



1500 County Road 269
Leander, TX 78641

P.O. Box 2029
Leander, TX 78646-2029

EXHIBIT A

Statement of Work (SOW) No. 22

TO MASTER SERVICES AGREEMENT

Statement of Work No. 22 to the Master Services Agreement between the City of Manor, Texas, as CITY, and George Butler Associates, Inc., as ENGINEER, dated October 7, 2020.

Through this SOW, CITY hereby authorizes ENGINEER to undertake the work assignment described in the following, said assignment to be performed within the terms and conditions defined in said Master Services Agreement, except as modified herein.

ASSIGNMENT: Professional Engineering Services for Sanitary Sewer Evaluation Study including inventory, inspection, and evaluation of selected existing sanitary sewer lines and structures for both structural condition and inflow and infiltration (I/I) defects; analyze the extent of I/I in the project area using flow monitoring; and provide rehabilitation recommendations for the studied assets.

STATEMENT OF WORK:

This SOW is generally as described below and as more particularly described in the attached Scope of Services, Exhibit A-1.

TASK 100: PROJECT MANAGEMENT AND ADMINISTRATION

Coordinate project goals and align CITY and ENGINEER expectations and purposes. Subtasks will include:

SUBTASK 1: Contract Maintenance

SUBTASK 2: Kickoff Meeting

SUBTASK 3: Progress Meetings

TASK 200: FIELD INVESTIGATIONS

SUBTASK 1: Review of existing data to identify data gaps and prepare for field investigations by developing GIS datasets for various types of field work to be performed.

SUBTASK 2: Flow and Rainfall Monitoring: The ENGINEER will provide flow monitoring equipment and data gathering at a minimum of four (4) flow monitoring sites for a period of 60 days and at nine (9) sites for a period of 90 days. The ENGINEER will provide rainfall monitoring at three (3) sites in the CITY. These sites will be spatially selected and appropriate to collect rainfall data patterns and volumes across the CITY. To gain a baseline understanding of how the system reacts to groundwater levels, piezometers, level only meters that measure groundwater levels, will be installed in one (1) location simultaneously during flow and rainfall monitoring in the CITY.

SUBTASK 3: Simple Manhole Condition Assessments: The ENGINEER will perform simple manhole condition assessments on up to 105 manhole structures in a specific portion of the project area that has

previously been identified as having excessive I/I quantities. Condition assessments will gather basic information about the structures and provide an overall condition rating to determine if further rehabilitation is necessary.

SUBTASK 4: Internal Manhole Condition Assessments: The ENGINEER will perform internal assessments on structures that are determined to need further, more detailed inspections in Subtask 3. It is anticipated approximately 10% of the structures inspected under Subtask 3 will require a more detailed inspection, or approximately 10 structures.

SUBTASK 5: CCTV Inspections: The ENGINEER will review CCTV inspections of up to 31,000 LF of sanitary sewers. The CCTV will be collected by a subconsultant hired by the ENGINEER. NASSCO PACP scoring and condition ratings will be used to score the pipes and to help determine which lines will require rehabilitation.

SUBTASK 6: Smoke Testing: The ENGINEER will perform smoke testing on up to 31,000 LF of sanitary sewers. This testing will identify the locations of public and private sources of I/I in a specific portion of the project area that has previously been identified as having excessive I/I quantities.

SUBTASK 7: Dyed Water Testing: The ENGINEER will perform dyed water testing on up to ten (10) sources identified as being inconclusive during smoke testing. This task may not be necessary if all sources of I/I are identified during smoke testing.

SUBTASK 8: The ENGINEER will field verify unusual or unclear conditions such as routing, asset locations, or utility conflicts on an as-needed basis. This time is also to be used to communicate with homeowners who may have questions about the field work being performed.

TASK 300: GIS DATABASE PREPARATION AND DATA ENTRY

SUBTASK 1: Develop GIS Database and Shapefiles: The ENGINEER will develop GIS databases for the field work being performed. These databases will include information such as assets being inspected, results of inspections, rehabilitation recommendations, and issues found during field investigations.

SUBTASK 2: The ENGINEER will transfer the databases set up under Subtask 1 to the CITY for their use and incorporation into their own asset management software.

TASK 400: DATA ANALYSIS AND RECOMMENDATIONS

SUBTASK 1: Identification of I/I Parameters: Flow parameters will be determined for each metering site to gain an understanding of how the system reacts to rainfall events. The flow parameters will include average daily dry-weather flow (ADDF), infiltration, peak inflow rates and rain-to-sewer volumetric analysis.

SUBTASK 2: Identification of Excessive I/I: Based on results of the I/I parameter calculations, ENGINEER will compare findings to established excessive I/I flow thresholds for each parameter.

SUBTASK 3: The ENGINEER will perform I/I analysis on the other field work completed including manhole condition assessments, CCTV, and smoke/dyed water testing. I/I parameters will be assigned to defects found in the assets and total volumetric I/I values will be calculated.

SUBTASK 4: Draft Report: The ENGINEER will prepare a report that summarizes findings of the monitoring period as well as the other field investigations, I/I determination, recommended I/I rehabilitation methods and locations, and high-level cost estimates of rehabilitation.

SUBTASK 5: Draft Report Review Meeting: The ENGINEER will schedule a meeting with the CITY to go over the results of the field investigations and analysis.

SUBTASK 6: Final Report: The ENGINEER will prepare a final report based on the report review meeting with the CITY and any comments received from the CITY.

SUBTASK 7: The ENGINEER will present the findings of this project at a City Council meeting.

ADDITIONAL SERVICES:

Services specifically excluded under this Agreement include:

1. Hydraulic Capacity Spreadsheet Model with Growth Expectations Included.
2. Any designs or reports not specifically listed.
3. Additional meetings and site visits not specifically listed.
4. Any other service not specifically listed.

COMPENSATION:

TASK 100 FEE:	\$22,500
TASK 200 FEE:	\$233,700
TASK 300 FEE:	\$4,400
TASK 400 FEE:	\$30,200

TOTAL: \$290,800

CITY OF MANOR, TEXAS

GEORGE BUTLER ASSOCIATES, INC.

By: _____

By: Frank T. Phelon

Date: _____

Date: 8/30/2022