



AGENDA MEMORANDUM

Public Hearing and First Reading for the City Council Meeting of April 24, 2018
Second Reading for the City Council Meeting of May 08, 2018

DATE: March 23, 2018

TO: Margie C. Rose, City Manager

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Amendments to the London Area Wastewater Master Plan

CAPTION:

Ordinance amending the London Area Wastewater Master Plan, an element of the Comprehensive Plan; amending related elements of the Comprehensive Plan; and providing for severance and publication.

PURPOSE:

The purpose of this item is to amend the London Area Wastewater Master Plan ("Master Plan") to support development and improve the design of the system by increasing the diameters of the lines, adjusting the location of the proposed lines and lift station, correcting and expanding the lift station service area, and delineating sub-basins.

BACKGROUND AND FINDINGS:

The current Master Plan was adopted in April 2017 and covers an area of about 1,000 acres located outside of the city limits south of the Oso Creek in approximately the northwest corner of State Highway (SH) 286 and County Road (CR) 43 and approximately 2,500 feet west of CR 33 and the London Independent School District property. The area served in the London Area Wastewater Master Plan is located within the boundaries of the City's *water* Certificate of Convenience and Necessity (CCN), but not within the City's *wastewater* CCN. The Public Utility Commission of Texas approves municipalities' or utility districts' requests for CCN boundaries, and a CCN gives the CCN holder the exclusive right to provide retail water and/or wastewater utility services to an identified geographic area. A map of the CCNs is attached.

The current Master Plan was developed by calculating projected flows based on land uses in east and west sub-basins. The current Master Plan assumes low density

residential development to occur with limited consideration for medium and high density residential uses or commercial development. Given the current housing trends toward smaller lots, proximity to SH 286 and CR 43 with additional planned arterial roads shown on the Urban Transportation Plan, and the proposed Regional Youth Sports Complex, staff believes anticipated land uses will require greater capacity in the sanitary sewer system than what the current Master Plan is designed to handle.

The current Master Plan shows two proposed 15-inch diameter gravity main lines tying into a proposed lift station, which will be located in the north end of the lift station service area on City Solid Waste property, and a proposed 16-inch diameter force main, all to be tied into the Greenwood Wastewater Treatment Plant. The proposed lift station is shown on the current Master Plan to be located approximately 1,100 feet north of the City limit line. The gravity mains serve as wastewater trunk mains for the east and west sub-basins. The 15-inch gravity lines were designed with minimal slopes to be able to have appropriate depth at the extreme limits of each sub-basin.

A 15-inch gravity line will handle a maximum flow of 1,160 gallons per minute (GPM) at minimum slopes. Based on the higher densities, the estimated flows for the 530-acre east sub-basin are 2,460 GPM, well exceeding the capacity of a 15-inch line. A 21-inch line with similar slopes has a design capacity of 2,800 GPM, and staff proposes to increase the east sub-basin gravity line from 15 inches to 21 inches in diameter. Based on the higher densities, the estimated flows for the 470-acre west sub-basin are 1,600 GPM, exceeding the capacity of a 15-inch line. An 18-inch line with similar slopes has a design capacity of 1,633 GPM, and staff proposes to increase the west sub-basin gravity line from 15 inches to 18 inches in diameter. Based on the higher densities and need for larger diameter lines, staff proposes to increase the diameter of the north-south gravity line that will connect to the lift station from 15 inches to 24 inches.

Other minor amendments are proposed as follows:

- **Correct the boundaries of the lift station service area.**
The area of the City Solid Waste property south of the Oso Creek is immediately adjacent to the proposed gravity lines. This area was assumed as park use for the purposes of calculating wastewater demand for the current Master Plan. The lift station service area needs to be corrected to reflect this property being included in the calculations.
- **Identify the east and west sub-basin boundaries.**
To more specifically represent wastewater needs, sub-basins were delineated to better represent the properties/land uses that will be served by each gravity line.
- **Relocate the lift station approximately 1,100 feet south closer to the junction of the 30-foot deep gravity lines and farther from the Oso Creek.**
Relocating the lift station will reduce construction costs and help protect the lift station, which is considered a critical facility according to FEMA, from possible flood impacts.

ALTERNATIVES:

During the Planning Commission public hearing, Commissioners asked whether or not additional land could be added into the service area so that a specific property in the northwest portion of the plan that is owned by one landowner would not have to split their property between two service areas. Planning Commission and staff also discussed reducing the number of people assumed per household type to reflect census data and other City wastewater master plan assumptions and reducing the assumed gallons of sewage generated per person per day. Upon further review after the Planning Commission public hearing, staff determined that by reducing the density/demand assumptions, the additional land could be added into the service area without impacting the proposed design. Including this area will add approximately 95 acres to the west sub-basin. With the additional acreage, however, the proposed system will be at capacity. Staff recommends the inclusion of the additional 95 acres.

Planning Commission and staff also discussed whether the service area boundary included land in the flood zones and if the boundary followed the Oso Creek. Staff recommends amending the lift station service area boundary to reflect that the developable flood zones (not floodways) south of the Oso Creek are included in the service area. This change to the boundary has been made to the maps presented in the staff recommendation and ordinance exhibit.

All departments are in agreement with the proposed alternative and staff recommendation.

OTHER CONSIDERATIONS:

Private developers are eligible for certain levels of reimbursement for constructing City *master-planned* infrastructure. A private developers cost of designing and installing an 18-inch wastewater trunk line and lift station is 100% reimbursable from the Developer's Trust Fund. A 15-inch wastewater collection line is only partially reimbursable.

For reimbursement purposes, a wastewater "collection line" is defined as a line of 15-inch diameter and smaller. Maximum developer reimbursement for collection lines will be limited for such off-site extensions to 50% of the mathematical product obtained by multiplying the pipe diameter in inches by the acreage or lot fee value.

For reimbursement purposes, a wastewater "trunk line" is defined as a line of 18-inch diameter and larger. A trunk line is 100% reimbursable whether or not it is an off-site or on-site extension. ("On-site" means the line is proposed within or abutting the developer's property.)

CONFORMITY TO CITY POLICY:

The proposed amendment conforms to City policy and Plan CC Comprehensive Plan guidelines for updating utility master plans.

EMERGENCY / NON-EMERGENCY:

Non-emergency

DEPARTMENTAL CLEARANCES:

Utilities, Planning, and Legal support the proposed amendment.

FINANCIAL IMPACT:

☐ Operating ☐ Revenue ☐ Capital ☒ Not applicable

Fiscal Year: 2017-2018	Current Year	Future Years	TOTALS
Line Item Budget			
Encumbered / Expended Amount			
This item		Approximately \$4,200,000	
BALANCE			

Fund(s): Not Applicable

Comments: The estimated cost of this plan is over \$4,200,000. The wastewater trust funds would not cover the anticipated improvements. Reimbursements could be processed as funds become available or additional funds such as water trust funds could be transferred to cover the costs to the developer. The proposed plan amendments actually reduce costs by relocating the lift station 1,100 feet south to take advantage of existing ground elevations.

RECOMMENDATION:

Upon review of Planning Commission's input discussed under "Alternatives," Staff recommends approval of the following proposed amendments to the Master Plan:

1. Correct the service area to include City Solid Waste property south of the Oso Creek.
2. Relocate the lift station approximately one-quarter mile south.
3. Increase the north-south gravity line that ties into lift station from 15-inch diameter to 24-inch diameter.
4. Increase west gravity line from 15-inch diameter to 18-inch diameter.
5. Increase east gravity line from 15-inch to 21-inch diameter and reduce its length to approximately 100 feet.
6. Identify east and west sub-basin boundaries within the lift station service area.
7. Expand the service area by 95 acres in the northwest area.
8. Correct the service area boundary to follow the Oso Creek floodway.

The current Master Plan used lower densities than staff anticipates will actually be developed and is, therefore, inadequate in handling projected wastewater demands. The proposed amendments will support anticipated wastewater demand, accommodate

development, reduce construction cost, and reduce the risk of flooding the lift station.

LIST OF SUPPORTING DOCUMENTS:

- Ordinance
- Map of the Greenwood Wastewater Service Area
- Presentation