



Celina Road Six Million Gallon Ground Storage Tank Project

WaterSMART: Drought Resiliency Project Grants FY 2019 Funding Group II

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EXECUTIVE SUMMARY

DATE: March 27, 2019

APPLICANT NAME: City of Celina, Texas

PROJECT NAME: Celina Road Ground Storage Tank

CITY, COUNTY, STATE: Collin and Denton Counties, Texas

PROJECT LENGTH OF TIME: The total project length, including grant execution, final design, construction, and close-out, is estimated to take 24 months. Project construction is estimated to begin in May 2020 and be complete by April 2021 (12 months).

PROJECT ON FEDERAL FACILITY: No

In an effort to build long-term resilience to drought and water supply emergencies in North Texas, the City of Celina (service area population 18,860) requests \$750,000 to offset construction costs for a 6 million gallon (MG) ground water storage (GST) tank at the Celina Road Pump Station (CRPS) (total construction costs of \$7.3 million). In just two short years, by the time the project is proposed for completion, Celina's water storage capacity will be less than 16 hours a day. The GST will more than double that capacity – from 15.37 hours to 38.43 hours on an average day in 2021 – bringing storage capability to over a day's worth of water in the event of temporary interruptions from our single source of water supply, the Upper Trinity Regional Water District (UTRWD), and provide additional system storage to meet Texas Commission on Environmental Quality (TCEQ) requirements. **As mentioned above, the proposed project will more than double our capacity to retain water for emergency water shortages or drought.**¹ And, with our booming population, the water storage is vital. Celina is on target to be named the fastest growing city in the U.S. within the next few years, with a population estimated to grow by over 200% by 2022. From 2000 to 2010 the population grew by 325%. Exponential population growth is our city's single greatest challenge. We have a future estimated build-out of 363,100 people and an average projected daily water demand of 100 MG/day – or 97.31 MG more than our current storage capacity. Currently, if an interruption in water supplies occurs due to drought-level lake sources or exceeding capacity at UTRWD, Celina will have just over one day of stored water (if water use was average). The proposed GST is needed to improve water reliability and flexibility of our resources as we try to keep up with the unrelenting growth and face frequent and inevitable cycles of drought.

BACKGROUND DATA

Water Supply. The City of Celina is located in Collin and Denton counties, in one of the fastest growing regions of North Texas. The City has experienced significant, sustained population growth over the last decades. The current population of approximately 18,860 is expected to more than double over the next five years. The existing City limits are 22 square miles with an anticipated ultimate build-out area of 77 square miles. The City of Celina, Public Works Water Department manages the maintenance and repair of the water production, transfer, and distribution facilities. The City's total water supply managed in 2018 was 790,923,000 gallons, or 2,427 acre-feet per year (AFY), of water supply.

¹ The City has 2.69 MG of existing storage, and plans to decommission two storage tanks and bring a 2.0 MG elevated storage tank online in September 2019, bringing total water storage in Fall of 2019 to 4.0 MG. Due to projected population increase for 2019, the 4.0 MG of storage will provide only 22 hours of storage on an average day/11 hours on a peak-use day.

Celina’s single source of water supply is the Upper Trinity Regional Water District (UTRWD). UTRWD was created by the State of Texas in 1989 to provide towns, cities, and utilities with water supply, and is composed of 25 Member entities (21 cities and towns), one utility, and three special districts, and is supplied by the lakes available to the Upper Trinity watersheds (Lewisville Lake, Ray Roberts Lake, Jim Chapman Lake and from the reuse of water imported from Jim Chapman Lake). Some Upper Trinity Customers also use groundwater for a portion of their water supply (not Celina). In Denton County, groundwater resources are very limited; the County has been included in a “Priority Groundwater Management Area” by the Texas Commission on Environmental Quality (TCEQ), and a groundwater conservation district has been created to manage and conserve groundwater resources within the County. UTRWD is taking important steps to avoid further draw-down of these limited groundwater resources, and to make surface water available as a more reliable and sustainable source for further growth in Upper Trinity’s service area. The North Texas region is anticipated to add 1.6 million households with a corresponding 4.1 million people in the next 30 years. This represents an average annual population growth rate of 2.6% for these 30 years, a magnitude of growth never before experienced in the North Central Texas region.² To this end, conservation, reuse, and the development of additional water supply resources will contribute greatly to the conservation and drought resilience in the region.

Water Demand. Celina’s current water system has 6,129 connections (2,565 connections added since 2016), and the five-year average use is 219.2 gallons per capita per day (GPCD). The current average day water demand is 2.16 MG/day and the current maximum day demand is 5.09 MG/day (a higher demand than our projected Fall 2019 storage capacity of 4 MG). With the population projected to be 363,100 at build-out (158,298 connections), the corresponding water demand is expected to be 100 MG/day on an average day/200 MG/day on a peak demand day. We anticipate that our water supply needs will be 4.28 MG/day on an average day, or 8.56 MG/day on a peak-use day, by the end of 2019, and 6.25 MG/day on an average day, or 12.49 MG/day during peak use in 2021, when the proposed tank would be online.³ All proposed City facilities must meet the capacity requirements found in the Texas Administrative Code (TAC) Chapter 290.45. According to TAC Chapter 290.45(b) (1) (D) (ii); a community water system consisting of more than 250 connections must have a total storage capacity of 200 gallons per connection. Based on the future projected connections of 158,298, a total of 31.66 MG of storage will be required (half must be through elevated

Name	Type	Storage (MG)
Downtown (To be Decommissioned Summer 2019)	Ground	0.15
Celina Road	Ground	1.0
Morgan Lake (To be Decommissioned September 2019)	Elevated	0.54
Light Farms	Elevated	1.0
SE Sector (September 2019)	Elevated	2.0

Figure 1. Current and Scheduled Storage Facilities in Celina.

² Vision North Texas. http://www.visionnorthtexas.org/regional_summit/North_Texas_2050.pdf

³ The usage projections are based on TCEQ records that were provided for the month of June 2018. Historical demand per day resulted in 178 gpcd for average day demand. A peaking factor of 2.0 was recommended, since higher usage rates tend to occur later in the summer months, such as July and August. 4.28 MGD average/8.56 MGD peak is based on 2019 population projections of 24,049 people @ 178 gpcd usage for average day, 356 gpcd usage for maximum day; 6.25 MGD average and 12.49 MGD is based on 2021 population projections of 35,096.

storage, and half can be through ground storage). Without additional storage capacity, the City will suffer a shortfall of 27.66 MG of storage.

Water Delivery and Distribution System. The City of Celina's water delivery/distribution system is for residential, commercial, and industrial purposes.⁴ One hundred percent of the City's treated water is pumped from the UTRWD system to the Celina Road Pump Station (CRPS). Water enters the CRPS through a 1 MG ground storage tank (GST) and is then pumped to the City's water distribution system. Please see Figure 1 for the City's current and scheduled water storage capacities.

The City has two booster pump stations: the CRPS and the Downtown Pump Station (DTPS). From the CRPS, the water is pumped through an 18-inch line approximately four miles to the City's downtown GST. Water is also pumped from the CRPS through an 18-inch line, five miles to the Light Farms elevated storage tank (EST). The DTPS pumps water approximately 3.5 miles through a 12-inch line to the Morgan Lake EST. Improvements are under construction at the two pump stations, including a new 36" transmission main, and are anticipated to be completed by the end of Summer 2019. At completion, the firm pump station capacity will be 13.9 MG/day and 12.9 MG/day at each station. The CRPS can meet peak demand through 2022 with firm capacity. The DTPS can meet peak demand through 2027 with firm capacity.

In just two short years, by the time the proposed GST is proposed for completion, Celina's water storage capacity will be less than 16 hours a day without the tank. The GST will more than double that capacity – from 15.37 hours to 38.43 hours on an average day – bringing storage capability to over a day's worth of water in a supply crisis. Below is a snapshot of projected water capacity, adjusted for projected population growth, with and without the proposed 6 MG GST:

	Without 6 MG Storage Tank added		With 6 MG Storage Tank added in 2019	
	Average Day Storage	Max Day Storage	Average Day Storage	Max Day Storage
	(Hours)	(Hours)	(Hours)	(Hours)
Existing	29.89	12.68	29.89	12.68
Projected 2018	18.18	9.09	18.18	9.09
Projected 2019	22.43	11.22	56.08	28.04
Projected 2020	18.37	9.18	45.92	22.96
Projected 2021	15.37	7.69	38.43	19.21
Projected 2022	13.04	6.52	32.61	16.30
Projected 2023	12.28	6.14	30.69	15.35
Projected 2024	11.62	5.81	29.06	14.53
Projected 2025	11.08	5.54	27.70	13.85
Projected 2026	10.63	5.32	26.59	13.29
Projected 2027	10.20	5.10	25.50	12.75

Figure 2. Current and Projected Storage Capacity in Celina.

BOR Relationship. Celina does not have past working relationships with Reclamation but is eager to enter into a partnership to construct the proposed GST.

PROJECT LOCATION

⁴ 5,818 residential connections; 252 commercial connections; and 59 industrial connections

The proposed Celina Road GST project will be located at Celina Road and FM 428 in the City of Celina, Collin and Denton Counties, Texas. The project latitude is 33 deg 18' 34.73"N, and longitude is 96 deg 50' 12.11"W. Celina is part of the Dallas-Fort Worth Metroplex, located approximately 28 miles east of Denton and 42 miles north of Dallas. It's an exhilarating time in Celina! Celina is one of the fastest growing cities in the Dallas-Fort Worth Metroplex and the nation. Situated between the major arteries of Preston Road to the east and the future Dallas North Tollway to the west, Celina's maximum projected buildout population is approximately 363,100 (158,298 water connections).

Geographic Location Map



TECHNICAL PROJECT DESCRIPTION AND MILESTONES

Technical Project Description. We propose to construct a 6 million gallon ground storage tank at the Celina Road Pump Station site. As this project has been determined to be a high priority for the City, the timing could not be better to implement this important drought resiliency project. All work will be conducted on existing,

previously-disturbed City-owned land at the pump station site. The project is expected to be completed within 24 months, including executing the grant agreement and project close-out (please see the Project Schedule under Evaluation Criterion D). The following tasks will be accomplished:

Task 1. Project Management. The City will assign a Project Manager (PM), Ms. Kimberly Brawner, and Fiscal Project Manager, Mr. Jay Toutouchian, to the proposed project upon award notification. The PM will be responsible for day-to-day oversight of the project, maintain contact with the BOR and provide updates, and hold monthly check-in meetings to ensure the project remains on-task and on-schedule. The PM will also be responsible for capturing Performance Measure data, as specified in this application. Performance Measure data will be included in the project's final evaluation and report, and submitted to the BOR within six months of the performance period. The Fiscal Project Manager will ensure all BOR required reporting documents are correctly submitted and on-time including quarterly reports, requests for reimbursement, and records retention.

Deliverables: Meeting minutes from monthly check-ins, quarterly program performance reports, requests for reimbursement, financial reports including SF-435 federal forms, final fiscal report, Project Evaluation, and Final Project Report.

Task 2. Execute Agreement. Upon notification from the BOR of a grant award, the PM will work with the BOR program officer to negotiate the grant agreement and deliverables.

Deliverable: Executed grant agreement.

Task 3. Final Design, Review, and Approval (Not requesting Grant Funding for this Task). Ten percent design is complete for the proposed project. It is expected that minimal design work will be needed to bring this task to completion. Final designs and construction drawings will be developed by an engineering consultant and provided to the PM and City Council for review and subsequent approval. The proposed engineering consultant is already contracted via a prior, on-call Master Services Agreement. This task will be added to the existing contract as a work order, assuming BOR approves of this process.

Deliverables: 100% complete and approved design drawings and documents, including construction drawings.

Task 4. Environmental Compliance including NEPA and Permitting. The PM will work with the BOR to follow all environmental compliance protocols including completion of the National Environmental Policy Act (NEPA) requirements. In addition, all required permits will be obtained, as required by City, State and Federal laws and regulations.

Deliverable: Completed NEPA documentation and permits obtained.

Task 5. Develop Construction RFP, Advertise and Review Construction Bids. The PM will develop the construction Request for Proposal (RFP), and advertise according to City of Celina and BOR procurement policies, and review all received bids.

Deliverables: RFP and bid tally sheets.

Task 6. Construction Notice to Proceed. The PM will negotiate the contract with the qualified construction agency according to BOR regulations and procurement practices, award the contract, and issue Notice to Proceed with the successful contractor. The PM will conduct a kick-off meeting with the Construction Manager to agree on deliverables and timeline, and set-up monthly check-in meetings with both parties.

Deliverables: Executed construction contract, meeting notes from kick-off meeting.

Task 7. Construction. Construction will include the following sub-tasks and will take approximately 12 months to complete:

7a. Excavate and dispose of native expansive soil at the storage tank location and backfill with select material.

7b. Prepare subgrade and drill hollow auger, fill with concrete, and remove auger after concrete hardens. Pour 24" concrete slab for storage tank. The building floor slab and roof will be constructed of poured concrete.

7c. Install piping and appurtenances (including tank pipe, outlet, manway, handrail and vents) to connect water supply piping to the storage tank, and discharge piping to the City's water system. Install electrical conduit for lighting and equipment.

7d. Construct storage tank. The storage tank building will be an enclosed building constructed of concrete with a concrete floor slab and roof. The dimensions on the building will be determined at final design.

7e. Install supervisory control and data acquisitions (SCADA) level sensor so that the operator can monitor and keep a record of the pump and storage tank status.

7f. Install security fencing. The security fencing will be constructed of bricks and a metal gate with a locking mechanism. Fencing construction will include constructing a base trench, filling and compacting the trench with granular compactible aggregate, placing post blocks, building fence posts and panels, grouting fence posts and panels, placing fence cap blocks, and installing the gate.

7g. Pour concrete access driveway and prepare finished grade.

Deliverables: Itemized invoices for expenses, on-site weekly walk through reports, photographs of work completed, and punch list.

Task 8. Testing, Notice of Completion Filed, Storage Tank Fully Operational. The Construction Manager will conduct the industry-standard required testing of the completed storage tank, and file a notice of completion with the PM.

Deliverables: Test records and filed notice of completion.

PERFORMANCE MEASURES

Proposed Data Collection Procedures, Schedule, and Reporting

The City will use a simple 'pre-post' design to quantify project benefits. Calendar year 2018 will serve as the preferred baseline, and earlier years will be used as the baseline when the use of 2018 data is not feasible.

The collection and analysis of performance data will be the responsibility of the City's Engineering and Public Works Division, working collaboratively. Data collection and analysis during Year 1 of the project will include both baseline and project data. These data will be included in the Year 1 Report (4th quarterly report). Project data will be collected and compiled each quarter throughout the project performance period to allow for incremental assessment of performance and future projections of performance and included in each annual report.

Proposed Performance Measures

The performance of the proposed GST will be assessed using the following measure:

- 1) **Actual Amount of Additional Water Supply Utilized** – The GST will hold 6 million gallons of water. We anticipate that our water supply needs will be 6.25 MG/day on an average day, or 12.49 MG/day on a peak-use day, in 2021 (based on a population projection of 35,096). Therefore, we anticipate that the new 6 MG GST will provide approximately 0.96 days of capacity at the average use, or refill approximately one time per day, or 356 times per year. This will result in approximately 6,555 AFY of additional water supply availability. ($356/\text{year} \times 6 \text{ MG} = 2,136 \text{ MG}$, or 6,555 AFY). Baseline and project data collected will be compiled and analyzed to determine if the actual amount of additional water supply generated meets the estimates.

EVALUATION CRITERIA

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 expected useful life of the water storage tank is 50 years. That means that it will facilitate the availability of approximately 327,750 AF of water until it needs to be replaced. ($6,555 \text{ AFY} \times 50 \text{ (Year Life of Project)} = 327,750 \text{ AF per Life}$)

The project builds long-term resiliency to drought by more than doubling the City's available capacity to retain potable water supplies at the site of use and allowing access to those supplies at any time whether during drought, emergency, or peak usage times. Celina's future build-out numbers and rate of growth demand a multi-phase solution for drought and emergency water shortages. The proposed GST is a top priority to meet immediate needs within the Celina water system. The built-out system will also need at least two more elevated storage tanks, and approximately 90,000 feet of additional waterline throughout the south and north sectors of the service area. The projected demand is 158,298 connections, with an ultimate maximum peak water distribution system demand of 100-200 million gallons per day. Due to minimum requirements from the Texas Commission on Environmental Quality, the City of Celina will need at least 31.66 million gallons of total water storage capacity by full build-out, half of which (15.83 million gallons) should be from ground storage tanks. The proposed Celina Road 6 million gallon GST will bring the total amount of ground storage in Celina to 7 million gallons (1 MG ground storage available in Fall 2019 + 6 MG from new GST), or just shy of half of the projected goal of ground storage tanks.

As the population swells, the City of Celina's infrastructure demands are outpacing the ability to add capacity. The City budgets as many incremental projects as possible into each year's planned spending, and cannot keep up with the demand. Every department is suffering from lack of capacity – water, sewer, streets, utilities, police, fire, and more. The City is simply trying to keep up by strategically prioritizing essential projects. While the proposed project will not fulfill the total need for storage capacity for the City, it will more than double our 2019 capacity, and will add enough storage to provide between 28 to 56 hours of detained water (refer to Figure 2). The City's current system and storage capacity would be exhausted in less than one day of continuous pumping (with estimated 2019 population).

- **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?**

Yes. The GST will hold 6 million gallons of water. We anticipate that our water supply needs will be 6.25 MG/day on an average day, or 12.49 MG/day on a peak-use day, in 2021. We anticipate that the new 6 MG GST will provide approximately 0.96 days of capacity at the average use, and will be refilled approximately 356 times per year, resulting in approximately 6,555 AFY of additional water supply availability. ((356/year X 6 MG = 2,136 MG, or 6,555 AFY).

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

The 6 MG GST represents approximately 0.76% of the existing water supply. (The City's total water supply managed in 2018 was 790,923,000 gallons/2,427 AFY. $6,000,000 = 0.76\%$ of 790,923,000.) The additional annual water supply of 6,555 AFY that will be provided in 2021 is 270% of the existing water supply. (6,555 AFY is 270% of 2,427 AFY.)

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

The significance of the benefits associated with the additional water supply cannot be overstated.

Improves Water Reliability and Flexibility. In the immediate future, the project will allow us to more than double our 2019 storage capacity. Additionally, the proposed GST will provide 37.9% of our total required ground storage capacity needed to meet TCEQ requirements at full build-out (6 MG of 15.83 MG required ground storage at build-out = 37.9%). These requirements are in place to ensure that during any interruption from our lone water supplier, UTRWD, the City can continue to provide clean, treated water to our residents even if levels of the water supply lakes available to Upper Trinity drop due to drought, population increase causes a demand to UTRWD that cannot be met (causing reduced delivery capacity), or transmission system failure.

In an article reviewing the ongoing crisis in Flynt, Michigan and last summer's water crisis in Cape Town, South Africa, in which the huge city ran out of water, the author quotes Kelly Sanders, assistant professor from the University of Southern California, "The tricky thing about water is you really can't solve the problem in a day or week or month, so you really have to start thinking about these problems decades in advance... No one really cares about water until it's a crisis."⁵ We could not agree more. The new tank is a step toward our overall goals of increased resilience, which will take a multi-year phased plan of adding tanks, pumps, and more waterlines to meet our growing and expected demand.

Improved Efficiency. The new tank will allow for 12-hour fill and drain cycles at the high service pumps at the CRPS, and will also allow bypass of the existing GST during maintenance activities. Without the proposed GST, Celina's water pumps will be running 24 hours a day to keep up with current potable water demand. By adding the GST, our pressurized plane system of pumping can rely on suction from the new tank to help pump, and allow 12-hour cycles of rest and run, as is a best practice to maintain the longevity and life span

⁵ "What Happens When a Major City Runs Out of Water?" Jasper McEvoy, February 20, 2018, USCAnnenbergMedia online sources on March 13, 2019 at <http://www.uscannenbergmedia.com/2018/02/23/what-happens-when-a-major-city-runs-out-of-water/>

of the pumps. This will also allow a more balanced cycle for UTRWD pumps as water is pumped to our system.

Improved Health Outcomes. An interruption to treated, potable water supply has enormous implications to the health and safety of residents. Without clean water to drink, bathe, cook, clean and sanitize dishes or medical supplies, airborne disease can flourish and residents, especially the most vulnerable residents, can suffer from dehydration. Clean water is perhaps the most important and basic resource to keep a community healthy. The ongoing threat of drought and population increase in North Texas pose serious impending threats to Celina's water supply, and thus the health of our residents. The proposed GST will provide vital capacity to the system, allowing time for replenishment at the source or a fix to technical issues.

Keeping Water Costs Down for Customers. Water shortage and a lack of water infrastructure and supply can cause water bills to climb for water customers. According to a 2017 paper from researchers at Michigan State University, water prices in the United States will have to increase by 41 percent in the next five years to cover the costs of replacing aging water infrastructure and adapting to climate change. That will mean that nearly 41 million households — or a staggering third of all US households — may not be able to afford water for drinking, bathing, and cooking by 2020.⁶ The BOR investment to offset costs to build the 6 million gallon proposed GST will help UTRWD, and in turn, the City of Celina, keep water prices low.

- **Will the project improve the management of water supplies? For example, will the project increase efficiency, increase operational flexibility, or facilitate water marketing (e.g., improve the ability to deliver water during drought or access other sources of supply)?**
 - **If so, how will the project increase efficiency or operational flexibility?**

Yes, the project will increase operational flexibility by more than doubling our current capacity to store water if supply is decreased or interrupted. This will allow us to continue to provide clean, treated water to residents for 19/38 hours (versus 8/15 hours) during an emergency for our 2021 projected population. As mentioned above, the new tank will also increase efficiency by allowing our pumps to run and rest on 12-hour cycles, increasing the longevity of the pumps and reducing maintenance costs.

- **What is the estimated quantity of water that will be better managed as a result of this project? How was this estimate calculated?**

The quantity of water that will be better managed will be 100% of our water supply, due to the flexibility and operational efficiency the tank will provide the system. In 2018, our entire supply was 2,427 AFY, but that number will grow exponentially along with our population. We will use 2019/20 data as our baseline for measuring 2021 data. The GST will substantially increase our water supply availability by an estimated 6,555 AFY in 2021. The total water supply managed will be measured post-construction, and is estimated be at least 6,555 AFY.

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

⁶ "America Has a Water Crisis No One is Talking About," Sarah Frostenson, March 22, 2018, vox.com sourced on March 13, 2019 at <https://www.vox.com/science-and-health/2017/5/9/15183330/america-water-crisis-affordability-millions>.

The project will facilitate the better management of 100% of water supplies. The increased resiliency of the 6 MG GST will allow more flexibility in the water system, allow system components to rest in between cycles, allow for a more comfortable buffer of detained water in case of a supply interruption, and allow the growing needs for additional supply to be realized. The estimate was calculated by estimating that 100% of our total supply will be better managed.

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

The degree/significance of anticipated water management benefits mirror the benefits of having an increased supply: improved flexibility and reliability of supply, improved efficiency by allowing pumps to rest and cycle, and the ability to keep water prices low for customers by offsetting the City's cost to complete this vital project.

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

Yes. The GST will include float sensors tied into SCADA, and pressure monitors on piping within the pump station, which will provide additional data to water managers regarding potable water use during non-emergency and emergency water stages. This will allow water managers to better plan for population growth as the increased supply will show a more accurate picture of water use as new neighborhoods and businesses continue to be built.

- **Will the project have benefits to fish, wildlife, or the environment? If so, please describe those benefits.**

Yes. The City of Celina's water comes from UTRWD, as mentioned throughout the proposal. UTRWD water sources include lakes and tributaries to the Trinity River, a habitat for at least three species of freshwater mussels that were added to the petitioned list of for endangered species by the Texas Parks and Wildlife Department in 2018.⁷ Prolonged and intermittent drought conditions in Texas decrease the quantity and quality of water in the Trinity River, threatening these species' ability to thrive. The proposed project will allow more water to be retained in storage for Celina residents, meaning that the City can incrementally begin building capacity for the ongoing population increase across North Texas, in turn allowing UTRWD to also build this incremental capacity, without drastic increase demands that can deplete river and lake waters more quickly and abruptly. This incremental approach will allow more time for UTRWD to address capacity needs and find solutions such as the use of recycled water to meet growing needs, and allow native river species to remain in their habitat and repopulate.

If the proposed project includes any of the following components, please provide the applicable additional information:

Salt Water Barriers. Not applicable.

Wells. Not applicable.

⁷ "Texas Freshwater Mussels of Conservation Concern" Clint Robertson and Gary Pandolfi, https://www.fws.gov/southwest/es/Documents/R2ES/AUES_Mussel_Summit_3_Robertson&Pandolfi.pdf

New Water Marketing Tool or Program. Not applicable.

Metering/Water Measurement Projects. Not applicable.

Environmental/Wildlife Projects

- **What are the types and quantities of environmental benefits provided, such as the types of species and their numbers benefited, acreage of habitat improved, restored or protected, or the amount of flow provided? How was this estimate calculated?**

The proposed drought resiliency project will benefit three species of Texas freshwater mussels, the Triangle Pigtoe, Louisiana Pigtoe, and the Texas Heelsplitter. These species are listed as "state-threatened" by the Texas Parks and Wildlife Department (TPWD), and have been submitted for petition as endangered species.⁸ The benefit will be the increased ability to detain water and build capacity for our growing North Texas population, which depends on water from the Trinity River and its lakes for drinking water. An article referenced earlier, in the Texas Observer states, "The disappearance of some mussels from Texas rivers mostly boils down to two main causes: a decrease in the quantity and quality of water. Texas' growing population, drought exacerbated by climate change, and irrigation and industrial needs are all placing a strain on the state's rivers."⁹ The proposed project will allow for incremental capacity-building over time, allowing UTRWD and its water sources to adjust gradually rather than abruptly, building resilience not only to drought but to the potential threat of restrictions on water allocations should the mussels become subject to conservation plans – in a region already listed as a Priority Groundwater Management Area by TCEQ due to concern of water scarcity.

- **What is the status of the species of interest (i.e. endangered, threatened, etc.? How has the drought impact the species?**

The three Texas freshwater mussels species, the Triangle Pigtoe, Louisiana Pigtoe, and the Texas Heelsplitter, are considered "state-threatened" by the TPWD.¹⁰

If the proposed project will benefit federally listed threatened or endangered species please consider the following elements:

- **Is the species subject to a recovery plan or conservation plan under the ESA?**

The three freshwater species are not yet subject to a recovery plan, but the Texas hornshell mussel of the Rio Grande River, recently listed as endangered, could give us insight on what such a plan or endangered species listing could mean. The aforementioned March 2018 article in the Texas Observer cites that the US Fish and Wildlife Service (FWS) is in the process of considering which sections of the [Rio Grande] river to designate as critical habitat for the mussels and whether a minimum flow of water is needed for the species to survive. If so, this means a reduction in allocations for farmers and industry who depend on the Rio Grande for their water supply. So far, FWS is setting up voluntary conservation agreements with landowners and

⁸ "Texas Freshwater Mussels of Conservation Concern" Clint Robertson and Gary Pandolfi, https://www.fws.gov/southwest/es/Documents/R2ES/AUES_Mussel_Summit_3_Robertson&Pandolfi.pdf

⁹ "How the Fate of Texas' Endangered Mussels Could Affect Water Usage Statewide" TexasObserver.org, <<https://www.texasobserver.org/texas-hornshell-mussel-endangered-rio-grande/>>. March 23, 2018.

¹⁰ "Texas Freshwater Mussels of Conservation Concern" Clint Robertson and Gary Pandolfi, https://www.fws.gov/southwest/es/Documents/R2ES/AUES_Mussel_Summit_3_Robertson&Pandolfi.pdf

companies along the Rio Grande.¹¹ If the same were to happen along the Trinity River in response to the declining freshwater mussels, UTRWD, and in turn, Celina, will face even greater challenges to supply.

- **What is the relationship of the species to water supply?**

The species live in the Trinity River, which is the water supply for UTRWD and the City of Celina.

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

By incrementally building capacity now, the proposed storage tank will allow for capacity adjustments gradually, reducing the need for excess draw during times of drought, thus reducing the impact on the species.

- **Is the species adversely affected by a Reclamation project?**

To our knowledge, the species are not adversely affected by a Reclamation project.

Evaluation Criterion B—Drought Planning and Preparedness (15 Points)

For purposes of evaluating this criterion, please:

- **Attach a copy of the applicable drought plan, or sections of the plan, as an appendix to your application. These pages will not be included in the total page count for the application.**

Please see Appendix A for a copies of the 2019 Celina Drought Contingency Plan (Draft) and Appendix C of the 2017 Celina Water & Wastewater System Improvements Water Capital Improvements Plan. The Drought Contingency Plan is scheduled for approval and adoption in April 2019 (next month).

- **Explain how the applicable plan addresses drought. Proposals that reference plans clearly intended to prepare for and address drought will receive more points under this criterion.**

Celina Drought Contingency Plan

The purpose of the Celina Drought Contingency Plan is to provide drought contingency measures for the City of Celina as required by the Texas Commission on Environmental Quality (TCEQ) and the Upper Trinity Regional Water District (UTRWD). Such contingency measures may be needed during drought conditions, during an emergency and when water use approaches the Regional Treated Water System supply or the capacity of treatment and delivery facilities. Examples of drought or emergency conditions include low levels of water supply lakes, unusually high water demands, unforeseen equipment / system failure or contamination of the water supply source.

The Plan includes definitions of drought and emergency conditions, priority mitigation projects (including the proposed project) and/or actions, a four-stage drought response for water usage and conservation initiation and termination criteria, and a plan of communication with businesses and residents.

¹¹ "How the Fate of Texas' Endangered Mussels Could Affect Water Usage Statewide" TexasObserver.org, <<https://www.texasobserver.org/texas-hornshell-mussel-endangered-rio-grande/>>. March 23, 2018.

Celina Water & Wastewater System Improvements Water Capital Improvements Plan

The Water Capital Improvements Plan Appendix utilized model criteria and simulations detailed in the Plan to develop proposed projects from recommended improvements for a 5-year planning horizon (2017 – 2022 fiscal years). The Plan's Appendix lists the proposed project on page 34 as "Project 11: Water Group Z Capital Improvements - Project Description: This project consists of installation of a new, 6 MG ground storage tank and associated site improvements at the CRPS."

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

Yes, the City developed the Drought Contingency Plan and the Water Capital Improvements Plan with input from multiple stakeholders including the Texas Water Development Board's (TWDB) Region C Water Planning Group, UTRWD, the Celina Chamber of Commerce, local businesses, and local residents. The City of Celina provided opportunity for public input in the development of this Plan by the following means:

- Provided written notice of the draft Plan and the opportunity for the public to comment by newspaper or posted notice prior to adoption;
- Made the draft Plan available on the City of Celina's website;
- Provided a copy of the draft Plan to anyone requesting a copy; and
- Held a public meeting at a time and location convenient to the public and provided written notice to the public concerning the draft Plan and meeting.

In addition, The City coordinated with the Region C Water Planning Group and UTRWD to ensure consistency with the approved regional water plan and UTRWD's drought contingency plan. The City sent a copy of the draft ordinance(s) or resolution(s) implementing the Plan to UTRWD for review and approval. After adoption, the City sent the final ordinance(s) or resolution(s) and the Plan to UTRWD.

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

The increased frequency and duration of droughts is a direct result of climate change, which the Plan addresses. According to the National Integrated Drought Information System (NIDIS), projections of future climate change suggest that drought may become more common given warmer temperatures and increased depletion of soil and vegetation moisture.

- **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 or response action?**

Yes, the proposed project is listed as a potential mitigation or response action in both of the attached plans. Please see page number 13 of the Drought Contingency Plan and selected page from the CIP located in Appendix A.

- **Does the proposed project implement a goal or need identified in the drought plan?**

Yes, the proposed project is identified as a goal/need in the Drought Contingency Plan. As stated above, the City currently does not have adequate water storage to meet the needs of our growing population or buffer against water supply interruptions. Water storage and alternative water sources are the top needs identified in the Plan.

- **Describe how the proposed project is prioritized in the referenced drought plan?**

The proposed project is the number one priority listed in the Drought Contingency Plan.

Evaluation Criterion C—Severity of Actual or Potential Drought Impacts to be addressed by the Project

Describe the severity of the impacts that will be addressed by the project:

- **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? Impacts should be quantified and documented to the extent possible. For example, impacts could include, but are not limited to:**
 - **Whether there are public health concerns or social concerns associated with current or potential drought conditions (e.g., water quality concerns including past or potential violations of drinking water standards, increased risk of wildfire, or past or potential shortages of drinking water supplies? Does the community have another water source available to them if their water service is interrupted?).**

The past and potential drought impacts for North Texas and Celina are urgent. The City does not have another water source if service from UTRWD is interrupted, and a groundwater conservation district has been created to manage and conserve groundwater resources within Denton County due to limited groundwater supply. We have no groundwater sources. An interruption in supply would mean one thing – Celina has to depend on detained water. With current storage capacity, we could not last more than 30 hours before we are considered “out of water,” and by the end of 2021 we would not last over 16 hours. This would have devastating health effects on our community, meaning no clean tap water, no water for cooking, no water for cleaning. Disease and illness would thrive.

El Nino rains have currently pulled our region from an extreme, prolonged drought, but it is imperative that we continue to seek measures to diversify our water supply as the population soars and drought promises to return. Ten of the last 18 years in Texas have been consumed by extreme drought. And, UTRWD is suffering from a capacity problem as the North Texas population continues to grow. In 2017, the region added 123,000 people. In 2016, 25 cities grew by more than 5%.¹² Threats to capacity and supply are looming.

- **Whether there are ongoing or potential environmental impacts (e.g., impacts to endangered, threatened or candidate species or habitat).**

Along with drought, comes potential environmental impacts to endangered species. Three species of freshwater mussels, the Triangle Pigtoe, Louisiana Pigtoe, and the Texas Heelsplitter, found in the Trinity River, were placed on the petitioned list for endangered species by Texas Parks and Wildlife just last year.¹³

¹² Vision North Texas. http://www.visionnorthtexas.org/regional_summit/North_Texas_2050.pdf

¹³ “Texas Freshwater Mussels of Conservation Concern” Clint Robertson and Gary Pandolfi,

These creatures live in the rivers of Texas, and due to prolonged drought conditions, there has been a decrease in the quantity and quality of water, making it difficult for the mussels to survive. According to Naveena Sadasivam of the TexasObserver.org, "if FWS finds that some species are struggling because there isn't enough water in the river, the agency could require that a certain amount of water be left in the river for the mussels. That could limit how much industries, cities and farmers can draw from a river during a drought, which may in turn hurt the economy of regions dependent on the rivers."¹⁴

- **Whether there are ongoing, past or potential, local, or economic losses associated with current drought conditions (e.g., business, agriculture, reduced real estate values).**

If no action is taken, our region will not be prepared for the next prolonged drought event, which is estimated to occur, again, within the next five years. Texas has a long history of catastrophic droughts. 2011 was the driest year ever for Texas, with an average of only 14.8 inches of rain. Dry conditions fueled a series of wildfires across the state in early September 2011. Texas A&M Forest Service Fire Chief Mark Stanford said Texas had 157,000 wildfires over a nine-year period ending in 2014. He said nearly 80 percent of those fires raged within miles of a community. The most devastating, the Bastrop Complex Fire in Bastrop County, burned over 34,000 acres and leveled more than 1,300 homes. This is especially relevant in Celina, as nearly 70% of our residential area is bounded by agricultural and open grasslands.

During the summer of 2018, the last instance of extreme drought in North Texas, NBC-5's Chief Meteorologist Rick Mitchell said, of the drought, "For now, it's primarily an agricultural drought, meaning there's not enough moisture to sustain crops," but added that scorched landscapes and cracked foundations are also economic losses due to drought, "Clay soil across North Texas expands and contracts as it heats up and dries out. If a crack forms, it can damage doors, locks and even plumbing. I predict one in three homes in the [Dallas-Fort Worth] metroplex are affected," he said. "It's a multitude of problems."¹⁵

Additionally, should conservation plans for endangered mussels due to drought restrict water allocations from the Trinity River and its tributaries, the economic impact could be staggering. The aforementioned article in the Texas Observer states, "A 2014 study funded by the Texas comptroller's office found that if water use in the Brazos, Colorado and Guadalupe-San Antonio river basins were restricted to protect mussels, it could result in losses from \$37 million to \$80 million a year in Bexar, Medina and Tom Green counties."¹⁶

- **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).**

Our population increase demands immediate water conservation measures and local water sustainability. As growing municipalities in North Texas compete for resources, shortages due to drought may occur and rates for purchasing water will likely increase. Sharlene Leurig of the nonprofit sustainability group Ceres says the state's growth will demand conservation whether that comes in the form of conservation measures or high water rates. "If we reverted back to the way we were using water in the past, we would have to invest in some extremely expensive water supply projects just to facilitate that historic high water usage," she says.¹⁷

https://www.fws.gov/southwest/es/Documents/R2ES/AUES_Mussel_Summit_3_Robertson&Pandolfi.pdf.

¹⁴"How the Fate of Texas' Endangered Mussels Could Affect Water Usage Statewide" TexasObserver.org, <<https://www.texasobserver.org/texas-hornshell-mussel-endangered-rio-grande/>>. March 23, 2018.

¹⁵ "Extreme Drought Cooks Lawns, Cracks Foundations," Samantha J. Gross, Dallas Morning News,

<https://www.dallasnews.com/news/weather/2018/08/07/weeks-rain-wont-end-dallas-drought-worst-since-historic-2011-dry-spell>.

¹⁶ Ibid.

¹⁷"Here's Why the End of the Drought is Not Completely Good News for Texas," Mose Buchelle and Ben Philpott, July 21, 2015,

Additional supplies to meet higher demands will be expensive and difficult to develop and cause major environmental impacts. Additionally, tensions are already high as it relates to conservation plans and endangered species and access to water, as noted in the Texas Observer, "Ultimately, the future of the mussels is closely tied to how water from the state's rivers is divvied up. That places the inconspicuous mussels squarely in the crosshairs of some of the state's most powerful interests — energy companies, farmers and cities."¹⁸

○ **Describe existing or potential drought conditions in the project area.**

The majority of Texas experienced extreme drought from 2010 to 2015, with North Texas suffering the brunt of the crisis. The Texas Water Development Board's Texas Drought Report stated that "exceptional drought, the worst category, strengthened its hold on North Texas," with 39 percent of the state in moderate to exceptional drought in 2015. As described throughout this section, North Texas has suffered from ten years of drought conditions in the last 18 years. Extreme drought occurs in the region with regular frequency, and wreaked havoc in 2005, 2006, 2008, 2009, 2010 – 2015, and most recently, in 2018.

Is the project in an area that is currently suffering from drought or which has recently suffered from drought? Please describe existing or recent drought conditions, including when and the period of time that the area has experienced drought conditions (please provide supporting documentation, [e.g., Drought Monitor, droughtmonitor.unl.edu]).

As mentioned previously, North Texas has suffered from ten years of extreme drought conditions in the last 18 years. Extreme drought occurred in the region in 2005, 2006, 2008, 2009, 2010 – 2015, and 2018. Previously, the National Climatic Data Center (NCDC) recorded a total of 28 cases of drought in Texas between 1996 and 2011. In 1998 the Associated Press reported on a devastating drought that burdened the economy and in 1999, the New York Times reported "Worse Drought Than in '98 Appears Possible in Texas." As illustrated in the map below from Drought Monitor (droughtmonitor.unl.edu), northeast Texas recently experienced significant drought during the summer of 2018. From March through July, meteorologists said, North Texas suffered through the second-driest period since weather records began 120 years ago.¹⁹

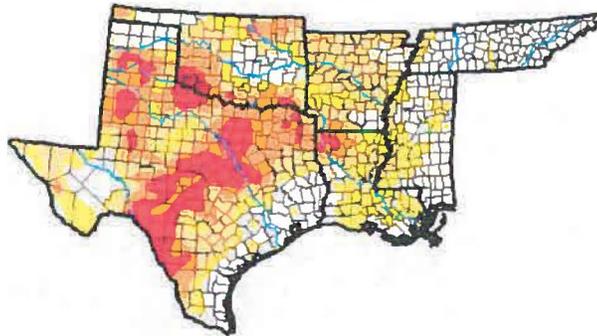
<https://www.kut.org/post/here-s-why-end-drought-not-completely-good-news-texas>

¹⁸ "How the Fate of Texas' Endangered Mussels Could Affect Water Usage Statewide" TexasObserver.org, <<https://www.texasobserver.org/texas-homshell-mussel-endangered-rio-grande/>>, March 23, 2018.

¹⁹ "Extreme Drought Cooks Lawns, Cracks Foundations," Samantha J. Gross, Dallas Morning News, <https://www.dallasnews.com/news/weather/2018/08/07/weeks-rain-wont-end-dallas-drought-worst-since-historic-2011-dry-spell>.

**U.S. Drought Monitor
 South**

August 7, 2018
 (Released Thursday, Aug. 9, 2018)
 Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D1	D1-D2	D2-D3	D3-D4	D4
Current	29.52	70.38	43.75	29.01	11.17	0.52
Last Week <i>07-31-2018</i>	29.22	70.78	46.11	23.79	5.58	0.00
3 Months Ago <i>05-08-2018</i>	62.03	37.97	25.77	16.90	11.13	5.45
Start of Calendar Year <i>01-01-2018</i>	31.09	68.91	42.64	15.33	0.30	0.00
Start of Water Year <i>09-26-2017</i>	72.17	27.83	2.38	0.02	0.00	0.00
One Year Ago <i>08-08-2017</i>	83.96	16.02	3.99	0.46	0.00	0.00

Intensity

■ D0 Abnormally Dry	■ D3 Extreme Drought
■ D1 Moderate Drought	■ D4 Exceptional Drought
■ D2 Severe Drought	

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See the accompanying text summary for forecast statements.

Author
 Richard Tinker
 CPC/NOAA/NWS/NCEP

Figure 3. US Drought Monitor, August 7, 2018.

- Describe any projected increases to the severity or duration of drought in the project area resulting from climate change. Provide support for your response (e.g., reference a recent climate change analysis, if available).

In February 2013, the state climatologist told the Texas Legislature that high temperatures related to climate change have exacerbated the drought. He said that the state's average temperature has increased by an average of about 2 degrees Fahrenheit since the 1970's.²⁰ In Celina, the average temperature during the summer is 93 degrees, often rising to triple digits. A 2015 study by professors at the University of Texas (UT) at Arlington found that rising temperatures and anticipated extreme weather patterns in North Texas over the next several decades will be devastating. The study, funded by the Federal Highway Administration (FHWA), stated that, "By 2100, summer highs are expected to reach 125 degrees, with the increased potential for flooding, spontaneous wildfires and other extreme weather."²¹ High summer temperatures increase evaporation, and will further lower river and lake levels.

Evaluation Criterion D—Project Implementation

The City of Celina is capable of entering into a financial assistance agreement with the BOR for the proposed project. There are no identifiable reasons why a proposed project would not be feasible or otherwise advisable, including environmental or cultural resources compliance issues, permitting issues, legal issues, or financial position. The project will be managed by Ms. Kimberly Brawner P.E., Director of Engineering. Ms.

²⁰ "Everything You Need to Know About the Texas Drought." State Impact Texas, <<https://stateimpact.npr.org/texas/tag/drought/>>. Accessed on March 28, 2016.

²¹ "North Texas Study: Rising Climate Averages & Transportation Infrastructure Damage," Rachel Engel, March 6, 2018, <<https://efficientgov.com/blog/2018/03/06/texas-study-predicts-stressed-transportation-infrastructure/>> Accessed on March 22, 2019.

Brawner has over 15 years of experience successfully managing projects, and will oversee the selected contractor and City staff. Ms. Brawner will hold a Kick-Off Meeting that includes a schedule of milestones and list of deliverables for associated staff, and will ensure that proposed work is completed on-time and on-budget. Ms. Brawner has managed multiple grant-funded projects, including a BOR-funded project in the Town of Little Elm prior to her role as Director of Engineering in the City of Celina.

- Describe the implementation plan of the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.

Please see the Project Schedule below for the detailed implementation plan.

Project Schedule

YEAR	2019					2020					2021							
MONTH	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Final Design Including Review and Approval (2 months) (NOT GRANT FUNDED)																		
Project Management (22 months)																		
Execute Grant Agreement																		
Environmental Compliance Including NEPA (3 months)																		
Develop Construction RFP, Advertise, and Review Construction Bids (3 months)																		
Construction Notice to proceed (1 month)																		
Permitting Process (2 months)																		
Construction (12 months)																		
Testing, Notice of Completion Filed, Storage Tank Fully Operational (2 months)																		
Project Closeout (2 months)																		

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

The City expects to file for a construction permit (provided by the City Development Services Department), which will be provided in-kind, and will follow state and local procedures to submit construction plans and specifications to TCEQ.

- Identify and describe any engineering or design work performed specifically in support of the proposed project.

The City holds a contract with the Garver USA Engineering Firm to complete design of the project. Project design is 10% complete, and will be completed by October of 2019, before grant-funded activities would begin.

- **Describe any new policies or administrative actions required to implement the project.**

The City does not anticipate needing any new policies or administrative actions to implement the project.

- **Describe how the environmental compliance estimate was developed. Has the compliance costs been discussed with the local Reclamation office?**

Mr. Trent Parish in the Texas office of the BOR advised that the environmental compliance line item should be \$3,000.

Evaluation Criterion E—Nexus to Reclamation

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

The proposed project does not have a direct connection to a Reclamation project or activity. Nor does the City of Celina receive any Reclamation project water. We currently do not have a Reclamation facility or contract/agreement within our jurisdiction. However, we are anxious for such an opportunity and desire to begin a relationship with the Bureau of Reclamation.

Evaluation Criterion F—Department of the Interior Priorities

The proposed project aligns with the following Department of the Interior Priorities:

1. ***Creating a conservation stewardship legacy second only to Teddy Roosevelt***
 - a. **Utilize science to identify best practices to manage land and water resources and adapt to changes in the environment;**
 - b. **Foster relationships with conservation organizations advocating for balanced stewardship and use of public lands;**

Utilizing Science

The project utilizes best practices and mitigates critical challenges for Texas water resources management created by climate change. The Texas Water Board's 2017 State and Water Plan and the 2016 Texas Region C Regional Water Plan are the State's and Celina's roadmap for water usage, conservation, and drought planning. Several best practices are listed that are reflected in the proposed project. These include diversifying local supplies, conservation, and increasing water use efficiency. Increasing regional self-reliance and diversification of local water supplies and maximizing water conservation and water use efficiency will enable Texans to better respond to changing economic and climatic conditions while ensuring a reliable water supply for the diversity of the State's water needs.

Fostering Relationships

The City developed the Drought Contingency Plan and the Water Capital Improvements Plan with input from multiple stakeholders including the Texas Water Development Board's (TWDB) Region C Water Planning Group, UTRWD, the Celina Chamber of Commerce, local businesses, and local residents. All share a goal

to conserve water and believe implementing a modernized infrastructure today, to achieve greater efficiency and effectiveness in delivering water supplies, is critical for the future of Texas. The City is eager to continue fostering these relationships with vital stakeholders in the local and regional water picture in North Texas.

2. Utilizing our natural resources

a. Ensure American Energy is available to meet our security and economic needs

The historic 2012-2015 North American Drought impacted electricity generation capacity by restricting surface water withdrawals used for power plant cooling, as well as drastically reducing hydropower resource availability. Situations such as this highlight how water and energy systems are inextricably linked and the potential vulnerabilities this creates. The energy needed for providing water can be a significant portion of all energy use. It is estimated that approximately five percent of energy consumption can be attributed to the conveyance, distribution, and treatment of water. Water storage near the site of use reduces the need for energy to pump and clean water from farther sources.

3. Restoring trust with local communities

- a. Be a better neighbor with those closest to our resources by improving dialogue and relationships with persons and entities bordering our lands;**
- b. Expand the lines of communication with Governors, state natural resource offices, Fish and Wildlife offices, water authorities, county commissioners, Tribes, and local communities.**

The City is a member of Texas Water Development Board's (TWDB) Region C Regional Water District, which seeks to improve coordination, collaboration, and communication among local, state, and federal governments and water purveyors and other water resource stakeholders in the North Texas region to achieve greater efficiency and effectiveness in delivering water supplies. The project aligns with TWDB goals that, in effect, include being a better neighbor by improving dialogue and relationships with one another, and working toward conservation projects that benefit the entire region and entities from all over Texas. Project results will be dispersed among Region C members to increase communication and demonstrate best practice projects.

5. Modernizing our infrastructure

- a. Remove impediments to infrastructure development and facilitate private sector efforts to construct infrastructure projects serving American needs;**
- b. Prioritize DOI infrastructure needs to highlight:
 - 1. Construction of infrastructure****

The proposed project directly aligns with the Department of Interior's priority to modernize American infrastructure through public/private partnerships. Should the project be awarded funding, the City of Celina will select a qualified private contractor to build the GST. The GST will be the largest in the City, accomplishing 17.6% of our ground storage tank goals for modern infrastructure and full build-out.

PROJECT BUDGET

The project budget includes:

- (1) Funding plan and letters of commitment.
- (2) Budget proposal.
- (3) Budget narrative.

(1) FUNDING PLAN AND LETTERS OF COMMITMENT

Describe how the non-Federal share of project costs will be obtained. Reclamation will use this information in making a determination of financial capability. Project funding provided by a source other than the applicant shall be supported with letters of commitment from these additional sources.

The City will utilize cash from the General Fund to provide the local share of project costs. Funds are readily available. No funding will be provided by a source other than the applicant.

Please identify the sources of the non-Federal cost share contribution for the project:

The source of the cost share contribution is cash from the City's General Fund. The original source is bond proceeds. The City has implemented bond funds, special financing districts such as Public Improvement Districts and Tax Increment Reinvestment Zones to help accommodate for incremental population growth.

In addition, please identify whether the budget proposal includes any project costs that have been or may be incurred prior to award.

The budget proposal does not include any project costs that have been or may be incurred prior to award.

(2) BUDGET PROPOSAL

Table 1. Total Project Cost Table

Source	Amount
Costs to be reimbursed with the requested Federal funds	\$750,000
Costs to be paid by applicant	\$6,503,000
Value of third-party contribution (N/A)	\$0
Total Project Cost	\$7,253,000

Table 2. Summary of Federal and Non-Federal Funding Sources

Funding Sources	Amount
Non-Federal Entities	
1. City of Celina	\$6,503,000
Non-Federal Subtotal	\$6,503,000
Other Federal Entities	
1. Not applicable	\$0
Other Federal Subtotal	\$0
Requested Reclamation Funding	\$750,000

Table 3. Budget Proposal

Budget Item Description	Computation		Quantity Type (hours/days)	Total Cost
	\$/Unit	Quantity		
Salaries and Wages				
Not Applicable				\$ -
Fringe Benefits				
Not Applicable				\$ -
Travel				
Not Applicable				\$ -
Contractual				
6.0 MG Ground Storage Tank (including tank and 24" concrete slab)	\$3,050,000	1	LS	\$3,050,000
Auger cast pile foundation system	\$3,000,000	1	LS	\$3,000,000
Tank piping and appurtenances (including riser pipe, outlet, manway, handrail, vent, etc.)	\$500,000	1	LS	\$500,000

Fencing and site improvements	\$500,000	1	LS	\$500,000
SCADA	\$200,000	1	LS	\$200,000
Supplies/Materials				
Not Applicable				\$ -
Equipment				
Not Applicable				\$ -
Other				
Environmental Compliance including NEPA				\$3,000
Total Direct Costs				\$7,253,000
Indirect Costs - %				\$-
Total Project Costs				\$7,253,000

(3) BUDGET NARRATIVE

Salaries and Wages

No salaries or wages are included in the proposed project budget.

Fringe Benefits

No fringe benefits are included in the proposed project budget.

Travel

No travel costs are included in the proposed project budget.

Equipment

No equipment is included in the proposed project budget. All costs are either contractual or environmental.

Materials and Supplies

No materials and supplies are included in the proposed project budget.

Contractual (\$7,250,000)

The City proposes to construct a six million gallon water ground storage tank (GST). The tasks included are listed below:

1. Develop Construction RFP, Advertise and Review Construction Bids. The PM will develop the construction Request for Proposal (RFP), and advertise according to City of Celina and BOR procurement policies, and review all received bids.
2. Construction Notice to Proceed. The PM will negotiate the contract with the qualified construction agency according to BOR regulations and procurement practices, award the contract, and issue Notice to Proceed with the successful contractor. The PM will conduct a kick-off meeting with the Construction Manager to agree on deliverables and timeline, and set-up monthly check-in meetings with both parties.
3. Construction/Contractual. The successful contractor will oversee construction, which will include the following sub-tasks, and will take approximately 12 months to complete:
 - 3a. Excavate and dispose of native expansive soil at the storage tank location and backfill with select material.
 - 3b. Prepare subgrade and drill hollow auger, fill with concrete, and remove auger after concrete hardens. Pour 24" concrete slab for storage tank. The building floor slab and roof will be constructed of poured concrete.
 - 3c. Install piping and appurtenances (including tank pipe, outlet, manway, handrail and vents) to connect water supply piping to the storage tank, and discharge piping to the City's water system. Install electrical conduit for lighting and equipment.
 - 3d. Construct storage tank. The storage tank building will be an enclosed building constructed of concrete with a concrete floor slab and roof. The dimensions on the building will be determined at final design.
 - 3e. Install supervisory control and data acquisitions (SCADA) level sensor so that the operator can monitor and keep a record of the pump and storage tank status.
 - 3f. Install security fencing. The security fencing will be constructed of bricks and a metal gate with a locking mechanism. Fencing construction will include constructing a base trench, filling and compacting the trench with granular compactible aggregate, placing post blocks, building fence posts and panels, grouting fence posts and panels, placing fence cap blocks, and installing the gate.
 - 3g. Pour concrete access driveway and prepare finished grade.

Contractual Budget Items:

All construction costs were estimated by Garver USA Engineering.

- **Auger Cast Pile Foundation System. \$3,000,000 (LS).** The City will use an auger cast pile foundation system versus a driven pile system to provide high-quality, deep foundation support for the structure.

- **Ground Storage Tank. \$3,050,000 (LS).** The budget includes a 6 million gallon prestressed concrete ground storage tank. The line item includes the 24" concrete foundation slab. The make/model will likely be a DN or Preload tank. The tank will be constructed with a highly reinforced, membrane, concrete floor effectively poured in the minimum number of pours. Walls will either be cast-in-place or precast, and the concrete roof will either be a dome or a column-supported flat slab. Following tank concrete placement, the tank wall will be circumferentially prestressed with continuous high strength steel.
- **Tank Piping & Appurtenances. \$500,000 (LS).** Elements will include tank pipe, outlet, manway, handrail and vents to connect water supply piping to the storage tank, and discharge piping to the City's water system; and electrical conduit for lighting and equipment.
- **City Standard Brick Fencing. \$500,000 (LS).** The security fencing will be constructed of bricks and a metal gate with a locking mechanism. Fencing construction will include constructing a base trench, filling and compacting the trench with granular compactible aggregate, placing post blocks, building fence posts and panels, grouting fence posts and panels, placing fence cap blocks, and installing the gate.
- **SCADA Integration. \$200,000 (LS).** The storage tank will be added to the City's existing SCADA system so that the operator can monitor and keep a record of the storage tank status, including pump runtime, pump failure alarms, tank high and low level alarms.

4. Testing, Notice of Completion Filed, Storage Tank Fully Operational. The Construction Manager will conduct the industry-standard required testing of the completed storage tank and reuse system, and file a notice of completion with the PM.

Environmental and Regulatory Compliance Costs/OTHER (\$3,000)

Mr. Trent Parish of the Bureau of Reclamation Texas Oklahoma office recommended that a line item of \$3,000 should be added for "Environmental Compliance Costs Including NEPA."

Indirect Costs

No indirect costs are included with the proposed project budget.

Total Costs

The total project costs are \$7,253,000, and are all equipment/construction costs.

Budget Form

Budget Form SF 424C is included with the Grants.gov application and uploaded via the online system.

ENVIRONMENTAL AND CULTURAL RESOURCE CONSIDERATIONS

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 proposed project requires a geotechnical evaluation during the design phase. The evaluation will help inform the earth-disturbing work that will occur during the construction phase. The following information and answers reflect our knowledge of the project area up to this point.

The proposed project will have minor and temporary impacts on the surrounding environment which could include temporary increases in dust and partial loss of vegetation. The construction phase is scheduled to be completed within twelve (12) months and will include the following tasks:

- Excavate and dispose of native expansive soil at the storage tank location and backfill with select material.
- Prepare subgrade and drill hollow auger, fill with concrete, and remove auger after concrete hardens. Pour 24" concrete slab for storage tank. The building floor slab and roof will be constructed of poured concrete.
- Install piping and appurtenances (including tank pipe, outlet, manway, handrail and vents) to connect water supply piping to the storage tank, and discharge piping to the City's water system. Install electrical conduit for lighting and equipment.
- Construct storage tank. The storage tank building will be an enclosed building constructed of concrete with a concrete floor slab and roof. The dimensions on the building will be determined at final design.
- Install supervisory control and data acquisitions (SCADA) level sensor so that the operator can monitor and keep a record of the pump and storage tank status.
- Install security fencing. The security fencing will be constructed of bricks and a metal gate with a locking mechanism. Fencing construction will include constructing a base trench, filling and compacting the trench with granular compactible aggregate, placing post blocks, building fence posts and panels, grouting fence posts and panels, placing fence cap blocks, and installing the gate.
- Pour concrete access driveway and prepare finished grade.

The selected contractor will take every precaution and develop a plan to minimize any temporary impacts on the environment. The actions taken will include, but not be limited to:

- Utilizing erosion control devices such as buffer zones, flow diversion, gabions, and sediment traps;
- Minimizing the amount of disturbed soil;
- Meeting or exceeding any local or state sediment or erosion control plans;
- Minimizing the amount of removed vegetation;
- Ensuring efficient and timely construction;
- Construction personnel will post signage of work area;
- Construction personnel will facilitate ingress and egress of vehicles to project site through on-street traffic direction; and
- The Construction Contractor will alert local emergency response entities that construction vehicles will be located within the project area.

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?

No, we are not aware of any known species listed or proposed to be listed as Federal threatened or endangered species or designated critical habitat in the project area.

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.

No.

When was the water delivery system constructed?

The delivery system was constructed in 2003, with system improvements 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)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.

No, the proposed project will not result in any such modifications or effects to individual features on an irrigation system.

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.

No.

Are there any known archeological sites in the proposed project area?

No.

Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?

No. In fact, the proposed project will have a beneficial effect on low-income and minority populations served by the City of Celina as these populations will have a more reliable water supply during times of water scarcity.

Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?

No.

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.

REQUIRED PERMITS:

The City expects to file for a construction permit (provided by the City Development Services Department), which will be provided in-kind, and will follow state and local procedures to submit construction plans and specifications to TCEQ.



March 15, 2019

Secretary Sally Jewell
U.S. Department of the Interior
1849 C Street, N.W.
Washington, DC 20240

SUBJECT: Celina, Texas Drought Resiliency Project

Dear Secretary Jewell:

Upper Trinity Regional Water District (UTRWD) is pleased to submit this letter in support of the City of Celina's Drought Resiliency Grant Program application for the Celina Road Water Storage Tank project. This project will enable the City to store six million gallons of potable water, readily available at any time including times of drought and peak usage.

The proposed project will help ensure a reliable, high-quality water supply for Celina residents that meets or surpasses all state and federal regulations for drinking water. As with many member cities, Celina continues to grow at a rapid pace, and the City must expand its water infrastructure to keep up with growing demands in potentially drought areas. According to the US Census, Celina's population has grown 123% since 2000. Development is booming, and new neighborhoods are being designed and constructed at a record speed. UTRWD is Celina's sole source of water. If the supply should be interrupted with only the current infrastructure, the City will run out of potable water within 18 hours.

UTRWD recognizes the importance of water storage, particularly as changes in climate continue to impact rainfall in the North Texas region, and we will coordinate with the City for any needed permits. We strongly urge you to support the City of Celina's effort to store and provide potable water to its growing community.

Sincerely,

A handwritten signature in blue ink, appearing to read "Larry Patterson".

FOR
Larry Patterson, P.E.
Executive Director

CITY OF CELINA, TEXAS

RESOLUTION NO. 2019-17R

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CELINA APPROVING THE APPLICATION FOR GRANT FUNDS FOR THE CELINA ROAD GROUND STORAGE TANK FROM THE BUREAU OF RECLAMATION WATERSMART: DROUGHT RESILIENCY PROJECT GRANT PROGRAM FOR FISCAL YEAR 2019

WHEREAS, the United States Department of the Interior has provided funds for the WaterSMART: Drought Resiliency Project Grant Program; and

WHEREAS, the City of Celina desires to submit an application for grant funds from said program; and

WHEREAS, the Bureau of Reclamation has been delegated the responsibility for the administration of this grant program and establishing necessary procedures; and

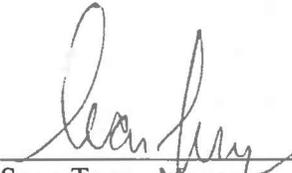
WHEREAS, said procedures established by the Bureau of Reclamation require the applicant to certify by resolution the identity of the official with legal authority to enter into an agreement; that the appropriate official or governing body has reviewed and supports the application submitted; the capability of the applicant to provide the amount of funding and/or in-kind contributions specified in the application funding plan; and that the applicant will work with the Bureau of Reclamation to meet established deadlines or entering into a cooperative agreement; and

WHEREAS, the applicant will enter into a cooperative agreement or grant agreement with the Bureau of Reclamation to complete the project(s) if awarded grant funds.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Celina, Texas:

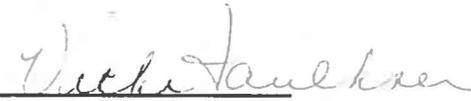
1. Appoints the City Manager, or his designee, to act as agent with legal authority to enter into the grant agreement, conduct all negotiations, execute and submit all documents including, but not limited to, applications, agreements, payment requests and any other grant required correspondence which may be necessary for the completion of the grant program; and
2. Certifies that the City Council of the City of Celina has reviewed and supports the proposed application; and
3. Certifies that the City of Celina has sufficient funds available to provide the amount of funding specified in the funding plan as matching funds/in-kind contributions; and
4. Certifies that the City of Celina will work with the Bureau of Reclamation to meet established deadlines for entering into a cooperative agreement.

PASSED AND APPROVED by the City Council of the City of Celina, Texas this 19th day of March, 2019.



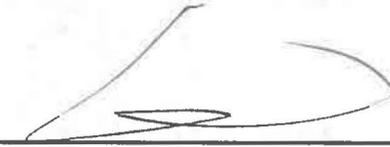
Sean Terry, Mayor

ATTEST:



Vicki Faulkner, City Secretary

APPROVED AS TO FORM:



Lance Vanzant, City Attorney



UNIQUE IDENTIFIER AND SYSTEM FOR AWARD MANAGEMENT:

The City of Celina is registered in the System for Award Management (SAM).

The City's SAM registration status is active with an expiration date of 9/7/19, and the City will continue to keep SAM up to date.

The City's unique entity identifier is 1693359730000.

APPENDIX A:

- 2019 Celina Drought Contingency Plan (DRAFT)
- 2019 Utility Profile (DRAFT)
- Select Pages – 2017 Celina Water & Wastewater System Improvements Water Capital Improvements Plan Appendix



**DROUGHT CONTINGENCY PLAN
PREPARED FOR CITY OF CELINA
TCEQ PWS ID#0430004**

March 22, 2019

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APPENDICES

- A. TCEQ Minimum Requirments of a Drought Contingency Plan – Subchapter B, Rule 288.20
- B. Copy of Ordinance, order or resolution adopted by the City Council or Governing Board Implementing the Drought Contingency Plan
- C. Coordination with Regional Planning Group

1. Introduction and Objectives

The purpose of this Drought Contingency Plan (the “Plan”) is to provide for drought contingency measures for the City of Celina as required by the Texas Commission on Environmental Quality (“TCEQ”) and the Upper Trinity Regional Water District (“UTRWD”). Such contingency measures may be needed during drought conditions, during an emergency and when water use approaches the Regional Treated Water System (“System”) supply or the capacity of treatment and delivery facilities. Examples of drought or emergency conditions include low levels of water supply lakes, unusually high water demands, unforeseen equipment / system failure or contamination of the water supply source.

The City of Celina developed its original plans for drought contingency in [Date], later amended in [Date(s)]. This update of the Plan has been coordinated with the suggested model drought contingency plan prepared by UTRWD for its Members and Customers, such as the City of Celina, and is consistent with TCEQ’s model drought contingency plan and the latest requirements outlined below. The provisions and responses outlined in this Plan are intended to be uniformly applied among UTRWD’s Members and Customers.

The City of Celina uses the following source(s) of water: treated surface water supplied by UTRWD. The total combined amount from these sources is normally sufficient to provide water for residential and commercial customers and to maintain adequate reserve quantities and pressure from storage facilities to meet emergency and firefighting demands.

Drought is a frequent and inevitable factor in the climate of Texas. Therefore, it is vital to plan for the effect that droughts will have on the use, allocation and conservation of water in the region. Drought contingency planning is one critical element of a water supplier’s effort to reduce peak water demands and extend water supplies. The following are the central objectives of this Plan:

- Help assure reliability of water service to retail customers;
- Conserve the available water supply in times of drought and emergency;
- Maintain adequate water supplies for domestic use, sanitation and fire protection;
- Protect and preserve public health, welfare and safety;
- Minimize the adverse impacts of water supply shortages and
- Minimize the adverse impacts of emergency conditions affecting water supply.

2. Applicable Rules of Texas Commission on Environmental Quality

TCEQ rules governing the development of drought contingency plans for Municipal Uses by Public Water Suppliers, such as the City of Celina, are contained in Title 30, Part 1, Chapter 288, Subchapter B and Rule 288.20 of the Texas Administrative Code (“TAC”). A copy of these rules is included in Appendix A. The rules define a drought contingency plan as:

“A strategy or a combination of strategies for temporary supply and demand management responses to temporary and potentially recurring water supply shortages and other water supply emergencies.”

Minimum Drought Contingency Plan Requirements

The minimum requirements contained in the TAC for drought contingency plans are covered in this Plan as follows:

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Rule	Subject	Section
288.20(a)(1)(A)	Informing the Public & Providing Opportunity For Input	Section 3
288.20(a)(1)(B)	Provisions for Continuing Public Education & Information	Section 4
288.20(a)(1)(C)	Coordination with the Regional Water Planning Group	Section 10
288.20(a)(1)(D)	Criteria for Initiation Monitoring & Termination of Stages	Section 7
288.20(a)(1)(E)	Drought and Emergency Response Stages	Section 7
288.20(a)(1)(F)	Targets to be Achieved During Drought	Section 7
288.20(a)(1)(G)	Water Supply & Demand Mgmt Measures for Each Stage	Section 7
288.20(a)(1)(H)	Procedures for Initiation & Termination of Drought Stages	Section 7
288.20(a)(1)(I)	Procedures for Granting Variances	Section 8
288.20(a)(1)(J)	Procedures for Enforcement of Mandatory Restrictions	Section 9
288.20(a)(2)	Drought Plans for Privately-Owned Utilities	Section 12
288.20(a)(3)	Consultation with Wholesale Suppliers	Section 7
288.20(b)	Notification of Implementation of Mandatory Measures	Section 7
288.20(c)	Review & Update of Plan	Section 11

Also included in this Plan are statements of authorization (Section 5) and application (Section 6).

3. Public Involvement

The City of Celina previously provided opportunity for public input in the development of this Plan by the following means:

- Provided written notice of the draft Plan and the opportunity for the public to comment by newspaper or posted notice prior to adoption;
- Made the draft Plan available on the City of Celina’s website;
- Provided a copy of the draft Plan to anyone requesting a copy and
- Held a public meeting at a time and location convenient to the public and provided written notice to the public concerning the draft Plan and meeting.

4. Provisions for Continuing Public Education and Information

The City of Celina will provide public information about the Plan at least annually, including information about the conditions under which each stage of the Plan is to be initiated or terminated and the drought response measures to be implemented in each stage. This information will be provided by any of the following means:

- Prepare bulletins / newsletters describing the Plan and make said bulletins / newsletters available in utility bills, public facilities or other appropriate places;
- Make the Plan and its requirements available on the City of Celina’s website;
- Include information about this Plan and water conservation on the City of Celina’s website, and as part of its bulletins / newsletters, public service announcements and media reports and

- Notify local organizations, schools and civic groups that the City of Celina staff members are available to make presentations on the Plan (usually in conjunction with presentations on water conservation programs).

When provisions of the Plan are activated or when a drought response stage changes, the City of Celina will notify local media of the relevant issues, the appropriate drought response stage and the specific actions required of the public. The provisions of the Plan are mandatory and therefore, TCEQ shall be notified within five (5) business days. The information will also be publicized on the City of Celina's website. Billing inserts may also be used as appropriate means of disseminating information to the public.

5. Authorization

The City Manager or official designee, is hereby authorized and directed to implement the applicable provisions of this Plan upon determination that such implementation is necessary to protect public health, safety and welfare, and to comply with applicable regulations or contractual requirements. Except as otherwise provided in the Plan, the City Manager or official designee, shall have the authority to initiate, to enforce and to terminate the measures provided herein for a drought or other water supply emergency. The authority to implement and enforce the Drought Contingency Plan is established in Ordinance No. _____ or Resolution No. _____, as provided in Appendix B.

6. Application

The provisions of this Plan shall apply to all persons, customers and property utilizing water provided by the City of Celina. The terms "person" and "customer" as used in the Plan include individuals, corporations, institutions, partnerships, associations and all other legal entities.

7. Drought Contingency Plan - - Emergency Response Stages

The City Manager, or official designee, may order the initiation or termination of a drought response stage or water emergency when one or more of the trigger conditions for that stage is met as provided in this Section. The triggering criteria described below are based on the ability of the City of Celina to deliver treated water to its customers and / or the ability of UTRWD to deliver treated water to the City of Celina. Water supply and / or demand conditions are monitored by both the City of Celina and UTRWD on a regular basis to determine when conditions warrant initiation or termination of a drought response stage.

7.1 Initiation of Drought Response Stages

The following actions will be taken when a drought response stage is initiated:

- The public will be notified through local media, the City of Celina's website and other appropriate methods as described in Section 3 above;
- Unless otherwise implemented by UTRWD, the City of Celina will notify UTRWD by telephone with a follow-up letter, e-mail or fax to confirm implementation of any drought response stage and to provide relevant details and

- The City of Celina will also notify the Executive Director of the TCEQ within five (5) business days.

When specific drought response stages are announced by UTRWD, the City of Celina and other entities receiving water from UTRWD are required to implement the appropriate measures. For other trigger conditions not announced by UTRWD, the City Manager or official designee, may implement contingency measures based on local conditions affecting the City of Celina; or for good cause may decide not to order the implementation of a drought response stage or water emergency even though one or more trigger criteria for the stages are met. Various factors are taken into account when making a decision about such stages, including circumstances unique to the City of Celina, the time of the year, weather conditions, the anticipation of replenished water supplies, use of an alternate water resource or the anticipation that additional facilities will become available on a timely basis to meet needs. The reason for such decision will be documented and communicated to UTRWD for the record.

7.2 Termination of Drought Response Stages

The following actions will be taken when a drought response stage is terminated:

- The public will be notified through local media, the City of Celina's website and other appropriate methods as described in Section 3 above;
- UTRWD will be notified by telephone with a follow-up letter, e-mail or fax to confirm the particular drought response stage has been terminated and
- The City of Celina will also notify the Executive Director of the TCEQ within five (5) business days

The City Manager or official designee, may decide not to order the termination of a drought response stage or water emergency even though the conditions for termination of the stage are met. Various factors could influence such a decision about whether to end a specific stage, including circumstances unique to the City of Celina, the time of the year, weather conditions, and conditions within the local water distribution system or anticipation of other relevant factors that warrant continuation of measures for the drought stage. The reason for such decision will be documented and communicated to UTRWD for the record.

7.3 Drought and Emergency Response Stages

A. **Stage 1 – Water Watch**

Requirements for Initiation

The following are key conditions, any one of which may trigger this stage:

- UTRWD has announced Stage 1 – Water Watch, which may be a result of:
 - The total raw water supply in water supply lakes available to UTRWD has dropped below 75% (25% depleted) during the time period from April 1 to October 31; or
 - The total raw water supply in the water supply lakes available to Upper Trinity has dropped below 80% (20% depleted) during the time period from November 1 to March 31; or

- Dallas Water Utilities (a source of raw water to UTRWD) has initiated Stage 1 and given notice to UTRWD; or
- UTRWD, with concurrence of the Board of Directors, finds that conditions warrant the declaration of Stage 1; or
- Water demand has reached or exceeded 80% of delivery capacity for three consecutive days; or
- Water demand is approaching a level that will cause a reduced delivery capacity for all or part of the distribution system, as determined by the City of Celina or
- The water supply system has a significant limitation due to failure of or damage to important water system components.

Goal

Stage 1 is intended to raise public awareness of potential drought and water emergency problems. The goal for water use reduction under Stage 1 is five percent (5%) of total daily water use that otherwise would have occurred in the absence of drought contingency measures. If circumstances warrant, the City Manager can set a goal for greater or lesser water use reduction.

Water Use Restrictions for Reducing Demand

Under this stage, customers will be requested to conserve water through mandatory and voluntary measures, and to comply with restrictions on certain non-essential water use as provided below. Specific measures to be implemented during the stage will be determined by the City of Celina’s City Manager or official designee. The City Manager or official designee, may also take other actions not listed, if deemed necessary.

- Require reduction of water use through mandatory, maximum two-days-per-week landscape irrigation schedule for automatic irrigation systems and hose-end sprinklers. Irrigation of landscaped areas and building foundations is permitted at any time if it is by means of a hand-held hose, drip irrigation or soaker hose systems.

Twice Per Week Watering Schedule

Last Digit of Address	Allowed Landscape Watering Days
1, 3, 5, 7, 9	Saturday and Wednesday
0, 2, 4, 6, 8	Sunday and Thursday

- Require reduction of water use through mandatory time-of-day landscape irrigation schedule. No outdoor watering with automatic irrigation systems and hose-end sprinklers can occur from 10:00 a.m. to 6:00 p.m. Irrigation of landscaped areas and building foundations is permitted at any time if it is by means of a hand-held hose, drip irrigation or soaker hose systems.
- Restrict washing of any motor vehicle, motorbike, boat, trailer, airplane or other vehicle to the use of a hand-held bucket or a hand-held hose equipped with a positive shut-off nozzle for quick rinses. Vehicle washing may be done at any time on the immediate premises of a commercial car wash facility or commercial service station. Companies with an automated on-site vehicle washing facility may wash its vehicles at any time.
- Encourage reduction in frequency of draining and refilling swimming pools.
- Encourage customers to avoid waste during recreational use (water used for leisure and entertainment purposes) from faucets, hoses or hydrants.
- Increase public education efforts on ways to reduce water use.
- Review internal operational conditions and capabilities by the City of Celina and intensify efforts on leak detection and repair.
- Be alert to internal non-essential water use by the City of Celina (examples include vehicle washing, operation of ornamental fountains, landscape uses for parks or medians, etc.).

Termination

Stage 1 may terminate when UTRWD terminates its Stage 1 condition or when the circumstances that caused the initiation of Stage 1 – Water Watch no longer prevail.

B. Stage 2 – Water Warning

Requirements for Initiation

The following are key conditions, any one of which may trigger this stage:

- UTRWD has initiated Stage 2 – Water Warning, which may be a result of:
 - The total raw water supply in water supply lakes available to UTRWD has dropped below 60% (40% depleted) during the time period from April 1 to October 31; or
 - The total raw water supply in the water supply lakes available to Upper Trinity has dropped below 65% (35% depleted) during the time period from November 1 to March 31; or
 - Dallas Water Utilities has initiated Stage 2 and given notice to UTRWD; or
 - UTRWD, with concurrence of the Board of Directors, finds that conditions warrant the declaration of Stage 2; or
 - Water demand has reached or exceeded 85% of delivery capacity for three consecutive days; or
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Use of contents on this sheet is subject to the limitations specified at the end of this report.

- Water demand has reached a level that is causing a reduced delivery capacity for all or part of the distribution system, as determined by the City of Celina; or
- The water supply system is unable to deliver water at normal rates due to failure of or damage to major water system components or
- A significant deterioration in the quality of a water supply, being affected by a natural or man-made source.

Goal

The goal for water use reduction under Stage 2 is a ten percent 10% reduction in the use that would otherwise have occurred in the absence of drought contingency measures. If circumstances warrant, the City Manager can set a goal for greater or lesser water use reduction.

Water Use Restrictions for Reducing Demand

Under this stage, customers will be requested to continue following the mandatory measures to conserve water and to comply with restrictions on certain non-essential water uses as provided below. Specific measures to be implemented during this stage will be determined by the City Manager or official designee. The City Manager or official designee, may also take other actions not listed, if deemed necessary. All requirements of Stage 1 shall remain in effect during this Stage 2, plus the following incremental or new measures:

- Require reduction of water use through mandatory maximum one-day-per-week landscape irrigation schedule. This includes irrigation of landscaped areas with automatic irrigation systems and hose-end sprinklers. Irrigation of landscaped areas and building foundations is permitted at any time if it is by means of a hand-held hose, drip irrigation or soaker hose systems.

Once Per Week Watering Schedule

(For Drought Contingency Plan Stage 2 Water Warning)

Last Digit of Address	Allowed Landscape Watering Days
1, 3	Monday
0, 2	Tuesday
5, 7	Wednesday
4, 6	Thursday
9	Friday
8	Saturday
Sunday – No Watering (Storage Recovery Day)	

- Prohibit recreational water use (water used for leisure and entertainment purposes) including use of faucets or hoses in such a manner that creates runoff or other wastes.
- Encourage further reduction in draining and filling of swimming pools.
- Further accelerate public education efforts on ways to reduce water use.
- Continue intensified leak detection and repair activities by the City of Celina on water pipes and mains.
- Reduce internal water use by the City of Celina, by restricting of no hosing off paved areas, buildings, windows or other hard surfaces and no vehicle washing except on the premises of a commercial car wash.
- Encourage retail customers to wait until the current drought or water emergency situation has passed before establishing new landscaping.
- Initiate engineering studies to evaluate alternatives to mitigate drought conditions should conditions worsen.
- The City of Celina is restricted to day-of-week and time-of-day landscape watering schedule except for parks and golf courses.
- Require reduction of water use through day-of-week landscape watering schedule for parks and golf courses.
- Announce enforcement efforts and penalties for noncompliance. Enforcement to be primarily based on complaints being received.

Termination

Stage 2 may terminate when UTRWD terminates its Stage 2 condition or when the circumstances that caused the initiation of Stage 2 no longer prevail. Upon termination of Stage 2, Stage 1 – Water Watch will remain in effect unless otherwise announced by the City of Celina or UTRWD.

C. Stage 3 – Water Emergency

Requirements for Initiation

The following are key conditions, any one of which may trigger Stage 3:

- UTRWD has initiated Stage 3 – Water Emergency, which may be a result of:
 - The total raw water supply in water supply lakes available to UTRWD has dropped below 45% (55% depleted) during the time period from April 1 to October 31; or

- The total raw water supply in the water supply lakes available to Upper Trinity has dropped below 50% (50% depleted) during the time period from November 1 to March 31; or
 - Dallas Water Utilities has initiated Stage 3 and given notice to UTRWD; or
 - UTRWD, with concurrence of the Board of Directors, finds that conditions warrant the declaration of Stage 3; or
- Water demand has reached or exceeded 90% of delivery capacity for three consecutive days; or
 - Water demand **exceeds** the delivery capacity for all or part of the distribution system, as determined by the City of Celina; or
 - Water supply system is unable to deliver water in adequate quantities due to failure of or damage to major water system components; or
 - Interruption of one or more water supply source(s).
 - Natural or man-made contamination of the water supply source that threatens water availability.

Goal

The goal for water use reduction under Stage 3 is a reduction of twenty percent 20% in the use that would otherwise have occurred in the absence of drought contingency measures. If circumstances warrant, the City Manager can set a goal for greater or lesser water use reduction.

Water Use Restrictions for Reducing Demand

Customers will comply with the requirements and mandatory restrictions on non-essential and other water uses as provided below. Specific measures to be implemented during this stage will be determined by the City Manager or official designee. The City Manager or official designee, may also take other actions not listed, if deemed necessary. All requirements of Stage 1 and Stage 2 shall remain in effect during this Stage 3, plus the following incremental or new measures:

- Outdoor irrigation is prohibited. Irrigation of landscaped areas and building foundations is permitted one day per week between 6:00 p.m. and 6:00 a.m. if it is by means of a hand-held hose, drip irrigation or soaker hose systems.

Once Per Week Watering Schedule

(For Drought Contingency Plan Water Emergency - hand-held hose, drip irrigation or soaker hose systems.)

Last Digit of Address	Allowed Landscape Watering Days
1, 3	Monday
0, 2	Tuesday
5, 7	Wednesday
4, 6	Thursday
9	Friday
8	Saturday
Sunday – No Watering (Storage Recovery Day)	

- Use of water to wash any motor vehicle, motorbike, boat, trailer or other vehicle not occurring on the premises of a commercial vehicle wash facility or commercial service stations is prohibited. Further, such washing may be exempt from these requirements if the health, safety and welfare of the public are contingent upon frequent vehicle cleansing, such as garbage trucks and commercial vehicles used to transport food and perishables.
- Prohibit the filling, draining and refilling of water to swimming pools, wading pools, hot tubs, spas and ornamental ponds except to maintain structural integrity, proper operation and maintenance or to alleviate a public safety risk. Existing pools may add water to replace losses from normal use and evaporation.
- Suspend issuance of permits for new swimming pools, hot tubs, spas and ornamental ponds.
- Hosing and washing of paved areas, buildings, structures, windows or other surfaces is prohibited except by variance and performed by a professional service using high efficiency equipment.
- Prohibit operation of ornamental fountains or ponds that use potable water except where supporting aquatic life or water quality.
- Landscape watering of parks, golf courses, and athletic fields with potable water is prohibited. Exception for golf course greens and tee boxes which may be hand watered as needed. Variances may be granted by the water provider under special circumstances.
- Prohibit non-essential internal water use by the City of Celina, except where water is supplied from treated wastewater effluent.
- No restrictions on commercial nurseries, construction, patio misters, and for dust abatement.

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- Step-up enforcement activities.
- Implement utilization of alternative water sources if available.

Termination

Stage 3 may terminate when UTRWD terminates its Stage 3 condition or when the circumstances that caused the initiation of Stage 3 no longer prevail. Upon termination of Stage 3, Stage 2 – Water Warning will be initiated, unless otherwise announced by the City of Celina or UTRWD.

8. Variances

The City Manager or official designee, may grant temporary variances for existing water uses otherwise prohibited under this Plan if one or more of the following conditions are met:

- Failure to grant such a variance would cause an emergency condition adversely affecting health, sanitation or fire safety for the public or the person requesting the variance;
- Compliance with this Plan cannot be accomplished due to technical or other limitations and
- Alternative methods that achieve the same level of reduction in water use can be implemented.

Variances may be granted or denied at the discretion of the City Manager or official designee. However, no variances shall be granted under any circumstance if the City of Celina is in Stage 3 Water Emergency. All petitions for variances should be in writing and should include the following information:

- Name and address of the owner and a licensed Texas irrigator responsible for the variance;
- Purpose of water use;
- Specific provisions from which relief is requested;
- Detailed statement of the adverse effect of the provision from which relief is requested;
- Description of the relief requested including a proposed irrigation plan;
- Monthly report verifying the goal reductions;
- Period of time for which the variance is sought;
- On-call personnel with contact information for 24-hour a day repair response within one hour of notice;
- Alternative measures that will be taken to reduce water use;
- Other pertinent information.

9. Enforcement

Mandatory water use restrictions are imposed in Stages 1, 2 and 3 of the Plan. These mandatory water use restrictions will be enforced by any combination of warnings, reconnection fees, suspension of service, monetary penalties, citations and fees as follows and authorized by the governing body:

- On the first violation, customers will be notified by a sign or door-hanger that they have violated the mandatory water use restriction;
- On the second violation, the City of Celina may request the resident to disconnect its irrigation system; or, if the resident doesn't comply with said request, the City of Celina may disconnect said irrigation system. In addition, City of Celina may post notification of violation with reconnection fees and possible monetary penalties;
- On the third violation, the City of Celina will disconnect water service and post notification of violation with reconnection fees, fines and / or citations;
- The City of Celina maintains the right, at any violation level, to disconnect irrigation systems and / or total water services to a customer with reconnection fees and possible monetary penalties authorized by action of the governing body and
- The City Manager or official designee may implement any provision of the enforcement process of this Plan.
- Any police officer having jurisdiction may issue a citation for any violation.
- A person commits an offense if the person knowingly or unknowingly allows the use of water from the city for residential, commercial, industrial, agricultural, governmental, or any other purpose in a manner contrary to any provision of this plan, or in an amount in excess of that permitted by the drought response stage in effect at the time pursuant to action taken by city manager, in accordance with provisions of this plan.
- Any person who violates this plan is guilty of a misdemeanor and, upon conviction shall be punished by a fine of not less than \$500.00 and not more than \$2,000.00. Each day that one or more of the provisions in this plan is violated shall constitute a separate offense. If a person is convicted of three or more distinct violations of this plan, the city manager shall, upon due notice to the customer, be authorized to discontinue water service to the premises where such violations occur. Services discontinued under such circumstances shall be restored only upon payment of a reconnection charge, hereby established at \$25.00, and any other costs incurred by the city in discontinuing service. In addition, suitable assurance must be given to the city manager that the same action shall not be repeated while the plan is in effect. Compliance with this plan may also be sought through injunctive relief in the appropriate court.
- Any person, including a person classified as a water customer of the city, in apparent control of the property where a violation occurs or originates shall be presumed to be the violator, and proof that the violation occurred on the person's property shall constitute a rebuttable presumption that the person in apparent control of the property committed the violation, but any such person shall have the right to show that he/she did not commit the violation. Parents shall be presumed to be responsible for violations of their minor children and proof that a violation, committed by a child, occurred on property within the parents' control shall constitute a rebuttable presumption that the

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parent committed the violation, but any such parent may be excused if he/she proves that he/she had previously directed the child not to use the water as it was used in violation of this plan and that the parent could not have reasonably known of the violation.

- Any employee of the city, police officer, or other employee designated by the city manager, may issue a citation to a person he/she reasonably believes to be in violation of this division. The citation shall be prepared in duplicate and shall contain the name and address of the alleged violator, if known, the offense charged, and shall direct him/her to appear in the city municipal court on the date shown on the citation. A summons to appear may be issued in lieu of an arrest warrant.

10. Coordination with Regional Water Planning Group, UTRWD and Others

The City of Celina has coordinated with the Region C Water Planning Group and UTRWD to ensure consistency with the approved regional water plan and UTRWD's drought contingency plan. The City of Celina sent a copy of the draft ordinance(s) or resolution(s) implementing the Plan to UTRWD for review and approval. After adoption, the City of Celina sent the final ordinance(s) or resolution(s) and the Plan to UTRWD. Appendix C includes a copy of a letter sent to the Chair of the Region C Water Planning Group along with the City of Celina's Plan.

11. Review and Update of Drought Contingency Plan

As required by TCEQ rules, the City of Celina will review and update this Plan every five years. The Plan will be updated as appropriate based on new or updated information, such as the adoption or revision of the regional water plan, or based on new or updated information related to the City of Celina's service area, population, water supply, transmission system and, for compliance with UTRWD requirements. The next revision of the drought contingency plan must be prepared, adopted and submitted to TCEQ's Executive Director not later than May 1, 2012. Any revised Plan must be submitted to TCEQ within 90 days of adoption by the community water system.

12. Current and Future Expansion Projects of the Water Distribution System

Project 1: One (1), six (6) million gallon ground storage tank is pending design that will be located at the Celina Road Pump Station, to meet current and future potable water demands. The ground storage tank will ensure that potable water storage for the City of Celina meets the Texas Administrative Codes pertaining to potable water storage capacities.

APPENDIX A

TCEQ Minimum Requirements of a Drought Contingency Plan for Municipal Uses by Public Water Suppliers (Subchapter B, Rule §288.20) Effective October 7, 2004

(a) A drought contingency plan for a retail public water supplier, where applicable, must include the following minimum elements.

(1) Minimum requirements. Drought contingency plans must include the following minimum elements.

(A) Preparation of the plan shall include provisions to actively inform the public and affirmatively provide opportunity for public input. Such acts may include, but are not limited to, having a public meeting at a time and location convenient to the public and providing written notice to the public concerning the proposed plan and meeting.

(B) Provisions shall be made for a program of continuing public education and information regarding the drought contingency plan.

(C) The drought contingency plan must document coordination with the regional water planning groups for the service area of the retail public water supplier to ensure consistency with the appropriate approved regional water plans.

(D) The drought contingency plan must include a description of the information to be monitored by the water supplier, and specific criteria for the initiation and termination of drought response stages, accompanied by an explanation of the rationale or basis for such triggering criteria.

(E) The drought contingency plan must include drought or emergency response stages providing for the implementation of measures in response to at least the following situations:

(i) reduction in available water supply up to a repeat of the drought of record;

(ii) water production or distribution system limitations;

(iii) supply source contamination; or

(iv) system outage due to the failure or damage of major water system components (e.g., pumps).

(F) The drought contingency plan must include specific, quantified targets for water use reductions to be achieved during periods of water shortage and drought. The entity preparing the plan shall establish the targets. The goals established by the entity under this subparagraph are not enforceable.

(G) The drought contingency plan must include the specific water supply or water demand management measures to be implemented during each stage of the plan including, but not limited to, the following:

(i) curtailment of non-essential water uses; and

(ii) utilization of alternative water sources and/or alternative delivery mechanisms with the prior approval of the executive director as appropriate (e.g., interconnection with another water system, temporary use of a non-municipal water supply, use of reclaimed water for non-potable purposes, etc.).

(H) The drought contingency plan must include the procedures to be followed for the initiation or termination of each drought response stage, including procedures for notification of the public.

(I) The drought contingency plan must include procedures for granting variances to the plan.

(J) The drought contingency plan must include procedures for the enforcement of mandatory water use restrictions, including specification of penalties (e.g., fines, water rate surcharges, discontinuation of service) for violations of such restrictions.

(2) Privately-owned water utilities. Privately-owned water utilities shall prepare a drought contingency plan in accordance with this section and incorporate such plan into their tariff.

(3) Wholesale water customers. Any water supplier that receives all or a portion of its water supply from another water supplier shall consult with that supplier and shall include in the drought contingency plan appropriate provisions for responding to reductions in that water supply.

(b) A wholesale or retail water supplier shall notify the executive director within five business days of the implementation of any mandatory provisions of the drought contingency plan.

(c) The retail public water supplier shall review and update, as appropriate, the drought contingency plan, at least every five years, based on new or updated information, such as the adoption or revision of the regional water plan.

APPENDIX B

**Copy of Ordinance or Resolution Adopted
by City Council or Governing Body
(insert here)**

DRAFT

APPENDIX C

**Coordination with Regional Planning Group
(insert here)**

DRAFT



Texas Commission on Environmental Quality

Water Availability Division

MC-160, P.O. Box 13087 Austin, Texas 78711-3087

Telephone (512) 239-4691, FAX (512) 239-2214

Utility Profile and Water Conservation Plan Requirements for Municipal Water Use by Retail Public Water Suppliers

This form is provided to assist retail public water suppliers in water conservation plan assistance in completing this form or in developing your plan, please contact the Conservation staff of the Resource Protection Team in the Water Availability Division at (512) 239-4691.

Water users can find best management practices (BMPs) at the Texas Water Development Board's website <http://www.twdb.texas.gov/conservation/BMPs/index.asp>. The practices are broken out into sectors such as Agriculture, Commercial and Institutional, Industrial, Municipal and Wholesale. BMPs are voluntary measures that water users use to develop the required components of Title 30, Texas Administrative Code, Chapter 288. BMPs can also be implemented in addition to the rule requirements to achieve water conservation goals.

Contact Information

Name of Water Supplier: City of Celina

Address: 142 North Ohio Street, 75009

Telephone Number: (972) -3822682 Fax: (972) -3823736

Water Right No.(s): _____

Regional Water Planning Group: C

Water Conservation Coordinator (or person responsible for implementing conservation program): Andrew Moore Phone: (972) -3822682

Form Completed by: Andrew Moore

Title: Water Supervisor

Signature: _____ Date: 3/6/2019

A water conservation plan for municipal use by retail public water suppliers must include the following requirements (as detailed in 30 TAC Section 288.5). If the plan does not provide information for each requirement, you must include in the plan an explanation of why the requirement is not applicable.

Utility Profile

I. POPULATION AND CUSTOMER DATA

A. *Population and Service Area Data*

1. Attach a copy of your service-area map and, if applicable, a copy of your Certificate of Convenience and Necessity (CCN).
2. Service area size (in square miles):
(Please attach a copy of service-area map)
3. Current population of service area: 18,860
4. Current population served for:
 - a. Water 17,848
 - b. Wastewater

5. Population served for previous five years:

<i>Year</i>	<i>Population</i>
2014	8,706
2015	10,374
2016	11,985
2017	15,392
2018	18,000

6. Projected population for service area in the following decades:

<i>Year</i>	<i>Population</i>
2020	38,741
2030	162,610
2040	200,290
2050	363,100
2060	363,600

7. List source or method for the calculation of current and projected population size.
Master plan and some estimation

B. Customer Data

Senate Bill 181 requires that uniform consistent methodologies for calculating water use and conservation be developed and available to retail water providers and certain other water use sectors as a guide for preparation of water use reports, water conservation plans, and reports on water conservation efforts. A water system must provide the most detailed level of customer and water use data available to it, however, any new billing system purchased must be capable of reporting data for each of the sectors listed below. http://www.tceq.texas.gov/assets/public/permitting/watersupply/water_rights/sb181_guidance.pdf

1. Quantified 5-year and 10-year goals for water savings:

	<i>Historic 5-year Average</i>	<i>Baseline</i>	<i>5-year goal for year 2023</i>	<i>10-year goal for year 2028</i>
Total GPCD	136.6		165	160
Residential GPCD	219.2		200	195
Water Loss GPCD	27.93		18	15
Water Loss Percentage	19.85		15	12

Notes:

Total GPCD = (Total Gallons in System ÷ Permanent Population) ÷ 365

Residential GPCD = (Gallons Used for Residential Use ÷ Residential Population) ÷ 365

Water Loss GPCD = (Total Water Loss ÷ Permanent Population) ÷ 365

Water Loss Percentage = (Total Water Loss ÷ Total Gallons in System) x 100; or (Water Loss GPCD ÷ Total GPCD) x 100

2. Current number of active connections. Check whether multi-family service is counted as Residential or Commercial?

<i>Treated Water Users</i>	<i>Metered</i>	<i>Non-Metered</i>	<i>Totals</i>
Residential	5818		
Single-Family	5676		
Multi-Family	51		
Commercial	252		
Industrial/Mining			
Institutional	59		
Agriculture			
Other/Wholesale			

3. List the number of new connections per year for most recent three years.

<i>Year</i>	<i>2016</i>	<i>2017</i>	<i>2018</i>
<i>Treated Water Users</i>			
Residential	620	755	1190
Single-Family	620	754	1190
Multi-Family		1	0
Commercial			51
Industrial/Mining			
Institutional		24	4
Agriculture			
Other/Wholesale			

4. List of annual water use for the five highest volume customers.

<i>Customer</i>	<i>Use (1,000 gal/year)</i>	<i>Treated or Raw Water</i>
FINI Enterprise	18,509,400	treated
TXI Redi Mix	6,481,000	treated
Settlers Ridge Care Center	4,367,000	treated
TXI-2 RAIL	4,220,000	treated
Prosper ISD	701,000	treated

II. WATER USE DATA FOR SERVICE AREA

A. Water Accounting Data

1. List the amount of water use for the previous five years (in 1,000 gallons).

Indicate whether this is diverted or treated water.

<i>Year</i>	2014	2015	2016	2017	2018
<i>Month</i>					
January	22,933	26,245	36,577	42,347	54,641
February	21,640	23,554	32,623	39,992	32,914
March	28,045	25,456	34,920	45,689	45,556
April	28,061	26,353	36,595	44,723	50,872
May	36,136	24,734	37,219	66,824	64,752
June	35,217	34,905	44,690	60,168	88,190
July	35,859	58,597	65,093	65,667	126,798
August	39,028	76,076	62,288	60,161	111,928
September	41,415	62,506	52,652	68,688	64,855
October	34,730	53,087	56,704	61,630	51,430
November	26,556	34,228	39,405	48,009	50,370
December	26,781	35,856	38,542	45,684	48,617
Totals	376,411	481,597	537,178	649,582	790,923

2. Describe how the above figures were determined (e.g, from a master meter located at the point of a diversion from the source or located at a point where raw water enters the treatment plant, or from water sales).

Water leaving the CRPS is metered. the meter is tested every year and reading is recorded daily off of SCADA.

- Amount of water (in 1,000 gallons) delivered/sold as recorded by the following account types for the past five years.

<i>Year</i>	2014	2015	2016	2017	2018
<i>Account Types</i>					
Residential	174,993	267,931	310,053	397,260	473,028
Single-Family	171,544	264,442	307,045	393,791	470,029
Multi-Family	3,448	3,488	3,007	3,469	3,179
Commercial	47,444	93,857	67,522	102,068	97,396
Industrial/Mining			26,150		
Institutional	3,448	3,488	1,532	16,993	16,173
Agriculture					
Other/Wholesale					

- List the previous records for water loss for the past five years (the difference between water diverted or treated and water delivered or sold).

<i>Year</i>	<i>Amount (gallons)</i>	<i>Percent %</i>
2014	71,154,553	18.28
2015	137,797,432	25.45
2016	93,408,877	17.21
2017	104,206,884	15.88
2018	177,606,329	22.46

B. Projected Water Demands

- If applicable, attach or cite projected water supply demands from the applicable Regional Water Planning Group for the next ten years using information such as population trends, historical water use, and economic growth in the service area over the next ten years and any additional water supply requirements from such growth.

III. WATER SUPPLY SYSTEM DATA

A. Water Supply Sources

- List all current water supply sources and the amounts authorized (in acre feet) with each.

<i>Water Type</i>	<i>Source</i>	<i>Amount Authorized</i>
Surface Water	Upper Trinity Water District	16.88
Groundwater		
Other		

B. Treatment and Distribution System (if providing treated water)

1. Design daily capacity of system (MGD): 13.9
2. Storage capacity (MGD):
 - a. Elevated 3.0
 - b. Ground 7.0
3. If surface water, do you recycle filter backwash to the head of the plant?
 Yes No If yes, approximate amount (MGD):

IV. WASTEWATER SYSTEM DATA

A. Wastewater System Data (if applicable)

1. Design capacity of wastewater treatment plant(s) (MGD): 1.0
2. Treated effluent is used for on-site irrigation, off-site irrigation, for plant wash-down, and/or for chlorination/dechlorination.

If yes, approximate amount (in gallons per month): 1,000,000
3. Briefly describe the wastewater system(s) of the area serviced by the water utility. Describe how treated wastewater is disposed. Where applicable, identify treatment plant(s) with the TCEQ name and number, the operator, owner, and the receiving stream if wastewater is discharged.

B. Wastewater Data for Service Area (if applicable)

1. Percent of water service area served by wastewater system: 35%
2. Monthly volume treated for previous five years (in 1,000 gallons):

<i>Year</i>	2014	2015	2016	2017	2018
<i>Month</i>					
January	16,161	9,945	18,927	13,110	12,344
February	9,618	9,591	15,067	15,166	19,828
March	11,342	15,552	20,579	14,522	19,989
April	12,021	15,782	18,500	17,469	24,274
May	11,314	31,126	18,662	11,514	13,315
June	11,658	26,132	18,154	13,423	9,879
July	10,107	14,077	8,821	10,104	8,777
August	9,781	5,375	10,054	12,225	12,752
September	7,291	7,892	13,111	21,373	20,710
October	7,115	11,181	10,791	10,187	35,110
November	7,072	25,405	13,431	9,516	17,731
December	7,164	23,287	12,810	12,664	26,739
Totals	115,346	190,060	178,907	161,273	26,739

Water Conservation Plan

In addition to the utility profile, please attach the following as required by Title 30, Texas Administrative Code, §288.2. Note: If the water conservation plan does not provide information for each requirement, an explanation must be included as to why the requirement is not applicable.

A. Record Management System

The water conservation plan must include a record management system which allows for the classification of water sales and uses in to the most detailed level of water use data currently available to it, including if possible, the following sectors: residential (single and multi-family), commercial.

B. Specific, Quantified 5 & 10-Year Targets

The water conservation plan must include specific, quantified five-year and ten-year targets for water savings to include goals for water loss programs and goals for municipal use in gallons per capita per day. Note that the goals established by a public water supplier under this subparagraph are not enforceable. These goals must be updated during the five-year review and submittal.

C. Measuring and Accounting for Diversions

The water conservation plan must include a statement about the water suppliers metering device(s), within an accuracy of plus or minus 5.0% in order to measure and account for the amount of water diverted from the source of supply.

D. Universal Metering

The water conservation plan must include and a program for universal metering of both customer and public uses of water, for meter testing and repair, and for periodic meter replacement.

E. Measures to Determine and Control Water Loss

The water conservation plan must include measures to determine and control water loss (for example, periodic visual inspections along distribution lines; annual or monthly audit of the water system to determine illegal connections; abandoned services; etc.).

F. Continuing Public Education & Information

The water conservation plan must include a description of the program of continuing public education and information regarding water conservation by the water supplier.

G. Non-Promotional Water Rate Structure

The water supplier must have a water rate structure which is not "promotional," i.e., a rate structure which is cost-based and which does not encourage the excessive use of water. This rate structure must be listed in the water conservation plan.

H. Reservoir Systems Operations Plan

The water conservation plan must include a reservoir systems operations plan, if applicable, providing for the coordinated operation of reservoirs owned by the applicant within a common watershed or river basin in order to optimize available water supplies.

I. Enforcement Procedure and Plan Adoption

The water conservation plan must include a means for implementation and enforcement, which shall be evidenced by a copy of the ordinance, rule, resolution, or tariff, indicating official adoption of the water conservation plan by the water supplier; and a description of the authority by which the water supplier will implement and enforce the conservation plan.

J. Coordination with the Regional Water Planning Group(s)

The water conservation plan must include documentation of coordination with the regional water planning groups for the service area of the public water supplier in order to ensure consistency with the appropriate approved regional water plans.

K. Plan Review and Update

A public water supplier for municipal use shall review and update its water conservation plan, as appropriate, based on an assessment of previous five-year and ten-year targets and any other new or updated information. The public water supplier for municipal use shall review and update the next revision of its water conservation plan not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group. The revised plan must also include an implementation report.

VI. ADDITIONAL REQUIREMENTS FOR LARGE SUPPLIERS

Required of suppliers serving population of 5,000 or more or a projected population of 5,000 or more within the next ten years:

A. Leak Detection and Repair

The plan must include a description of the program of leak detection, repair, and water loss accounting for the water transmission, delivery, and distribution system in order to control unaccounted for uses of water.

B. Contract Requirements

A requirement in every wholesale water supply contract entered into or renewed after official adoption of the plan (by either ordinance, resolution, or tariff), and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements in this chapter. If the customer intends to resell the water, the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with the provisions of this chapter.

VII. ADDITIONAL CONSERVATION STRATEGIES

Any combination of the following strategies shall be selected by the water supplier, in addition to the minimum requirements of 30 TAC §288.2(1), if they are necessary in order to achieve the stated water conservation goals of the plan. The commission may require by commission order that any of the following strategies be implemented by the water supplier if the commission determines that the strategies are necessary in order for the conservation plan to be achieved:

1. Conservation-oriented water rates and water rate structures such as uniform or increasing block rate schedules, and/or seasonal rates, but not flat rate or decreasing block rates;
2. Adoption of ordinances, plumbing codes, and/or rules requiring water conserving plumbing fixtures to be installed in new structures and existing structures undergoing substantial modification or addition;
3. A program for the replacement or retrofit of water-conserving plumbing fixtures in existing structures;
4. A program for reuse and/or recycling of wastewater and/or graywater;
5. A program for pressure control and/or reduction in the distribution system and/or for customer connections;
6. A program and/or ordinance(s) for landscape water management;
7. A method for monitoring the effectiveness and efficiency of the water conservation plan; and
8. Any other water conservation practice, method, or technique which the water supplier shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

VIII. WATER CONSERVATION PLANS SUBMITTED WITH A WATER RIGHT APPLICATION FOR NEW OR ADDITIONAL STATE WATER

Water Conservation Plans submitted with a water right application for New or Additional State Water must include data and information which:

1. support the applicant's proposed use of water with consideration of the water conservation goals of the water conservation plan;
2. evaluates conservation as an alternative to the proposed appropriation; and
3. evaluates any other feasible alternative to new water development including, but not limited to, waste prevention, recycling and reuse, water transfer and marketing, regionalization, and optimum water management practices and procedures.

Additionally, it shall be the burden of proof of the applicant to demonstrate that no feasible alternative to the proposed appropriation exists and that the requested amount of appropriation is necessary and reasonable for the proposed use.

Appendix C

Water & Wastewater System Improvements Water Capital Improvements Plan

City of Celina, Texas



Prepared by:



3010 Gaylord Parkway
Suite 190
Frisco, TX 75034

September 2017

Garver Project No.: 16088050



Project 11: Water Group Z Capital Improvements

Project Description

This project consists of installation of a new, 6 MG ground storage tank and associated site improvements at the CRPS. Associated site improvements include bypass piping, SCADA level sensor, and security fencing.

Justification

Ground storage at this location provides a buffer against interruptions in Upper Trinity Regional Water District (UTRWD) water supply. Current demand projections identify a significant reduction in the amount of detention time provided by the existing GST, as shown in Figure 1-5Figure 1-4. This project will provide 16 hours of emergency storage at average day conditions in 2022 in the event of temporary water supply interruptions from UTRWD and provide additional system storage to meet TCEQ requirements. The new tank will provide steady operation of the high service pumps at the UTRWD, and will allow bypass of the existing GST during maintenance activities.

Unintended Consequences

This tank could lead to increased water age if flow demands do not increase as projected; however, this can be mitigated by controlling the level in the tank.

Special Considerations

This project will require geotechnical evaluation of the site prior to tank design. Coordination with UTRWD will be needed for tank level SCADA integration.

Potential Alternatives

A smaller GST could be constructed; however, a smaller tank would result in increased unit costs and would reduce the amount of time the system could operate without the UTRWD supply.

Project Identification		
Number:	11	
Location:	Low Plane	
Flexibility:	Medium	
Schedule		
Primary Trigger:	Operational	
Secondary Trigger:	Capacity	
Trigger # of Lots Constructed:	1,526	
Trigger Date:	Oct-2018	
Project Complete:	Jul-2020	
Project Implementation (Months)		
Engineering/Design:	9	
Bid/Construction:	12	
Total Project Duration:	21	
	2017 Costs (\$ Millions)	Forecasted Costs (\$ Millions)
Construction	\$6.35	\$6.94
Professional Services	\$1.27	\$1.35
Total Project Cost	\$7.62	\$8.29

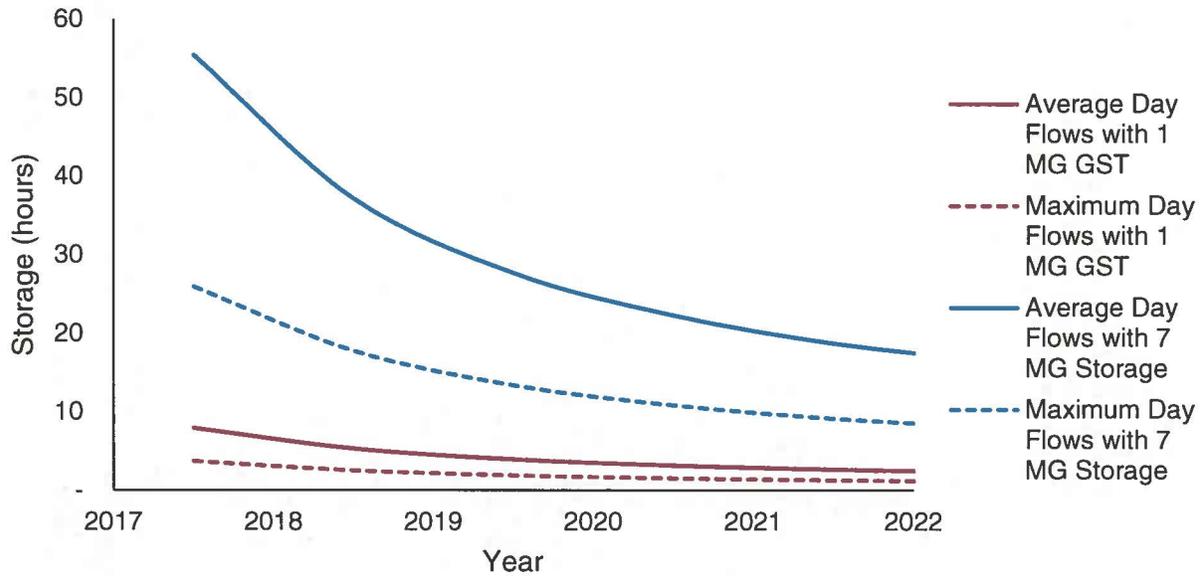


Figure 1-5: Comparison of Available Ground Storage at the CRPS with and without the 6 MG GST

Group Z			
Description	Unit	Quantity	Cost
New 6 MG GST	LS	1	\$ 2,668,750
Piping and appurtenances	LS	1	\$ 150,000
Work area and subgrade preparation	LS	1	\$ 900,000
City standard brick fencing	LS	1	\$ 450,000
Subtotal			\$ 4,168,750
Contractor's OH&P (18%)			\$ 750,375
Miscellaneous (SCADA, etc., 10%)			\$ 371,875
Contingency (20%)			\$ 1,058,200
Professional Services			\$ 1,269,840
OPCC			\$ 7,619,040

Project 11 Schematic

