

WaterSMART: Drought Response Projects for Fiscal Year 2024
Funding Group II
Hidalgo County Irrigation District No. 6
Construction of Rio Grande Pump Station for Increased Reliability and
Water Better Managed
NOFO No. R24AS00007



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Frank A. Ferris

11.6.23

TECHNICAL PROPOSAL

(1) EXECUTIVE SUMMARY

Hidalgo County Irrigation District No. 6 (The District) is an Irrigation District in the city of Mission in Hidalgo County, Texas, an eligible Category 'A' applicant. The District is applying under Task A: Increasing the Reliability of Water Supplies through Infrastructure Improvements as a Category 'A' applicant.

The proposed project is the construction of a pumping plant (pump station) to increase reliability and flexibility to deliver water, especially during periods of drought, and will be located on the Rio Grande near La Joya, Texas. The proposed pump station will have a steel sheet pile and concrete intake structure and foundation with two 50 cubic feet per second (cfs) vertical turbine pumps: one driven by a natural gas engine and the other by an electric motor. The natural gas engine driven pump will allow pump operation during power outages to maintain water supply for irrigation, municipal water supply, and cooling water supply for power generation. The District's present river lift station is limited in its operational conditions due to persistent low water levels in the Rio Grande associated with the ongoing drought. The proposed pump station will allow access to water supplies during periods of low river levels. The District's existing river pump station sits below the latest IBWC (International Boundary and Water Commission) Flood Control Levee elevation, and the proposed pump station's pumps and motors will be constructed above the levee for protection against river flooding. At the time of this application, the National Drought Mitigation Center's U.S. Drought Monitor shows the majority of Hidalgo County, Texas, and the project location/District, as Category D2: "Severe Drought" as of October 2023. During periods of drought, water releases from Falcon and Amistad reservoirs down the Rio Grande are minimized, equating to lower river levels and decreased ability for the District to divert water from the river using their existing pumping facility. The proposed project is expected to take 23 months to complete, with a start date of November 2024 and a projected completion date of September 2026. The proposed project is located on District-owned property. Hidalgo County Irrigation District No. 6 was founded in 1914 and operates under the Texas Water Code Chapters 49 and 58. The District encompasses 35.8 square miles and has 13,799 acres of irrigated farmland to include alfalfa hay, aloe vera, citrus, corn, cotton, grain, onions, assorted trees, sugar cane, vegetables, and pastures for raising livestock.

The District also supplies water to Agua Special Utility District (Agua SUD), a municipal potable water district supplying a population of 75,000, and supplies water to Frontera Generation, a steam and gas turbine electricity generation facility that uses water from the District for cooling. The District also supplies water to Moore Airfield, a federal research facility which is home to the United States Department of Agriculture's (USDA) Animal and Plant Health Inspection Service. The District is authorized to divert 9,816 acre feet of municipal and industrial rights, 5,000 of which is contracted to Frontera Generation and the balance committed to potable water suppliers included Agua SUD.

The District is authorized to divert 26,913 acre feet annually of irrigation water to its customers in the District. The District also delivers water to USDA, under their water rights up to a maximum of 500 acre feet per year, and delivers water under Agua SUD's water rights amounting to approximately 2,500 acre feet per year. The average amount of water diverted at the proposed pump station is 16,500 acre feet per year.

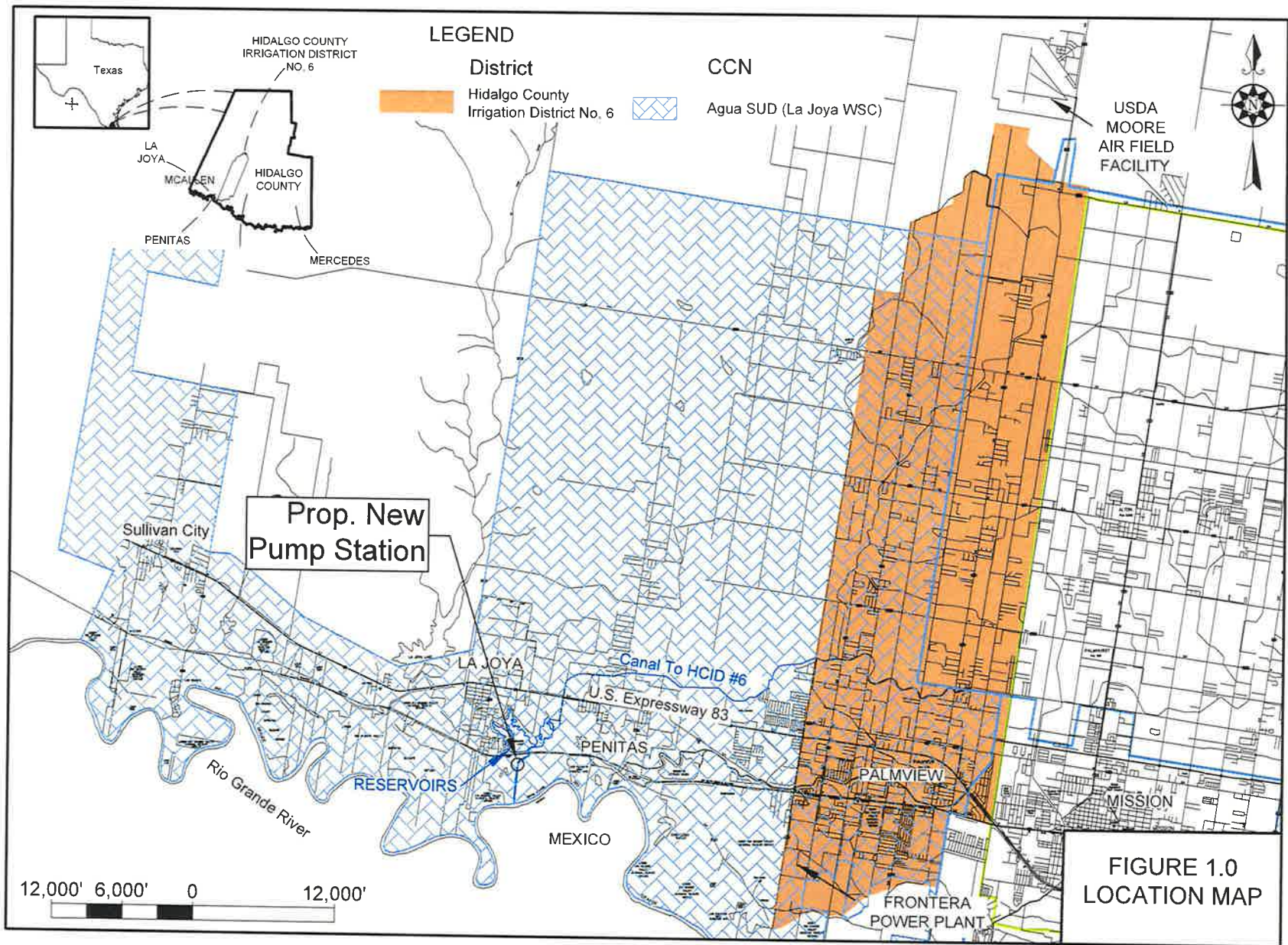
(2) PROJECT LOCATION

Hidalgo County Irrigation District No. 6's proposed River Pump project is located in Hidalgo County, Texas, approximately 1 mile southeast of the town of Peñitas, Texas. Figure 1 shows the location of the project. The project latitude is 26° 13' 46.99" N, and its longitude is 98° 28' 19.54" W. Figure 1 also shows the extents of the District service boundary, and the service area of Agua SUD, a potable water supplier that the District supplies raw water for treatment. Figure 2 shows the District's intake channel connecting the Rio Grande to its First Lift pump station, which was created as the course of the river changed naturally over time since the construction of the First Lift pump station. Also shown in Figure 2 is the proposed pump station near the existing first lift pump station, its location over a satellite map, as well as the District's storage reservoirs: Walker Lake and District Lake.

(3) PROJECT DESCRIPTION

The primary goals of the proposed project are to increase the District's reliability and flexibility to deliver water to its customers in agricultural, municipal, and industrial sectors. The District's existing pumping facility at their point of diversion on the Rio Grande is limited in its operation conditions with respect to the water level of the river. Figure 3 is a graph of the water levels in the Rio Grande at the District's First Lift Pump from the period of 2020 through the grant application date. Anytime the river falls below an elevation of 104, the District is unable to utilize its largest pump. The low river levels are exacerbated by the current drought. Figure 4 shows the existing pump station(s) as well as the proposed pump station. The proposed project will provide continued operation during periods of drought and low water levels in the river, power outages at the pump station, and increase the overall reliability of water supply to its customers through infrastructure improvements.

The District has two storage reservoirs totaling 1,350 acre-feet near its existing river pump station, which allows for the pumping of "No-Charge" water in the river that would otherwise be lost downstream into the Gulf of Mexico. No-Charge water occurs when the Rio Grande Watermaster releases water as ordered by another entity who is not able to divert that water by the time it arrives to their point of diversion, or direct runoff from rainfall. The proposed pump station will also remain unharmed during flood events, due to the elevation of the pumps and motors.

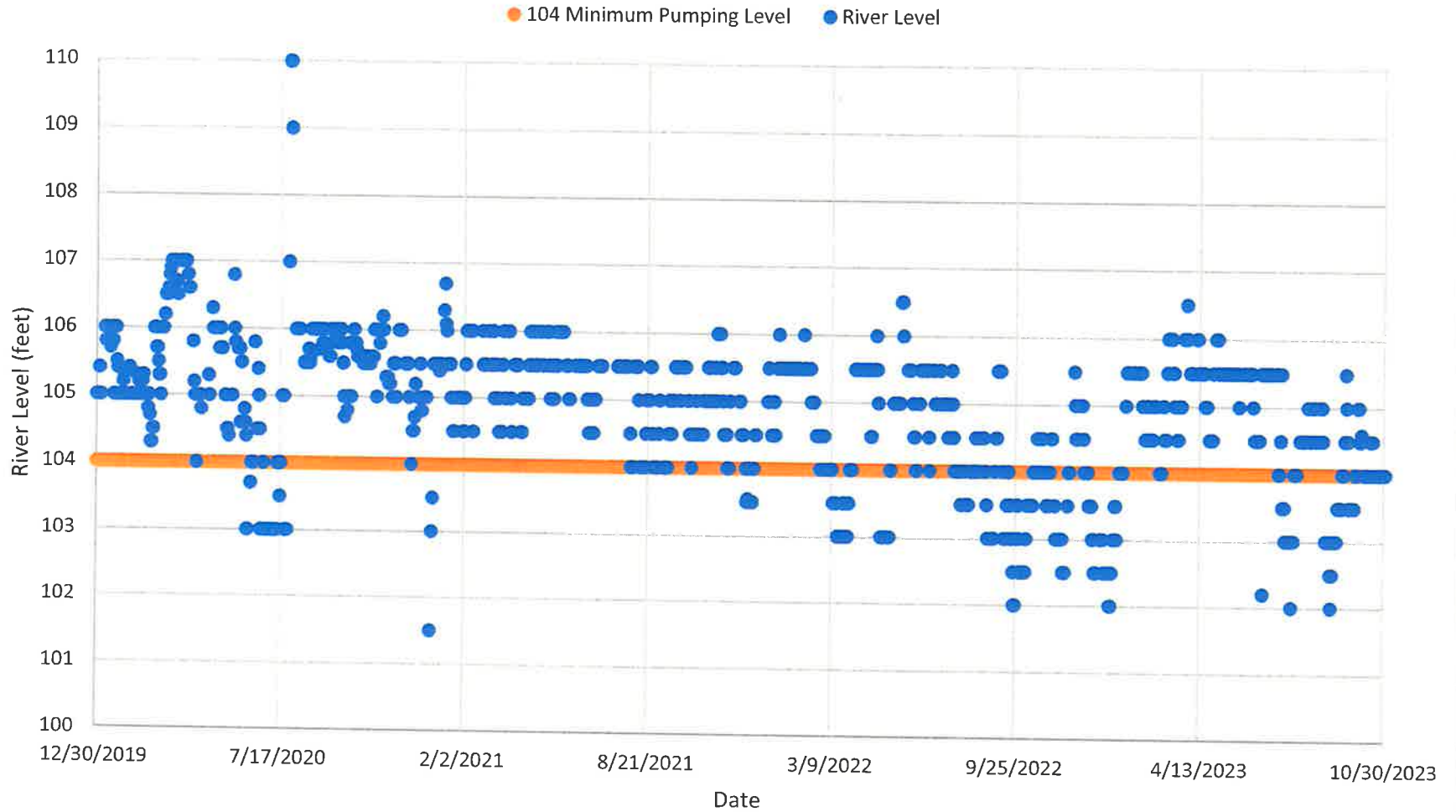




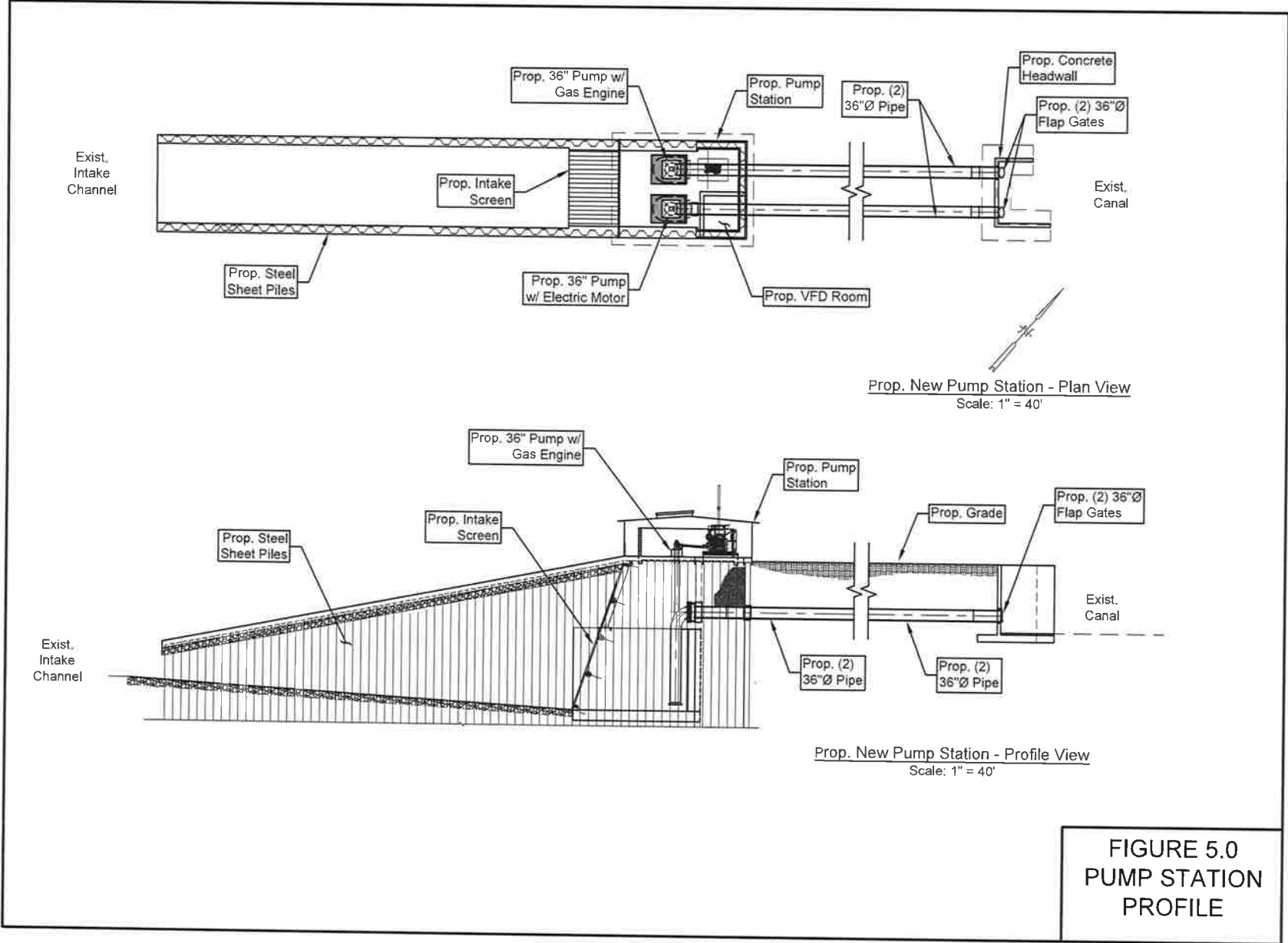
**FIGURE 2.0
INTAKE
CHANNEL AND
RESERVOIRS**

Figure 3

2020-2023 Rio Grande Levels at HCID 6 1st Lift Pump Station







The District's existing pump station is now at risk of flooding due to the elevation of the newest IBWC flood levees. Before construction can begin, there will need to be surveying of the project site and geotechnical testing at the site of the pump station's structure. Due to construction on the Rio Grande at the District's intake channel, a construction permit from the International Boundary Water Commission (IBWC) will be needed. The District already possesses a permit from the IBWC for previously proposed pump station improvements, which can be renewed and used for this project. Following surveying, geotechnical, and IBWC permittance, environmental and historical agency correspondence will be made with the United States Fish and Wildlife Service (USFWS), Texas Parks and Wildlife Department (TPWD), the Texas Historical Commission (THC), and the United States Army Corps of Engineers (USACE) as necessary. A site plan of the proposed pump station is shown in Figure 4 below. The construction of the pump station will involve dewatering and excavation of the area of the proposed intake structure at the east side of the north end of the District's intake channel at the river and discharge headwall structure at the District's main canal, and excavation of two trenches for 36" discharge piping from the intake channel to the Main Canal. Sheet pile will be driven around the sides of the intake structure and from the intake channel and around the backside of the pump station structure and pump intake pit, serving as a retaining wall for the pump sump. Figure 5 shows the design of the proposed pump station in plan and profile views.

For the electric motor-driven pump, a variable frequency drive (VFD) and supporting electrical control system will be installed, to control the motor speed and thus pump flow as required by water needs and allow for the most efficient operation possible of the electric motor and minimize power consumption. The VFD controls will be housed in an air-conditioned structure incorporated in the pump station. The natural gas engine also allows variable-speed operation to pump at any desired flowrate to conserve water. The pump station itself will be open-air without walls for maximum airflow for natural gas engine and electric engine cooling, and lower cost, with a metal roof which will have access hatches over each pump for maintenance.

(4) PERFORMANCE MEASURES

To quantify the benefits of the proposed project following completion, water data collected by the District will be made available to the US Bureau of Reclamation. Presently, diversion and delivery data are collected and maintained in water accounting ledgers for each year, with data collected weekly. In addition, Water Efficiency Analyses are conducted based on this data alongside regional rainfall data to monitor and analyze District water efficiency over time to monitor the effects of infrastructure improvements and minimize water losses. Table 1 below shows a Water Efficiency Analysis from 2019 to 2022. Utilizing these annual water efficiency analyses is imperative to measuring infrastructure improvements and predicting future water usage across all sectors of water supply. Yearly Water Use Surveys are completed and filed with the Texas Water Development Board using this information, which benefits the Region M State Water Planning Group in assessing and developing water management strategies for the future. An electronic water level sensor will be utilized to monitor river levels to demonstrate that the new pump station functions even at the low river levels.

(5) EVALUATION CRITERIA

A. PROJECT BENEFITS

A1.b. WATER BETTER MANAGED

The proposed project will build long-term resilience to drought by allowing the District to divert water from the Rio Grande periods of drought and low water level, as releases from Falcon and Amistad storage reservoirs are minimized to conserve water. Presently, when the river water levels are below 104' elevation, the District's existing river pumps are limited in capacity, with its largest (60 inch) pump unable to prime and operate at all. The proposed pump station project will also incorporate a natural gas engine driven pump. Presently, all existing pumps are driven by electric motors and are therefore inoperable in the event of a power outage due to inclement weather. A natural gas driven engine, started by standalone batteries can operate during a power outage, and prevent the loss of ordered and released water from Falcon/Amistad Reservoirs downstream in the Rio Grande to the Gulf of Mexico. The proposed pump station will continue to provide benefits for the District and Rio Grande water users indefinitely. 100% of the water diverted by the District from the Rio Grande will be better managed from the proposed project and its components since the project components are all present at the point of diversion and each have a positive impact on all diversions.

As shown in Table 1 below, the District has diverted an average of 16,403 acre-feet of water each year from 2019-2022 out of the river.

The District owns a total of 36,729 acre-feet of authorized water rights, of which 9,816 (26.7%) are Domestic, Municipal, and Industrial water rights. In addition to the District's own water rights, it is an authorized diverter for 7,397 acre-feet owned by other entities that do not have the capability or infrastructure to divert water at the river themselves. Between the authorized water rights owned by the District and the authorized water rights owned by other entities that the District is an authorized diverter, the water better managed is 44,126 acre-feet. The water better managed includes water supplies for agricultural, municipal, and industrial usage, encompassing a variety of users which renders this water management, drought resiliency, and increased water supply flexibility crucial to the community and its economy. Table 1 was created through regular water efficiency analyses conducted by the District and its engineers on at least an annual basis using the District's irrigation accounting software in addition to a water accounting ledger maintained by the District to track water diversions and deliveries on a weekly basis.

A2.a. CLIMATE CHANGE RESILIENCY

One natural hazard risk reduction of the pump station is that the motors and electrical controls will be elevated above the existing flood levels of the Rio Grande. The existing pumps, a photograph of which are on the cover page, were constructed many years ago, before the IBWC flood control project, which raised the flood level at the existing pumps. The existing pumps are located below the 100 year flood plain and in fact were flooded during the 2010 Rio Grande Flooding from Tropical Storm Alex and TD #2. The new pump facility mitigates that risk by elevating critical infrastructure above the 500 year floodplain.

The proposed project's new river pump station will utilize one electric motor with a variable frequency drive. The variable frequency drive allows for the most efficient operation of the electric motor and allows for much greater efficiency over operating the motor at a static frequency in dynamic conditions. With varying river levels on the intake side of the pump and main canal levels on the discharge side of the pump, the frequency may be adjusted to run the pump in its most efficient operating conditions, which minimizes power consumption. The same strategy will be utilized with the proposed gas engine, adjusting flowrate to maintain the most efficient operating speed of the pump and its engine to minimize gas consumption and emissions. The variable frequency drive electric motor driven pump will be the main pump, with the gas engine driven pump utilized when additional pumping capacity is needed or during the event of power outage due to inclement weather. Natural gas, although a fossil fuel, is a relatively clean burning fossil fuel, with fewer environmentally detrimental emissions components than diesel or gasoline powered engines.

Table 1
HCID No. 6 Water Diversions, Deliveries and Efficiency Analysis

Year	Water Pumped (Acre-Feet)	Agriculture		AguaSUD (Acre-Feet)	USDA		Total Accounted Water (Acre-Feet)	In-District Water Losses (Acre-Feet)	In-District Water Losses (Percent)	Overall Efficiency (Percent)	Rainfall (Inches)
		Agriculture In-District (Acre-Feet)	Out-of-District (Acre-Feet)		Moorefield (Acre-Feet)	Frontera (Acre-Feet)					
2019	19,750	7,233	4	4,504	364	3,155	15,260	4,490	22.7%	75.0%	16.5
2020	18,875	7,045	6	4,254	170	3,095	14,570	4,305	22.8%	75.0%	25.8
2021	11,775	3,313	3	3,747	136	2,151	9,351	2,424	20.6%	75.0%	27.8
2022	15,210	4,421	0	4,676	128	2,763	11,988	3,222	21.2%	75.0%	21.22
2019-2022 Average	16,403	5,503	3	4,295	200	2,791	12,792	3,610	21.8%	75.0%	22.8

Notes: 2019-2021 not reconciled with Watermaster statements
 2022 Rainfall data source: NWS Historical Surface Observations - Palmview
 Date: 3/17/2023

A fact sheet for the Electric Reliability Council of Texas (ERCOT) can be found in Appendix "D", which shows that the 2023 generating capacity for Texas is 28.6% wind energy, 11% solar energy, and 0.5% hydroelectric energy, which equates to approximately 40% of all power generation in Texas coming from renewable, sustainable, green energy generation. At the time of this application, the District is obtaining quotes from electric retailers for renewable energy plans which utilize solar and wind power generation whenever possible.

The ability of the pump station to operate during periods of low water levels in the Rio Grande serves to protect precious water supplies in the Rio Grande and its reservoir system, consisting of Falcon and Amistad Reservoirs. The existing river pump station and its pumps are very limited in operation during low river flows caused by drought and are at reduced efficiency due to inability to prime. A release authorized and conducted by the Rio Grande Watermaster from the reservoirs will arrive at the District's point of diversion in three days and if the pumps are unable to prime or are delayed in priming, any water not diverted out of that release is lost downriver to the Gulf of Mexico unless a downstream district is able to divert it, which requires coordination between the Rio Grande Watermaster's office, HCID No. 6, and acting within a very limited time window on another District's part and its capability and readiness to do so.

The proposed natural gas engine driving one of the two proposed pumps will be a new, modern Caterpillar engine which is EPA compliant, meeting modern emissions requirements and utilizes state-of-the-art combustion technology and turbocharging for improved fuel consumption. The proposed project will have no impact on land or aquatic wildlife. The proposed project benefits the agricultural, municipal, and industrial sectors through the continued supply of water to irrigators in the District, customers of Agua Special Utility District (a municipal water supplier), Frontera Generation power plant, and the USDA's Moore Airfield research facility. The supply of irrigation water to farmers and ranchers in periods of drought is critical, and any failure to deliver water supplies to irrigators has the potential to result in the loss of crops and livestock, having a strong negative effect on the local economy and impact the Nation's domestic food source sustainability. All crop irrigation in South Texas is carried out through the conveyance of water from the Rio Grande by irrigation districts and their infrastructure. The proposed project serves to increase both the flexibility of water delivery and the resilience of water delivery operations under all conditions, but especially during periods of drought such as the present drought, classified as "severe" by the National Drought Monitor in Hidalgo County, Texas as well as the vast majority of the state. Agua SUD is a potable water supplier that serves about 75,000 people in its service area, shown in Figure 1, and is supplied with water for treatment from the District. Frontera Generation is an electricity generation facility which supplies power to ERCOT and the Texas power grid, whose operation is critical and its power generation reliability greatly enhanced by the proposed project; this is especially important following Texas's power grid and infrastructure shortcomings brought to light by the February 2021 freeze amid high power utilization.

The water supplied to Frontera Generation is used for the cooling of its natural gas and steam powered turbines. USDA's Moore Airfield research facility relies on the District and their supply and delivery of water to support the research and development of crop sustainability improvements and defense strategies against invasive insects and other sources of crop damage.

Additional benefits of the proposed project's improvement upon water management for water in the Rio Grande and its reservoir system includes aiding in the release of tension caused by dispute of the Treaty of 1944 between the United States and Mexico regarding the shared water use between the two countries of the waters of the Colorado, Tijuana, and Rio Grande. According to the Treaty, 1/3 of the water from several Mexican tributaries is allotted to the United States. Since the Treaty, Mexico has constructed reservoirs upstream of Falcon and Amistad reservoirs that allow Mexico to withhold runoff that many in the US consider to be a violation of the Treaty. A graphic from the IBWC can be found in Appendix "B" depicting the status of the current 5-year cycle. Mexico is three years behind in delivery of water to the US, causing drought in the more heavily irrigated Districts in South Texas. There are conflicts in Mexico in which farmers have protested against the Mexican government's plans to repay the debt. The fact that Mexico delays releases is evident in the IBWC's graphic depicting ownership trends between Mexico and the US in Appendix "A", where Mexico's percentage of storage in the Falcon and Amistad reservoirs is much less than that of the US. One third of water released into Falcon and Amistad reservoirs from Mexican reservoirs eventually becomes US water, so Mexico delays that release for as long as possible. The increased drought resiliency and water supply flexibility that will result from the proposed project, as well as conservation efforts from past USBR projects, helps ease the international conflict over the shared, limited water resources of the Rio Grande. The South Texas Rio Grande region is in the worst drought it has seen in 25 years, making the proposed project and its many benefits extremely important and in urgent need.

B. PLANNING AND PREPAREDNESS

Hidalgo County Irrigation District No. 6 and its pump station project proposed in this application are part of the Region M Water Planning Group's 2021 Water Plan, a group whose purpose as a water planning group is to *"...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; further economic development; and protect the agricultural and natural resources of that particular region."* The Region M water plan identifies and projects current and projected population economy, and natural resource information in addition to surface and groundwater resources. Major water providers in the irrigation, municipal, and industrial sectors and their demands are identified alongside the cumulative water balances present in water sources for the region.

Water management strategies (conservation, best management practices, conversion/purchase of surface water rights) and drought planning are all main focuses of the Region M water plan. Drought planning topics present in the plan include droughts of record, drought preparation and response, emergency district/city interconnects, drought response recommendations and drought contingency plans, and drought management strategies.

The District maintains Water Conservation and Drought Contingency Plans which were filed with the Texas Water Development Board and are recognized within the Region M plan on page 98 (Appendix M). The District's most recent drought contingency plan was filed in 2019 and is updated every 5 years. The Region M plan addresses climate change impacts to water resources on page 101 (Appendix M), citing a 2013 USBR and Rio Grande Water Authority evaluation of climate change on the Lower Rio Grande Valley in a Basin study funded by a WaterSMART grant, identifying a median on 84,000 acre-feet per year reduction in available water following the review of a range of climate scenarios. The Region M plan's most recent iteration was published in 2021 and is updated every five years. The Region M plan was developed through a collaborative process, with group members' interests ranging from public, county, municipal, industrial, agricultural, environmental, small business, river authority, water district, water utility, and groundwater management representatives alongside the Texas Water Development Board to gather data and evaluate current demands and supplies while projecting future water demands and supplies for the above detailed range of stakeholders. The Region M Water Plan was prepared by the Rio Grande Regional Water Planning Group with administration by the Lower Rio Grande Valley Development Council. Hidalgo County Irrigation District No. 6 was involved in a data collection aspect regarding its authorized water rights balances, its users across multiple sectors, its Drought Contingency Plan, and its Capital Improvements Plan, which includes the proposed pump station project, recognized as a recommended water management strategy alongside other planned infrastructure improvement projects including future pipeline and reservoir projects. One aspect of water management strategy evaluation is reliability, defining the extent to which a quantity of water is available to an entity over time. One of the proposed pump station project's primary goals is to increase the reliability of the District during low river levels and/or inclement weather. The Region M Plan identifies irrigation district improvements as low-cost water management strategies for Region M that decrease losses and improve service. The proposed project, among other planned infrastructure improvements related to conservation and drought resiliency are recognized in the Region M plan on page 765 (Appendix M). The proposed pump station is recommended within the plan on this page as "diversion and control structure" and "data gathering/monitoring technology".

C. SEVERITY OF ACTUAL OR POTENTIAL DROUGHT IMPACTS TO BE ADDRESSED BY THE PROJECT

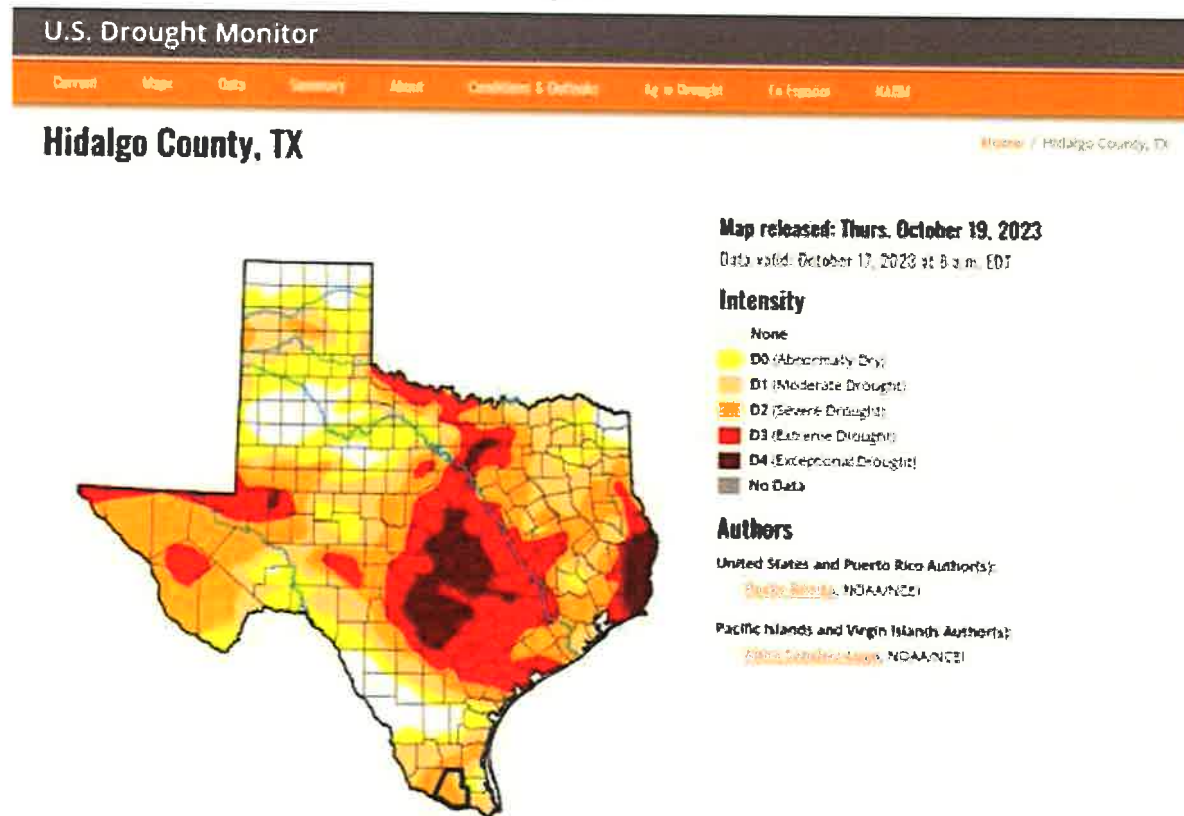
Figure 7 from the National Drought Monitor shows the current status of drought conditions across the entire State of Texas, including Hidalgo County which is still in “severe drought” as of October 2023. As of October 21st, 2023, the U.S. water storage in Falcon and Amistad reservoirs is 21.1%. The region is in the worst drought experienced within the last 25 years. At the time of this application, Agua SUD has enacted “Stage 3” water use restrictions in accordance with their Drought Contingency Plan within their service area (Figure 1) due to the present drought.

The threshold of which this restriction stage occurs is a less than or equal to 25% storage balance for the U.S. in Falcon and Amistad reservoirs. Restrictions under Stage 3 of their Drought Contingency Plan include limited residential irrigations limited to one day per week between 8:00 P.M and 12:00 midnight, prohibited use of automated sprinkler systems and hose-end sprinklers, prohibited vehicle and boat washing unless at a commercial car wash, prohibited use of water for filling pools, prohibited golf course/park/green belt irrigation, prohibited water use for dust control or wash down of all surfaces such as driveways, sidewalks, or walkways. Agua SUD has been forced to issue water boil notices due to low water pressure within their system in June of 2023. Water boil notices, though uncommon, do occur in more rural areas of the Rio Grande Valley during periods of drought such as the present. The proposed project increases water supply reliability in periods of drought and helps build resiliency in the supply of water to Agua SUD, promoting the health of those in the community.

Due to the present drought, farmers in certain regions of South Texas have had to purchase Contract Water from outside of the irrigation district that their land and crops are within so that they are able to irrigate and maintain their crops. In addition, many farmers have been forced to plant and grow crops that use less water in order to maintain production and stay in business. In a recent Rio Grande Stakeholders meeting of irrigation district managers, potable water suppliers, farmers, and other stakeholders held by TCEQ to discuss the current drought, a representative of a large sugar farming and production company expressed dire concern for the industry and its sustainability in South Texas due to the drought. This cooperative of farmers represents one of the top 10 producers of raw sugar in the United States; and the industry represents \$21.1 billion in economic activity within the United States. This industry comprises over 8,000 jobs in the state of Texas alone. The drought creates strain on local, state and national economies, in addition to potable water supply, food production, power generation, and wildlife and plants.

The proposed project allows the District to divert water otherwise lost downriver due to increasingly more prevalent low river levels through the construction of the proposed pump station and its self-priming axial flow turbine pumps which will be installed at such a height and with such an intake structure that will minimize releases from Falcon and Amistad Reservoirs.

Figure 7



Inclement weather that will cause a power outage at the District's First Lift Station will not result in lost water following the construction and implementation of the proposed pump station, due to the natural gas engine-driven pump which will not require electricity to operate. The ability to divert water during a power outage at the pump station is critical to the supply of water to Agua SUD to maintain its reservoir levels for water treatment and supply to the public for safe potable water. Should a power outage affect their water treatment plant, the maintenance of reservoir levels to sustain readiness to treat water upon restoration of power is equally as important. The same holds true for cooling water supply to Frontera Generation's power plant by the District.

D. PRESIDENTIAL AND DOI PRIORITIES

100% of both Hidalgo County Irrigation District No. 6, Agua Special Utility District (potable municipal water supplier) are categorized as disadvantaged or underserved communities by the US Census Bureau using its Climate and Economic Injustice Screening Tool, as shown in Appendix H. The area served by the project, the District, and the municipal water supplier to which the District delivers water for treatment are represented in this map. Hidalgo County Irrigation District No. 6 and Agua SUD boundaries and service areas are shown in Figure 2.

E. READINESS TO PROCEED AND PROJECT IMPLEMENTATION

An overview of the project's schedule is shown below in Table 2 with an estimated 23 months to completion following the award of funds. Preliminary engineering design has already begun for the development of the District's Capital Improvement Plan and for the preparation of this grant application. The permitting aspect of the project is relatively simple, with the most significant aspect being the pump station's intake of water from and location on the Rio Grande which represents the border of the United States and Mexico and is also a shared resource. A permit will be required from the IBWC for the proposed project; however, the District has obtained a permit for the purpose of this project in the past, which was not utilized. The existing permit may be renewed and any modifications to the permit required due to potential changes from the original scope will be made if needed. USFWS, TPWD, TCEQ, USACE and SHPO offices will all be presented with the project information and any necessary applications. The project will occur on District owned property, so no purchase or leasing of property will occur. The proposed project is the main component of the District's Capital Improvement Plan and has been approved by the District's Board of Directors. The Official Resolution will be adopted by the Board of Directors at their regular meeting of November 20, 2023.

Upon award of the grant for the proposed project in October of 2024, surveying, environmental compliance, and geotechnical investigation will begin in November of 2024.

Table 2
Project Schedule

	Milestone / Task / Activity	Start Date	End Date
1	Surveying, Environmental, Geotechnical Investigation	November-24	March-25
2	Engineering Design, Planning	November-24	March-25
3	Bidding	March-23	April-25
4	Construction	April-25	September-26

Alongside those tasks, engineering design, construction specifications, and planning will begin, with all planning completed by approximately March of 2025. Next, the District will advertise for bids, hold a public bid opening, review bids, and award bids in April of 2025. Following the award of bids, construction will begin approximately April 2025 with the completion of construction and implementation of the proposed infrastructure scheduled for September of 2026.

F. NEXUS TO RECLAMATION

The Rio Grande Valley has a long-standing history of Bureau of Reclamation projects. Many of the irrigation districts have been improved over many years with Bureau of Reclamation funding. One notable Bureau of Reclamation project is the Lower Rio Grande Valley Water Conservation Act of 2000 which funded many water conservation projects in South Texas, including a \$2.8 million project for HCID No. 6, consisting of canal linings, of which 50% was funded by the US Bureau of Reclamation. Because of the unique water right laws in the lower Rio Grande Valley, any water saved positively impacts all other water rights holders below the Falcon and Amistad reservoirs. Hidalgo County Irrigation District No. 6 has also applied for and was awarded a WaterSMART: Energy and Efficiency Grant for fiscal year 2010 for the lining of its 4B canal and a solar powered monitoring station. The 2010 grant project included the relining of approximately 17,520 linear feet of the 4B canal, which was successful in saving water and energy, reducing water losses within the District, and ultimately allowing for utilization of conserved water by other water users along the Rio Grande. The 2010 grant project's solar powered monitoring station has allowed for better management of water both conserved and conveyed by the District.

G. STAKEHOLDER SUPPORT

Letters of Support are provided in Appendix N from municipal, industrial, and agricultural sectors, which show a diverse field of water users reliant on the District and its reliable supply of water, especially in times of drought, low river levels, or flooding events. The supply of water to water treatment plants for safe potable water for the community, the supply of water to a power plant in the ERCOT system for reliable energy and defense against another power grid failure, the supply of water to a federal agricultural research facility which protects the health and safety of much of the food consumed by the country, and the supply of water to farmers and ranchers who provide food and materials, such as cotton, for the country and beyond, are all benefitted greatly by the proposed project which will fortify the District's resiliency to drought, aid in the resiliency of all water users along the Rio Grande and its reservoirs, increase the reliability and flexibility of water delivery during the increasingly more common periods of low river levels, during power outages, during flood events, and serve to better manage water in the region.

PROJECT BUDGET

Table 3.0 Provides an overview of the project's funding sources. The development of the budget is provided in the budget narrative below and supported by Table 3.1, Budget Development. The cost estimate for the pump station structure, pumps, engines, and associated piping was developed based on a nearly identical project completed at Cameron County Irrigation District No. 6 in 2014.

A construction inflation factor was applied as necessary utilizing Ed Zarenski's Construction Analytics Building Cost Index for Construction Inflation (Nonbuilding infrastructure) to adjust costs for inflation between the project's bidding or construction date and the planned bidding date of the project proposed in this application. The Construction Analytics Inflation graph is found in Appendix C of this application. The inflation factor was calculated for the project component by dividing the linearly approximated inflation factor from the graph for the proposed project bid date by the actual inflation factor for the date of the bid award for the referenced project. This calculated inflation factor was multiplied by the referenced project's cost at the time of award to obtain the resultant inflation-adjusted cost estimate for the proposed project.

The construction of the referenced CCID 6 pump station building/structure (Figure 8), designed by Ferris, Flinn, & Medina, LLC., including intake and discharge headwalls and piping at the time of bid award was \$1,939,613. The furnishing and installation of two pumps at the time of the award was \$414,000. The furnishing and installation of motors at the time of the award was \$343,240. The total contract cost for the entire pump station construction and pump and motor installation was \$2,696,853.00. Engineering, surveying, geotechnical inspection, and NEPA Compliance, are estimated at 25% of the total contract cost in the amount of \$674,213.25. The total cost to complete the proposed pump station project is \$3,371,066.25. A construction inflation factor of 1.50 using the building cost index construction inflation graph from Construction Analytics in Appendix C is then applied to the total pump station cost for an adjusted construction cost of \$5,056,599, for the projected time of award and construction for the proposed project in April of 2025.

The proposed Federal share for this project at 39% is \$1,972,074. The proposed non-Federal share to be paid by the Applicant at 61% is \$3,084,526.

ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

Environmental and Cultural Compliance shall proceed quickly as there is no brush clearing required and minimal earth disturbance. The work will occur primarily on District owned property with only the pump intake headwall lying on the bank of the District's intake channel connected to the Rio Grande.

Table 3.0
Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCES	AMOUNT
Non-Federal Entities	
1. Hidalgo County Irrigation District No. 6 (Applicant)	\$3,084,526
Non-Federal Subtotal	\$3,084,526
REQUESTED RECLAMATION FUNDING	\$1,972,074

Table 3.1
Budget Development

Construction of New Pump Station Building	\$1,939,613
Furnishing and Installation of Pumps	\$414,000
Furnishing and Installation of Motors & VFD	\$343,240
Total Contract Cost in April of 2014	\$2,696,853
Engineering, Surveying, Geotechnical Inspection & NEPA Compliance @ 25%	\$674,214
Total Pump Station Cost	\$3,371,067
Construction Analytics Factor (Apr. 2025/Apr. 2014)	1.50
Adjusted Construction Cost (Nov. 2024)	\$5,056,600
Project Cost Grand Total	\$5,056,600



Figure 8
CCID No. 6 Pump Station

The State Historic Preservation Office will be notified of the project for guidance on any possible permitting required, however no demolition or modification of the District's existing pump station facilities will occur. Information will be provided to USFWS, TPWD, and SHPO offices as needed.

- The impact area of the project will be limited to upland, previously cleared properties. The Contractor will leave an earthen dam in the new pump station channel to limit impact to waters being pumped by the existing station. The Contractor will be required to comply with NPDES requirements for a construction as administered by the TCEQ. When the intake channel is finally excavated, it will be limited to a period when the existing pumps are not pumping.
- There are no known listed or proposed to be listed Federal threatened or designated critical habitat to be impacted by the project.
- The intake channel will be classified as "Waters of the United States." The District will apply for a Nationwide USACE Permit for an intake. The permit will become a part of the construction contract to minimize impacts to surface waters.
- The water delivery system was constructed between 1914 and 1960. The three existing pump station swill not be altered and will remain operational.
- There are features eligible for listings on the National Register of Historic Places.
- There are no known archeological sites in the project area.
- The proposed project will only benefit low income and minority populations. There are no adverse effects.
- The project will not limit access or ceremonial use of Indian sacred sites or other impacts on tribal lands.
- The project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area.

REQUIRED PERMITS OR APPROVALS

A permit will be required from the IBWC for the proposed project; however the District has obtained a permit for the purpose of this project in the past, which was not utilized. The existing permit may be renewed and any modifications to the permit required due to potential changes from the original scope will be made if needed. A Nationwide Permit from the US Army Corps of Engineers is anticipated. Through the NEPA process, the District will contact the USACE and file any necessary paperwork to verify authorization under Nationwide Permit No. 7. The general contractor will be required to comply with all the forms of the Nationwide Permit. USFWS, TPWD, TCEQ, and SHPO offices will all be presented with the project information and any necessary applications.

LETTERS OF SUPPORT

Attached to this application in its appendix are letters of support from stakeholders benefitted by the proposed project. The project stakeholders include Agua SUD, Frontera Generation, USDA, Wonderful Citrus, South Tex Organics, Thompson Farms, Karle Farms, and Gonzalez Farms. These entities represent agricultural, municipal, and industrial sectors who are all reliant on a reliable supply of water, especially in periods of drought, but additionally during power outages and flood events.

OVERLAP OR DUPLICATION OF EFFORT STATEMENT

There is no overlap between the proposed project and any other active or anticipated proposals or projects in terms of activities, costs, or commitment of key personnel.

CONFLICT OF INTEREST DISCLOSURE STATEMENT

There is no actual or potential conflict of interest that exists at the time of submission.

RESOLUTION FOR ADOPTION OF A WATER CONSERVATION & DROUGHT CONTINGENCY PLAN

RESOLUTION NO. 19-023

A RESOLUTION OF THE BOARD OF DIRECTORS OF HIDALGO COUNTY IRRIGATION DISTRICT NO. 6 ADOPTING A WATER CONSERVATION & DROUGHT CONTINGENCY PLAN.

WHEREAS, Hidalgo County Irrigation District No.6 Board recognizes that the amount of water available to the Hidalgo County Irrigation District No. 6 and its water customers is limited and subject to depletion during periods of extended drought;

WHEREAS, Hidalgo County Irrigation District No.6 Board recognizes that natural limitations due to drought conditions and other acts of God cannot guarantee an uninterrupted water supply for all purposes;

WHEREAS, the Water Code and the regulations of the Texas Commission on Environmental Quality (the "Commission") and the Texas Water Development Board (the "TWC Board") require that HCID#6 adopt water conservation and drought contingency plans;

WHEREAS, as authorized under law, and in the best interests of the customers of the Hidalgo County Irrigation District No. 6, the Board deems it expedient and necessary to establish certain rules and policies for the orderly and efficient management of limited water supplies during drought and other water supply emergencies;

WHEREAS, the provisions of this Plan shall apply to all persons, individuals, corporations, partnerships, associations, and legal entities utilizing water provided by Hidalgo County Irrigation District No. 6;

NOW THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE HIDALGO COUNTY IRRIGATION DISTRICT NO. 6:

SECTION 1. That the Water Conservation and Drought Contingency Plan attached hereto and made part hereof for all purposes be, and the same is hereby, adopted as the official policy of the Hidalgo County Irrigation District No. 6.

SECTION 2. That the Interim General Manager and or General Manager is hereby directed to implement, administer, and enforce the Water Conservation & Drought Contingency Plan.

SECTION 3. That this resolution shall take effect immediately upon its passage.

DULY PASSED BY THE BOARD OF DIRECTORS OF THE HIDALGO COUNTY IRRIGATION DISTRICT NO. 6, ON THIS 21 day of MARCH, 2019.

Board of Directors 

ATTESTED TO:

Board of Directors 