



City of Pflugerville

Legislation Text

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Discussion and update regarding the Wilbarger Creek Regional Wastewater Treatment Facility Project.

This presentation is to give an update regarding the progress of this project.

Background

The City's wastewater service area includes three basins, the Central, Wilbarger, and Cottonwood basins. Currently, lift stations and pumping infrastructure is in place to convey wastewater flows across basins to the Central Wastewater Treatment Plant (WWTP).

The adopted 2020 Wastewater Master Plan recommended the City proceed with improvement projects in the Wilbarger Basin to provide conveyance of wastewater from the Wilbarger and Cottonwood basins to a new wastewater treatment plant in the Wilbarger Basin. The updated 2020 Wastewater Master Plan indicates that these improvements will need to be substantially completed and in service by December 2024 to meet the City's projected growth needs.

The property, approximately 159 acres, for the proposed Wilbarger Creek Regional Wastewater Treatment Facility was purchased for this purpose in 2009 and is owned by the City of Pflugerville. The tract of land is located off of Gregg Lane between Fuchs Grove Road and FM 973. A permit was approved by the Texas Commission on Environmental Quality (TCEQ) (Permit NO. WQ0011845005 (EPA I.D. No. TX0132021)) on 10/2009 to authorize the discharge of treated wastewater at a volume not to exceed an annual daily flow (ADF) of 15.75 million gallons per day (MGD) and a peak 2-hour flow of 43,750 gallons per minute (GPM) (63.0 MGD). The discharge permit included Interim permit flow limits as follows: Interim 1 - 2.0 MGD ADF and Interim II - 4.0 MGD ADF. The discharge route is from the plant site via a pipeline to Wilbarger Creek, then to the Colorado River.

Conceptual Phase (Current Contract)

Garver, LLC was awarded a professional services agreement in November 2020 for the Conceptual Engineering Phase for the Wilbarger Creek RWWTF. Garver is in the process of completing the Conceptual Phase for the Wilbarger Creek RWWTF. During the conceptual phase, the Garver Team developed technical memoranda, a conceptual design report, a public outreach plan as well as an Environmental Information Document (EID), conducted survey work and preliminary geotechnical engineering.

The technical memoranda (TM) addressed the following:

- Flow Transfer TM
- Planning Criteria TM
- Process Model TM
- Site Development TM

Phasing TM
Hydraulic Model TM
Regulatory Evaluation TM
Site Hydrology and Hydraulics TM
Airspace Analysis Coordination TM

To determine the appropriate sizing for the RWWTF, the Flow Transfer TM evaluated three treatment capacities; Alternative 1 - 8.0 MGD, Alternative 2 - 4.0 MGD and Alternative 3 - 6.0 MGD. The goal of the evaluation was to match future treatment capacity to the flow projections and maximize use of existing infrastructure. From the evaluation it was determined that the Wilbarger Creek RWWTF would be designed for an average daily flow (ADF) of 6.0 MGD and a peak 2-hr flow (P2H) of 24.0 MGD. This sizing was based on utilizing the existing City infrastructure that is in place, consideration of the rates for the citizens of Pflugerville, planning for future expansion of the RWWTF and consideration of flexibility for future decision making. The 6.0 MGD Wilbarger Creek RWWTF will take advantage of the expanded capacity of the Central WWTP and utilize the Carmel Lift Station to direct flows to the Central WWTP and the proposed Wilbarger Creek RWWTF.

The Planning Criteria TM, Process Model TM, Regulatory Evaluation TM and the Hydraulic Model TM evaluated the flows and loadings to the treatment facility, which treatment process provides best value to meet the plant discharge permit limits, evaluated the TCEQ permit limit including consideration for the possible future permitted flow increase from 15.75 MGD to 24.0 MGD and evaluated the hydraulics through the plant.

The Site Development TM and the Phasing TM evaluated the development of the site and the expansion phasing of the RWWTF. The Site Development TM considered site access, TCEQ siting requirements and consideration of options for delivery of electrical power to the site. The Phasing TM evaluated the expansion of the RWWTF from 6.0 MGD, to 12.0 MGD, to 15.75 MGD and to a possible future flow of 24.0 MGD. A phasing facility plan that provides for the layout of the plant to a potential future capacity of 24.0 MGD was developed.

The Site Hydrology and Hydraulics TM determined that the RWWTF site development would not have 100-year floodplain impacts. The Airspace Analysis Coordination TM provided coordination with the Austin Executive Airport. Due to the proximity of the RWWTF site to the airport, considerations may be required for bird deterrent as well as required measures during the construction of the RWWTF.

This Conceptual Design Report (CDR) presents the major findings from each of the scope items but focuses on the conceptual design alternatives analysis/selection and presents the overall opinion of probable construction cost (OPCC). This CDR is also intended to serve as the Engineering Feasibility Report (EFR) for the TWDB funding process.

The Conceptual Phase OPCC for the 6.0 MGD Wilbarger Creek RWWTF is \$92.4 million. This estimate is based on 2021 dollars.

The design of a Wastewater Interceptor to convey flows from the existing Carmel Lift Station to the proposed Wilbarger Creek RWWTF is part of a separate agenda item and will be completed on a similar schedule.

Design and Bid Phase (Proposed Contract)

Garver, LLC has been selected by the City for engineering services associated with the Wilbarger Creek RWWTF. The professional service agreement negotiated between the City and Garver, LLC is for the Design and Bid Phase of the project and is composed of the following scope of services:

Task I - Project Management and Quality Assurance - Provides for projects management, meetings, internal coordination and quality assurance.

Task II - Preliminary Design Development (30% Design) - Provides for development of Design Information Memoranda and development of 30% design drawings for the following:

- Hydraulic capacity of the RWWTF Annual Average Design of 6 MGD.
- Hydraulic capacity of the RWWTF Peak Flow of 24 MGD.
- Site civil, such as yard piping, site utilities (drains, water distribution), paving, drainage, site access and security.
- Influent lift station.
- Headworks facility with screening and grit removal with screenings and grit processing loading.
- Influent foul air facility.
- Secondary treatment splitter structures.
- A2O activated sludge basins for secondary treatment.
- Blower facility.
- Mixed liquor splitter box.
- Secondary clarifiers.
- RAS/WAS pump station.
- Tertiary filter facility.
- Ultraviolet disinfection facility.
- Effluent facility.
- Chemical storage and feed facilities.
- Non-potable plant water system.
- Potable plant water system.
- Solids thickening and decant facilities.
- Solids dewatering facilities.
- Operations, laboratory, and maintenance building.
- Electrical service facilities and electrical distribution facilities.
- Backup power generator system.
- SCADA system.

Task III - Final Design Development (60% Design) - Provides for development of 60% design drawings, updated schedule, OPCC and workshop.

Task IV - Final Design Development (90% Design) - Provides for development of 90% design drawings, contract documents, updated schedule, OPCC and workshop.

Task V - Contract Documents (100% Design) - Provides for development of 100% design drawings, contract documents, updated schedule and OPCC. These documents will be utilized for the bidding of the project.

Task VI - Bid Phase Services - Provides for pre-qualification of bidders for the project. Provides for the bidding of the project.

Task VII - Regulatory Review Set - Provides for the development of plans and contract documents to be submitted for review by the Texas Water Development Board (TWDB).

Task VIII - Permitting - Provides for amending the TCEQ discharge permit. The permit will be amended from the Interim I and II phases to the proposed capacity of 6.0 MGD ADF.

Task IX - Regulatory/Agency Coordination - Provides for coordination with the various agencies that have permitting jurisdiction and/or support the development of the RWWTF including the TWDB, City of Pflugerville, Travis County and Manville WSC.

Task X - Startup & Commissioning Planning - Provides for the development of the plan which will serve as the guiding document, intended to be utilized by the project team, to understand the recommended approach for transitioning the project from construction to operations with a trained operations and maintenance staff.

Task XI - Public Outreach Plan - Provides for support regarding public outreach for the RWWTF. The support provided by the Garver Team will be directed and approved by the City of Pflugerville for the public outreach component.

The estimated schedule for the Design and Bid Phase is as follows:

Preliminary Design Development (30% Design - June 2021 - Jan. 2022
Final Design Development (60% Design) - Dec. 2021 - April 2022
Final Design Development (90% Design) - April 2022 - Sept. 2022
Final Design Development (100% Design) - Sept. 2022 - Dec. 2022
Bid Phase Services - Dec. 2022 - Feb. 2023
Construction Notice-to-Proceed - February 2023

A supplemental agreement is forthcoming that will expand the scope of services to include construction phase services.

Prior City Council Action

September 22, 2020 Council approved selection of Garver for services associated with the Wilbarger Creek Regional Wastewater Treatment Facility Project.

October 27, 202 Council approved a professional services agreement with Garver associated with the Wilbarger Creek Regional Wastewater Treatment Facility Project.

Deadline for City Council Action

No action to be taken.

Funding Expected: Revenue Expenditure N/A

Budgeted Item: Yes No N/A

Amount: N/A

1295 Form Required? Yes No

Legal Review Required: N/A Required Date Completed: _____

Recommended Action

This item is for discussion. No action will be taken.