



## AGENDA MEMORANDUM

Planning Commission Meeting of March 21, 2018

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**DATE:** March 14, 2018

**TO:** William J. Green, P.E., Interim Director, Development Services  
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**FROM:** Annika G. Yankee, Sr. Project Planner, Development Services  
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Amendments to the London Area Wastewater Master Plan
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### **PURPOSE:**

The purpose of this item is to amend the adopted London Area Wastewater Master Plan (Master Plan) by increasing the diameters of the gravity lines to support more intense development, adjusting the location of the proposed lift station, correction the lift station service area, and delineating sub-basins.

### **BACKGROUND AND FINDINGS:**

The Master Plan covers an area of about 1,000 acres. The Master Plan's lift station service area is located outside of the city limits in approximately the northwest corner of State Highway (SH) 286 and County Road (CR) 43 and approximately 3,400 feet west of CR 33 and the London Independent School District property. The current Master Plan was developed by calculating projected flows based on land uses in east and west sub-basins, though the sub-basins were not identified in the Master Plan. The east sub-basin contains 530 acres. The west sub-basin contains 470 acres.

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 J.C. Elliott Transfer Station 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 one-quarter mile north of the City limit line. The gravity mains run east approximately 7,400 feet and west 1,800 feet from the proposed lift station and are intended to 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.

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.

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 to include the J.C. Elliott Transfer Station property south of the Oso Creek.
- Delineate the east and west sub-basin boundaries to better represent the properties/land uses that will be served by each gravity line.
- Relocate the lift station approximately one-quarter mile south closer to the junction of the 30-foot deep gravity lines to reduce construction costs.

#### **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 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.)

## **DEPARTMENTAL CLEARANCES:**

Utilities and Planning have reviewed the proposed amendment.

## **RECOMMENDATION:**

Staff recommends approval of the following proposed amendments to the Master Plan:

1. Correct service area to include J.C. Elliott Transfer Station property south of the Oso Creek.
2. Delineate east and west sub-basin boundaries within the lift station service area.
3. Relocate the lift station approximately one-quarter mile south.
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. Increase the north-south gravity line that ties into lift station from 15-inch diameter to 24-inch diameter.

## **LIST OF SUPPORTING DOCUMENTS:**

- Staff Report
- Existing Master Plan
- Proposed Master Plan
- PowerPoint