estimated amounts of additional water supply, energy savings, and greenhouse gas reductions benefitting the Project.

TABLE A1 – 1.0 MG REUSE ELEVATED STORAGE TANK PROJECT BENEFITS AND PERFORMANCE MEASURES.

Benefit	Target	Measurement Tools and Methods
Reduce Potable Water Demand for Irrigation - Additional Reuse Water Supplies Delivered.	1,120 AFY	Measuring Tool: Tank Level Instrumentation. Method: Data collected from instrumentation will be analyzed to confirm the tanks storage capacity of 1.0 MG, which generates additional water supply of 1,120 AFY.
Power (Energy Savings) - Reduce energy required to supply Reuse Water demands.	266,121 kWh/Year	Measuring Tool: Tank Level Instrumentation. Method: Data collected from instrumentation will be analyzed to confirm the energy savings estimated to supply 1,120 AFY of Reuse water to the elevated tank.
Carbon Emissions Savings (Climate Change Impacts)	231,524 lbs. of CO2/year	Measuring Tool: Tank Level Instrumentation. Method: Data collected from Instrumentation will be analyzed to confirm the energy savings and associated Carbon Emission Savings using the eGrid CO2 Factor of 868.6 lbs./MWh.

D.2.2.4.5. Evaluation Criteria

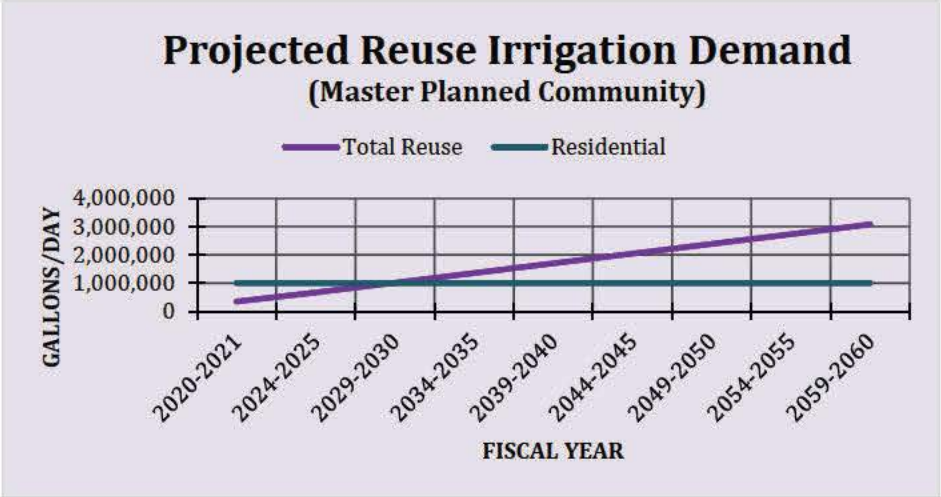
E.1.1. Evaluation Criterion A—Project Benefits

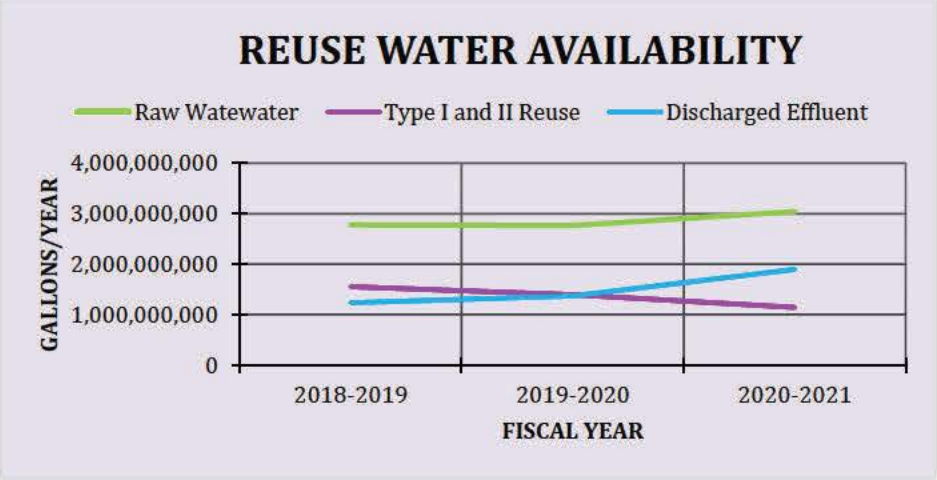
• How will the project build long-term resilience to drought? How many years will the project continue to provide benefits?

The proposed elevated tank will upgrade the McAllen Public Utility (MPU) growing reuse system infrastructure and build long-term resilience to drought by enhancing reliability and flexibility to retain reuse water supplies at the site of use and allows access to those supplies during times of drought, emergency, or peak usage. This project is a critical component of long-term resilience to drought as it retains water that would otherwise be lost as treated wastewater effluent discharged into a state stream which makes its way to the Gulf of Mexico. The tank is estimated to have a 50-year service life, which provides for benefits for decades to come.

MPU is invested into the continued efforts to maximize the use of water that the municipality has purchased. In 2017, MPU upgraded one of two Wastewater Treatment Facilities to produce Type I Reclaimed Water for the primary intent of providing residential and commercial irrigation to a Master Planned Community of approximately 5,000 connections. The Reclaimed Water system will maximize the use of the current water portfolio of the municipality by recycling the previously utilized water.

The build-out of the Master Planned Community based on projections should take place by year 2058 with 5,000 Reuse Connections and a daily average demand of 3.08 MGD. Given the current system pumping capacity of 1,300 gpm (1.87 MGD) and the addition of the Proposed Storage Tank of 1.0 MG, the system will have a total available Reuse Capacity of 2.87 MGD. Reuse Water Tank is and will continue to be a critical component to provide resilience to drought and to provide water savings by repurposing wastewater for irrigation and by improving system functionality, reliability, and flexibility.





Will the project make additional water supplies available? If so, what is the estimated quantity of additional supply the project will provide and how was this estimate calculated? Provide this quantity in acre-feet per year as the average annual benefit over ten years.

Yes, the project will make additional water supplies available. The Project will hold one million gallons (1.0 MG) of Reuse Water. This would be one million gallons of water that would otherwise be lost from the system as discharged Wastewater Treatment Effluent. Instead, the water can be stored and retained in the system as available Reuse Water for irrigation.

The estimated benefit of the proposed project will be 1,120 Acre-Feet per Year (AFY) of recycled water availability. This is calculated assuming a total stored water capacity of one million gallons per day for 365 days a year (1 MG = 3.07 AF * 365 Days/Year = 1,120 AFY). Over a 10 Year period, the total benefit of surface water savings is in the order of 11,200 AF.

o What percentage of the total water supply does the additional water supply represent? How was this estimate calculated?

The additional water supply represents 4.5% of the total water supply. The 1.0 MG Water Storage Tank will generate 1,120 AFY of stored Reuse Water. The yearly average total water supply over the past 5 years was calculated at 24,893 AFY, with 19,048 AFY for Domestic Potable Consumption, 5,383 for Irrigation (using Potable Water) and 462 AFY for Irrigation (using Reuse Water). Therefore, 1,120 AFY Reuse Storage/24,893 AFY Total Water Supply = 4.50%.

o Provide a brief qualitative description of the degree/significance of the benefits associated with the additional water supplies.

The benefits of additional water supplies are significant to drought resilience. The Project not only provides additional water supplies by converting water from treated wastewater to Reuse Water and meeting the demand for Irrigation needs, but it is also an improvement to the Reuse system in terms of functionality, efficiency, reliability and flexibility. With the storage capacity being added, the system can now be operated and managed in a more effective manner. Currently the system is dependent on a pumping capacity to deliver Reuse Water. During events such as system

maintenance, line breaks, or power loss, the delivery of the Reuse Water is temporarily interrupted. Additionally, without the storage tank, the Reuse System would need to pump over 17 hours straight to meet current peak day demand. With the addition of the storage tank, the system can be operated on 12-hour fill and drain cycles, which provides for a more functional, efficient, flexible and reliable Reuse Water system. Furthermore, the storage tank also provides benefits of system longevity, as is best practice operation for a distribution system.

Other benefits associated with the project are due to social and economic factors. Water shortage can be a detrimental roadblock for future development and community growth which directly impacts the quality of life and economic sustainability of municipalities. The Reuse Waster System expands the water portfolio of the municipality and reduces the amount of source water needs, which in turn reduces the cost of new source water. Additionally, MPU offers a direct cost savings of $0.79 (cents) per 1,000 gallons for using Reuse Water in lieu of Potable Water for irrigation. The social benefit of the project can be expressed by the pride that the City of McAllen residents take in knowing that the MPU is one of very few communities in Texas that offers Reuse Water for Residential Irrigation. Our residents and community leaders also take pride in knowing that MPU continues to look for innovative ways to provide a great service by providing fundamentally sound water management operations and keeping water costs down and affordable without compromising system integrity.

All together, these benefits provide for a confident community that seeks to learn, grow and evolve to make sure that the most basic resource is always available and yield real water supply benefits that will contribute to achieving a drought resilient water system.

Will the project improve the management of water supplies? For example, will the project increase efficiency, increase operational flexibility, or facilitate water marketing? If so, How will the project increase efficiency or operational flexibility?

The Project will improve management of water supplies. The Project will provide one million gallons of stored Reuse water to supply in case the pumping system is temporarily interrupted. The built-in operation flexibility and increased efficiency generated by a storage tank in a distribution system makes for a better functional system. The tank will allow for the management of the Reuse system to operate on 12-hour fill and drain cycles which increases system efficiency and operational flexibility.

o What is the estimated quantity of water that will be better managed as a result of this project? How was this estimate calculated? Provide this quantity in acre-feet per year as the average annual benefit over ten years.

The Project will result in 1,120 AFY of water supply that will be better managed. The capacity of the Reuse storage tank has a direct impact on the water supply. A gallon of Reuse water utilized for irrigation is equivalent to a gallon of potable water available for supply. Reuse water, as the name implies, is water that has already served an intended purpose, in this case the water was previously used for potable consumption. The water is then collected, conveyed and eventually treated as wastewater. The Reuse treatment polishes the water to be utilized for purposes other than potable consumption, such as irrigation. If the Reuse system was not in place, the water

would be discharged onto a stream and lost as treated effluent. Having the capacity to retain and store that water for a secondary use (Reuse) is a direct savings for potable water needs and provides water supply better management. The estimated quantity of water that will be better managed is calculated based on the storage capacity of the proposed Reuse Storage Tank of 1.0 MG (1 Million Gallons = 3.07 Acre-Feet; 3.07 Acre-Feet * 365 days/year = 1,120 AFY). The Project benefit over a ten-year period will result in 11,200 AF.

o What percentage of the total water supply does the water better managed represent? How was this estimate calculated?

The Project will provide the storage of 1,120 AFY of water that will be better managed and thus represents 4.5% of the total Potable Water Supply. In relation to Reuse Type I - Residential Irrigation Water, the water to be better managed results in 287% of Reuse water supply. The 287% is calculated based on the current Reuse Water Supply of 390 AFY for residential irrigation. Dividing 1,120 AFY (Project) by 390 AFY current Reuse Water Supply) equates to 287% of the total Reuse Water Supply.

o Provide a brief qualitative description of the degree/significance of anticipated water management benefits.

The anticipated water management benefits are based on the inherent benefits of enhancing a distribution system with a storage tank. The stored capacity provides operational flexibility improvements and increased system efficiency. The storage tank will allow for the system to operate on a 12-hour fill and drain cycle that will ultimately increase system longevity. The project will also provide potable water savings by storing treated effluent into Reuse Water for irrigation demand.

o Will the project make new information available to water managers? If so, what is that information and how will it improve water management?

The Storage Tank will have instrumentation equipment that will provide level signals to the Reuse Pumping Station (located at the Wastewater Treatment Facility). This information will be utilized to monitor daily operations of the Reuse Distribution System, but it will also generate demand data that can be utilized to determine system growth and projected Reuse system needs. Overall this information will allow for better management of current and future water demands.

E.1.2. Evaluation Criterion B—Sustainability and Supplemental Benefits

• In addition to drought resiliency measures, does the proposed project include other natural hazard risk reductions for hazards such as wildfires or floods?

While the Project does not directly intend to reduce other natural hazards such as wildfires or floods, the Type I Reuse Water can be utilized for fire protection as established in the State of Texas, Chapter 210 – The Use of Reclaimed Water, regulated by The Texas Commission on Environmental Quality (TCEQ).

• Does the proposed project include green or sustainable infrastructure to improve community climate resilience such as, but not limited to, reducing the urban heat island effect, lowering building energy demands, or reducing the energy needed to manage water? Does this infrastructure complement other green solutions being implemented throughout the region or watershed?

The Proposed Reuse Water Storage Tank will reduce the energy needed to manage water. Currently, the Reuse system operates to maintain pressure, meaning that pumping energy is required during the entire operating window of 12 hours a day to meet demands. The required energy for the current operation is 408,435 KWh/Year (1-125 Hp pump operating 12 hours/day, 365 days/year). With the storage tank, the system would operate on 12-hour cycles, but with average demands of 348,266 gals/day, the storage tank would provide capacity for 2.87 days. The stored water reduces the pumping needs to basically 12-hours every 3 days or 127 days/year. The energy consumption becomes 142,314 KWh/Year (1-125 Hp operating 12 hours/day, 127 days/year). The total energy reduction obtained by the Project is 266,121 KWh/Year 408,435 KWh/Yr – 142,314 KWh/Year = 266,121 KWh/Year).

• Will the proposed project establish and use a renewable energy source?

The Proposed Project will not establish or use a renewable energy source.

• Does the proposed project seek to reduce or mitigate climate pollutions such as air or water pollution?

The Proposed Project will reduce volume of effluent discharge onto existing drainage ditches that convey onto receiving waters of the state. One of MPU's goals is to capture and recycle as much treated effluent as possible and minimize effluent discharge at our Wastewater Treatment Facilities. Achieving this would will reduce and mitigate water pollution, such as nutrient loading, on our local water streams and the overall ecosystem. This Project is a critical component to achieving that goal.

• Will the proposed project reduce greenhouse gas emissions by sequestering carbon in soils, grasses, trees, and other vegetation?

The Proposed Project will not reduce greenhouse gas emissions by sequestering carbon in soils, grasses, trees, and other vegetation. The Project will reduce CO2 gas emissions with the addition of the storage tank by achieving energy consumption savings. Based on the energy savings generated by the Project, a conversion can be made to pounds of Carbon Dioxide utilizing EPA's latest eGrid data from 2019 and published in 2021. The eGRID subregion for Texas is ERCT, which currently outputs an average of 868.64 lbs. of CO2/MWh. With the estimated 266,121 KWh/Year energy savings to be generated by the Project, the CO2 emission reduction is estimated at 231,524 lbs. of CO2 266,121 KWh/Year 0.87 lbs./KWh of CO2 231,524 lbs. of CO2 per year.

• Does the proposed project have a conservation or management component that will promote healthy lands and soils or serve to protect water supplies and its associated uses?

The Proposed Project will have a conservation and management component that will serve to protect water supplies and its associated uses. The project will conserve and protect 1,120 AFY of water by storing as Reuse for Residential Irrigation. The project will also provide better management of potable water supply, as every gallon of Reuse Irrigation Water substitutes a gallon of Potable Water Supply.

• Does the proposed project contribute to climate change resiliency in other ways not described above?

The Project does not contribute to Climate Change Resilience in other ways than Water Conservation and Energy Reduction.

2. Disadvantaged or Underserved Communities:
• Will the proposed project serve or benefit a disadvantaged or historically underserved community?

The project does address environmental justice and equality. The Rio Grande Valley Region, as a whole, is comprised of many disadvantaged communities. The Region will benefit by the project's impact of reducing the potable water supply demand on the Rio Grande River. Other direct benefits include the reduced nutrient loading on receiving waters which can have detrimental effects on aquatic life uses and native plants and wildlife. Our community will also provide an economic benefit by providing affordable reuse water rates to residents and businesses for irrigation.

- The City of McAllen meets the definition of Section 1015 of the Cooperative Watershed Act. The Area Median Income for the State of Texas is $64,064 while the Area Median Income for the City of McAllen is $46,804 according to the American Community Survey and US Census.

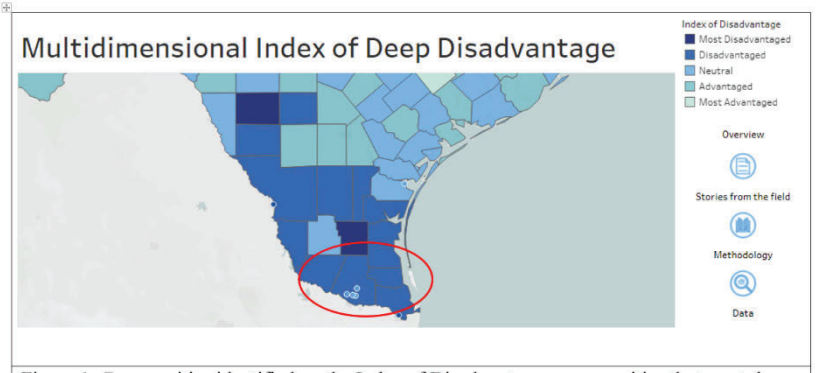


Figure 1. Communities identified on the Index of Disadvantage - communities that meet the definition of 'underserved' stated by the DOE. **Reference**: University of Michigan Poverty Solutions - Workbook: Index of Deep Disadvantage (umich.edu).

- Approximately 70% of McAllen ISD students are economically disadvantaged. McAllen ISD students qualify for free lunch under the National School Lunch and School Breakfast Programs for public schools.[1]
- MPU projects serving low income neighborhoods have received Economically Distressed Area Program (EDAP) funding for infrastructure improvements in previous years. Service

[1] https://www.usnews.com/news/healthiest-communities/articles/2018-05-16/americas-third-world-border-colonias-in-texas-struggle-to-attain-services

area median household income can be no greater than 75% of statewide median household income for projects to qualify.

- The Rio Grande Valley counties of Hidalgo, Starr, Cameron, and Willacy are all classified as 'Disadvantaged' by the University of Michigan Poverty Solutions (Figure 1) and portions are considered as 'Opportunity Zones' by the Department of Housing and Urban Development (Figure 2)

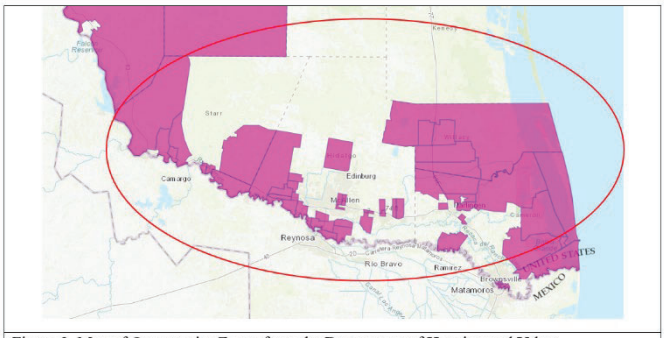


Figure 2. Map of Opportunity Zones from the Department of Housing and Urban Development - communities that meet the definition of 'underserved' stated by the DOE.

Reference: HUD Opportunity Now - Opportunity Zones - Map | opportunityzones.hud.gov.

The Project will provide potable water supply savings that translates to affordable water rates for our residents and customers. The McAllen Public Utility currently provides one of the lowest water rates in the region and implementation projects such as the Reuse Storage Tank that will provide infrastructure benefits of flexibility and efficiency as well as projects that promote water and energy savings have allowed the Utility to operate without sacrificing the integrity of the system and providing good quality water at a low cost.

• **If the proposed project is providing benefits to an underserved community, provide sufficient information to demonstrate that the community meets the underserved definition in E.O. 13985, which includes populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life.**

The project will provide regional benefits to underserved communities. *Colonias* (Spanish word for subdivision) are substandard subdivisions, often found along the Texas-Mexico border in the Rio Grande Valley that have been systematically denied opportunities in the past. About 900 of the state's 2,000+ *colonias* are located in Hidalgo County. *Colonias* date back to the 1950s, when low-income immigrants, mostly from Mexico, began settling in newly formed subdivisions on the outskirts of the costlier housing markets in the cities, including McAllen. The location outside the city limits cut them off from municipal services and government-provided infrastructure such as potable water, sewer systems, garbage pickup and paved roads. In addition, *Colonias* are a considerable distance (with no public transportation available) from schools, grocery stores, medical facilities and businesses. *Colonias* are often located on former agricultural land, making them effective flood zones that are vulnerable during heavy rains. Until recently, lots were purchased through a contract for deed, a property financing method whereby developers typically offer a low down payment and low monthly payments but no title to the property until the final payment is made. Houses in *colonias* are generally constructed piecemeal over time by their owners and usually lack electricity, plumbing and other basic amenities. There have been improvements in living conditions in many *colonias* in the past decade due to changes in the state law and *colonia* annexation by neighboring cities. The City of McAllen has annexed subdivisions

that were former *colonias*. However, the demographics of the residents have not changed with 96% of *colonia* residents identifying as Hispanic or Latino and 40% living below the poverty line.

3. Tribal Benefits:

The State recognized Lipan Apache Tribe of Texas has its headquarters in McAllen, Texas. Historically, the Lipan Apache Tribe members have blended within the South Texas Community and would have access to the same estimated Project Benefits and resources.

4. Ecological Value: Drought resiliency projects often provide environmental benefits in addition to water supply reliability benefits for other users. Ecological resiliency is crucial to sustain ecosystems that can respond to and recover from external stressors resulting from climate change and drought.

The Rio Grande River is the source water for the City of McAllen. The project will generate water benefits of 1,120 AFY in water savings by storing treated effluent as Reuse Water for irrigation demand. This equates to less water source water demand and more water available in the river to sustain its natural ecosystem. Additionally, the water stored as a result of the project will reduce the discharged effluent by that same volume into man-made water conveying systems that eventually lead to the Gulf of Mexico. Wastewater Effluent Discharge can be detrimental to ecosystems even when the effluent is satisfactory to state requirements. The effluent discharge can lead to a high oxygen demand into water streams and therefore having a direct impact to an ecosystem.

• Does the project seek to improve ecological climate change resiliency of a wetland, river, or stream to benefit to wildlife, fisheries, or habitats? Do these benefits support an endangered or threatened species?

The project will allow more water to remain in the Rio Grande River and provide ecological resilience. The Texas Parks and Wildlife Department identifies the Blackfin Goby, Unique Black Mangrove Series Community and the Unique Texas Palmetto Series Habitat as threatened or endangered species/unique communities in the Rio Grande River from the Gulf of Mexico upstream to Falcon Dam in Starr County.

• What are the types and quantities of environmental benefits provided, such as the types of species and the numbers benefited, acreage of habitat improved, restored, or protected, or the amount of additional stream flow added? How were these benefits calculated?

As a result of the 1950's droughts, The Texas Legislature created the Texas Water Development Board (TWDB) to coordinate and plan for water needs in the State. The TWDB created 16 groups or regions to facilitate the water needs planning. Our Water Planning Region is known as Region M, which includes the segment of the Rio Grande River from the Gulf of Mexico to Falcon Dam in Starr County. Region M identifies this segment of the Rio Grande River as having a Biological Function as primarily bottomland habitat with extensive freshwater and estuarine wetland habitats (Bauer et al. 1991). It is a segment of riparian conservation area, not just one, but nine unique locations in the Rio Grande Valley. Also identified as high water quality with exceptional aquatic

life and high aesthetic value TNRCC, 1996); diverse benthic macroinvertebrate community (J. Davis, 1998, pers. comm.). The benefit of water conservation and resilience provided by the project has a calculated benefit of 1,120 AFY of water savings. This is water savings that will allow that water to remain in the Rio Grande River and benefit the river's habitat and ecosystem.

• Will the proposed project reduce the likelihood of a species listing or otherwise improve the species status?

While it is not certain that the Project will directly reduce the likelihood of a species listing or otherwise improve the species status, the Project will improve management of water supplies which will directly impact the available water in the Rio Grande River segment and reduce nutrient loading on receiving water bodies. The water savings generated can only provide benefits to the Rio Grande River habitat and ecosystem.

5. Other Benefits: Will the project address water sustainability in other ways not described above? Will the project assist States and water users in complying with interstate compacts?

The Project will provide benefits to overall water sustainability for our source water; the Rio Grande River. The Rio Grande River is a binational waterway that originates in Colorado and traverses across New Mexico as well. Consequently, any water savings generated from our project will indirectly benefit the entire Rio Grande River Watershed.

• Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others)?

Water savings from the Project will benefit other users such as agricultural irrigation. The region has a high demand for agricultural irrigation water supply. Water savings from the project will allow more source water availability which during times of drought would provide benefits to the agricultural industry.

• Will the project benefit a larger initiative to address sustainability of water supplies?

The Project is just another component of the Reuse System that continues to see growth and expansion. Phase 1 of the Type I Reuse Water System was to construct the treatment and pumping station to provide irrigation water to the Master Planned Community with a build-out of 5,000 service connections. Phase 2 is the construction of the Storage Tank for system flexibility, reliability and efficiency. The long-term goal of the Reuse System is to continue to expand and grow to other customers for current and future use. A new developer for another Master Planned Community that is currently being planned within the next five years has expressed interest in utilizing our Reuse Water for Residential and Commercial irrigation, similar to the current use.

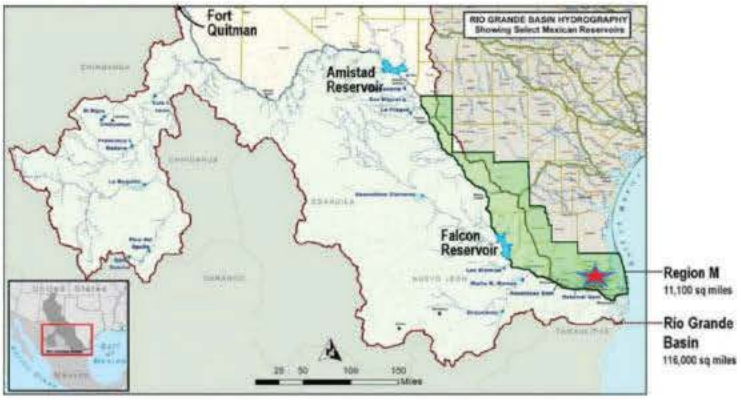
E.1.3. Evaluation Criterion C—Drought Planning and Preparedness

Drought Plan

Please see Appendices C 1- C 5 for copies of the following documents: City of McAllen Water Conservation and Drought Contingency Plan, Northwest Reclaimed Water Master Plan, MPU Reuse Master Plan, MPU Operating Budget/Capital Improvement Plan, and Region M.

• Explain how the plan addresses drought

The Rio Grande Valley Region, located in deep South Texas, has a long history with drought. The impacts of drought are compounded by the fact that the Rio Grande River is essentially the sole source of water for our region. The problem is further exacerbated by the fact that the two (2) Rio Grande River Reservoirs (Falcon Lake and Lake Amistad) are located so far upstream (118 Miles from Falcon and 364 Miles from Amistad) from our diversion points. To address this vulnerability, the State of Texas maintains a State Water Plan that is continuously updated. The State Water Plan is intended to function as a comprehensive and flexible long-term plan for the development, conservation, and management of the state's water resources. In 1997, Senate Bill 1 was passed, which mandated establishment of local Regional Planning Groups throughout the state. The idea behind this legislation was to develop strategies to conserve and manage water resources at the local level through a stakeholder collaborative planning process and requiring each region to develop a plan that will be part of the overall State Plan. The intent of this Plan is best summarized by the original SB 1 legislative language as follows: " ... *provide for the orderly development, management, and conservation of water resources and preparation for and* ***response to drought conditions*** *in order that sufficient water will be available at a reasonable cost to ensure public health, safety, and welfare.* The State Water Plan is interactive at https://texasstatewaterplan.org/statewide. MPU's Reuse Project is part of the State Plan and Regional Plan. The City of McAllen Water Conservation and Drought Contingency Plan was designed to be in alignment with both the state and regional plan. Two MPU Reuse projects are listed as Recommended Projects on the State Plan and on the Region M Plan *(Attachment C-5 page 1).*



Our Regional Planning Group (Region M) is one of 16 Planning Groups in the State of Texas mandated with developing and maintaining Regional Water Plans. Our Planning Group meets on a regular basis to collaborate on efforts to conserve and manage water throughout the region. The Region M Water Plan is posted online.

In addition to the State Water Plan and Regional Planning Documents, MPU has a number of documents that encourage and/or mandate conservation and drought resiliency and serve as planning documents when strategizing infrastructure improvement projects. These include the following:

- **City of McAllen Water Conservation and Drought Contingency Plan**-By ordinance, MPU maintains a water conservation and drought contingency plan which is continuously updated and provides strategies for conservation and enhanced water reliability in times of drought. The plan includes definitions of drought and emergency conditions, priority conservation strategies (including this project), triggering criteria for the drought response stages, the drought response stages for water usage and penalty of violation. This was updated in 2018

and is updated every five years. *The plan is included in Attachment C-1 with wastewater effluent reuse listed as a conservation strategy on page 7.*

- **Northwest Reclaimed Water Master Plan** The plan was finalized in 2015 which defines the necessary infrastructure improvements to reliably deliver reclaimed water to the Tres Lagos subdivision and other customers in the vicinity. *This plan is listed in Attachment C-2. The elevated storage tank is mentioned on pages 1-1 and 4-12.*
- **MPU Reuse Implementation Master Plan II** This Study was conducted by Alan Plummer in 2009 and provided a concept roadmap for "non-potable" Reuse Water. Plummer is currently under retainage to update this Study and we anticipate completion by Spring of 2022. *A copy of this Master Plan Document is included in Attachment C-3.*
- **MPU Operating Budget and Capital Improvement Plan** Our current fiscal year operating budget includes a line item for the full design services for the project. The project is identified as Tres Lagos Reclaimed Water Elevated Tower. *A copy of the FY 22 CIP Budget Worksheet is included in Attachment C-4*

o Explain whether the drought plan was developed with input from multiple stakeholders. Was the drought plan developed through a collaborative process?

All referenced documents were developed through collaborative efforts with varying groups of stakeholders in the region. Our local Regional Planning Group (Region M) is composed of various professionals representing a wide array of organizations and interests.

The City of McAllen Water Conservation and Drought Contingency Plan was adopted as an ordinance and thus required formal public presentation for consideration and approval. The City of McAllen provided opportunity for public input in the update of this plan by the following: Written notice (online and in a newspaper) of the draft plan and the opportunity for the public to comment; draft of the plan was available to anyone who requested a copy; held a public meeting at a time and location that was open to the public and provided written notice to the public concerning the draft plan and meeting and lastly, provided written notice of the adoption of the ordinance. MPU provided copies of the draft ordinances and the final ordinance to Region M.

Our Reuse Master Plan, prepared by engineering firm Alan Plummer in 2009, included collaborative efforts with the community in terms of identifying potential interest in reuse water. Finally, our current fiscal year operating budget includes funding for the design of the Elevated Reuse Tower. The budget planning process is a months-long collaborative effort within MPU that requires formal public presentation for consideration and approval by the MPU Board as well as the McAllen City Commission. Our NWWTP Reclaimed Master Plan also followed similar collaborative efforts in terms of identifying potential users.

o Does the drought plan include consideration of climate change impacts to water resources or drought?

The impacts of climate change add a level of uncertainty and can be considered an additional threat to our local water source. Our region has witnessed numerous droughts throughout recent history. The Regional Water plan references the Bureau of Reclamation's Lower Rio Grande Basin study. The study found that climate change is likely to result in increased temperatures, decreased

precipitation, and increased evapotranspiration in the Lower Rio Grande Basin resulting in severe water supply and demand imbalances through 2060, leading to a likely decrease in water delivery reliability.

The Texas Division of Emergency Management provided recommendations from the Drought Preparedness Council to all regional planning Groups, including Region M for incorporation into our Regional Water Plan. This can be found in Chapter 7 of the Rio Grande Regional Water Planning Group (*See Attachment C-5*). Reuse is mentioned as a reliability source on *(Attachment C-5 page 7-23)*

• Describe how your proposed drought resiliency project is supported by an existing drought plan. Does the drought plan identify the proposed project as a potential mitigation response action? o Does the proposed project implement a goal or need identified in the drought plan? Describe how the proposed project is prioritized in the referenced drought plan

The City of McAllen Water Conservation and Drought Contingency Plan addresses wastewater effluent reuse as a strategy to reduce water usage (*Attachment C-1 page 7*). MPU's strategic planning process is guided by the MPU Master Plans, which address the current and future needs of the water supply and distribution system. The Master Plans also address drought and include strategies for drought resiliency. The MPU Reuse Implementation Master Plan II describes how reuse offsets water needs, with a reliable drought resistant supply (*Attachment C-3 -Halff Technical Memo Appendix J - saved on pages 2-4*). The Northwest Reclaimed Water Master Plan identified future elevated storage needs (*Attachment C-2 pages 1-1 and 4-12*). The State Plan and Region M Plans encourage reuse and alternative water sources to combat drought and to meet water supply demands.

E.1.4. Evaluation Criterion D-Severity of Actual/Potential Drought Impact to Be addressed

- **What are the ongoing or potential drought impacts to specific sectors in the project area if no action is taken (e.g., impacts to agriculture, environment, hydropower, recreation and tourism, forestry), and how severe are those impacts?**

Drought and extreme weather are not new to McAllen. MPU's service area has experienced many adverse impacts related to drought. The Rio Grande currently supplies approximately 97% percent of MPU's water supply via water delivery contracts with four raw water supply districts. The Rio Grande is the sole source of raw water not only for citizens of McAllen but for all communities in the Rio Grande Valley as well as Mexican border communities, enhancing the impact of drought conditions and the reality of limited water supplies by a single source. In addition to acquiring supplemental supplies to eliminate the projected water supply deficit, diversification of supply is also desirable to MPU and was the catalyst for MPU's expansion of the reclaimed water service.

o Whether there are public health concerns or social concerns associated with current or potential drought conditions?

Public Health Concerns or Social Concerns: The proposed project will provide reliable reclaimed water at a lower cost than imported water to the service area for irrigation uses. From a social equality and environmental justice perspective, affordable water rates are important,

especially to the residents of disadvantaged communities. As mentioned previously, McAllen is a disadvantaged community, so the affordable rates will be beneficial to all, especially the low-income segment of the community.

In terms of health, generally during droughts, irrigation water is restricted which in turn creates more dust and allergens, thereby negatively impacting public health. For the past four years, the Allergy and Asthma Foundation, has rated McAllen as one of the top four most challenging cities in the US for spring and fall pollen allergies. The project will provide more stored reclaimed water, which will help provide water for irrigation which will help ensure public health needs are met.

Drinking Water Impacts: The project increases water supply reliability by providing 1,120 AFY of reuse water supply in place of drinking water supply. Drought conditions in the past have affected drinking water supplies by decreasing the reliability of imported water causing water restrictions to be implemented from 2013-2016. MPU, however, continues to exist in a continuous state of response, especially due to recent drought conditions, low reservoir levels and other extreme weather conditions (Hurricane Hanna in 2020 and the February 2021 Winter Storm Uri) that have occurred in the past year. The proposed project will contribute to providing system reliability benefits, which is critical for combating drought conditions as well as other emergency conditions that unexpectedly arise.

o Whether there are ongoing or potential environmental impacts?

Environmental Impacts: Our Reuse Project will minimize the volume of treated effluent that is discharged to receiving water bodies. Our North WWTP discharges to a drainage ditch that eventually outfalls into the Laguna Madre Bay and Estuary. Although our reuse water is considered Type I, the treated effluent tends to be nutrient rich which is generally beneficial to plants but not ideal for aquatic life. Nutrient rich waters have been associated with contributing to algae blooms in certain waters. The Laguna Madre is considered an important estuary that is vital to the fishing industry in addition to the contact recreational uses.

The project provides reclaimed water as an alternate source for irrigation to ensure that traditional Rio Grande River flows make their way to streams to enhance water quality and support local habitat. There are many wildlife sanctuaries throughout the region that share our source water. The project will benefit wildlife and habitats by allowing more water to stay at its source to support the Rio Grande habitats. The Lower Rio Grande Valley region is renowned as one of the biologically diverse regions in the county and one of the top birding destinations in the world with more than 300 different species documented as migrating to the area; such as the Green Jay, the Buffbellied Hummingbird, the Great Kiskadee, the Altamira Oriole and many others. The Texas Parks and Wildlife Department also identifies the Blackfin Goby, Unique Black Mangrove Series Community and the Unique Texas Palmetto Series Habitat as threatened or endangered species/unique communities in the Rio Grande River from the Gulf of Mexico upstream to Falcon Dam in Starr County.

Drought conditions also provide a substantial increase in fire risk. In 2020 and 2021, local television newscasters reported that the frequency of grass fires throughout the region due to dry conditions had increased. This occurred when the Rio Grande Valley was in drought conditions. As plants and trees wither and die from a lack of precipitation—they become fuel for fires. Actions

such as starting a car on grass and improper disposal of tobacco products can contribute to igniting fires on dry landscapes.

o Whether there are local or economic losses associated with current drought conditions that are ongoing, occurred in the past, or could occur in the future?

Economic Impacts and Agriculture Demands: The project's reclaimed water supply will help reduce a drought's threat to residents, the agriculture sector, and local businesses by providing an alternate source of water. Reclaimed water helps ensure that there is an adequate supply of water for irrigation and agricultural uses. Texas is the third-largest U.S. citrus producer behind Florida and California, with thousands of groves located in the Rio Grande Valley. The citrus industry maintains a vital role in the local economy creating jobs in farming, warehousing, and distribution. In the Rio Grande Valley, reduced water supplies are a challenge to growers, so flood irrigation is necessary for a successful crop. Increasing the reclaimed water availability for irrigation purposes increases the water reliability, thereby making high quality drinking water available for potable uses rather than non-potable uses.

Lastly, the project provides economic benefits to consumers by providing recycled water for residential irrigation at a reduced cost. Reclaimed water is available even during times of drought since it is dependent on wastewater, which will continue to be produced due to continuous water use for toilet flushing and washing.

o Whether there are other drought-related impacts not identified above (e.g., tensions over water that could result in a water-related crisis or conflict)?

Tensions Regarding Rio Grande Water Supplies: The Rio Grande River is a binational water source that serves as a viable water source for communities in Texas and Mexico. The project addresses competition for finite water supplies by increasing reclaimed water supplies to offset available raw water supplies. The volume of water that is available for use is a fixed number that is 100% allocated in the form of water rights. Additional water can only be obtained by purchasing water rights from a party interested in selling. This fixed commodity means that the value of water will only increase in proportion to demand.

Currently, an estimated 12-13 million people on both sides of the border depend upon the Rio Grande for their water, according to the International Boundary and Water Commission (IBWC) and the population is growing..[2] The population increase demand on both sides of the border requires continuous water conservation measures and local water sustainability practices. As municipalities in the Lower Rio Grande Valley compete for water resources provided by the Rio Grande River, shortages due to drought may occur and rates for purchasing water will likely increase.

A significant portion of the water used in Region M comes from the Mexican side of the Rio Grande Watershed. A bilateral water treaty from 1944 (the 1944 Water Treaty) and other binational agreements guide how the two governments share the flows of these rivers. MPU depends on Mexico to divert water flow to the Rio Grande River, which can be challenging at times of peak water demand by both countries. Overall, the Rio Grande water rights are subject to curtailment

[2] https://twri.tamu.edu/publications/txh2o/2021/winter-2021/getting-to-know-the-rio-grande/

and their reliability is tied to upstream water availability as well as the enforcement of complex treaties between the United States and Mexico.

Lake Amistad and Lake Falcon store water for Texas and Mexican border communities. The capacity levels fluctuate due to drought and extreme weather conditions, but since January 2020, the levels have been at low capacity[3]. In June 2021, the two reservoirs were at very low conservation capacity levels (this refers to the portion that belongs to Texas) with Amistad at 32.80% and Falcon at 17.71%.[4] Since there is no inline reservoir storage along the Rio Grande River south of Falcon Lake, it is critical that water is conserved as much as possible. Having an alternate source like reclaimed water, is an excellent option for alleviating demand.

- **Describe existing or potential drought conditions in the project area.**
- **Is the project in an area that is currently suffering from drought or which has recently suffered from drought?**

Texas is no stranger to droughts. The Rio Grande Valley has historically been in a state of perpetual drought for many decades, only briefly relieved by hurricanes or significant flooding events from time to time. From 2010 to 2015, the majority of Texas experienced extreme drought. In July 2016, MPU lifted a three-year restriction on[5] water usage. In June 2018, only two months after record rainfall, the U.S. Drought Monitor Index reclassified multiple Rio Grande Valley counties as abnormally dry[6].

Since then, the Rio Grande Valley has had on and off drought conditions. In 2020, Hidalgo County was designated as contiguous disaster counties by the U.S Department of Agriculture due to the drought conditions. As recently as April 2021, the U.S. Drought Monitor reported that Hidalgo County, where the proposed project is located, was in extreme drought conditions. At this time, nearly three dozen communities in Deep South Texas were listed as "watch," meaning that they have at least a 180-day supply, but need monitoring, according to the Texas Department of Environmental Quality. The State of Texas Drought Preparedness Council Biennial Report dated January 29, 2021, states that "by late 2020, a moderately strong La Niña was firmly in place. La Niña helped intensify a drought that had already developed. Although recent rain resulting from tropical disturbances and hurricanes in the Gulf have temporarily pulled our region out from an extreme drought, the rains have not filled the reservoirs (Amistad and Falcon) that supply South Texas with water for municipal and agricultural use because the rains were east of the reservoirs. Local weather forecasters say that the reservoir levels are low due to La Niña, which has kept the climate drier than normal over the last year.

- **Describe any projected increases to the severity or duration of drought in the project area resulting from changes to water supply availability and climate change.**

According to a study by the Texas Center for Climate Studies published in June 2020, "Texas is one of the fastest growing states in the nation, with population expected to increase from 29.5 million in 2020 to 51 million in 2070. Furthermore, the state is located in a sub humid to semiarid

[3] https://www.nps.gov/amis/planyourvisit/conditions.htm
[4] https://myrgv.com/featured/2021/06/06/dwindling-supply-though-recent-rains-busted-drought-low-reservoir-levels-exacerbated-by-la-nina/
[5] *https //myrgv.com/local-news/2020/03/15/drought-conditions-in-region-worsen-to-severe-extreme/*
[6] *https //apnews.com/article/2e04512f43fd49d7a7ab93d5e70fd1a1*

environment that is vulnerable to changes in water availability resulting from global climate change.[7]" This means that the demand for water will go up as the state gets drier and the population grows at a rapid pace. The study raised awareness of potential problems for the state's future water supply emphasizing that climate change will lead to even more mega droughts and that during the latter half of the century, droughts are likely to be worse than any of those previously on record.

In December 2013, the Bureau of Reclamation completed The Lower Rio Grande Basin study, which is referenced in the Region M Water Plan. The study found that climate change is likely to result in increased temperatures, decreased precipitation, and increased evapotranspiration in the Lower Rio Grande Basin resulting in severe water supply and demand imbalances through 2060, leading to a likely decrease in water delivery reliability.

E.1.5. Evaluation Criterion E—Project Implementation

- **Describe the implementation plan of the proposed project.**

McAllen Public Utility is excited to move forward with this project and is ready to begin immediately after execution of the grant agreement with the Bureau of Reclamation. The table below shows the Project schedule with a project start date of October 1, 2021, which coincides with our fiscal year start date. Our Governing Board approved fiscal year funding for engineering design of the proposed 1 MG Elevated Reuse Water Tower. We anticipate that we can formally award a design contract between October and November 2021. A detailed Project Schedule including key milestones Tasks with corresponding dates is included in the Attachments and is summarized below.

Task #	Task Description	Dates	
		Start	Finish
Task 1	Planning & Engineering Design Phase Coordination Meetings	Nov 2021	Apr 2022
Task 2	Reporting and Compliance Tasks	Jan 2022	Sep 2023
Task 3	Plan and Design Review	Mar 2022	Aug 2022
Task 4	Site Survey & Investigation	Jan 2022	Mar 2022
Task 5	Bid Preparation	Aug 2022	Sep 2022
Task 6	Contract Document	Jul 2022	Sep 2022
Task 7	Pre-construction Meeting	Oct 2022	Oct 2022
Task 8	Product Submittal Review	Oct 2022	Dec 2022
Task 9	Site Inspection	Nov 2022	Aug 2023
Task 10	Field Change Coordination	Nov 2022	Aug 2023
Task 11	Change Order Coordination	Nov 2022	Aug 2023
Task 12	Project Close-out Documentation	Jul 2023	Sept 2023

- **Describe any permits that will be required, along with the process for obtaining such permits.**

[7] *https //www.weforum.org/agenda/2020/10/texas-water-supplies-running-dry/*

No permits will be required

- **Identify and describe any engineering or design work performed specifically in support of the proposed project.**
  MPU will be retaining a Professional Engineer tasked with complete Planning, Design and Construction Phase consulting services. MPU anticipates awarding this Professional Services Contract by late October or early November 2022.

- **Describe any new policies or administrative actions required to implement the project.**
  MPU does not anticipate any new policies, however, all professional services and construction contracts require formal MPU Board approval. MPU has already secured resolutions of support with assurances of financial commitments from City Commission and MPU Board. No permits will be required

E.1.6. Evaluation Criterion F Nexus to Reclamation

Describe the nexus between the proposed project and a Reclamation project or activity.

In December 2013, the Bureau of Reclamation completed The Lower Rio Grande Basin study in partnership with the Rio Grande Regional Water Authority, the Texas Commission on Environmental Quality (TCEQ), the TCEQ Region M Planning Group, the Texas Water Development board and the International Boundary and Water Commission. The study provided an overall evaluation of future water demands, future supply, and other factors that may affect the supply and demand for water in the Lower Rio Grande Valley Basin, which includes the MPU service area. The study found that climate change is likely to result in increased temperatures, decreased precipitation, and increased evapotranspiration in the Lower Rio Grande Basin resulting in severe water supply and demand imbalances through 2060, leading to a likely decrease in water delivery reliability. To address these projected imbalances, the study recommended various water management strategies on a regional level designed to conserve water to meet future demands and to reduce dependence on the Rio Grande and to prepare for severe weather conditions. The study mentioned Reuse as a strategy receiving further evaluation. Reuse was described as an effective way to utilize existing reliable supply streams of water and alleviate the supply imbalance.

D.2.2.5 PROJECT BUDGET

(1) D.2.2.5 FUNDING PLAN AND LETTERS OF COMMITMENT

MPU will contribute the entire non-federal cost share portion of the project from MPU's Water Revenue account. MPU's non-federal cost share portion of funding is currently available and there are no time constraints or other contingencies associated with the funds. A third party entity, Rhodes Enterprises, provided a letter of commitment for their contribution to the project. The budget proposal does not include any project costs that have been or may be incurred prior to July 2021 in accordance with the NOFO.

(2) D.2.2.5 BUDGET PROPOSAL

MPU is estimating total construction cost of $2,851,202.50 for this project. MPU is committed to funding a minimum of 50% of total costs. Board Resolutions from the City of McAllen and McAllen Public Utility attest to MPU's commitment are included as an attachment. The self-funding component will include both direct monetary contribution as well as a contribution provided by a third party entity. The source of funds for Owner's share of contribution will be from MPU's Capital Improvement Plan (CIP) and will be non-federal. Table 1 provides a summary of the funding sources for the project.

Table 1. Total Project Cost Table

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal Funding	1,327,305.25
Cost to be paid by the Applicant	1,327,305.25
Value of third-party contributions	196,592.00
TOTAL PROJECT COST	2,851,202.50

Table 2. Non-federal and Federal Funding Sources Summary

FUNDING SOURCE	AMOUNT
Non-federal Entities	
MPU Water Revenue Fund	1,327,305.25
Value of third-party contributions	196,592.00
Total Non-federal	1,523,897.25
Requested Reclamation Funding	1,327,305.25

The budget proposal for the project is included on Table 3 Since the construction of the water tower will be contracted out, an Engineer's Probable Opinion of Construction Costs has been provided for the project

Table 3 Budget Proposal

Budget Item Description	Computation		Quantity Type	Total Cost
	S/Unit	Quantity		
Salaries and Wages				
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Total		**938.00**	**hours**	**40,962.00**
Fringe Benefits				
Full time Employees				**10,240.50**
Travel				
None				**0.00**
Equipment				
None				**0.00**
Supplies and Materials				
The materials and supplies will be furnished and installed under a contract				
Contractual/Construction				
Contractor *Refer to Engineer's Probable Opinion of Construction Costs*	2,500,000.00	1.00	Lump Sum	**2,500,000.00**
Other				
Consulting Engineering Fee	300,000.00	1.00	Lump Sum	**300,000.00**
Off-site water transmission line	196,592.00	1.00	Lump Sum	**196,592.00**
Indirect Costs				**0.00**
Total Cost				**2,851,202.50**

D.2.2.5.3 Budget Narrative

D.2.2.5.3.1 Salaries and Wages

MPU staff will be involved throughout the entire length of project from planning phase thru construction phase. The staff expected to be involved in this project are listed in Table 3 Budget Proposal along with their estimated hours, salaries and fringe benefits. The Program Manager and key staff working on the project are shown by name, title, and project task in Table 4 Project Budget by Task. MPU certifies that the labor rates included in the budget proposal represent the actual labor rates of the identified personnel and are consistently applied to Federal and non-Federal activities.

The MPU principal representative and project manager is Mark Vega, P.E., General Manager. Mr. Vega has authorization by resolution to represent City of McAllen and McAllen Public Utility in all contractual matters and will be responsible for managing all in-house staff such as to ensure overall success of project. MPU Staff will be responsible for all administrative and technical support of the project. Mr. Vega will work closely with staff in Planning and Coordination Meetings; Design review meetings; Contract preparation and construction phase reviews. A more descriptive description of job specific tasks for MPU Staff are summarized below:

Project Engineers - Carlos Gonzalez, P.E., Marco Ramirez, P.E.: Mr. Gonzalez and Mr. Ramirez will be available to help coordinate the administrative and technical project reviews. A third party consulting engineer will be responsible for the preparation of a complete set of design plans and contract specifications. Mr. Gonzalez and Mr. Ramirez will be responsible for coordinating specific aspects of technical design. This includes Site Plan review, hydraulic review, value engineering and QA/QC.

The MPU Inspectors will be responsible for providing day-to-day site inspections throughout the length of the construction phase to ensure that the contractor proceeds with construction in accordance with contract plans and specifications and following all appropriate safety practices.

Grants and Contracts Coordinator(GCC) – Janet Landeros, Ms. Landeros will be responsible for generating all financial and programmatic reporting to support the necessary Grant Compliance. In addition, the GCC will develop an evaluation plan that will include a system for data collection and tracking to ensure that the project meets all projected outcomes.

The calculation of the salaries, wages costs are listed in Table 3 Budget Proposal and total $40,962.00 and $10,240.50 for Fringe.

D.2.2.5.3.2 Fringe Benefits

Fringe Benefits include Social Security FICA, medical insurance, dental insurance, retirement, unemployment, and workers compensation. For this project, MPU calculated fringe benefits using a flat rate of 25%. Total cost will be $10,240.50 (40,962.00 x .25= 10,240.50)

Table 4 Project Budget by Task

Employee			
General Manager Mark Vega, P.E. [redacted]	Task 1	Planning & Coordination Meetings	20
	Task 3	Plan and Design Review	8
	Task 6	Contract Document	2
	Task 7	Pre-construction Meeting	1
	Task 9	Site Inspection	10
	Task 10	Field Change Coordination	1
	Task 11	Change Order Coordination	1
	Task 12	Project Close-out Documentation	1
	Subtotal		**44**
Program Manager/Engineer - Carlos Gonzalez P.E. @ [redacted]	Task 1	Planning & Coordination Meetings	60
	Task 2	Reporting and Compliance Tasks	25
	Task 3	Plan and Design Review	40
	Task 4	Site Survey & Investigation	8
	Task 5	Bid Preparation	16
	Task 6	Contract Document	8
	Task 7	Pre-construction Meeting	2
	Task 8	Product Submittal Review	16
	Task 9	Site Inspection	25
	Task 10	Field Change Coordination	16
	Task 11	Change Order Coordination	16
	Task 12	Project Close-out Documentation	8
	Subtotal		**240**
Engineer - Marco Ramirez P.E. [redacted]	Task 1	Planning & Coordination Meetings	60
	Task 2	Reporting and Compliance Tasks	25
	Task 3	Plan and Design Review	40
	Task 4	Site Survey & Investigation	8
	Task 5	Bid Preparation	16
	Task 6	Contract Document	8
	Task 7	Pre-construction Meeting	2
	Task 8	Product Submittal Review	16
	Task 9	Site Inspection	25
	Task 10	Field Change Coordination	16
	Task 11	Change Order Coordination	16
	Task 12	Project Close-out Documentation	8
	Subtotal		**240**
Inspector - Javier Morales [redacted]	Task 3	Plan and Design Review	8
	Task 7	Pre-construction Meeting	2
	Task 9	Site Inspection	120
	Task 12	Project Close-out Documentation	8
	Subtotal		**138**

Inspector - Santiago Aguilar [redacted]	Task 7	Pre-construction Meeting	2
	Task 9	Site Inspection	60
	Task 12	Project Close-out Documentation	4
	Subtotal		**66**
Reporting and Compliance- Janet Landeros [redacted]	Task 1	Planning & Coordination Meetings	30
	Task 2	Reporting and Compliance Tasks	40
	Task 5	Bid Preparation	4
	Task 6	Contract Document	4
	Task 7	Pre-construction Meeting	2
	Task 9	Site Inspection	12
	Task 12	Project Close-out Documentation	8
	Subtotal		**100**
EIT-Rafael Balderas [redacted]	Task 1	Planning & Coordination Meetings	24
	Task 3	Plan and Design Review	30
	Task 4	Site Survey & Investigation	8
	Task 9	Site Inspection	8
	Task 12	Project Close-out Documentation	4
	Subtotal		**74**
EIT-Patrick Gray [redacted]	Task 1	Planning & Coordination Meetings	8
	Task 3	Plan and Design Review	8
	Task 4	Site Survey & Investigation	8
	Task 9	Site Inspection	8
	Task 12	Project Close-out Documentation	4
	Subtotal		**36**
		Total Hours	**938**

D.2.2.5.3.3 Travel

There will be no travel costs for this project so the line item is $0. All work will be completed within the McAllen city limits.

D.2.2.5.3.4 Equipment

All the equipment, materials and supplies will be furnished and installed under a contract, so it is identified as a contractual cost in the contractual line item for this project.

D.2.2.5.3.5 Materials and Supplies

All the equipment, materials and supplies will be furnished and installed under a contract, so it is identified as a contractual cost in the contractual line item for this project.

D.2.2.5.3.6 Contractual

MPU will seek the services of a contractor to construct the water tower. The total cost of construction is estimated to be $2,500,000.00. The Engineer's Probable Opinion of Construction Costs for the project is attached to this application as an exhibit.

MPU operates under the procurement policies and procedures established by the City of McAllen that comply with all city ordinances and all State and Federal law requirements pertaining to Procurement and Contracting practices. To ensure transparency and the best possible price, all purchases over $50,000 will require a formal sealed bid from a bidder. All formal sealed bids received in response to a solicitation by the City of McAllen should be electronically opened and read aloud publically. Notice to Proposers will be publicly advertised in the newspaper for two consecutive weeks, with the first date of publication being at least 14 days prior to the opening of the bid. The City of McAllen will indicate in the bid specifications that the contract may be awarded to either the lowest responsive and responsible bidder or to the bidder who provides goods and services as the best value per Texas Government Code. An award of bid to the lowest responsive and responsible bidder will be recommended as an award of bid that will require approval by the MPU Board of Trustees.

Engineering services will be awarded using a qualifications-based procurement method as stipulated in the policies and procedures established by the City of McAllen.

D.2.2.5.3.7 Third Party In-Kind Contributions

The subject project will require the extension of a transmission line a distance of ½ mile or 2,640 LF to reach the proposed tower site. The estimated costs are $196,592.00. The developer has committed to fully fund the necessary "off-site" transmission line. The developer's commitment is expressed in Letter of Support and included as an attachment and is being used as an in-kind contribution to the project.

The developer has also offered to convey to City of McAllen a minimum of ½ an acre or 21,780 SF for the proposed water tower site at no cost to the City. We estimate an appraised value in the $3.00 per square foot range, which would equate to $65,340.00. The owner acknowledges that purchase of any property is not allowed under this NOFO.

D.2.2.5.3.8 Environmental and Regulatory Compliance Costs

There are no anticipated environmental and regulatory compliance costs.

•**Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts**. The majority of the project will comprise of "above-ground" construction. There are no significant environmental or cultural impacts associated with this project. The project should be compliant with the National Environmental Policy Act (NEPA).

• **Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?** This project will not involve any brush or tree clearing. Previous land uses were primarily farming related. MPU is not aware of any species listed, or proposed to be listed, as a Federal threatened or endangered species, or of designated critical habitat in the individual project areas.

• **Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "Waters of the United States?" If so, please describe and estimate any impacts the proposed project may have.** There are no known wetlands or other surface waters inside the individual project boundaries that potentially fall under Clean Water Act (CWA) jurisdiction.

• **When was the water delivery system constructed?** The existing related reclaim facilities and transmission delivery system were completed in 2019.

• **Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g. headgates, canals, or flumes)?** No modification to existing facilities will be required with the exception of an extension of 2,570 LF of the Transmission Line.

• **Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.** MPU is not aware of any structures or buildings that are listed or eligible for listing on the national register of historic places that would be impacted by the project. The project should be compliant with the National Historic Preservation Act (NHPA).

• **Are there any known archeological sites in the proposed project area?** There are no known archeological sites in the proposed area.

• **Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?** No, the project will not have an adverse effect on low income or minority populations.

• **Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?** No, there will not be an impact on tribal lands

• **Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?** No, the project will not contribute to the introduction, continued existence or spread of noxious weeds or non-native invasive species.

D.2.2.5.3.9 Other Expenses
MPU is not anticipating any other expenses for this project.

D.2.2.5.3.10 Indirect Costs
MPU is not requesting any indirect costs for this project. All requested funds are for direct construction costs related to the water tower.

D.2.27. Required Permits or Approvals

No permits or approvals will be required for the project.

D2.2.8 Existing Drought Contingency Plan

The McAllen Water Conservation and Drought Contingency Plan and other planning documents are attached to this grant application.

D2.2.9 Letters of Support and Letters of Partnership

Letters of Support were provided by the developer Rhodes Enterprises and the Chairman of Region M's Rio Grande Valley Regional Water Planning Group.

D2.2.10 Official Resolution

The McAllen City Commission has adopted by Official Resolution, support for this project during a meeting held on September 27, 2021. The MPU Board of Trustees also passed a resolution of support for this project during a meeting on September 28, 2021.

Unique Entity Identifier and System for Management (SAM)

The City of McAllen is registered in the System for Management (SAM). The assigned Commercial and Government Entity (CAGE) code is 306W9. An active SAM registration will be maintained at all times during an active federal award and/or an application is under consideration by a Federal agency.

List of Attachments-

- Letters of Support
- McAllen City Commission Resolution and MPU Resolution
- Engineer's Probable Opinion of Construction Cost
- Drou[redacted] Preparedness Planning Documents
  - [redacted]