

STATE OF TEXAS §
 § **AGREEMENT FOR PROFESSIONAL SERVICES**
 COUNTY OF DALLAS §

This Agreement for Professional Services (“Agreement”) is made by and between the City of Farmers Branch, Texas (“City”) and Freese and Nichols, Inc., a Texas Corporation (“Professional”) (each a “Party” and collectively the “Parties”), acting by and through their authorized representatives.

RECITALS:

WHEREAS, City desires to engage the services of Professional as an independent contractor, and not as an employee, to provide the services described in Exhibit “A” (the “Scope of Services”) to assist City in developing a *Wastewater Master Plan* (the “Project”) on the terms and conditions set forth in this Agreement; and

WHEREAS, Professional desires to render services for City on the terms and conditions set forth in this Agreement;

NOW THEREFORE, in consideration of the mutual covenants set forth herein, and other valuable consideration, the sufficiency and receipt of which are hereby acknowledged, the Parties agree as follows:

Article I
Term

1.1 Effective Date; Term. This Agreement shall commence on the last date it has been signed by authorized representatives of the Parties, whether on the same document or in duplicate counterparts (“Effective Date”) and continue until completion of the services which shall be not later than 435 calendar days after delivery of a written Notification to Proceed by City to Professional, unless sooner terminated as provided herein.

1.2 Early Termination. Either Party may terminate this Agreement providing written notice to the other Party not later than thirty (30) days prior to the termination date. In the event of such termination Professional shall deliver to City all finished and unfinished documents, data, studies, surveys, drawings, maps, models, reports, photographs or other items prepared by Professional in connection with this Agreement. Professional shall be entitled to compensation for any services completed to the reasonable satisfaction of City in accordance with this Agreement prior to such termination.

Article II
Scope of Service

2.1 Standard of Care. Professional shall perform the services in connection with the Project as set forth in the Scope of Services. Professional shall perform the services with: (i) the professional skill and care ordinarily provided by competent architects or engineers, as the case

may be, practicing in the same or similar locality and under the same or similar circumstances and professional license; and (ii) as expeditiously as is prudent considering the ordinary professional skill and care of a competent architect or engineer, as the case may be.

2.2 City Information. Prior to commencement of services, City shall Professional with the information set forth in the Scope of Services, if any.

2.3 Licenses. Professional represents to City that Professional possesses any and all licenses which may be required by the State of Texas or any other governmental entity having jurisdiction as may be necessary for the performance of Professional's services pursuant to this Agreement.

2.4 Information/Confidentiality. City will furnish to Professional such information with respect to the Project as Professional may reasonably request in order to render Professional's services effectively. Professional will hold in strict confidence all information with respect to the Project which is furnished to Professional by City in confidence and which is not otherwise publicly available and/or not required, as a matter of law or proper business practice, to be disclosed to a third party in connection with the consulting services for the Project.

2.5 Deliverables.

(a) All documents including but not limited to reports, drawings and specifications, provided or furnished by Professional pursuant to this Agreement are instruments of service in respect to the Project, whether such Project is completed, and shall be the property of the City ("Instruments of Service"). The City shall have, keep and retain all rights, title and interest in and to all Instruments of Service, including all ownership, common law, statutory, and other reserved rights, including copyrights, in and to all Instruments of Service, whether in draft form or final form, which are produced at its request and in furtherance of this Agreement. The Professional shall endeavor to omit any information in the Instruments of Service which may constitute trade secrets or copyrighted. If any portion of the documents comprising the Instruments of Service have been previously copyrighted or otherwise protected from disclosure or unauthorized use by the Professional which have previously been prepared by the Professional and which are not created for the sole and specific purpose of this Project, such copyright protections or reservations of rights shall be expressly stated thereon. Professional shall not place any copyright marks on the Instruments of Service.

(b) When such documents are in electronic form, the City shall own copies of data files, text, specifications or drawings for the City's information in its use of the Services. However, due to the potential that electronic information can be modified by the City or other persons, unintentionally or otherwise, Professional reserves the right to remove all indicia of its ownership and/or involvement from each electronic display or file. For documentation purposes, the original computer files will be retained by Professional for a period not to exceed five (5) years after completion of the Services. Thereafter, all such files shall be remitted to the City.

(c) In addition, electronic information created and produced by Professional is considered a part of Professional's instrument of service and will not be used by the City for other

services, for additions to the Scope of Services , or for completion of this Scope of Services by another design professional except by agreement or Professional's default.

(d) Any such use or reuse of any Instrument of Service by the City or others without written verification or data adaptation by Professional for the specific purpose intended will be at the City's sole risk and without liability or legal exposure to Professional. Notwithstanding the foregoing the City, its contractors and consultants may use the Instruments of Service for the Project.

2.6 Conflict of Interest. Professional agrees to notify City and seek City's approval prior to Professional's retention by any other individuals or entities, which either directly or indirectly may create a conflict of interest in Professional's services under this Agreement. City may deny any such approval for Professional's retention set forth above, in the event City, in City's sole and absolute discretion, should conclude that such retention would have an adverse effect on Professional's services under this Agreement.

2.7 Opinions of Probable Construction Cost. Any opinions or estimates of probable construction costs to be provided under this Agreement are to be made or reviewed based on the Professional's experience and qualifications and represent the Professional's judgment as an experienced and qualified professional. However, since the Professional has no control over the cost of labor, materials, equipment or services furnished by others or over the contractor's methods of determining prices, or over competitive bidding or market conditions, Professional cannot and does not guarantee that proposals, bids or actual final construction costs will not vary from the opinions or estimates prepared or reviewed by the Professional.

2.8 Construction Means, Methods and Safety. Professional is not responsible for supervising, directing, controlling, or otherwise being in charge of the construction activities, means, methods or health or safety programs at the project site or in connection with the work; or supervising, directing, controlling, or otherwise being in charge of the actual work of the Construction Contractor, its sub-contractors, or other materialmen or service providers not engaged by Professional.

2.9 Mutual Waiver of Consequential Damages. Except for the indemnification provided by the Professional for the City, in no event shall either Party be liable, whether in contract or tort or otherwise, to the other Party for loss of profits, delay damages, or for any special incidental or consequential loss or damage of any nature arising at any time or from any cause whatsoever.

Article III Schedule of Work

3.1 Professional agrees to complete the required services in accordance with the Project Schedule outlined in the Scope of Services.

3.2 Force Majeure. Neither Party shall be responsible for a delay in its respective performance under this Agreement, other than a delay in payment for services already performed, if such delay is caused by events beyond the reasonable control of a Party including, without limitation, acts of God or the public enemy, war, riot, terrorism, civil commotion, insurrection, government or de facto governmental action, restrictions or interferences (unless caused by the intentional acts or omissions of the Party), fires, explosions, floods, strikes, incidence of disease or other illness that reaches outbreak, epidemic, or pandemic proportions (an event of “Force Majeure”), the Party so obligated shall be excused from doing or performing the same during such period of delay, so that the time period applicable to such obligation or performance shall be extended for a period of time equal to the period such Party was delayed, provided the Party whose performance is delayed provides written notice to the other Party not later than fifteen (15) businesses days after occurrence of the event(s) or condition(s) causing the delay describing such event(s) and/or condition(s) and the date on which such event(s) and/or condition(s) occurred. In the event that any event of Force Majeure as herein defined occurs, the Professional shall be entitled to a reasonable extension of time for performance of its services under this Agreement.

Article IV Compensation and Method of Payment

4.1 Invoices; Payment. Professional will be compensated in accordance with the payment schedule and amounts set forth in the Scope of Services and shall not exceed Three Hundred Twenty-four Thousand, Eight Hundred Fifty and No/100 Dollars (\$324,850.00). Unless otherwise provided herein, payment to Professional shall be monthly based on Professional’s monthly progress report, and shall include the total amount of fee earned to date and the amount due and payable as of the current statement, in a form reasonably acceptable to City. Monthly statements shall include authorized non-salary expenses with supporting itemized invoices and documentation. City shall pay such monthly statements within thirty (30) days after receipt and City verification of the services and expenses unless otherwise provided herein.

4.2 Expenses. Unless otherwise provided in the Scope of Services Professional shall be responsible for all expenses related to the services provided pursuant to this Agreement including, but not limited to, travel, copying and facsimile charges, telephone, internet and email charges.

4.3 Rate Schedule. The hourly rates set forth in the Scope of Services, if any, shall remain in effect during the term of this Agreement. Any changes to established hourly rates shall require the prior written consent of City.

Article V Devotion of Time; Personnel; and Equipment

5.1 Devotion of Time and Personnel. Professional shall devote such time as reasonably necessary for the satisfactory performance of the services under this Agreement. Should City require additional services not included under this Agreement, Professional shall make reasonable effort to provide such additional services within the time schedule without decreasing the effectiveness of the performance of services required under this Agreement, and shall be

compensated for such additional services on a time and materials basis, in accordance with Professional's standard hourly rate schedule, or as otherwise agreed between the Parties.

5.2 Engagement of Third Parties. To the extent reasonably necessary for Professional to perform the services under this Agreement, Professional shall be authorized to engage the services of any agents, assistants, persons, or corporations that Professional may deem proper to aid or assist in the performance of the services under this Agreement. Professional shall provide written notice to and obtain written approval from City prior to engaging services not referenced in the Scope of Services. The cost of such personnel and assistance shall be included as part of the total compensation to be paid Professional pursuant to this Agreement and shall not otherwise be reimbursed by City unless otherwise provided herein.

5.3 Professional's Facilities and Equipment. Professional shall furnish the facilities, equipment and personnel necessary to perform the services required under this Agreement unless otherwise provided herein.

5.4 Progress Reports and Meetings. Professional shall submit monthly progress reports and attend monthly progress meetings scheduled by City or more frequently as may be required by City from time to time based upon Project demands. Each progress report shall detail the work accomplished and special problems or delays experienced on the Project during the previous report period, and the planned work activities and special problems or delays anticipated for the next report period.

Article VI Miscellaneous

6.1 Entire Agreement. This Agreement constitutes the sole and only agreement between the Parties and supersedes any prior understandings written or oral agreements between the Parties with respect to this subject matter.

6.2 Assignment. Professional may not assign this Agreement without the prior written consent of City. In the event of an assignment by Professional to which City has consented, the assignee shall agree in writing with City to personally assume, perform, and be bound by all the covenants, and obligations contained in this Agreement.

6.3 Successors and Assigns. Subject to the provisions regarding assignment, this Agreement shall be binding on and inure to the benefit of the Parties and their respective heirs, executors, administrators, legal representatives, successors and assigns.

6.4 Governing Law. The laws of the State of Texas shall govern this Agreement without regard to any conflict of law rules; and venue for any action concerning this Agreement shall be in the State District Court of Dallas County, Texas. The Parties agree to submit to the personal and subject matter jurisdiction of said court.

6.5 Amendments. This Agreement may be amended only by written agreement signed by all of the Parties.

6.6 Severability. In the event any one or more of the provisions contained in this Agreement shall for any reason be held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provisions, and the Agreement shall be construed as if such invalid, illegal, or unenforceable provision had never been contained in it.

6.7 Independent Contractor. It is understood and agreed by and between the Parties that Professional, in satisfying the conditions of this Agreement, is acting independently, and that City assumes no responsibility or liabilities to any third party in connection with these actions. All services to be performed by Professional pursuant to this Agreement shall be in the capacity of an independent contractor, and not as an agent or employee of City. Professional shall supervise the performance of its services and shall be entitled to control the manner and means by which its services are to be performed, subject to the terms of this Agreement.

6.8 Right-of-Access. Professional shall not enter onto private property without lawful right-of-access to perform the required surveys, or other necessary investigations. Professional will take reasonable precautions to minimize damage to the private and public property in the performance of such surveys and investigations. Any right-of-access to public or private property shall be obtained in accordance with the Scope of Services.

6.9 Notice. Any notice required or permitted to be delivered hereunder may be sent by first class mail, courier or by confirmed telefax or facsimile to the address specified below, or to such other Party or address as either Party may designate in writing, and shall be deemed received three (3) days after delivery or on the day actually received if sent by courier or otherwise hand delivered:

If intended for City, to:

Attn: Charles S. Cox
City Manager
City of Farmers Branch, Texas
13000 William Dodson Parkway
Farmers Branch, Texas 75234
972.919.2518 – telephone
972.919.2514 – facsimile

With a copy to:

Peter G. Smith
Nichols, Jackson, Dillard, Hager & Smith, L.L.P.
1800 Ross Tower
500 North Akard Street
Dallas, Texas 75201
214.965.9900 – telephone
214.965.0010 – facsimile

If intended for Professional:

Attn: Scott Cole, P.E.
Freese and Nichols, Inc. _____
4055 International Plaza, Suite 200 _____
Fort Worth, Texas 76109 _____
Telephone: 817.735.7255 _____
Fax: _____
Email: Scott.Cole@freese.com _____

6.10 Insurance.

(a) During the term of this Agreement, Professional shall maintain in full force and effect the following insurance:

- (i) Commercial general liability policy of insurance for bodily injury, death and property damage including the property of City, its officers, contractors, agents and employees (collectively referred to as the “City”) insuring against all claims, demands or actions relating to the work and services provided by Professional pursuant to this Agreement with a minimum combined single limit of not less than \$2,000,000.00 per occurrence for injury to persons (including death), and for property damage and \$2,000,000.00 aggregate including products and completed operations coverage of \$1,000,000.00. This policy shall be primary to any policy or policies carried by or available to City; An Excess / Umbrella policy following form of the underlying policy may be used to satisfy the limits required for Commercial general liability;
- (ii) Automobile liability insurance policy covering any vehicles owned, non-owned and hired and/or operated by Professional, its officers, agents, and employees, and used in the performance of this Agreement with policy limits of not less than \$1,000,000.00 combined single limit for bodily injury, death and property damage;
- (iii) Statutory Worker’s Compensation Insurance at the statutory limits and Employers Liability covering all of Professional’s employees involved in the provision of services under this Agreement with policy limit of not less than \$1,000,000.00; and
- (iv) Professional Liability with policy limit of not less than \$2,000,000.00 per claim and \$2,000,000.00 in the aggregate, covering negligent acts, errors and omissions by Professional, its contractors, sub-contractors, consultants and employees in the performance of services pursuant to this Agreement.

(b) All insurance shall be endorsed to provide the following provisions:

- (i) Except for the Workers Compensation Insurance and Professional Liability policy, name City, its officers, and employees as additional insureds as to all applicable coverage;
 - (ii) Except for the Professional Liability policy, provide for a waiver of subrogation against City for injuries, including death, property damage, or any other loss to the extent the same is covered by the proceeds of insurance;
 - (iii) A specific endorsement needs to be added to all policies, with a copy of the endorsement provided to City that indicates the insurance company will provide to City at least a thirty (30) day prior written notice for cancellation, non-renewal, and/or material changes of the policy. In the event the companies providing the required insurance are prohibited by law to provide any such specific endorsements, Professional shall provide at least thirty (30) days prior written notice to City of any cancellation, non-renewal and/or material changes to any of the policies of insurance.
- (c) All insurance companies providing the required insurance shall be authorized to transact business in Texas and rated at least “A” by AM Best or other equivalent rating service. The Commercial General Liability, Automobile and Workmen Compensation policies must be written on a primary basis, non-contributory with any other insurance coverage and/or self-insurance maintained by City.
- (d) A certificate of insurance and copies of policy endorsements evidencing the required insurance shall be submitted to City prior to commencement of services. On every date of renewal of the required insurance policies, Professional shall cause a certificate of insurance and policy endorsements to be issued evidencing the required insurance herein and delivered to City. In addition, Professional shall within ten (10) business days after written request provide City with certificates of insurance and policy endorsements for the insurance required herein. The delivery of the certificates of insurance and policy endorsements to City is a condition precedent to the payment of any amounts due to Professional by City. The failure to provide valid certificates of insurance and policy endorsements shall be deemed a default and/or breach of this Agreement.

6.11 Debarment and Suspension.

- (a) In accordance with 2 CFR Section 180.300, the principal of this Agreement as described in 2 CFR Section 180.995 being duly sworn or under penalty of perjury under the laws of the United States, certifies that neither Professional nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this transaction by any federal department or agency, the State of Texas or any of its departments or agencies.

- (b) If, during the term of this Agreement, Professional becomes debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation, Professional shall immediately inform City.
- (c) If this Agreement is financed in whole or in part by Federal and/or State grants, Professional agrees that this section will be enforced on each of its subcontractors and will inform City of Farmers Branch of any violations of this section by subcontractors to the Agreement.
- (d) The certification in this Section 6.11 is a material representation of fact relied upon by City in entering into this Agreement.

6.12 Indemnification. PROFESSIONAL DOES HEREBY COVENANT AND CONTRACT TO WAIVE ANY AND ALL CLAIMS, RELEASE, DEFEND, INDEMNIFY, AND HOLD HARMLESS CITY, ITS COUNCIL, OFFICERS, AND EMPLOYEES, FROM AND AGAINST ALL LIABILITY, CAUSES OF ACTION, CITATIONS, CLAIMS, COSTS, DAMAGES, DEMANDS, EXPENSES, FINES, JUDGMENTS, LOSSES, PENALTIES OR SUITS, TO THE EXTENT CAUSED BY THE NEGLIGENCE, INTENTIONAL TORT, INTELLECTUAL PROPERTY INFRINGEMENT, OR FAILURE TO PAY A SUBCONTRACTOR OR SUPPLIER COMMITTED BY PROFESSIONAL, ITS AGENT, ITS CONSULTANT UNDER CONTRACT, OR ANY OTHER ENTITY OVER WHICH PROFESSIONAL EXERCISES CONTROL SUBJECT TO THE LIMITATIONS IN TEXAS LOCAL GOVERNMENT CODE § 271.904 AND TEXAS CIVIL PRACTICE AND REMEDIES CODE, § 130.002 (B).

INDEMNIFIED ITEMS SHALL INCLUDE REASONABLE ATTORNEYS' FEES AND COSTS, COURT COSTS, AND SETTLEMENT COSTS IN PROPORTION TO PROFESSIONAL'S LIABILITY.

PROFESSIONAL'S OBLIGATIONS UNDER THIS SECTION SHALL NOT BE LIMITED TO THE LIMITS OF COVERAGE OF INSURANCE MAINTAINED OR REQUIRED TO BE MAINTAINED BY PROFESSIONAL UNDER THIS AGREEMENT. THIS PROVISION SHALL SURVIVE THE TERMINATION OF THIS AGREEMENT.

6.13 Counterparts. This Agreement may be signed by the Parties in separate counterparts, each of which when so executed and delivered shall be an original, but all such counterparts shall together constitute one and the same instrument. Each counterpart may consist of any number of copies hereof each signed by less than all, but together signed by all of the Parties hereto.

6.14 Exhibits. The exhibits attached hereto are incorporated herein and made a part hereof for all purposes.

6.15 Prohibition of Boycott Israel. Professional verifies that it does not Boycott Israel and agrees that during the term of this Agreement will not Boycott Israel as that term is defined in Texas Government Code Section 808.001, as amended. This section does not apply if Professional is a sole proprietor, a non-profit entity or a governmental entity; and only applies if: (i) Professional

has ten (10) or more fulltime employees and (ii) this Agreement has a value of \$100,000.00 or more to be paid under the terms of this Agreement.

(Signature Page to Follow)

SIGNED AND AGREED this _____ day of _____, 202__.

CITY OF FARMERS BRANCH, TEXAS

By: _____
Charles S. Cox, City Manager

ATTEST:

By: _____
Amy Piukana, City Secretary

APPROVED AS TO FORM:

By: _____
Peter G. Smith, City Attorney

SIGNED AND AGREED this 4th day of September, 2020.

FREESE AND NICHOLS, INC.

By: Scott A. Cole
Name: Scott Cole, P.E. _____
Title: Vice President _____

EXHIBIT A – SCOPE OF SERVICES

City of Farmers Branch Wastewater Master Plan

PROJECT UNDERSTANDING:

Freese and Nichols, Inc. (FNI) understands that the City of Farmers Branch (City) is seeking professional engineering assistance to prepare a Wastewater Master Plan. The intent of the wastewater master plan is to develop a capital improvements plan for the wastewater collection system. FNI will update population and non-residential land use assumptions from recent studies with assistance from City staff and utilize this information to develop wastewater flow projections. A hydraulic model of the wastewater collection system will be developed using a combination of GIS data and as-built data. FNI will utilize the wastewater hydraulic model to evaluate lift stations, collection system capacity, and future system improvements. FNI will develop a comprehensive Wastewater Capital Improvement Plan. The results of this study will be summarized in the Wastewater Master Plan Report.

SCOPE OF SERVICES:

TASK A: PROJECT KICK-OFF, PROJECT MANAGEMENT, AND DATA REVIEW

A1. Project Kick-Off Meeting

Freese and Nichols, Inc. (FNI) will meet with the City to review scope, project team, and schedule of the project, and present a data request memorandum.

A2. Data Collection and Review

FNI will compile information from the City including GIS files, as-built drawings, lift station layouts, pump curves, recently completed system improvements, and wastewater flow data.

A3. Project Management

FNI will perform project management duties including preparing and updating project schedule monthly, invoicing, development of monthly progress reports, written summaries of meetings (minutes), and any informal project collaboration.

TASK B: FLOW MONITORING AND I/I CHARACTERIZATION

B1. Temporary flow meter site selection

FNI will review the wastewater collection system network and available TRA flow meter data to recommend flow monitoring locations at 12 locations.

B2. Virtual Meeting with City to Discuss Flow Monitoring Locations

FNI will meet with the City using Microsoft Teams (or other virtual platform) to discuss the proposed temporary flow monitoring sites. FNI will prepare mapping showing the proposed

locations and will present to the City. FNI will update the mapping based on City comments before submitting to the flow monitoring subconsultant for installation.

B3. Temporary Flow Meter Basin Delineation

FNI will finalize the temporary flow monitoring plan with the recommended site selection for temporary flow monitoring. FNI will delineate flow meter basins based on the location of each flow meter.

B4. Temporary Flow Meter Installation, Calibration, Data Collection

FNI's flow monitoring subconsultant will install and calibrate twelve (12) temporary velocity/depth type flow meters and two (2) rainfall gauges at the agreed upon locations. Temporary flow meters shall remain in place for sixty (60) days.

FNI's subconsultant will remove all the temporary flow meters at the completion of the sixty (60) day monitoring period if adequate weather conditions have been observed (dry weather and wet weather conditions that includes at least two (2) storm events of different rainfall intensities). FNI will advise Farmers Branch if adequate weather conditions have not been observed during the initial sixty (60) day monitoring period to allow Farmers Branch to consider funding of an extended period for flow monitoring, in advance of removal of the temporary flow meters.

B5. Flow Monitoring Data Analysis and Evaluation

Reduce raw field monitoring data and tabulate 15-minute flow data for the entire flow monitoring period. Prepare flow hydrographs and scattergraphs for the flow monitoring period. Flow data will be analyzed for average dry weather flow, peak dry weather flow, and wet weather peak flow rates. Flow data will be compared with rainfall data to determine amount of inflow/infiltration experienced during selected storm events.

B6. Draft Flow Monitoring Results Technical Memorandum (TM-1)

Prepare Technical Memorandum (TM-1) showing flow monitoring results and submit one (1) electronic PDF copy to the City. TM-1 will include flow monitoring results and analysis, development of dry and wet weather flow parameters by sewer basin and meter sites as well as level of infiltration/inflow throughout City.

B7. Final Flow Monitoring Results Technical Memorandum (TM-1)

FNI will address any comments on the draft TM provided by the City and will finalize Technical Memorandum (TM-1) showing flow monitoring results and submit three (3) hard copies and one (1) electronic PDF copy to the City.

TASK C: POPULATION AND WASTEWATER FLOW PROJECTIONS

C1. Meeting with Planning Department

FNI will meet with City Planning staff to discuss population and land use assumptions. Projected growth rates and potential redevelopment areas will be identified. Future wastewater service areas for existing, 5-year, 10-year, 25-year planning periods will be discussed. If available, Farmers Branch will provide available demographic data in tabular or GIS format to be utilized in this study. During this meeting, FNI and the planning staff will identify potential growth or redevelopment areas in the Farmers Branch wastewater collection system.

C2. Develop and Distribute Population and Non-residential Growth Projections

FNI will work with City staff to develop and document population and non-residential growth projections by wastewater basin for existing, 5-year, 10-year, and 25-year conditions. Growth projections will be distributed throughout the wastewater service area.

C3. Develop Design Criteria for Wastewater Flow Projections

FNI will obtain and evaluate historical wastewater flow data from the TRA meter locations to develop historical trends and calculate peaking factors. This data along with flow monitoring data will be used to determine expected per-capita loads for future projections. Based on a review of historical wastewater flow data, FNI will review existing flow projection methodologies, including those previously developed for all the sewer basins and sub-basins to provide recommendations to update the design criteria for flow projections. FNI will develop base flow rates, per-capita flow rates, non-residential usage factors, infiltration and inflow (I/I) allowances based on flow monitoring data, rehabilitation work, and work order data (stoppages, blockages, etc.). FNI will review the wastewater flow characteristics defined in the previous flow monitoring study performed by FNI about 12 years ago to determine which parameters, if any, need to be updated.

C4. Develop and Distribute Wastewater Flow Projections

FNI will develop wastewater flow projections for existing, 5-year, 10-year, and 25-year conditions using the future land use assumptions and selected design criteria. Flows will be calculated by wastewater basin. FNI will distribute wastewater flows throughout the service area based on the existing and future population distribution.

C5. Progress Meeting #1 – Land Use and Wastewater Flow Projections

FNI will attend a progress meeting with the City to discuss the results and process of the population and wastewater flow projections.

C6. Draft Population and Flow Projections Technical Memorandum (TM-2)

Prepare and submit one (1) electronic PDF copy of a draft Population and Flow Projection Technical Memorandum TM-2. TM-2 will include existing and projected development by sewer basin, and existing flow estimates, and flow projections for existing, 5-, 10-, and 20-year planning periods.

C7. Finalize Population and Employment Distribution and Flow Projections Technical Memorandum (TM-2)

FNI will revise the TM based on City's comments and submit three (3) final hard copies and one (1) electronic copy in PDF format to the City.

TASK D: WASTEWATER MODEL DEVELOPMENT AND CALIBRATION

D1. Wastewater System Model Development

FNI will develop the City's wastewater collection system hydraulic model in the Innovyze® InfoSewer® software from the most current GIS. FNI will review unconnected (floating nodes) in the GIS to determine flow direction and network connectivity using as-built data and field maps. FNI will import modified GIS into the wastewater model. FNI will utilize modeling software to electronically verify and correct flow directions and network connectivity with modeled network. The model will consist of all pipelines 10-inches and larger in addition to all smaller pipelines for which invert elevation data is available. FNI will review as-built drawings and operational data provided by the City to obtain physical data (wet well dimensions, pump curves, force main material and pressure rating, etc.) and develop initial controls for the model. This task will include the determination of additional data needed to properly define special hydraulic structures such as siphons, tunnels, split flow manholes, weirs, junction boxes, and other interconnections between parallel lines. FNI will populate this information within the wastewater model.

D2. Update Detailed Lift Station Data

Lift station and force main as-built information provided by the City will be entered into the model. FNI will review as-built drawings and operational data provided by the City to obtain physical data (wet well dimensions, pump curves, force main material and pressure rating, etc.) and develop initial controls for the model. FNI will identify missing lift station data needing field verification including physical dimensions, pump performance data and any missing force main information. FNI will utilize institutional knowledge from the City staff regarding the operational complexities of the wastewater system.

D3. Distribute Updated Wastewater Flow in the Model

Geocoded water billing data and the population and commercial flow projections will be used to assign flows to the subcatchments for wastewater system analysis. Large customers will be located and allocated as a point load. FNI will assign residential and commercial diurnal patterns to each subcatchment based on the flow meter data and the flow meter basins.

D4. Dry Weather Calibration

Select dry weather calibration event to isolate projected flows as primarily domestic contributed flows. Develop flow meter schematic showing which sewer basin and metered subbasins feed into each sewer interceptor for model analysis and data output review. Perform dry weather calibration on selected dry weather flow event using calibrated flow volume by adjusting antecedent conditions, per capita flows, diurnal curves and dry weather infiltration. Dry weather

calibration should match field data within 5%. Adjust lift station parameters based on system response observed during calibration event using SCADA records and meter responses.

FNI will prepare mapping and profiles at selected calibration points showing metered vs. modeled dry weather calibration flows, depths, and velocities and meet with the City to present dry weather calibration results.

D5. Wet Weather Calibration

Review flow meter data and select two (2) wet weather calibration storm events if available. Perform wet weather calibration on selected wet weather flow events using calibrated peak I/I. Calibrate peak flow and volume to within 10%. Adjust model parameters to calibrate flow velocity and flow depth. Adjust lift station parameters based on system response observed during calibration events using SCADA records and meter responses. Prepare mapping showing metered vs. modeled wet weather calibration results and meet with the City to present wet weather calibration results for selected two wet weather calibration events.

TASK E. WASTEWATER SYSTEM PERFORMANCE ANALYSIS

E1. Identify System Improvement Requirements (Design Criteria)

FNI will evaluate and recommend wastewater system planning criteria, including design flows, minimum and maximum pipeline velocities, TCEQ requirements, and surcharging guidelines. The criteria will be based on level of service and will determine what surcharging, if any, is allowed, minimum and maximum velocity constraints, etc. Criteria will be developed for overall master planning purposes, development reviews, and environmentally sensitive areas. FNI will conduct a workshop with City staff to obtain input on draft design criteria.

E2. Existing System Evaluation

FNI will run the calibrated wastewater model with a 5-year, 6-hour design storm and identify existing surcharging and overflow locations and other capacity/restriction issues. FNI will conduct an evaluation to determine the impacts of critical infrastructure (special structures) and lift station modifications on the existing system evaluation results. FNI will prepare mapping and model results showing all surcharging and overflow locations by magnitude and location. FNI will categorize manholes by overflow amounts during design storm and sewer line surcharging by amounts during the design storm event.

E3. Progress Meeting #2 – Model Development, Calibration, and Existing System Analysis

FNI will attend a progress meeting with the City to discuss wastewater model development and calibration as well as existing system analysis. FNI will prepare mapping showing the existing system analysis results for the wastewater collection system.

E4. Develop Future Model Scenarios

FNI will utilize 5-year, 10-year, and 25-year wastewater model scenarios under design storm conditions to determine the system response for surcharging and overflow events. FNI will utilize the future system model scenarios to analyze the impact of future growth and redevelopment on the wastewater collection system. FNI will apply the selected design storm(s) to the future system models to locate potential future system deficiencies based on specified design criteria.

E5. Develop System Improvements Alternatives for 5-, 10-, and 25-year Planning Periods

Utilizing the modeling results, FNI will develop and size improvements to address identified system deficiencies and provide service to projected development. Improvement alternatives will be sized to serve projected 25-year flows. FNI will use interim 5-year and 10-year model simulations to determine the phasing of improvements. FNI will provide mapping to show recommended improvement alternatives by phase.

E6. Progress Meeting #3 – Wastewater System Evaluation and Improvement Alternatives

FNI will meet with the City to present the results of the hydraulic analysis and system evaluation and discuss identified improvement alternatives.

TASK F. WASTEWATER COLLECTION SYSTEM RENEWAL PLANNING

F1. Wastewater Data Assessment

FNI will utilize GIS shapefiles, as-builts, work orders, CCTV results, and any other existing available data to determine the age and material of the wastewater lines in the existing wastewater collection system. FNI will review and evaluate work order history, repair history, and maintenance data to determine areas to focus renewal efforts. FNI will review CCTV results for critical lines based on a review of work order data, repair history, and maintenance data.

F2. Develop Condition and Criticality Scoring Parameters

FNI will develop a draft condition and criticality scoring program for wastewater system pipelines and lift stations. FNI will meet with City Staff to obtain input on draft parameters.

- Potential condition parameters include:
 - Pipe age
 - Pipe material
 - Maintenance history
 - Soil conditions
- Potential criticality parameters include:
 - Number of customers served
 - Ease of access for repairs
 - Environmental impact
 - System redundancy
 - Critical facilities, e.g. hospitals and schools
 - Alley/street condition/replacement schedule

F3. Apply Condition and Criticality Scoring System to Pipelines

Based on available data, FNI will utilize InfoMaster® software by Innovyze® to apply the condition and criticality scoring system to collection pipeline network. Each line segment will receive a condition, criticality, and overall risk score and an overall prioritized ranking of pipelines will be prepared. FNI will develop large scale color-coded mapping of the results of the condition, criticality, and risk scoring analysis.

F4. Develop Prioritized Pipeline Renewal CIP

FNI will work with the City to develop a strategy to utilize the results of the risk based assessment to develop a prioritized wastewater pipeline renewal plan and CIP. Potential considerations include triggers for CIP inclusion and funding constraints. FNI will develop a renewal program CIP that includes project packaging, prioritization, phasing, descriptions, mapping, and cost estimates by fiscal year.

F5. Progress Meeting #4 – Renewal CIP Alternatives

FNI will meet with the City to discuss the Draft Renewal CIP. FNI will prepare mapping and present the proposed rehabilitation CIP to the City and will address any comments provided during the meeting.

TASK G. CAPITAL IMPROVEMENTS PLAN AND WASTEWATER MASTER PLAN REPORT

G1. Develop Draft Capital Improvement Plan (CIP) Costs, Schedule, and Mapping

FNI will develop a comprehensive Capital Improvements Plan based on growth and renewal needs. Costs for each proposed project will be developed in Year 2020/21 dollars including engineering and contingencies. Large scale citywide maps will be produced showing proposed projects, costs, and recommended in-service dates of proposed projects. FNI will also prepare a one-page summary for each project including but not limited to detailed description, issue, project map with planning level alignment, cost, proposed dates, and justification.

G2. Meet to Review Draft Capital Improvement Plan

FNI will meet with Farmers Branch to discuss draft CIP, project phasing and analyze alternative completion dates as necessary.

G3. Prepare Draft Wastewater Master Plan Report

FNI will prepare a draft Wastewater Modeling Services Report summarizing wastewater flow projections, model calibration, existing and future system analysis, and CIP development. FNI will deliver three (3) hard copies and one (1) electronic PDF file of the draft report to the City.

G4. Meet with Farmers Branch to Review Draft Report

FNI will meet with Farmers Branch to discuss the draft report. FNI will solicit comments to be incorporated into the final report.

G5. Revise Wastewater Master Plan Report to Incorporate City's Comments

FNI will revise the report based on comments from the City and submit three (3) final hard copies and one (1) electronic copy in PDF format of the Wastewater Master Plan Report.

SUMMARY OF DELIVERABLES:

- TM-1: Wastewater Flow Monitoring
- TM-2: Population, Employment, and Wastewater Flow Projections
- Wastewater System Capital Improvements Program
- Draft Wastewater Master Plan Report
- Final Wastewater Master Plan Report
- Calibrated Wastewater Model in InfoSewer® software
- Pipeline Renewal Database in InfoMaster® software
- All electronic project files

SCHEDULE

Professional services will commence upon Notice to Proceed (NTP) from Farmers Branch. It is anticipated that this project will take **12-14 months** to complete. The absence of desired rainfall events during the flow monitoring period may impact the project schedule.

Fee Summary

Task	Description	Cost
A	Project Management	\$14,800
B	Flow Monitoring and I/I Characterization	\$79,950
C	Population and Wastewater Flow Projections	\$39,800
D	Wastewater Model Development and Calibration	\$40,000
E	Wastewater System Performance	\$50,400
F	Collection System Renewal Planning	\$49,600
G	Capital Improvement Plan and Wastewater Master Plan Report	\$50,300
Total		\$324,850

COMPENSATION

ATTACHMENT CO

Compensation to FNI for Basic Services in Attachment SC shall be computed on the basis of the following Schedule of Charges, but shall not exceed Three Hundred Twenty Four Thousand Eight Hundred Fifty Dollars (\$324,850).

If FNI sees the Scope of Services changing so that Additional Services are needed, including but not limited to those services described as Additional Services in Attachment SC, FNI will notify OWNER for OWNER's approval before proceeding. Additional Services shall be computed based on the following Schedule of Charges.

<u>Position</u>	<u>Hourly Rate</u>
Professional 1	107
Professional 2	130
Professional 3	146
Professional 4	169
Professional 5	197
Professional 6	225
Construction Manager 1	85
Construction Manager 2	111
Construction Manager 3	131
Construction Manager 4	164
CAD Technician/Designer 1	91
CAD Technician/Designer 2	117
CAD Technician/Designer 3	145
Corporate Project Support 1	87
Corporate Project Support 2	105
Corporate Project Support 3	139
Intern / Coop	53
Senior Advisor	175

Rates for In-House Services and Equipment

<u>Mileage</u>	<u>Bulk Printing and Reproduction</u>		<u>Equipment</u>	
Standard IRS Rates		<u>B&W</u>	<u>Color</u>	Valve Crew Vehicle (hour) \$75
	Small Format (per copy)	\$0.10	\$0.25	Pressure Data Logger (each) \$100
<u>Technology Charge</u>	Large Format (per sq. ft.)			Water Quality Meter (per day) \$100
\$8.50 per hour	Bond	\$0.25	\$0.75	Microscope (each) \$150
	Glossy / Mylar	\$0.75	\$1.25	Pressure Recorder (per day) \$200
	Vinyl / Adhesive	\$1.50	\$2.00	Ultrasonic Thickness Gauge (per day) \$275
				Coating Inspection Kit (per day) \$275
	Mounting (per sq. ft.)	\$2.00		Flushing / Cfactor (each) \$500
	Binding (per binding)	\$0.25		Backpack Electrofisher (each) \$1,000
				<u>Survey Grade</u> <u>Standard</u>
				Drone (per day) \$200 \$100
				GPS (per day) \$150 \$50

OTHER DIRECT EXPENSES:

Other direct expenses are reimbursed at actual cost times a multiplier of 1.10. They include outside printing and reproduction expense, communication expense, travel, transportation and subsistence away from the FNI office. For other miscellaneous expenses directly related to the work, including costs of laboratory analysis, test, and other work required to be done by independent persons other than staff members, these services will be billed at a cost times a multiplier of 1.10. For Resident Representative services performed by non-FNI employees and CAD services performed in-house by non-FNI employees where FNI provides workspace and equipment to perform such services, these services will be billed at cost times a multiplier of 2.0. This markup approximates the cost to FNI if an FNI employee was performing the same or similar services.

These ranges and/or rates will be adjusted annually in February. Last updated February 2019.