



**CITY OF PLANO
COUNCIL AGENDA ITEM**

CITY SECRETARY'S USE ONLY					
<input type="checkbox"/> Consent <input type="checkbox"/> Regular <input type="checkbox"/> Statutory					
Council Meeting Date:		3/26/2012			
Department:		Public Works			
Department Head:		Gerald P. Cosgrove, P.E.			
Agenda Coordinator (include phone #): Linda Sweeney (ext. 7157)				Project No. 6075	
CAPTION					
To approve a Professional Services Agreement by and between the City of Plano and Pipeline Analysis, LLC, in the amount of \$65,555, for the Prairie Creek Basin Infiltration/Inflow Analysis, and authorizing the City Manager to execute all necessary documents.					
FINANCIAL SUMMARY					
<input type="checkbox"/> NOT APPLICABLE <input type="checkbox"/> OPERATING EXPENSE <input type="checkbox"/> REVENUE <input checked="" type="checkbox"/> CIP					
FISCAL YEAR:	2011-12	Prior Year (CIP Only)	Current Year	Future Years	TOTALS
Budget	0	66,000	0	66,000	
Encumbered/Expended Amount	0	0	0	0	
This Item	0	-65,555	0	-65,555	
BALANCE	0	445	0	445	
FUND(S): SEWER CIP					
COMMENTS: Funds are included in the 2011-12 Sewer CIP. This item, in the amount of \$65,555, will leave a current year balance of \$445. STRATEGIC PLAN GOAL: Monitoring of sewer flow relates to the City's Goal of Financially Strong City with Service Excellence.					
SUMMARY OF ITEM					
This agreement will consist of a sanitary sewer Infiltration/Inflow (I/I) Analysis of the Prairie Creek Basin to include flow monitoring of the sanitary sewer system. The contract fee is for \$65,555.00, and is detailed as follows:					
	1. Flow Monitoring, installation/calibration and monitoring			\$36,085.00	
	2. Rainfall Gauging, installation/calibration and monitoring			\$5,760.00	
	3. Project Adm./ Mobilization			\$900.00	
	4. Flow Data Analysis			\$5,160.00	
	5. Draft/Final Report			\$2,050.00	
				<u> </u>	
	BasicServices:			\$49,955.00	

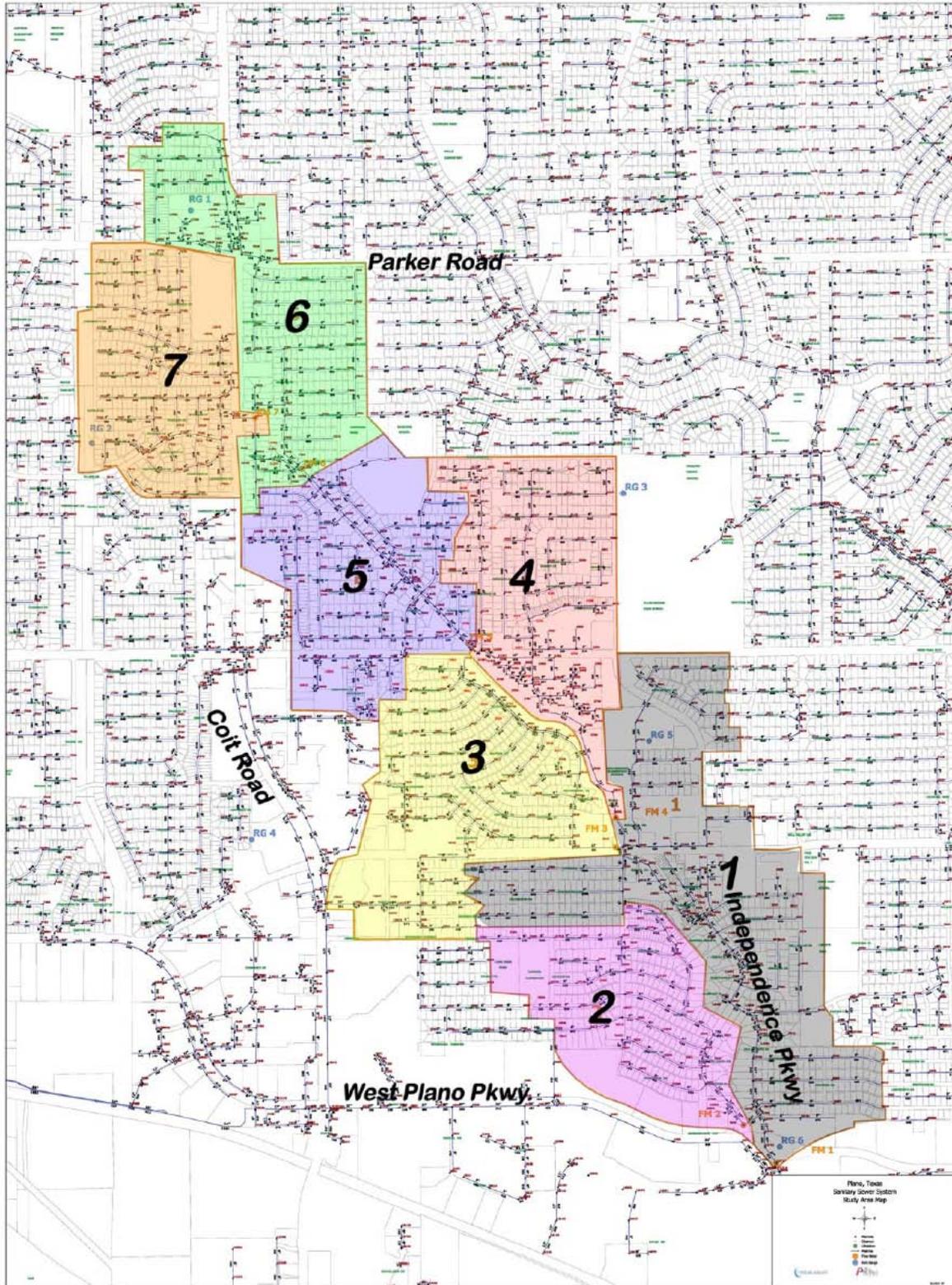


**CITY OF PLANO
COUNCIL AGENDA ITEM**

1. Extend additional 30 days of Flow Monitoring	\$12,600.00
2. Rainfall Gauging, for 30 days of additional Flow Monitoring	\$2,700.00
3. Project Adm./ Mobilization for 30 days of additional Flow Monitoring	<u>\$300.00</u>
Special Services:	\$15,600.00
TOTAL PROJECT COST NOT TO EXCEED	\$65,555.00

List of Supporting Documents: Location Map; Engineering Services Agreement	Other Departments, Boards, Commissions or Agencies N/A
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PRAIRIE CREEK BASIN INFILTRATION/INFLOW ANALYSIS
PROJECT NO. 6075
Figure 1 – Location Map



PRAIRIE CREEK BASIN INFILTRATION/INFLOW ANALYSIS

PROJECT NO. 6075

ENGINEERING SERVICES AGREEMENT

THIS AGREEMENT is made and entered by and between the **CITY OF PLANO, TEXAS**, a Home-Rule Municipal Corporation, hereinafter referred to as "City", and **PIPELINE ANALYSIS, LLC**, a **TEXAS LIMITED LIABILITY COMPANY**, hereinafter referred to as "Engineer", to be effective from and after the date as provided herein.

WITNESSETH:

WHEREAS, the City desires to engage the services of the Engineer to provide engineering services in connection with the **PRAIRIE CREEK BASIN INFILTRATION/INFLOW ANALYSIS** project located in the City of Plano, Collin County, Texas, hereinafter referred to as the "Project"; and

WHEREAS, the Engineer desires to render such engineering services for the City upon the terms and conditions provided herein.

NOW, THEREFORE, for and in consideration of the covenants contained herein, and for the mutual benefits to be obtained hereby, the parties hereto agree as follows:

I. Employment of the Engineer

The City hereby agrees to retain the Engineer to perform professional engineering services in connection with the Project. Engineer agrees to perform such services in accordance with the terms and conditions of this Agreement.

II. Scope of Services

The parties agree that Engineer shall perform such services as are set forth and described in Exhibit "A", which is attached hereto and thereby made a part of this Agreement. The parties understand and agree that deviations or modifications in the form of written contract modifications may be authorized from time to time by the City.

III. Schedule of Work

The Engineer agrees to commence work immediately upon execution of this Agreement, and to proceed diligently with said work, except for delays beyond the reasonable control of Engineer, to completion as described in the Completion Schedule, attached hereto as Exhibit "B" and thereby made a part of this Agreement.

IV. Compensation and Method of Payment

The parties agree that Engineer shall be compensated for all services provided pursuant to this Agreement in the amount and manner described and set forth in the Payment Schedule attached hereto and incorporated herein as Exhibit "C". The contract amount specified in Exhibit "C" shall not be exceeded without the written permission of the City.

V. Information to be Provided by the City

The City agrees to furnish, prior to commencement of work, all that information requested by Engineer and available in City's files.

VI. Insurance

Engineer agrees to meet all insurance requirements, and to require all consultants who perform work for Engineer to meet all insurance requirements, as set forth on Exhibit "D", which is attached hereto and thereby made a part of this Agreement.

Engineer agrees to notify the City of any changes in insurance policy coverage, including but not limited to changes in limits and cancellation. The Engineer shall notify the City in writing of any changes within forty-eight (48) hours of the change. The Engineer's notice shall include a description of the changes and how those changes vary from the insurance requirements of the contract/agreement.

VII. INDEMNITY

THE ENGINEER AGREES TO DEFEND, INDEMNIFY AND HOLD THE CITY AND ITS RESPECTIVE OFFICERS, AGENTS AND EMPLOYEES, HARMLESS AGAINST ANY AND ALL CLAIMS, LAWSUITS, JUDGMENTS, FINES, PENALTIES, COSTS AND EXPENSES FOR PERSONAL INJURY (INCLUDING DEATH), PROPERTY DAMAGE OR OTHER HARM OR VIOLATIONS FOR WHICH RECOVERY OF DAMAGES, FINES, OR PENALTIES IS SOUGHT, SUFFERED BY ANY PERSON OR PERSONS, THAT MAY ARISE OUT OF OR BE OCCASIONED BY ENGINEER'S BREACH OF ANY OF THE TERMS OR PROVISIONS OF THIS CONTRACT, VIOLATIONS OF LAW, OR BY ANY NEGLIGENT, GROSSLY

NEGLIGENT, INTENTIONAL, OR STRICTLY LIABLE ACT OR OMISSION OF THE ENGINEER, ITS OFFICERS, AGENTS, EMPLOYEES, INVITEES, SUBCONTRACTORS, OR SUB-SUBCONTRACTORS AND THEIR RESPECTIVE OFFICERS, AGENTS, OR REPRESENTATIVES, OR ANY OTHER PERSONS OR ENTITIES FOR WHICH THE ENGINEER IS LEGALLY RESPONSIBLE IN THE PERFORMANCE OF THIS CONTRACT. THE INDEMNITY PROVIDED FOR IN THIS PARAGRAPH SHALL NOT APPLY TO ANY LIABILITY RESULTING FROM THE SOLE NEGLIGENCE OF THE CITY, AND ITS OFFICERS, AGENTS, EMPLOYEES OR SEPARATE ENGINEERS. THE CITY DOES NOT WAIVE ANY GOVERNMENTAL IMMUNITY OR OTHER DEFENSES AVAILABLE TO IT UNDER TEXAS OR FEDERAL LAW. THE PROVISIONS OF THIS PARAGRAPH ARE SOLELY FOR THE BENEFIT OF THE PARTIES HERETO AND ARE NOT INTENDED TO CREATE OR GRANT ANY RIGHTS, CONTRACTUAL OR OTHERWISE, TO ANY OTHER PERSON OR ENTITY.

ENGINEER AT ITS OWN EXPENSE IS EXPRESSLY REQUIRED TO DEFEND CITY AGAINST ALL SUCH CLAIMS. CITY RESERVES THE RIGHT TO PROVIDE A PORTION OR ALL OF ITS OWN DEFENSE; HOWEVER, CITY IS UNDER NO OBLIGATION TO DO SO. ANY SUCH ACTION BY CITY IS NOT TO BE CONSTRUED AS A WAIVER OF ENGINEER'S OBLIGATION TO DEFEND CITY OR AS A WAIVER OF ENGINEER'S OBLIGATION TO INDEMNIFY CITY PURSUANT TO THIS AGREEMENT. ENGINEER SHALL RETAIN DEFENSE COUNSEL WITHIN SEVEN (7) BUSINESS DAYS OF CITY'S WRITTEN NOTICE THAT CITY IS INVOKING ITS RIGHT TO INDEMNIFICATION UNDER THIS AGREEMENT. IF ENGINEER FAILS TO RETAIN COUNSEL WITHIN THE REQUIRED TIME PERIOD, CITY SHALL HAVE THE RIGHT TO RETAIN DEFENSE COUNSEL ON ITS OWN BEHALF AND ENGINEER SHALL BE LIABLE FOR ALL COSTS INCURRED BY THE CITY.

VIII. Independent Contractor

Engineer covenants and agrees that Engineer is an independent contractor and not an officer, agent, servant or employee of City; that Engineer shall have exclusive control of and exclusive right to control the details of the work performed hereunder and all persons performing same, and shall be responsible for the acts and omissions of its officers, agents, employees, contractors, subcontractors and consultants; that the doctrine of respondeat superior shall not apply as between City and Engineer, its officers, agents, employees, contractors, subcontractors and consultants, and nothing herein shall be construed as creating a partnership or joint enterprise between City and Engineer.

IX. Assignment and Subletting

The Engineer agrees that neither this Agreement nor the work to be performed hereunder will be assigned or sublet without the prior written consent of the City. The Engineer further agrees that the assignment or subletting of any portion or feature of the work or materials required in the performance of this Agreement shall not relieve the Engineer from its full obligations to the City as provided by this Agreement.

X. Audits and Records/Prohibited Interest

The Engineer agrees that at any time during normal business hours and as often as City may deem necessary, Engineer shall make available to representatives of the City for examination all of its records with respect to all matters covered by this Agreement, and will permit such representatives of the City to audit, examine, copy and make excerpts or transcripts from such records, and to make audits of all contracts, invoices, materials, payrolls, records of personnel, conditions of employment and other data relating to all matters covered by this Agreement, all for a period of one (1) year from the date of final settlement of this Agreement or for such other or longer period, if any, as may be required by applicable statute or other lawful requirement.

The Engineer agrees that it is aware of the prohibited interest requirements of the City Charter and Code of Conduct and will abide by the same. Further, a lawful representative of Engineer shall execute the affidavit shown in Exhibit "E". Engineer understands and agrees that the existence of a prohibited interest during the term of this contract will render the contract voidable.

XI. Contract Termination

The parties agree that City shall have the right to terminate this Agreement with or without cause upon thirty (30) days written notice to Engineer. In the event of such termination, Engineer shall deliver to City all finished or unfinished documents, data, studies, surveys, drawings, maps, models, reports, photographs or other items prepared by Engineer in connection with this Agreement. Engineer shall be entitled to compensation for any and all work completed to the satisfaction of City in accordance with the provisions of this Agreement prior to termination.

XII. Engineer's Opinion of Probable Construction Costs

The parties recognize and agree that any and all opinions of probable construction costs prepared by Engineer in connection with the Project represent the best judgment of Engineer as a design professional familiar with the construction industry, but that the Engineer does not guarantee that any bids solicited or received in connection with the Project will not vary from opinions prepared by Engineer.

XIII. Ownership of Documents

Original drawings and specifications are the property of the Engineer; however, the Project is the property of the City and Engineer may not use the drawings and specifications therefor for any purpose not relating to the Project without City's consent. City shall be furnished with such reproductions of drawings and specifications as City may reasonably require. Upon completion of the work or any earlier termination of this Agreement under Article XI, Engineer will revise drawings to reflect changes made during construction and he will promptly furnish the City with one (1) complete set of reproducible record prints. Prints shall be furnished, as an additional service, at any other time requested by City. All such reproductions shall be the property of the City who may use them without Engineer's permission for any proper purpose including, but not limited to, additions to or completion of the Project. However, use of the documents for other than their intended purpose shall be at the sole risk of the City.

XIV. Complete Contract

This Agreement, including the Exhibits lettered "A" through "E", constitute the entire agreement by and between the parties regarding the subject matter hereof and supersedes all prior or contemporaneous written or oral understandings. This Agreement may only be amended, supplemented, modified or canceled by a duly executed written instrument.

XV. Mailing of Notices

Unless instructed otherwise in writing, Engineer agrees that all notices or communications to City permitted or required under this Agreement shall be addressed to City at the following address:

City of Plano
Public Works Department, Suite 250
P.O. Box 860358
Plano, TX 75086-0358
Attn: Shahrzad Tavana

City agrees that all notices or communications to Engineer permitted or required under this Agreement shall be addressed to Engineer at the following address:

Pipeline Analysis, LLC
1115 Main Street
Garland, TX 75040
Attn: James H. Forbes, Jr., P.E.

All notices or communications required to be given in writing by one party or the other shall be considered as having been given to the addressee on the date such notice or communication is posted by the sending party.

XVI. Miscellaneous

A. Paragraph Headings:

The paragraph headings contained herein are for convenience only and are not intended to define or limit the scope of any provision in this Agreement.

B. Contract Interpretation:

Although this Agreement is drafted by the City, should any part be in dispute, the parties agree that the Agreement shall not be construed more favorably for either party.

C. Venue/Governing Law:

The parties agree that the laws of the State of Texas shall govern this Agreement, and that it is performable in Collin County, Texas. Exclusive venue shall lie in Collin County, Texas.

D. Successors and Assigns:

City and Engineer, and their partners, successors, subcontractors, executors, legal representatives, and administrators are hereby bound to the terms and conditions of this Agreement.

E. Severability:

In the event a term, condition, or provision of this Agreement is determined to be void, unenforceable, or unlawful by a court of competent jurisdiction, then that term, condition, or provision, shall be deleted and the remainder of the Agreement shall remain in full force and effect.

F. Effective Date:

This Agreement shall be effective from and after execution by both parties hereto.

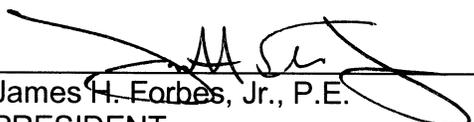
G. Authority to Sign:

The undersigned officers and/or agents of the parties hereto are the properly authorized officials and have the necessary authority to execute this Agreement on behalf of the parties hereto.

SIGNED on the date indicated below.

PIPELINE ANALYSIS, LLC
A TEXAS Limited Liability Company

DATE: March 7, 2012

BY: 
James H. Forbes, Jr., P.E.
PRESIDENT

CITY OF PLANO, TEXAS

DATE: _____

BY: _____
Bruce D. Glasscock
CITY MANAGER

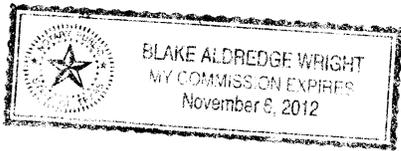
APPROVED AS TO FORM:

Diane C. Wetherbee
CITY ATTORNEY

ACKNOWLEDGMENTS

STATE OF TEXAS §
 §
COUNTY OF DALLAS §

This instrument was acknowledged before me on the 7 day of March, 2012, by **JAMES H. FORBES, JR., P.E., PRESIDENT, of PIPELINE ANALYSIS, LLC, a TEXAS LIMITED LIABILITY COMPANY**, on behalf of said company.



Blake A. Wright
Notary Public, State of Texas

STATE OF TEXAS §
 §
COUNTY OF COLLIN §

This instrument was acknowledged before me on the _____ day of _____, 2012, by **BRUCE D. GLASSCOCK, CITY MANAGER**, of the **CITY OF PLANO, TEXAS**, a Home-Rule Municipal Corporation, on behalf of said municipal corporation.

Notary Public, State of Texas

EXHIBIT "A"
SCOPE OF SERVICES
PRAIRIE CREEK BASIN INFILTRATION/INFLOW ANALYSIS
PROJECT NUMBER 6075

PROJECT DESCRIPTION

This project will consist of a sanitary sewer Infiltration/Inflow (I/I) Analysis of the Prairie Creek Basin. The service area included in this scope of services is shown in Figure 1 – Study Area Map. The approach to the I/I Analysis is organized around the City's objectives for this project:

- Reduction in dry and wet weather infiltration/inflow
- Cost controls and Least Cost Alternatives
- Attainment of long-term Infiltration/Inflow solutions
- Collection System Capacity Assurance
- Regulatory compliance
- Customer satisfaction

BASIC SERVICES

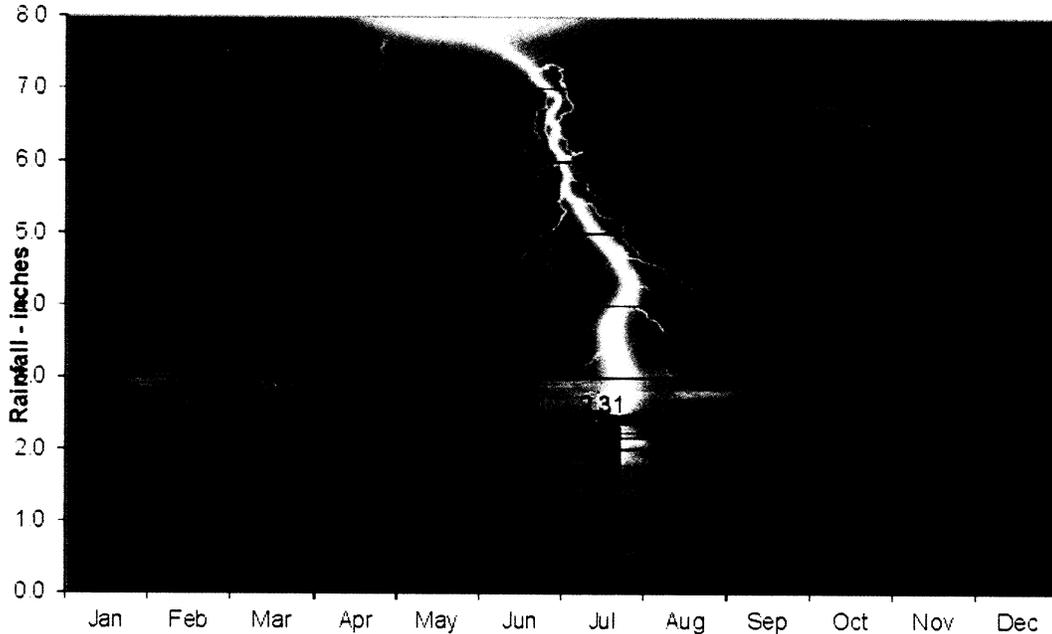
The investigation objectives and goals will be achieved through the performance of the following tasks:

TEMPORARY FLOW MONITORING

In order to perform an I/I analysis and establish the existing capacity being used during dry and wet weather, it will be necessary to obtain flow monitoring information during both dry and wet weather. Under ideal conditions, multiple events are recorded to establish the volume of extraneous water that enters the collection system. From this collected data the inflow response for each storm event is determined. Information obtained during the monitoring period will be used to determine the following for each metering site:

- Average daily flow-dry weather
- Peak flow-dry weather
- Average daily flow-wet weather
- Peak flow-wet weather
- Peak inflow rates
- Total I/I volume

Normal Monthly Rainfall
Dallas - Fort Worth Airport



The preliminary meter site selection has been accomplished following review of the collection system map and preliminary field inspections. Each monitoring site will be selected so that the footage of the collection system upstream of the meter can be isolated for the purposes of determining extraneous I/I and other engineering analysis. Flow meters that record flow depth and velocity are used to obtain the necessary hydraulic information for subsequent analysis. By undertaking temporary flow monitoring, the existing performance of the collection system can be determined. From a review of the collection system, seven flow (7) metering sites and six (6) rain gauges have been identified (See Figure 1). Flow monitoring will be undertaken for ninety (90) consecutive days starting in early April 2012 depending on receipt of the notice to proceed. Note that a milestone will occur sixty (60) days into the flow monitoring where a determination will be made with respect to the adequacy of recorded rainfall events. If adequate rainfall (as determined by the City project manager) has occurred within the sixty (60) days of initial monitoring then the flow metering portion of the project will be terminated and flow and rainfall metering billings will cease resulting in a project cost reduction. If inadequate rainfall is determined, then at City's options, the metering may be extended under the "Special Services" section of this agreement.

RAINFALL MONITORING

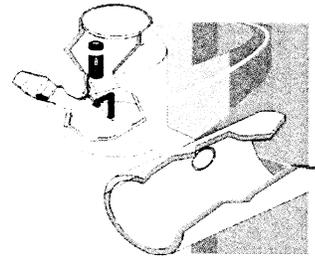
Rainfall meters are used to accurately measure rainfall intensity and duration throughout the monitoring period. This data will be used to establish the rainfall distribution over the entire study area using GIS mapping tools. The rainfall distribution

will establish the amount of rain that fell over each meter basin. Analysis of the flow meter data for each rain event will establish the percentage of rainfall that entered the wastewater collection system. The results obtained from field testing of wastewater collection systems are, to a great degree, weather dependent. In order to minimize the negative impact of inadequate rainfall on the proposed project, the project schedule must consider the local rainfall patterns in order to optimize the field efforts.

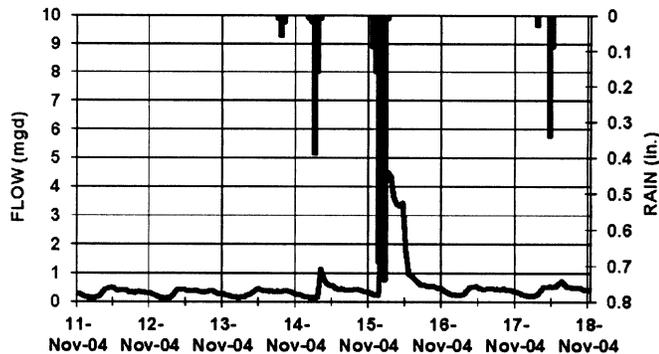
The March thru June period is the optimum time to monitor wastewater. The success of field testing wastewater collection systems is weather dependent and this schedule considers the optimum time to perform this critical flow monitoring.

TASK 1 - METER INSTALLATION, CALIBRATION AND DATA COLLECTION

Understanding the hydraulics of each proposed metering location will ensure that the site selection is appropriate and that the recorded data is accurate. Where flow hydraulics are poor due to abrupt changes in flow direction, large deposits of silt, restrictions, etc. a proposed meter location may be changed upstream or downstream to ensure proper hydraulic conditions in order to obtain accurate flow data.



The temporary flow meters proposed will utilize the area/velocity technology. Flow information is critical in determining the effects of inadequate capacity, I/I, bottlenecks, and backwater conditions. Both the Manning and continuity equations can be compared for analysis. Under ideal free flow hydraulic conditions the two different equations for flow should provide the same result. However, in a backwater or restrictive hydraulic situation, the Manning equation will over quantify flows and diverge from the continuity equation. Such an occurrence will indicate to the data analyst that a backwater condition was observed and a downstream restriction should be investigated. By obtaining continuous velocity and depth data, the engineer can further isolate hydraulic problems within the collection system.



Each meter will be calibrated in a hydraulic flume located at Pipeline Analysis's office. In addition, a field calibration check will be performed following installation. Calibration of each meter is a simple procedure consisting of verification of the depth of flow and

velocity. The flow sensors will be secured to a steel mounting band that fits securely in the pipeline. The data logger for each site will be installed in the top of each manhole and the meter will be activated at user defined sampling intervals; typically 15 minutes. Routine maintenance and service will be undertaken weekly to confirm normal operation. A review of the collection system map indicates that seven (7) flow meters and six (6) rainfall gauges would provide the desired dry and wet weather flow data. Proposed meter sites are:

Meter Site*	Manhole	Nominal Diameter
1	12713	27"
2	5649	12"
3	5855	12"
4	5846	21"
5	11542	15"
6	11556	15"
7	7642	10"

*Note: Final meter locations will be established during site inspections and meters may be moved upstream or downstream due to site hydraulics, traffic or access.

Prior to completion of the 60 day monitoring period, Pipeline Analysis will review dry and wet weather collected to date and determine if sufficient wet weather data has been recorded to provide the desired infiltration/inflow analysis. Engineer will submit a summary along with recommendation to the City project manager. A determination will be made by the City project manager if flow monitoring can be terminated at the 60 day milestone or extended, at City's option under "Special Services", to obtain additional rainfall data. If the City extends the monitoring, the unit price for "Extended Monitoring" will be used during this period.

TASK 2 – DATA ANALYSIS

During and following completion of the flow and rainfall monitoring, Engineer will analyze the gathered data and develop tabular and graphical summaries. Comparisons with any previous historical flow meter data will be reviewed. The impact of silt and debris will also be evaluated. Information obtained during the monitoring period will be used to determine the following for each site:

1. Dry Weather Average daily flow – A typical dry weather week will be established that is not impacted by rainfall. Velocity data will be compared to debris levels to analyze the scouring velocity necessary to prevent deposition in the lines. Discrete flows from each monitored sub-basin will be calculated.
2. Dry Weather Peak Flow – Peak flows during dry weather will be determined from the recorded.
3. Wet Weather Average daily flow - Wet weather flows for each rainfall event will be analyzed to determine the percentage of rainfall that enters the collections

system (also known as the leakiness factor). By comparing the storm event flow with the dry weather flows will establish the Rainfall Derived Infiltration/Inflow (RDII). This value will vary for each storm duration and intensity. The discrete RDII for each sub-basin will be determined and will allow the ranking (prioritization) of each sub-basin by severity of RDII.

4. Wet Weather Peak Flow – Peak flow rates during wet weather are critical to the capacity analysis. Peaking ratios (Peak flow rate to average dry weather flow) will be compared for dry and wet weather.
5. Peak Inflow Rates – Peak inflow rates are calculated by observing peak flow during a wet weather event and subtracting the “normal” flow rate during dry weather.
6. Total I/I volume- The area under each storm event curve will be evaluated to establish the volume of rainfall induced infiltration/inflow. These values can then be normalized to establish the volume of RDII per inch of rainfall. Projections can then be made to accurately determine the impact of RDII during a normal year.

TASK 3– DRAFT AND FINAL REPORT

Prepare and submit one (1) Draft Final Report for review and comments. The Draft Report will include an electronic copy of the report will all supporting data for staff distribution and review. Incorporate comments and prepare three (3) copies of the Final Report and electronic spreadsheets including electronic copy of the Final Report. The project report will include the following sections:

1. Executive Summary
 - a. Study Area Description
 - b. Flow and Rain Gauge Sites
 - c. Recorded Rainfall
 - d. Description of tasks
 - e. Dry/Wet weather flow Summary
 - f. Rainfall Distribution Analysis
 - g. Dry Weather Flow Summary
 - h. Wet Weather Flow Summary
 - i. Rainfall Dependent Infiltration/Inflow Analysis
 - j. Sub-basin Priority Rankings
2. Conclusions and Recommendations
3. Estimated Sewer System Evaluation Costs based on Findings
4. Appendix of flow data, hydrographs, rainfall data, mapping, photographs

Reports shall be bound in 3 –ring binders. All field data, photographs, sketches, maps, data, report narrative, etc. will be placed on CD-ROM and included with the Final Report. The Final Report will be in MSWord and Adobe pdf formats. Maps will be

presented in pdf format and electronic shape files. Tabular flow and rainfall data will be presented in Excel format.

Engineer Deliverables:

1. One (1) copy of Draft Final Report and one (1) CD-ROM Draft Final Report
2. Three (3) bound copies of the final report.
3. Three (3) electronic copies CD-ROM Final Report with data, photographs, maps, and report
4. Presentation of Final Report to staff

TASK 4 – PROJECT ADMINISTRATION/MOBILIZATION

Mobilize project team and coordinate startup. Establish personnel assignments and responsibilities. Inventory equipment needs and order expendable supplies. Perform meter pre-calibration, prepare mounting rings for various pipe sizes, set-up meter database and project information.

Preliminary placement of flow meters and rainfall gauges will be field verified to finalize meter placement. The site inspection will verify wastewater flows, line sizes, debris levels, flow hydraulics and access. Site inspection reports will be prepared based on the field observations. Meter sites will be finalized or new alternative sites established.

This task includes internal project administration and oversight including scheduling, budget, quality assurance and control and reporting. The project schedule will be reviewed in detail and milestones for the completion of each task will be assigned. The project schedule will be reviewed and updated monthly to ensure that all tasks are completed in a timely and organized fashion.

Management work items include:

1. Field crew supervision and project planning
2. Obtain initial maps for field use and verification
3. Prepare monthly billings
4. Schedule equipment and order supplies
5. Monthly meetings and progress reports

Meet with the City Project Team to coordinate upcoming work, receive City Project Team input, discuss major milestones and provide report presentations. ENGINEER will prepare an agenda for meetings. Meeting notes will be prepared for each meeting and distributed to the project team members. Copies of handouts will be prepared for distribution at the meeting. ENGINEER will supply all meeting presentation materials.

EXHIBIT "B"

SCHEDULE OF WORK

The work will be initiated immediately upon receipt of Authorization to Proceed, and is estimated to be completed within approximately five (5) months from the notice to proceed. If uncooperative weather conditions are encountered during the study period (i.e. inadequate rainfall preventing analysis of wet weather infiltration/inflow) the project schedule can be extended at the City's option.

Basic Services Schedule

Task Description		2 Weeks	Month 1	Month 2	Month 3	Month 4	Month 5
1	Temporary Flow Monitoring						
	a. Installation/calibration						
	b. Monitoring - 7 sites at 60 days						
	c. Extended Monitoring at City Option 7 sites at 30 days						
	Rainfall Gauging						
	a. Installation/calibration						
	b. Monitoring - 6 site for 60 days						
	c. Extended Monitoring at City Option 6 sites for 30 days						
	2	Flow Data Analysis					
3	Draft Final Report						
4	Project Adm/ Mobilization						

Special Services with 30 day Extended Monitoring (Total 90 day monitoring period)

Task Description		2 Weeks	Month 1	Month 2	Month 3	Month 4	Month 5
1	Temporary Flow Monitoring						
	a. Installation/calibration						
	b. Monitoring - 7 sites at 60 days						
	c. Extended Monitoring at City Option 7 sites at 30 days						
	Rainfall Gauging						
	a. Installation/calibration						
	b. Monitoring - 6 site for 60 days						
	c. Extended Monitoring at City Option 6 sites for 30 days						
	2	Flow Data Analysis					
3	Draft Final Report						
4	Project Adm/ Mobilization						

Note: Target Start: April 2012; Milestone at 60 days (Month 2)

EXHIBIT "C"

COMPENSATION AND METHOD OF PAYMENT

Basic Services

Payment for this work shall be a unit price for each flow meter and rain gauge installation and a daily rate for each day of monitoring. The basis for partial payment will be the daily rate multiplied by the number of meters times the number of days installed. Should monitoring be extended beyond the contract duration, then the unit price specified for metering shall be used for extended monitoring for each meter day during the extended monitoring period. Lump sum items will be billed based on the percentage completion of the work task. The total contract for basic services will not exceed \$49,955 without an amendment to this contract or authorization by the City to perform "special services" associated with extended monitoring.

Task	Description	Quantity	Unit Price	Total
1	Temporary Flow Monitoring			
	a. Installation/Calibration	7	\$ 325	\$ 2,275.00
	b. Monitoring - 7 sites at 60 days = 420 meter days	420	\$ 80.50	\$ 33,810.00
	c. Extended Monitoring at City Option 7 sites at 30 days	0	\$ 60	\$ -
	Rainfall Gauging			
	a. Installation/Calibration	6	\$ 60	\$ 360.00
	b. Monitoring - 6 sites at 60 days	360	\$ 15	\$ 5,400.00
	c. Extended Monitoring at City Option 6 sites for 30 days	0	\$ 15	\$ -
2	Flow Data Analysis	L.S.	L.S.	\$ 5,160.00
3	Draft/Final Report	L.S.	L.S.	\$ 2,050.00
4	Project Admin./Mobilization	L.S.	L.S.	\$ 900.00
Total Not to Exceed				\$ 49,955.00

Note: Extended Monitoring to be determined at 60 days into the monitoring.

Note: At City's options, flow and rainfall monitoring may be extended to gather additional wet weather flow data. Any monitoring beyond 60 days must be approved by the City of Plano project manager.

COMPENSATION AND METHOD OF PAYMENT

Special Services

Payment for this work shall be a daily rate for each day of extended monitoring. The basis for partial payment will be the daily rate multiplied by the number of meters times the number of days installed. Should monitoring be extended beyond the 60 day contract duration, then the unit price specified for metering shall be used for extended monitoring for each meter day during the extended monitoring period. Lump sum items will be billed based on the percentage completion of the work task. The total contract for Special Services will not exceed \$15,600 without an amendment to this contract. Total project costs will not exceed \$65,555 without an amendment to this contract.

Task	Description	Quantity	Unit Price	Total
1	Temporary Flow Monitoring			
	a. Installation/Calibration	0	\$ 325	\$ -
	b. Monitoring - 7 sites at 60 days = 420 meter days	0	\$ 80.50	\$ -
	c. Extended Monitoring at City Option 7 sites at 30 days	210	\$ 60	\$ 12,600.00
	Rainfall Gauging			
	a. Installation/Calibration	0	\$ 60	\$ -
	b. Monitoring - 6 sites at 60 days	0	\$ 15	\$ -
	c. Extended Monitoring at City Option 6 sites for 30 days	180	\$ 15	\$ 2,700.00
2	Flow Data Analysis	L.S.	L.S.	\$ -
3	Draft/Final Report	L.S.	L.S.	\$ -
4	Project Admin./Mobilization	L.S.	L.S.	\$ 300.00
Total Not to Exceed				\$ 15,600.00
Total Project Not to Exceed				\$ 65,555.00

EXHIBIT "D"
ENGINEERING
INSURANCE

INSURANCE: (Review this section carefully with your insurance agent prior to bid or proposal submission. See "Insurance Checklist" on the last page or specific coverages applicable to this contract).

1. General Insurance Requirements:

- 1.1 The Engineer (hereinafter called "Engineer") shall not start work under this contract until the Engineer has obtained at his own expense all of the insurance called for here under and such insurance has been approved by the City. Approval of insurance required of the Engineer will be granted only after submission to the Purchasing Agent of original, signed certificates of insurance or, alternately, at the City's request, certified copies of the required insurance policies.
- 1.2 All insurance policies required hereunder shall be endorsed to include the following provision: "It is agreed that this policy is not subject to cancellation, non-renewal, without first providing the Risk Manager, City of Plano, at least ten (10) days prior written notice."
- 1.3 No acceptance and/or approval of any insurance by the City shall be construed as relieving or excusing the Engineer from any liability or obligation imposed upon the provisions of the Contract.
- 1.4 The City of Plano (including its elected and appointed officials, agents, volunteers, and employees) is to be named as an additional insured under Engineer's General Liability Policy, and the certificate of insurance, or the certified policy, if requested, must so state. Coverage afforded under this paragraph shall be primary as respects the City, its elected and appointed officials, agents and employees.
 - 1.4.1 The following definition of the term "City" applies to all policies issued under the contract:

The City Council of the City of Plano and any affiliated or subsidiary Board, Commission Authority, Committee, or Independent Agency (including those newly constituted), provided that such affiliated or subsidiary Board Commission, Authority, Committee, or Independent Agency is either a Body Politic created by the City Council of the City of Plano, or one in which controlling interest is vested in the City of Plano; and City of Plano Constitutional Officers.
- 1.5 The Engineer shall provide insurance as specified in the "Insurance Checklist" (Checklist) found on the last page of the bid or proposal form. Full limits of insurance required in the Checklist of this agreement shall be available for claims arising out of this agreement with the City of Plano.

- 1.6 Engineer agrees to defend and indemnify the City of Plano, its officers, agents and employees as provided in Paragraph VII. of this contract.
- 1.7 Insurance coverage required in these specifications shall be in force throughout the Contract Term. Should the Engineer fail to provide acceptable evidence of current insurance within seven (7) days of written notice at any time during the Contract Term, the City shall have the absolute right to terminate the Contract without any further obligation to the Engineer, and the Engineer shall be liable to the City for the entire additional cost of procuring performance and the cost of performing the incomplete portion of the Contract at time of termination.
- 1.8 Written requests for consideration of alternate coverages must be received by the City Purchasing Manager at least ten (10) working days prior to the date set for receipt of bids or proposals. If the City denies the request for alternative coverages, the specified coverages will be required to be submitted.
- 1.9 All required insurance coverages must be acquired from insurers authorized to do business in the State of Texas and acceptable to the City. The City prefers that all insurers also have a policyholder's rating of "A-" or better, and a financial size of "Class VI" or better in the latest edition of A.M. Best, or A or better by Standard and Poors, unless the City grants specific approval for an exception.
- 1.10 Any deductibles shall be disclosed in the Checklist and all deductibles will be assumed by the Engineer. Engineer may be required to provide proof of financial ability to cover deductibles, or may be required to post a bond to cover deductibles.

2. Engineer's Insurance - "Occurrence" Basis:

- 2.1 The Engineer shall purchase the following insurance coverages, including the terms, provisions and limits shown in the Checklist.
 - 2.1.1 Commercial General Liability - Such Commercial General Liability policy shall include any or all of the following as indicated on the Checklist:
 - i. General aggregate limit is to apply per project;
 - ii. Premises/Operations;
 - iii. Actions of Independent Contractors;
 - iv. Contractual Liability including protection for the Engineer from claims arising out of liability assumed under this contract;
 - v. Personal Injury Liability including coverage for offenses related to employment;
 - vi. Explosion, Collapse, or Underground (XCU) hazards; if applicable. This coverage required for any and all work involving drilling, excavation, etc.
 - 2.1.2 Business Automobile Liability including coverage for any owned, hired, or non-owned motor vehicles and automobile contractual liability.

- 2.1.3 Workers' Compensation - statutory benefits as required by the State of Texas, or other laws as required by labor union agreements, including Employers' Liability coverage.

3.0 Engineer's Insurance – Claims Made

Professional Errors and Omissions

The Engineer shall carry Professional Liability insurance which will pay for injuries arising out of negligent errors or omissions in the rendering, or failure to render professional services under the contract, for the term of the Contract and up to three years after the contract is completed in the amount shown in the Checklist.

Professional Errors and Omissions, Limit \$1,000,000
per claim and aggregate of \$2,000,000

ENGINEERING

City of Plano - Insurance Checklist

("X" means the coverage is required.)

<u>Coverages Required</u>	<u>Limits (Figures Denote Minimums)</u>
<input checked="" type="checkbox"/> 1. Workers' Compensation & Employers' Liability	Statutory limits of State of Texas \$100,000 accident \$100,000 disease \$500,000 policy limit disease
<input type="checkbox"/> 2. For Future Use	
<input type="checkbox"/> 3. City Approved Alternative Workers' Comp. Program	\$150,000 medical, safety program
<input checked="" type="checkbox"/> 4. General Liability	Complete entry No. 26 Minimum \$500,000 each occurrence \$1,000,000 general aggregate
<input checked="" type="checkbox"/> 5. General aggregate applies per project (CGL)	
<input checked="" type="checkbox"/> 6. Premises/Operations	(Items No. 3-10 & 12 require)
<input checked="" type="checkbox"/> 7. Independent Contractors	<u>\$500,000</u> combined single limit for bodily injury and property damage
<input type="checkbox"/> 8. Products	damage each occurrence with
<input type="checkbox"/> 9. Completed Operations	\$1,000,000 general aggregate that applies to project under contract
<input checked="" type="checkbox"/> 10. Contractual Liability	
<input checked="" type="checkbox"/> 11. Personal Injury Liability	\$500,000 each offense & aggregate
<input type="checkbox"/> 12. XCU Coverages	
<input checked="" type="checkbox"/> 13. Automobile Liability	\$500,000 Bodily Injury & Property
<input checked="" type="checkbox"/> 14. Owned, Hired & Non-owned	Damage each accident
<input type="checkbox"/> 15. Motor Carrier Act Endorsement	
<input checked="" type="checkbox"/> 16. Professional Liability	\$1,000,000 each claim \$2,000,000 aggregate
<input type="checkbox"/> 17. Garage Liability	\$ _____ BI & PD each occurrence



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
2/23/2012

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Davis-Dyer-Max Insurance a Member of the Insurors Group P.O. Box 495429 Garland TX 75049	CONTACT NAME: Michele McGill PHONE (A/C, No. Ext): (972) 864-0400 FAX (A/C, No.): (972) 278-8400 E-MAIL ADDRESS: michele.mcgill@davis-dyer-max.com													
	<table border="1"> <tr> <th>INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> <tr> <td>INSURER A: Employers Mutual Casualty</td> <td></td> </tr> <tr> <td>INSURER B: Underwriters @ Lloyds, London</td> <td></td> </tr> <tr> <td>INSURER C:</td> <td></td> </tr> <tr> <td>INSURER D:</td> <td></td> </tr> <tr> <td>INSURER E:</td> <td></td> </tr> <tr> <td>INSURER F:</td> <td></td> </tr> </table>	INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A: Employers Mutual Casualty		INSURER B: Underwriters @ Lloyds, London		INSURER C:		INSURER D:		INSURER E:		INSURER F:
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INSURER E:														
INSURER F:														
INSURED Pipeline Analysis, LLC 1115 Main Street Garland TX 75040-6130														

COVERAGES **CERTIFICATE NUMBER: 11-12 Liab** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY		2N91686	5/21/2011	5/21/2012	EACH OCCURRENCE \$ 1,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY					DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000
	<input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR					MED EXP (Any one person) \$ 5,000
						PERSONAL & ADV INJURY \$ 1,000,000
						GENERAL AGGREGATE \$ 2,000,000
						PRODUCTS - COMP/OP AGG \$ 2,000,000
						\$
A	AUTOMOBILE LIABILITY		2R91686	5/21/2011	5/21/2012	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000
	<input checked="" type="checkbox"/> ANY AUTO					BODILY INJURY (Per person) \$
	<input checked="" type="checkbox"/> ALL OWNED AUTOS	<input checked="" type="checkbox"/> SCHEDULED AUTOS				BODILY INJURY (Per accident) \$
	<input checked="" type="checkbox"/> HIRED AUTOS	<input checked="" type="checkbox"/> NON-OWNED AUTOS				PROPERTY DAMAGE (Per accident) \$
	<input checked="" type="checkbox"/>					\$
A	UMBRELLA LIAB	<input checked="" type="checkbox"/> OCCUR	2K91686	5/21/2011	5/21/2012	EACH OCCURRENCE \$ 1,000,000
	EXCESS LIAB	<input type="checkbox"/> CLAIMS-MADE				AGGREGATE \$ 1,000,000
	DED <input checked="" type="checkbox"/>	RETENTION \$ 10,000				\$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY		2P91686	5/21/2011	5/21/2012	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) <input type="checkbox"/> Y/N	N/A				E.L. EACH ACCIDENT \$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below					E.L. DISEASE - EA EMPLOYEE \$ 1,000,000
						E.L. DISEASE - POLICY LIMIT \$ 1,000,000
B	Professional Liability		PPIP00110	9/28/2011	9/28/2012	General Aggregate 2,000,000 Each Claim 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)
 Project: Prairie Creek Basin Infiltration/Inflow Analysis - Project Number: 6075 - The General Liability & Automobile policies include a blanket automatic additional insured endorsement that provides additional insured status to the certificate holder only when there is a written contract between the named insured and certificate holder. The General Liability, Automobile, & Workers' Compensation policies include a blanket automatic waiver of subrogation endorsement only when there is a written contract between the named insured and the certificate holder.

CERTIFICATE HOLDER City of Plano Public Works Engineering Dept. 1520 K Avenue Plano, TX 75074 <i>103-07-12</i>	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE Larry Hughston/SE <i>Larry T. Hughston</i>
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