



**City of Manor**

**Cottonwood Creek WWTP Expansion Phase 3**

**ID# WS00987445**

**Budget Narrative**

**Budget Table for Total Project Cost**

<b>Task</b>	<b>Cost Classification</b>	<b>Units</b>	<b>Quantity</b>	<b>Estimated Cost</b>
Mobilization	Construction	1	LS	\$155,133.55
<b>Subtotal</b>				<b>\$155,133.55</b>
<b>Erosion Controls</b>				
Silt Fence	Site Work	1	LS	\$11,661.20
Restoration & Revegetation	Site Work	1	LS	\$5,965.96
Stabilized Construction Entrance	Site Work	1	LS	\$4,297.08
Concrete Washout Area	Site Work	1	LS	\$2,148.54
Stormwater Pollution Prevention Plan	Site Work	1	LS	\$3,222.81
24" Rock Rip-Rap	Site Work	1	LS	\$36,525.16
<b>Subtotal</b>				<b>\$63,820.74</b>
<b>Miscellaneous Site improvements</b>				
4' Sidewalk	Misc.	1	LS	\$21,485.39
Tagging/Signage	Misc.	1	LS	\$13,000.00
Trench Safety Program	Misc.	1	LS	\$15,000.00
6"/8" Drain to Wet Well	Misc.	1	LS	\$10,742.69
Pipe Insulation	Misc.	1	LS	\$13,965.50
Ribbon Curb	Misc.	1	LS	\$7,000.00
<b>Subtotal</b>				<b>\$81,193.59</b>
<b>Lift Station Improvements</b>				
Pumps	Equipment	1	LS	\$200,000.00
<b>Subtotal</b>				<b>\$200,000.00</b>
<b>Wastewater Treatment Plant Improvements</b>				
Blowers - F/R/P Slab	Construction	1	LS	\$13,000.00
Structural base- Excavate and place fill	Construction	1	LS	\$327,000.00
Handrail	Equipment	1	LS	\$41,000.00
Tanks and walkways	Equipment	1	LS	\$981,000.00

Water Reclamation Station	Equipment	1	LS	\$100,000.00
8" DIP, Raw Sewage	Equipment	1	LS	\$15,000.00
8" Knife Valve	Equipment	1	LS	\$3,000.00
Blowers	Equipment	1	LS	\$237,000.00
Clarifier	Equipment	1	LS	\$327,000.00
Grout Clarifier	Equipment	1	LS	\$6,000.00
Clarifier metal walkway and stairs	Equipment	1	LS	\$32,000.00
6" DIP piping for Sludge Draw-Off	Equipment	1	LS	\$8,000.00
Sludge Draw-off	Equipment	1	LS	\$50,000.00
Chlorine Contact Basin Diffusers	Equipment	1	LS	\$10,000.00
Chemical Feed System	Equipment	1	LS	\$15,000.00
Chemical Storage Tank	Equipment	1	LS	\$25,000.00
1" Chemical feed Lines	Equipment	1	LS	\$40,000.00
NPW piping and connection to existing system	Equipment	1	LS	\$26,856.74
NPW Hose Bib with Hose Rack	Equipment	1	LS	\$1,000.00
4" PVC	Equipment	1	LS	\$9,000.00
<b>Subtotal</b>				<b>\$2,266,856.74</b>

### Electrical

Mobilization Electrical sub	Construction	1	LS	\$81,800.00
Switchgear Installation	Construction	1	LS	\$32,000
Lighting Installation	Construction	1	LS	\$11,000
Light Fixtures	Equipment	1	LS	\$49,000
DB9 - EMCC to Clarifier Panel	Equipment	1	LS	\$23,000
DB10 - EMCC to Filter CP3	Equipment	1	LS	\$29,000
DB12 - EMCC to Blower Structure	Equipment	1	LS	\$40,000
DB14 - MCC to Blower Structure	Equipment	1	LS	\$43,000
DB17 - Chlorine Contact Meter to Office	Equipment	1	LS	\$11,000
Switchgear	Equipment	1	LS	\$161,000
Airlift Solenoids & Panel	Equipment	1	LS	\$10,000
<b>Subtotal</b>				<b>\$490,800.00</b>

<b>Construction Cost Subtotal</b>	<b>\$3,257,804.61</b>
<b>Contingencies (10% of Construction Cost Subtotal)</b>	<b>\$325,780.46</b>
<b>Admin/Legal Fees (10% of Total Grant Award)</b>	<b>\$349,972.08</b>
<b>Architectural/Engineering Fees (15% of Construction Cost Subtotal)</b>	<b>\$488,670.69</b>
<b>Project Total</b>	<b>\$4,422,227.85</b>

**Budget Timeline**

Cost Classification	Total Cost	2024	2025
Administrative and legal expenses	\$349,972.08	0	\$349,972.08
Land, structures, rights-of-way, appraisals, etc.	0	0	0
Relocation expenses and payments	0	0	0
Architectural and engineering fees	\$488,670.69	\$366,503.02	\$122,167.67
Other architectural and engineering fees	0	0	0
Project inspection fees	0	0	0
Site work	\$63,820.74	0	\$63,820.74
Demolition and removal	0	0	0
Construction	\$619,933.55	0	\$619,933.55
Equipment	\$2,492,856.74	0	\$2,492,856.74
Miscellaneous	\$81,193.59	0	\$81,193.59
Subtotal	\$4,096,447.39	\$366,503.02	\$3,729,944.37
Contingencies	\$325,780.46	0	\$325,780.46
Subtotal	\$4,422,227.85	\$366,503.02	\$4,055,724.83
Project (program) income	0	0	0
Total Project Cost	\$4,422,227.85	\$366,503.02	\$4,055,724.83

**Budget Breakdown**

- **Contingencies – \$325,780.46**
  - Contingencies are estimated at 10% of the Construction Cost Subtotal. When added to the subtotal, the result is the Total Construction Cost as shown in Appendix D of the Preliminary Engineering Report.
  - This 10% estimate is based on the standard practice recommended by GBA for typical projects in Manor. Contingencies serve as a financial buffer to address unexpected challenges that may arise during the project, helping to keep it on schedule and within budget. Additionally, the contingency supports effective risk management by providing the flexibility to manage unforeseen issues without compromising the project's quality or scope.
- **Administrative and Legal Expenses – \$349,972.08**
  - Administrative and Legal Expenses are estimated at 10% of the total grant award.
  - The services included, but not limited to, in this expense are the following:
    - Project Management Services
    - Financial Management Services
    - Construction Management Services

- Assistance meeting Fair Housing and Equal Opportunity Requirements
- Assistance with Audit/Close-Out Procedures
- **Land, Structures, Rights-of-Way, Appraisals, etc. – \$0**
  - No costs are allocated for land acquisition, structures, rights-of-way, or appraisals in this project because the property where the work will be completed is owned by the City of Manor. This property already houses the current phases of the Cottonwood Creek WWTP, eliminating the need for additional expenditures in this category.
- **Relocation Expenses and Payments – \$0**
  - No costs are allocated for relocation expenses and payments because this project does not require any relocation activities. The work will be conducted entirely on existing property, making these expenses unnecessary.
- **Architectural and Engineering Fees – \$488,670.69**
  - Architectural and Engineering Fees are estimated at 15% of the Construction Cost Subtotal.
  - The City of Manor has retained GBA to provide engineering design services and to assist with the bidding and construction of the new treatment train for the Phase 3 expansion.
  - The Professional Engineering Services that will be provided by GBA include the following:
    - Project Management Services: This includes conducting progress meetings, preparing progress reports, and providing principal oversight throughout the project.
    - Preliminary Engineering Services: This encompasses the initial phase of project development, including the collection of relevant maps, drawings, and specifications; defining project criteria; reviewing field investigations, surveying, and mapping; identifying major project components and design methodologies; and create a preliminary design and develop an opinion of probable cost.
    - Construction Document Phase Services: This phase involves reviewing field investigations, surveys, and other data to perform detailed designs, develop technical specifications, and create contract documents.
    - Permitting Services: These services include submittals to the Texas Commission on Environmental Quality (TCEQ) and finalizing plans to ensure compliance with regulatory requirements.
    - Bidding Phase Services: This includes assisting with the bidding process, issuing bid documents, corresponding with potential bidders, and verifying bid tabulations and qualifications.
    - Construction Phase Services: These services encompass conducting a pre-construction conference, reviewing contract documents, performing periodic observations of construction progress, reviewing field testing reports, evaluating contractor's pay requests, and conducting a final inspection of all completed work, culminating in the preparation of record construction drawings.

- Grant Application Assistance: This includes creating an environmental narrative and updating the preliminary engineering report to meeting grant requirements.
- **Other Architectural and Engineering Fees – \$0**
  - No costs are allocated for other architectural and engineering fees because the scope of this project does not require additional architectural or engineering services beyond those already accounted for in Architectural and Engineering Fees. All necessary design and engineering tasks are covered under the primary architectural and engineering fees category.
- **Project Inspection Fees – \$0**
  - No costs are allocated for project inspection fees as the City will supply inspection with City resources.
- **Site Work – \$63,820.74**
  - This estimate includes all parts of the erosion controls provided in the Construction Cost Estimate from Appendix D of the Preliminary Engineering Report. This estimate includes the following items:
    - Silt Fence – \$11,661.20
      - This cost accounts for the installation of silt fencing, a temporary barrier designed to prevent soil erosion and sediment runoff from the construction site.
    - Restoration & Revegetation – \$5,965.96
      - After construction is complete, the site will undergo restoration and revegetation to stabilize the soil and restore the area to its pre-construction condition.
    - Stabilized Construction Entrance – \$4,297.08
      - A stabilized construction entrance will be created to minimize the tracking of mud and debris onto public roads by construction vehicles. This entrance typically consists of a layer of large aggregate, reducing the environmental impact and maintaining cleanliness.
    - Concrete Washout Area – \$2,148.54
      - This area is designated for the cleaning of concrete trucks and equipment, ensuring that wastewater is contained and does not pollute the surrounding environment. The concrete washout area helps comply with environmental regulations and protects water quality.
    - Stormwater Pollution Prevention Plan (SWPPP) – \$3,222.81
      - The SWPPP outlines specific practices and measures to prevent stormwater contamination during construction. It includes strategies for managing runoff, controlling erosion, and mitigating potential pollution sources, ensuring compliance with environmental standards.
    - 24" Rock Rip-Rap – \$36,525.16

- The installation of 24-inch rock rip-rap is included to protect the construction site from erosion, particularly in areas subject to water flow.
  - The costs associated with each item were estimated using historical data from previous projects conducted by GBA in Texas. These costs have been updated to reflect current prices using the Engineering News-Record (ENR) Construction Cost Index factors, ensuring accuracy and relevance.
- **Demolition and Removal – \$0**
  - No costs are allocated for demolition and removal as these activities are not required for this project.
- **Construction – \$619,933.55**
  - This estimate includes mobilization, wastewater treatment plant improvements, and electrical components provided in the Construction Cost Estimate from Appendix D of the Preliminary Engineering Report. This estimate includes the following items:
    - **Blowers - Foundation, Riser, and Pad (F/R/P Slab) – \$13,000.00**
      - This cost covers the construction of the foundation, riser, and pad for the blowers, essential for ensuring the stability and proper functioning of these blowers. The foundation must be robust enough to support the heavy equipment and resist vibrations.
    - **Structural Base – Excavation and Fill Placement – \$327,000.00**
      - The structural base involves extensive excavation and the placement of fill to create a stable foundation for the wastewater treatment plant improvements. This process is crucial for maintaining the integrity of the plant’s infrastructure. The high cost is justified by the need for precision and the use of high-quality materials to ensure the long-term stability of the structure.
    - **Electrical Subcontractor Mobilization – \$81,800.00**
      - This covers the mobilization of the electrical subcontractor, including the transportation of equipment, materials, and personnel to the site.
    - **Switchgear Installation – \$32,000.00**
      - The installation of switchgear is a critical component of the electrical system, managing the distribution and control of electrical power throughout the plant. This cost reflects the need for precise installation by experienced technicians.
    - **Lighting Installation – \$11,000.00**
      - This cost covers the installation of lighting throughout the facility, ensuring adequate visibility for operations and maintenance activities. Proper lighting is essential for safety and efficiency.
    - **General Mobilization – \$155,133.55**

- Includes all preparatory activities necessary to begin construction, such as site setup, transportation of construction materials, and establishment of temporary facilities.
  - The costs associated with each item were estimated using historical data from previous projects conducted by GBA in Texas. These costs have been updated to reflect current prices using the Engineering News-Record (ENR) Construction Cost Index factors, ensuring accuracy and relevance.
- **Equipment – \$2,492,856.74**
  - This estimate includes all equipment necessary for the project, from lift station improvements to wastewater treatment plant improvements to electrical work. It is important to note that installation cost is already included in the equipment cost. These estimates are from Appendix D of the Preliminary Engineering Report, and includes the following items:
    - Pumps – \$200,000.00
      - The cost for pumps includes both the acquisition and installation of high-capacity units necessary for the efficient operation of the lift station. These pumps are crucial for moving large volumes of wastewater, and the expense reflects the need for equipment capable of continuous operation under demanding conditions.
    - Handrail – \$41,000.00
      - Handrails are essential for ensuring safety across the plant, particularly in elevated or hazardous areas. The handrails need to be designed to withstand the environmental conditions typical of wastewater facilities.
    - Tanks and Walkways – \$981,000.00
      - This covers the purchase and installation of tanks and associated walkways. The tanks are vital for storage, while the walkways provide safe access for maintenance and monitoring. The high cost is due to the scale of the infrastructure and the need for durable materials that meet regulatory standards.
    - Water Reclamation Station – \$100,000.00
      - The water reclamation station is an essential component of the plant that will serve as a distribution center for the reclaimed water. The reclaimed water will be either redirected back to the plant as process water, discharged to the receiving water body, or utilized as construction process water.
    - 8" DIP, Raw Sewage – \$15,000.00
      - This cost covers the installation of 8-inch ductile iron piping (DIP) for raw sewage transport. The piping must be robust and corrosion-resistant to handle the abrasive and corrosive nature of raw sewage, ensuring long-term reliability and minimal maintenance.
    - 8" Knife Valve – \$3,000.00

- Knife valves are essential for controlling the flow of sewage through the system.
- Blowers – \$237,000.00
  - Blowers play a key role in aeration processes within the treatment plant, essential for promoting microbial activity in the breakdown of organic matter. The cost reflects the need for high-performance, energy-efficient blowers that are capable of continuous operation.
- Clarifier – \$327,000.00
  - The clarifier is a critical component for settling and removing suspended solids from the wastewater.
- Clarifier Grouting – \$6,000.00
  - Placement of grout on the bottom of the clarifier to facilitate solids removal.
- Clarifier Metal Walkway and Stairs – \$32,000.00
  - The metal walkway and stairs provide access to the clarifier for maintenance and monitoring. The cost includes materials chosen for durability and resistance to corrosion.
- 6" DIP Piping for Sludge Draw-Off – \$8,000.00
  - This piping is crucial for the effective removal of sludge from the treatment process.
- Sludge Draw-Off – \$50,000.00
  - Piping, valving, and quick connect to remove excess solids from the wastewater treatment processes.
- Chlorine Contact Basin Diffusers – \$10,000.00
  - Diffusers in the chlorine contact basin ensure proper mixing and distribution of chlorine, which is essential for disinfection.
- Chemical Feed System – \$15,000.00
  - The chemical feed system is responsible for accurately dosing chemicals into the treatment process. This cost includes metering equipment and controls necessary for maintaining chemical balance, crucial for effective treatment.
- Chemical Storage Tank – \$25,000.00
  - Storage tanks for chemicals must be robust and resistant to corrosion. This cost includes high-quality tanks designed to safely store treatment chemicals, ensuring compliance with safety and environmental regulations.
- 1" Chemical Feed Lines – \$40,000.00
  - These feed lines are essential for delivering chemicals to various parts of the treatment process. The cost reflects the need for materials that ensure consistent and reliable operation.
- NPW Piping and Connection to Existing System – \$26,856.74



- Non-potable water (NPW) piping and its connection to the existing system are crucial for supplying water to various processes within the plant.
- NPW Hose Bib with Hose Rack – \$1,000.00
  - This item provides convenient access to non-potable water for various maintenance and operational tasks.
- 4" PVC – \$9,000.00
  - PVC piping is used for various low-pressure applications within the plant.
- Light Fixtures – \$49,000.00
  - Adequate lighting is critical for safe and efficient plant operation.
- DB9 - EMCC to Clarifier Panel – \$23,000.00
  - This duct bank provides the electrical connection from the EMCC (Emergency Motor Control Center) to the clarifier panel.
- DB10 - EMCC to Filter CP3 – \$29,000.00
  - This duct bank ensures power and control for the filter system, critical for maintaining water quality.
- DB12 - EMCC to Blower Structure – \$40,000.00
  - This duct bank provides the electrical connection to the blower structure and is essential for powering the blowers, which are critical to the aeration process.
- DB14 - MCC to Blower Structure – \$43,000.00
  - This cost includes the duct bank connection from the Motor Control Center (MCC) to the blower structure, providing power and control for the blowers.
- DB17 - Chlorine Contact Meter to Office – \$11,000.00
  - This duct bank provides the connection of the chlorine contact meter to the office for monitoring and control.
- Switchgear – \$161,000.00
  - The switchgear is a critical component for managing the distribution and control of electrical power within the plant.
- Airlift Solenoids & Panel – \$10,000.00
  - Airlift solenoids and their associated control panel are for the operation of airlift pump systems that are used for return activated sludge, sludge wasting, scum wasting and decanting.
- The costs associated with each item were estimated using historical data from previous projects conducted by GBA in Texas. These costs have been updated to reflect current prices using the Engineering News-Record (ENR) Construction Cost Index factors, ensuring accuracy and relevance.
- **Miscellaneous – \$81,193.59**

- This estimate includes all miscellaneous construction components necessary for the project. These estimates are from Appendix D of the Preliminary Engineering Report, and includes the following items:
  - 4' Sidewalk – \$21,485.39
    - The cost for the 4-foot sidewalk includes materials and installation. The sidewalk is crucial for providing safe pedestrian access around the facility, meeting ADA compliance standards, and ensuring ease of maintenance and inspection activities.
  - Tagging/Signage – \$13,000.00
    - Tagging and signage are necessary for clear identification of facility components, safety instructions, and directional guidance. This cost includes the installation of durable, weather-resistant signs and tags that comply with industry standards.
  - Trench Safety Program – \$15,000.00
    - The trench safety program is an essential component of the project, ensuring the safety of workers during excavation activities. This cost covers the implementation of safety measures, including trench shoring, sloping, and protective systems, all designed to prevent accidents and comply with OSHA regulations.
  - 6"/8" Drain to Wet Well – \$10,742.69
    - The installation of 6- and 8-inch drains to the wet well is vital for managing wastewater flow and preventing overflow or flooding.
  - Pipe Insulation – \$13,965.50
    - Pipe insulation is necessary to protect piping from temperature fluctuations, reduce energy loss, and prevent condensation. This cost includes the purchase and installation of insulation materials designed to withstand the specific environmental conditions of the facility.
  - Ribbon Curb – \$7,000.00
    - The ribbon curb serves both functional and aesthetic purposes, providing a boundary that helps direct water flow, protect landscaping, and enhance the overall appearance of the facility. The cost covers materials and installation.
- The costs associated with each item were estimated using historical data from previous projects conducted by GBA in Texas. These costs have been updated to reflect current prices using the Engineering News-Record (ENR) Construction Cost Index factors, ensuring accuracy and relevance.

