EXECUTIVE SUMMARY

ES.0 PURPOSE

The Pflugerville City Council adopted a Wastewater Master Plan in May 2008, which determined the need for a new regional wastewater treatment facility to serve the projected growth of the City. As part of the preparation of the Wastewater Master Plan, a 159-acre tract of land was identified and purchased by the City for the proposed facility. The tract is located on the west side of Wilbarger Creek and on the north side of Gregg Lane approximately one mile west of FM 973. The new facility was named the Wilbarger Creek Regional Wastewater Treatment Facility (WCRF) with a planned ultimate capacity of 18.3 million gallons per day (MGD). The WCRF would serve most of the area within the existing City Limits that is within the Wilbarger Creek watershed. In addition, it would serve areas within the extraterritorial jurisdictions (ETJ) of the City of Pflugerville, the City of Manor, and the City of Austin.

The growth projections in the Wastewater Master Plan indicated that the initial phase of the WCRF with a capacity of 4.0 MGD would need to be completed by 2012. However, updated wastewater flow projections have moved the recommended completion date back to mid-2014 as a result of a decrease in the growth rate caused by recent economic conditions. In order to complete the initial phase of the WCRF within the modified timeframe, the Pflugerville City Council authorized the preparation of the Preliminary Engineering Report and discharge permit application at their meeting on March 10, 2009. The purpose of the Preliminary Engineering Report is to summarize the facilities recommended for Phase I that should be designed and constructed to meet the near-term wastewater treatment needs of the City. Future phases were also determined in developing a site master plan for an ultimate 18.3 MGD capacity.

ES.1 DISCHARGE PERMIT APPLICATION

In order to construct wastewater treatment facilities and to discharge the treated effluent from the proposed facilities, it was necessary to obtain a Texas Pollutant Discharge Elimination System (TPDES) permit from the Texas Commission on Environmental Quality (TCEQ). An application for the TPDES permit was submitted to TCEQ, which resulted in the issuance of a draft permit that was advertised for public comment. The final permit was issued by TCEQ on August 30, 2010 after completion of the public process.

Prior to submittal of the TPDES permit application, the Project team performed water quality modeling and determined the maximum average flow that could be assimilated by Wilbarger Creek was 15.75 MGD. This assimilative capacity was subsequently verified by the TCEQ's water modeling department and was based on the effluent quality shown in Table ES-1. Although this effluent flow capacity is less than the 18.3 MGD capacity recommended in the Wastewater Master Plan, it is adequate for the 15.25 MGD projected from the City of Pflugerville. An additional estimated 0.55 MGD future capacity to serve the ETJ for the City of Manor could be provided with the Table ES-1 effluent. If the City of Austin desires capacity at the WCRF, it could be provided by reducing effluent limits or possibly by future water quality modeling that indicates increased assimilative capacity in Wilbarger Creek.

TABLE ES-1
EFFLUENT CHARACTERISTICS

Carbonaceous Biochemical Oxygen ($CBOD_5$)	5 mg/L
Total Suspended Solids (TSS)	5 mg/L
Ammonia Nitrogen	2 mg/L
Phosphorous	1 mg/L
Minimum DO	6 mg/L

ES.2 PHASE I RECOMMENDATIONS

Using influent data from the existing City of Pflugerville Central Wastewater Treatment Plant (WWTP), the wastewater influent characteristics used for the design of the WCRF treatment units were determined as shown in Table ES-2.

TABLE ES-2
INFLUENT CHARACTERISTICS

$CBOD_5$	265 mg/L (Design) 315 mg/L (Max. Day)
TSS	200 mg/L (Design) 231 mg/L (Max. Day)
Ammonia Nitrogen (as NH_3-N)	34 mg/L (Design) 39 mg/L (Max. Day)
Phosphorous	6.8 mg/L (Design) 8.0 mg/L (Max. Day)

Influent wastewater flow would be conveyed to the WCRF through an estimated 60-inch gravity-flow interceptor, which would generally follow Wilbarger Creek from the north of the plant property. The wastewater from the interceptor would provide the capacity for the ultimate 18.3 MGD projected flow to the plant. The facilities recommended for Phase I are shown on the site layout plan in Figure ES-1. Phase I facilities as described in Table ES-3 are recommended to provide wastewater treatment and solids processing for the influent characteristics indicated in Table ES-2 to produce the required effluent quality as shown in Table ES-1 for a design flow of 4.0 MGD and a peak 2-hour flow of 16.0 MGD.

TABLE ES-3
PHASE I RECOMMENDED FACILITIES
PFLUGERVILLE WILBARGER CREEK REGIONAL WWTF

Influent Lift Station	Construct half the ultimate wetwell and install five submersible pumps for the Phase I 16.0 MGD peak flow capacity.
Preliminary Treatment Units (PTU)	Construct the four screening channels needed for the ultimate capacity and install two fine screens side-by-side in one channel. Construct a building for screenings dewatering equipment and the container for collection of dewatered screenings.
Biological Nutrient Removal (BNR)	Construct two BNR basins and half the building that will house the electrical and instrumentation equipment plus the blowers needed to provide air to the BNR system.
Alum Feed System	Install chemical storage, pumping, and building to add alum to the BNR system effluent for trimming phosphorous.
Secondary Clarifiers	Construct two clarifiers 130-feet in diameter and 16-foot side water depth.
Returned Activated Sludge (RAS) Waste Activated Sludge (WAS) Pump Station	Construct one pump station with three sludge pumps.
Cloth Media Disk Filters (CMDF)	Construct four filter basins with a canopy roof.
Ultraviolet (UV) Disinfection	Construct two channels with four UV lamp banks in each channel.
Effluent Metering	Install a 10-foot wide Parshall Flume with a 3-foot wide insert.
Post-Aeration	Construct half of the ultimate 76-feet wide

TABLE ES-3
PHASE I RECOMMENDED FACILITIES
PFLUGERVILLE WILBARGER CREEK REGIONAL WWTF

	cascade system.
Outfall	Install a 78-inch reinforced concrete pipe (RCP) to outside the 12-foot high perimeter berm then a wetland pond system.
Non-Potable Plant Water System	Install two vertical turbine pumps to provide treated wastewater effluent for plant operations that do not require potable water.
Sludge Dewatering Facilities	Install two centrifuges with conveyor and dewatered sludge cake storage hopper all housed in a building.
Composting Facilities	Construct concrete pads for raw wood storage, wood chipper, wood chip storage, compost windrows, screener, and reclaimed chips. Provide scarab, manure truck, wood chipper, screener, frontend loader, and three conveyors.
Odor Control Facilities	Provide a hydroxyl ion fog system for the influent lift station and organic media biofilter system for the PTU and sludge dewatering facilities.
Site Work	Install site piping, grading, access roads, security fencing, and part of the 12-foot high perimeter berm using excavated material.
Electrical and Instrumentation	Obtain power supply from Bluebonnet Electric Cooperative, Inc. and install transformer, standby generator, electrical equipment, conduits, and instrumentation equipment.
Buildings	Construct a 1,200 square foot office/laboratory building and a 1,200 square foot maintenance building. Renovate the existing house into offices.

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NOT TO SCALE

PHASE 1 FACILITIES

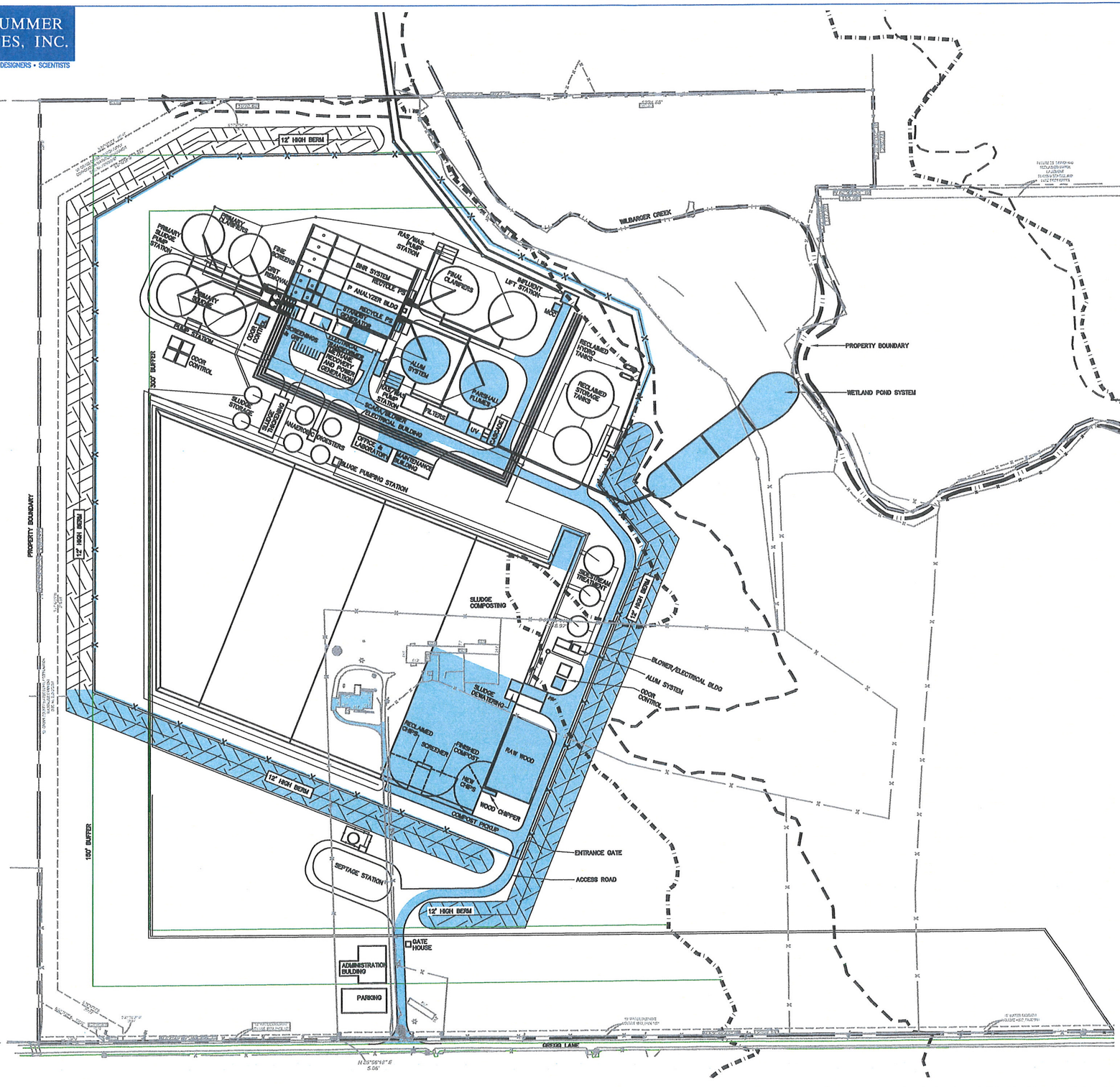

FIGURE ES–1
PHASE 1 SITE LAYOUT PLAN
WILBARGER CREEK REGIONAL
WASTEWATER TREATMENT FACILITY

ES.3 PHASE I OPINION OF PROBABLE CONSTRUCTION COST

The opinion of probable construction cost for the recommended Phase I facilities is shown in Table ES-4. It includes a 20% contingency, which is recommended for the preliminary engineering phase. The cost opinion will be updated, and the contingency will be decreased to 10% upon completion of design because of the reduction in unknown items during the design process.

The total opinion in the amount of $27,960,000 currently exceeds the current City budget amount of $24,000,000. If the cost opinion at completion of design remains above the budget, it is recommended that during the final design phase, items should be identified that could be bid as additive alternative bids to be considered if bids are less than the budget amount.

TABLE ES-4
OPINION OF PROBABLE CONSTRUCTION COST
4.0 MGD PHASE I FACILITIES
PFLUGERVILLE WILBARGER CREEK REGIONAL WWTF

CONSTRUCTION	AMOUNT
Influent Lift Station	$1,130,000
Preliminary Treatment Units	1,425,000
Biological Nutrient Removal System	3,175,000
Alum Feed System	175,000
Secondary Clarifiers	1,465,000
RAS/WAS Pump Station	360,000
Cloth Media Disk Filters	1,500,000
Ultraviolet Disinfection System	650,000
Effluent Metering	35,000
Post-Aeration	65,000
Outfall	300,000
Non-Potable Plant Water System	110,000
Sludge Dewatering Facilities	1,450,000
Composting Facilities	2,240,000
Odor Control Facilities	310,000
Site Piping	865,000
Site Grading, Fencing, Access Roads, Berms	570,000
Electrical and Instrumentation	3,150,000
Offices, Laboratory, Maintenance Buildings	440,000
Construction Sub-Total	$19,415,000
Contractor Mobilization Bonds, Insurance, Overhead, Profit (20%)	3,883,000
Project Sub-Total	$23,300,000
Contingencies (20%)	4,660,000
OPINION OF PROBABLE CONSTRUCTION COST	$27,960,000

ES.4 PROPOSED SCHEDULE

Updated wastewater flow projections have resulted in a determination that Phase I facilities will need to be in operation by mid-2014. A decrease in the growth of the City as a result of recent economic conditions has moved the need for the facilities back from the 2012 timeframe indicated in the Wastewater Master Plan. Unless economic conditions improve such that the growth rate increases to previous levels, start of construction for Phase I could be delayed until after mid-2012, which is currently the earliest date construction could start based upon completion of design. Therefore, it is recommended that the design of Phase I proceed after completion of the Preliminary Engineering Report. Since the design phase will take approximately 12 months, it would be completed by Spring 2012. A decision would be made by the City at that time on whether to proceed with construction based on the growth rate at that time. Another consideration is the current bidding climate with construction bids considerably less than bids one or two years ago. If construction costs remain low upon completion of design, the City may want to consider receiving bids prior to costs increasing to previous levels or higher.

ES.5 SITE MASTER PLAN

Figure ES-2 shows the site master plan including the proposed Phase I facilities. The site master plan provides for a 300-foot buffer zone between the property line and the treatment facilities, which is double the 150-foot buffer zone required by the Texas Commission on Environmental Quality (TCEQ). In addition, a 12-foot high berm with trees and bushes planted on it is being proposed to screen the facilities from future adjacent residences. The berm would be constructed with excess excavated material from construction of the facilities. The expanded buffer zone and screening facilities plus odor control and sound attenuation of the treatment units are intended to minimize potential negative impact on future neighbors to the plant. Security fencing would be 6-feet tall chain-link with three strands of barbed-wire at the top and a lockable access gate, which meets TCEQ requirements. Table ES-5 shows the recommended phases with facilities to be constructed in each phase. Each future phase would be re-evaluated at the time of the need for expansion in order to determine the facilities that should be constructed at that time.

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FEET
0 400

PROPERTY LINE
12' HIGH BERM
150' BUFFER
300' BUFFER
WILBARGER CREEK
PROPERTY LINE
12' HIGH BERM
150' BUFFER
300' BUFFER
EXISTING BUILDINGS TO BE REMOVED
100-YEAR FLOODPLAIN BOUNDARY FOR ULTIMATE DEVELOPMENT
EXISTING HOUSE TO POSSIBLY BE CONVERTED TO FUTURE CITY OFFICES
SECURITY FENCE
EXISTING STOCK POINDS
50' WIDE WATER LINE EASEMENT
WETLAND AREAS
CURRENT FEMA 100-YEAR FLOODPLAIN BOUNDARY
CURRENT FEMA 100-YEAR FLOODPLAIN BOUNDARY
EXISTING ACCESS ROAD
300' BUFFER
150' BUFFER
EXISTING MOBILE HOME TO BE REMOVED
SLUDGE LINE FROM FUTURE COTTONWOOD CREEK REGIONAL WWTF
ACCESS ROAD
PROPERTY LINE
GREGG LANE
15' WIDE WATER LINE EASEMENT
CURRENT FEMA 100-YEAR FLOODPLAIN BOUNDARY
FUCHS GROVE ROAD

FIGURE ES-2
SITE MASTER PLAN
WILBARGER CREEK REGIONAL
WASTEWATER TREATMENT FACILITY

TBPE FIRM REGISTRATION NO. 13 12/1/2010 10:04 AM M:\Projects\0826\002-01\Acad\Shts\PER Figures\FIG ES-2.dwg Briand

TABLE ES-5
POTENTIAL CONSTRUCTION PHASES

Treatment Units	Phase I 4.0 MGD	Phase 2 8.0 MGD	Phase 3 12.0 MGD	Phase 4 18.3 MGD
Influent Lift Station	Half of Wetwell	Add Pump Capacity	Half of Wetwell and Add Pump Capacity	Add Pump Capacity
Fine Screens	2	2	2	2
Grit Units	0	0	1	1
Primary Clarifiers	0	0	2	2
Primary Sludge Pump Stations	0	0	1	1
BNR Basins	2	2	0	2
Secondary Clarifiers	2	0	1	1
RAS/WAS pump Station	1	0	1	0
Filters	4	2	2	4
UV Channels	2	Add Lamp Banks	1	1
Parshall Flumes	1 w/ 3' insert	0	Remove Insert	0
Cascade Aeration	Half	0	Half	0
Sludge Storage	0	0	2	0
Sludge Thickeners	0	0	2	2
Anaerobic Digesters	0	0	2	2
Centrifuges	2	0	1	1
Compost Pads	1	1	1	1