

May 9, 2005

TO: John Szerlag, City Manager

FROM: Brian Murphy, Assistant City Manager/Services
Steven Vandette, City Engineer
Timothy Richnak, Public Works Director

SUBJECT: **Agenda Item**
Engineering Services for the Sanitary Sewer Infiltration/Inflow Study portion
of the Rouge River National Wet Weather Demonstration Grant Project

BACKGROUND INFORMATION

The Engineering Department advertised for technical proposals for Engineering Services for the Sanitary Sewer Infiltration/Inflow Study, which is part of the Rouge River National Wet Weather Demonstration Project grant that was approved by City Council on February 21, 2005 (CC Res# 2005-02-083-E12). Proposals were received from the following three (3) consultants:

1. Giffels-Webster Engineers, 2871 Bond Street, Rochester Hills, MI
2. Hubbell, Roth & Clark, 555 Hulet, Bloomfield Hills, MI
3. Spalding DeDecker Assoc., 905 South Blvd., Rochester Hills, MI

In accordance with the QBS process, a review committee consisting of the City Engineer, Deputy City Engineer, Storm Water Engineer, Public Works Director and the Water & Sewer Superintendent, rated the consultants based on each firm's understanding of the project, past experience with similar projects and other items as listed on the review sheet (Exhibit 1).

Total final scores for all consultants are presented in Exhibit 1, with Hubbell, Roth & Clark, Inc. (HRC) receiving the highest score based on the committee rating results. HRC was asked to submit a priced proposal based on guidelines prepared by the Engineering Department.

PROPOSAL INFORMATION

City project staff met with HRC to discuss in detail the required scope of services and specific project elements. The fee for Preliminary Engineering submitted by HRC was \$52,502.00. This submittal is based on 705 hours, which provides for all necessary sewer meter installation, maintenance, training of meter and software use, and the final Inflow/Infiltration Report and is in line with the hours by the other consultants submitting un-priced technical proposals on this project. A detailed breakdown of costs is included in the attached copy of the HRC priced proposal (Exhibit 2). Also included with this memo is the signed Engineering agreement with Hubbell, Roth & Clark, Inc.

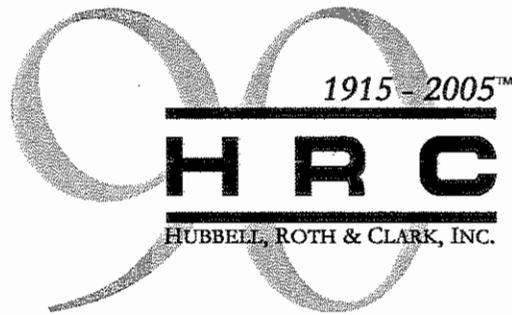
Exhibit 1

Request for Proposal					
<u>Evergreen Farmington Sewage District System</u>					
<u>Flow Monitoring Engineering Work</u>					
Item No.	Task	Hubbell, Roth & Clark, Inc.	Engineering Firm Spalding DeDecker Associates, Inc.	Giffels-Webster Engineers	
1.	Familiarity & experience w/ Wayne County's requirements & standards for the RRNNWWD (5 points)	4.6	3.8		3.4
2.	Qualifications & experience of "Key Personnel" assigned to this project (5 points)	4.2	4.7		4
3.	Prior experience w/ Flow Metering projects and I/I studies on sewer systems similar to this project (15 points)	14.2	13		11.6
4.	Familiarity & experience w/ City of Troy's sanitary sewer system & how the system functions within the EFSDS (25 points)	24.2	19		10.5
5.	Ability to complete the project on-time and address the project purpose and objectives (25 points)	22	22.8		18
6.	Demonstrate a clear understanding of the project (25 points)	24.4	22.4		21.2
7.	Minority, Women, Disadvantaged Owned Business (10 points)	8.2	9		9.2
Total Points (110 points possible)		101.8	94.7		77.9

PRINCIPALS
Gerald F. Knapp
Thomas E. Biehl
Walter H. Alix
George E. Hubbell
Peter T. Roth
Michael D. Waring
Keith D. McCormack
Curt A. Christeson

CHIEF FINANCIAL OFFICER
J. Bruce McFarland

SENIOR ASSOCIATES
Frederick C. Navarre
Gary J. Tressel
Lawrence R. Ancypa
Kenneth A. Melchior
Dennis M. Monsere
Randal L. Ford
David P. Wilcox
Timothy H. Sullivan



ASSOCIATES
Thomas G. Maxwell
Nancy M.D. Faught
Jonathan E. Booth
Michael C. MacDonald
Marvin A. Olane
James C. Hanson
Richard F. Beaubien
Margaret Synk Kuhn
William R. Davis
James J. Aiello
Daniel W. Mitchell
Jesse B. VanDeCreek
Robert F. DeFrain
Marshall J. Grazioli
Thomas D. LaCross

May 6, 2005

City of Troy
Engineering Department
500 West Big Beaver
Troy, Michigan 48084

Attention: Mr. Steve Vandette, P.E., City Engineer

Re: Rouge River National Wet Weather Demonstration Project
Meter Study
Cost Estimate and Work Plan

HRC Job No. 20050183.86

Dear Mr. Vandette,

Per your request, we are pleased to provide this cost estimate and work plan to assist the City with the metering portion of the City's Rouge River National Wet Weather Demonstration Project Round VI – Part "A" Grant Program.

In accordance with the items discussed during our meeting on April 26, 2005, our assistance with the meter study will generally consist of the following tasks:

- A. Flow Meter Training
- B. Meter Installation and Removal (assistance and training)
- C. Weekly Data Collection (assistance and training)
- D. Meter Data Analysis and Progress Meetings

Each task is described as follows.

Flow Meter Training

We will provide an 8-hour training session for City staff that will provide an overview on why we meter, how the data is analyzed, how meters work, how to fill out the various forms required to keep track of your meters and meter data, and how to utilize the meter software that programs, downloads and graphs meter data. We anticipate that the first half of the training session would be a presentation with the second half a work session utilizing the meter software package. For this afternoon session it would be beneficial if every person who will interface with the meters/software have a laptop or desktop at their disposal (if necessary, up to three (3) could share a computer). Depending on the number of City staff that will attend this training session, we may be able to provide all the necessary laptops/equipment (we can coordinate this upon approval of this work plan and notice to proceed). Assuming Isco meters are purchased, we can set up training as soon as possible (even before the City receives their meters). We will provide binders for each attendee that will include the presentation, as well as, meter programming, downloading and data viewing procedures and forms.

Meter Installation and Removal

Meters shall be installed as shown in Figure 1. Prior to installing the meters it is important to check out site conditions of selected meter locations to determine if the hydraulics will be conducive for flow metering. For training purposes, City staff should join our staff as we field investigate the meter locations. This task also requires programming of each meter prior to installation. Our staff will meet with the City staff that will be responsible for the meters and will show them how to program and get the meters ready for installation (typically this is completed a day or two (2) prior to installation; the site visit and meter programming could be coordinated to occur the same day). The installation and removal assumes that two (2) HRC representatives and one (1) Rama, Rao & Associates (RRA) representatives are utilized. The City personnel responsible for future metering projects must attend for training purposes. Upon removal, HRC staff will show City staff the proper way to clean the instrument and store it until further use. It is assumed that all these tasks, except site inspection, will occur twice (in 2005 and 2006).

Weekly Data Collection

Weekly data collection assumes that an HRC representative and an RRA representative will be on-site for the first two (2) weeks to assist the City with the weekly data downloading. Following the first two (2) weeks, only an RRA representative will assist the City with data downloading; however, please note, the RRA representative may not be prepared to answer questions on the software or data downloading, all such questions will likely have to be asked of HRC personnel. The budget under this task allows for one (1) field visit per month from HRC personnel should the City require additional assistance or have on-site questions. After the first two (2) data downloads, HRC personnel will show the 'City's "data analyst" and/or field staff how to scan the data (for telltale signs of apparent meter malfunctions that require immediate meter cleaning or calibrating), archive the data and transfer via email to HRC for review. HRC staff will review the data weekly and will let City staff know if any of the meters need additional maintenance.

Meter Data Analysis and Progress Meetings

The meter data analysis assumes that each data set from 2005 and 2006 will be analyzed with a preliminary report summarizing the 2005 study completed no later than November, 2005. And the final report will be completed no later than October 1, 2006 prior to the Grant deadline of October 31, 2006.

In general, the goal of the project is to quantify the effectiveness of the proposed Cured-In-Place-Pipe (CIPP) improvements. CIPP improvements will essentially remove the sources of ground water infiltration that are currently leaking into the local collection sewer at cracks in the pipes and joints. Therefore, the analysis will include an evaluation of the dry weather flow compared to tributary population and inch-mile of pipe. It would be best if metering occurred at same time of the year each year so that the data collection occurs under similar ground water table elevations. Therefore, as discussed during our April 26 meeting, in order to meet the Grant deadline, the metering periods will be from June through August in 2005 and 2006.

Rain events would be useful to collect to compare peak flows to tributary population and inch-mile of pipe, however, according to project goal, rain events are not necessarily required to determine the effectiveness of the CIPP improvements. While 10-year, 1-hour peak inflow projections may be useful to determine the extent of excessive inflow (footing drain and sump pump flow) into the sanitary system, it is important to note that, this study does not allow for data projections. We can adjust our proposal accordingly should the City want to expand the scope of the project to evaluate the 10-year, 1-hour projected peak inflow.

Mr. Vandette
May 6, 2005
20050183.86
Page 3

We have also included progress meetings (up to four (4)) and a presentation to City council, which are tasks that are in addition to the original estimate that was presented during our April 26, 2005 meeting.

We estimate that it will take approximately 705 hours of staff time to assist the City with the meter portion of the City's Rouge River National Wet Weather Demonstration Project Round VI – Part "A" Grant Program. Further, the cost to complete these tasks will not exceed \$52,502.00 without prior authorization (see attached for breakdown of hours and costs).

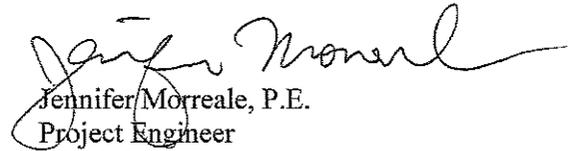
If you have any questions or require any additional information, please feel free to contact me at 248-454-6300.

Very truly yours,

HUBBELL, ROTH & CLARK, INC.



Walter H. Alix, P.E., P.S.
Vice President



Jennifer Morreale, P.E.
Project Engineer

JLM/jlm
Attachment

pc: Troy; D. Calhoun, B. Houtari, T. Richnak, M. Karloff
HRC; M. MacDonald, File

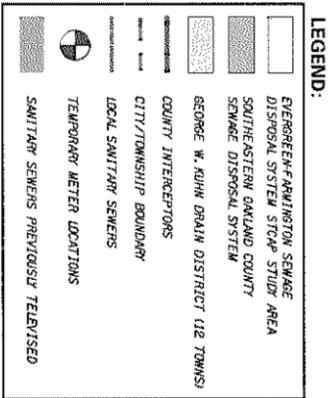
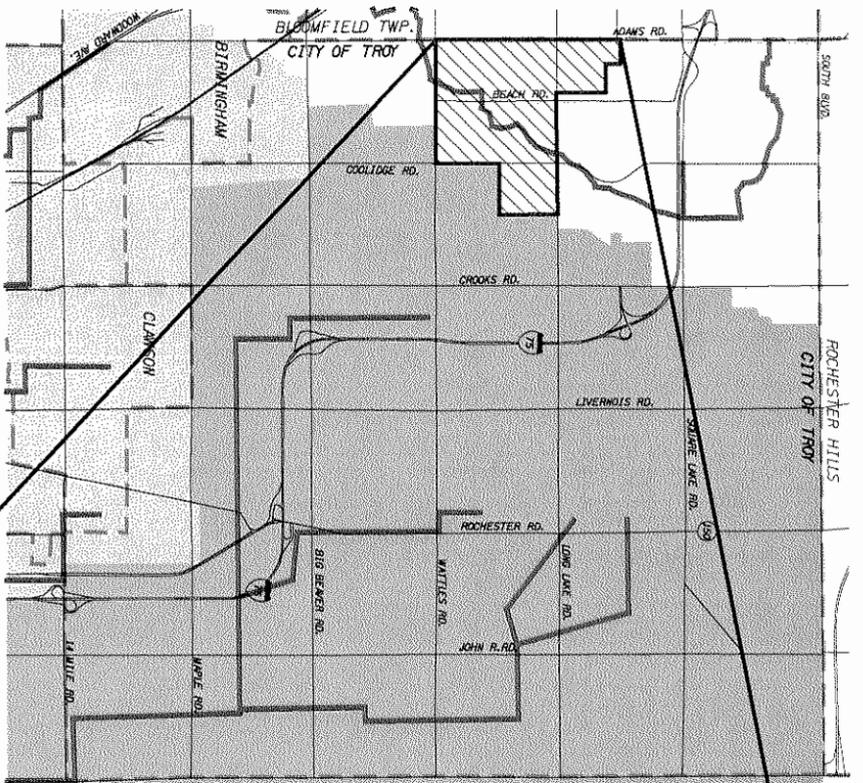
STAFF HOUR PROJECTIONS / TOTAL COST ESTIMATE
ROUGE RIVER NATIONAL WET WEATHER DEMONSTRATION PROJECT - METER STUDY
CITY OF TROY, MICHIGAN

TASK	Staff Hours by Labor Category					Total
	Associate	Project Engineer	Cadd Tech.	Field Tech.	Clerical	
A. Flow Meter Training						
1. Revise Meter Forms for City		3				3
2. Update Flow Meter Presentation		12		2		14
3. Compile Training Binders/Info		4			8	12
4. Training Day with City Staff		8				8
B. Meter Installation & Removal						
1. Site Inspection (with City Staff)		6		6		12
2. Set up 8 Meters for Installation (with City Staff)		2		16		18
3. Install 8 Meters (2 HRC + 1 RRA + City Staff)		2		64		66
4. Remove 8 Meters (2 HRC + 1 RRA + City Staff)				48		48
5. Clean and Store Meter Equipment (with City Staff) - Twice				16		16
C. Weekly Data Collection						
1. Data Collection for First 2 Weeks (1 HRC + 1 RRA + City Staff)				32		32
2. Data Collection for remaining 22 Weeks (1 RRA + City Staff)				110		110
3. Assume Field Site Visit/Help Once per Month (1 HRC)				36		36
4. Scan Data, Archive and Transfer for First 2 Weeks (1 HRC + City Staff) - Twice		16				16
5. Data Review		72				72
D. Meter Data Analysis & Progress Meetings						
1. Meter Data Analysis		64				64
2. Meter Study Preliminary Report (October - November, 2005)	4	40	16		8	68
3. Meter Study Final Report (October 1, 2006)	4	20	16		8	48
4. Progress Meetings - 4 Meetings	12	24				36
5. Presentation to City	4	18	4			26
	24	291	36	330	24	705

FEES FOR ENGINEERING SERVICES

ROUGE RIVER NATIONAL WET WEATHER DEMONSTRATION PROJECT - METER STUDY
CITY OF TROY, MICHIGAN

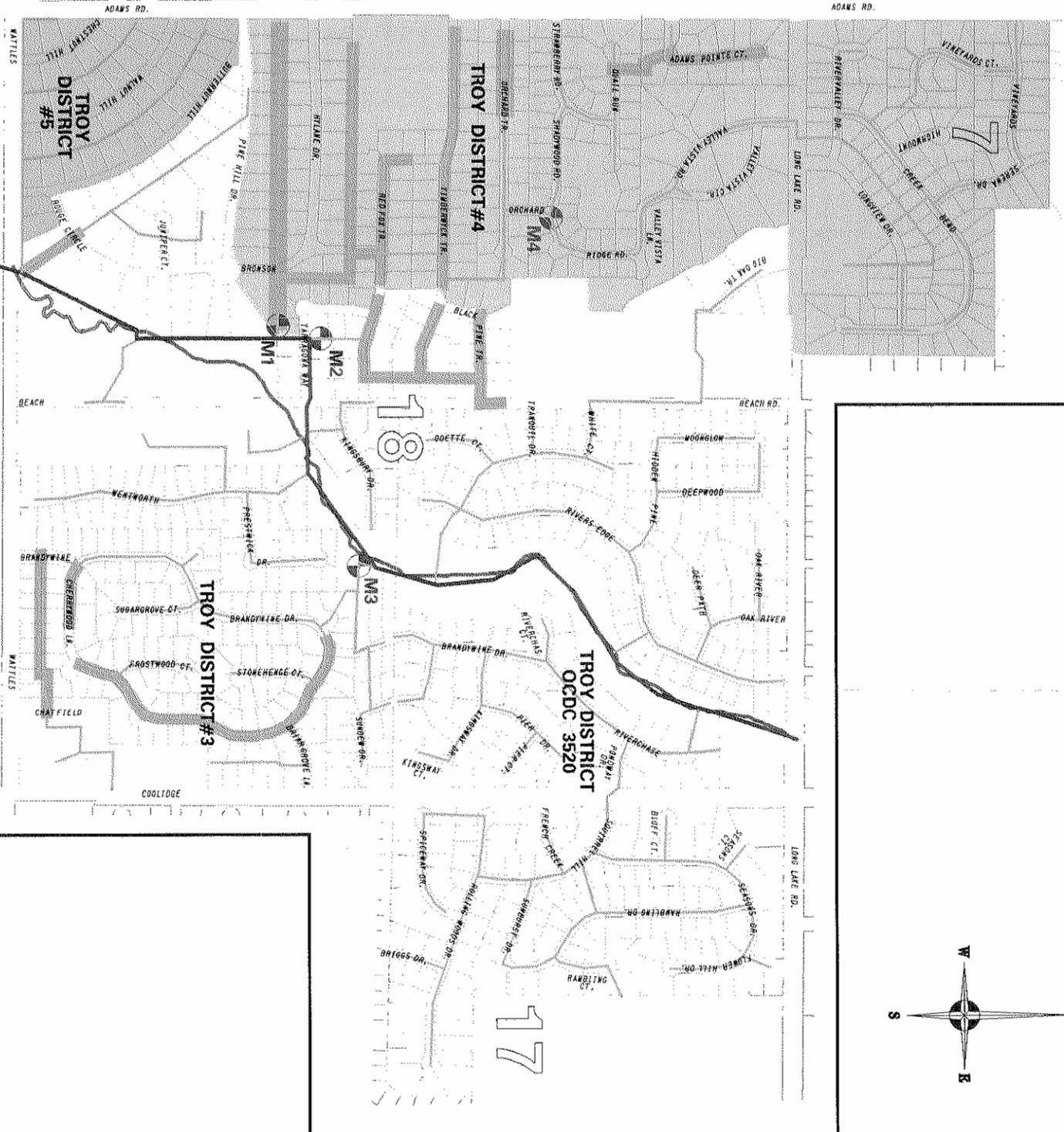
	<u>ESTIMATED HOURS</u>	<u>DIRECT PAYROLL</u>	<u>ESTIMATED COST</u>
Associate	24	\$45.00	\$ 1,080.00
Project Engineer	291	\$30.00	\$ 8,730.00
Cadd Tech.	36	\$25.00	\$ 900.00
Field Tech.	330	\$20.00	\$ 6,600.00
Clerical	24	\$15.00	\$ 360.00
TOTAL DIRECT PAYROLL			\$ 17,670.00
Overhead Labor (1.5837 Times Direct Payroll)			\$ 27,983.98
Sub-Total (Total Labor + Total Overhead)			\$ 45,653.98
Fixed Fee (15%)			\$ 6,848.10
TOTAL ESTIMATED FEE			\$ 52,502.08



TROY DISTRICT ¹	10-YEAR, 1-HOUR PROJECTED PEAK FLOW (gpcd) ²	DISTRICT RANKING ³
3	1,194	2
4	473	6
5	792	5
OCDC 3520	947	4

¹TROY DISTRICT DELINEATION, INFLOW AND DISTRICT RANKING INFORMATION ARE FROM THE 2004 EPCO PLAN MODEL/STOP STUDY FOR THE CITY OF TROY PREPARED BY HRC. REFER TO SECTION 1 OF SAID REPORT FOR MORE INFORMATION. ACCORDING TO THE EPA, PEAK FLOW > 275 gallon per capita per day (gpcd) IS CONSIDERED TO BE EXCESSIVE.

²A TOTAL OF 6 DISTRICTS WERE RANKED. THE LOWER THE NUMBER, THE WORSE THE DISTRICT IS. TROY DISTRICT 3 WAS RANKED THE 2nd WORST DISTRICT.



555 SILENT DRIVE
BLOOMFIELD HILLS, MICH. 48303-0824

CITY OF TROY -
ROUGE RIVER NATIONAL WET WEATHER
DEMONSTRATION PROJECT METER STUDY

**SECTION 18 -
TEMPORARY METER LOCATIONS**

JOB NO. 20050138

DATE: MAY 2005

FIGURE:

1

CITY OF TROY
AGREEMENT FOR ENGINEERING SERVICES
FOR SANITARY SEWER INFILTRATION/INFLOW STUDY

AGREEMENT

Pursuant to City Council Resolution No. _____, the City of Troy (City) and _____ (Consultant), based on the Proposal for Engineering Services received from _____ on March 31, 2005 (copy attached), agree as follows:

- a) The Consultant shall conform to all applicable laws, ordinances, City standards and statutes of the Federal Government, State of Michigan and City of Troy, including but not limited to, the following:
- Civil Rights Act of 1964, as amended
 - Davis Bacon Act, as amended (40 USC 327-330)
 - Copeland "Anti-Kickback" Act (18 USC 874), as supplemented in the Department of Labor Regulations (20 CFR-Part 3)
- b) The City reserves the right to terminate the contract at any time with the assurance that the contractor shall be entitled to reimbursement for any services rendered prior to the date of termination.
- c) Provide a statement that the Consultant will not perform any services for the City in which there is a conflict of interest, or the appearance of a conflict of interest, with any builder, developer, contractor or private client who is or might be expected to be active in the City.

If the Consultant is currently performing services for a builder, developer, contractor or private client who is or might be expected to be active in the City, the consulting engineer shall provide a detailed listing of this work, as well as the anticipated date of completion.

- d) The Consultant will be held responsible for additional costs resulting from negligence, mismanagement, delays or improper guidance. When it can be established that the Consultant is clearly at fault, these additional costs will be borne by the Consultant.

The City will require affirmative steps to be taken by the Consultant for the utilization of DBE/WBE firms for subcontracted services for this project if necessary.

- e) The Consultant shall not commence work under this agreement until it has obtained the following required insurance. All coverage shall be with insurance carriers acceptable to the City. **All insurance carriers shall be licensed and admitted to do business in the State of Michigan.** The Consultant shall require each its subcontractors to maintain the following required insurance. If

CITY OF TROY
AGREEMENT FOR ENGINEERING SERVICES
FOR SANITARY SEWER INFILTRATION/INFLOW STUDY

any insurance is written with a deductible or self-insured retention, the Consultant shall be solely responsible for said deductible or self-insured retention. The purchase of insurance and the furnishing of a certificate of insurance shall not constitute satisfaction of the Consultant's indemnification of the City.

The Consultant and its subcontractors shall procure and maintain during the life of the agreement the following coverage:

- i. Workers compensation insurance in accordance with all applicable statutes of the State of Michigan. Coverage shall include a minimum \$250,000 employers liability coverage.
- ii. Commercial general liability insurance on an "occurrence" basis with limits of liability not less than \$1,000,000 per occurrence and/or aggregate combined single limit, personal injury, bodily injury and property damage. Coverage shall include the following extensions:
 - Per Contract Aggregate (Annual Aggregate Contract Limit)
 - Contractual liability
 - Products and completed operations
 - Independent contractors coverage
 - Broad form general liability extensions or equivalent
- iii. Motor vehicle liability coverage, including Michigan no-fault coverage for all vehicles used in the performance of the contract.

Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles. Limits of liability shall not be less than \$1,000,000 per occurrence combined single limit bodily injury and property damage.

- iv. Professional liability, issued on an "occurrence basis" or "claims made basis", with limits of liability of not less than \$3,000,000 per occurrence/aggregate, or per claim/aggregate if on a "claims made basis". If written on a "claims made basis", the policy must continue for a period of two (2) years following the termination or end date of the contract. Whether on an "occurrence basis" or a "claims made basis", the policy shall include: a) per contract aggregate and b) deletion of all contractual liability exclusions and/or provisions.
- v. Additional insured, commercial general liability insurance and motor vehicle liability coverage, as described above, shall include an endorsement stating the following shall be additional insureds:

CITY OF TROY
AGREEMENT FOR ENGINEERING SERVICES
FOR SANITARY SEWER INFILTRATION/INFLOW STUDY

“The City of Troy, including architects and engineers, all elected and appointed officials, all employees and volunteers, boards, commissions and/or authorities and their board members, employees, and volunteers “; additional insured on ISO form B or broader.”

- vi. Cancellation notice. Worker’ compensation insurance, commercial general liability insurance, motor vehicle liability insurance and professional liability insurance, as described above shall include an endorsement stating that thirty (30) days’ advance written notice of cancellation, non-renewal, reduction and/or material change shall be sent to:

City of Troy – Risk Management
500 W. Big Beaver
Troy, MI 48084

- vii. Indemnification, except professional liability. To the fullest extent permitted by law, the Consultant expressly agrees to indemnify and hold the City harmless against all losses and liabilities arising out of personal injury, bodily injury or property damages, based upon any negligent act, grossly negligent act or omission, or willful or wanton misconduct, by the Consultant or anyone acting on the Consultant’s behalf, in connection with, or incidental to, the contract or the work to be performed, except that the Consultant shall not be responsible to indemnify the City for losses or damages caused by or resulting from the City’s gross negligence.

- viii. Indemnification, professional liability.

- a. The Consultant expressly agrees to indemnify and hold the City harmless against all losses and liabilities arising out of personal injury, bodily injury or property damages to the extent of any negligent act, grossly negligent act, error or omission of the Consultant or anyone acting on the Consultant’s behalf, in connection with, or incidental to, the contract or work to be performed, except that the Consultant shall not be responsible to indemnify the City for any losses or damages to the extent that same are caused by or result from the gross negligence of the City or any other person or entity.

- b. To the extent of the Consultant’s actual degree of fault, the Consultant’s obligation to indemnify and hold the City harmless shall include:

- I. The obligation to defend the City from any such suit, action or proceeding, and;

CITY OF TROY
AGREEMENT FOR ENGINEERING SERVICES
FOR SANITARY SEWER INFILTRATION/INFLOW STUDY

- II. The obligation to pay any and all judgments which may be recovered in any such suit, action or proceeding and/or any reasonable expenses including, but not limited to costs, attorney fees and settlement expenses which may be incurred, but only to the extent that such judgments and expenses are attributable to the Consultant's actual fault.
- c. The Consultant agrees that it will not settle or resolve any claim or action against the Consultant based upon its acts which includes, or may include, a claim or count against the City or its employees without obtaining a full and complete release in favor of the City with respect to any and all claims or counts against the City except those based upon the gross negligence or willful or wanton misconduct of the City or its employees.
- d. For the purpose of indemnity clauses in the agreement, "City" shall mean City of Troy, its elected and appointed officials, employees and volunteers working on behalf of the City; losses and liabilities shall mean loss, cost, expense, damage, liability or claims, whether groundless or not; personal injury shall mean false arrest, erroneous service of civil papers, false imprisonment, malicious prosecution, assault and battery, libel, slander, defamation of character, discrimination, mental anguish, wrongful entry or eviction, violation of property, or deprivation of any rights, privileges or immunities secured by the constitution and laws of the United States of America or the State of Michigan, for which the Consultant may be held liable to its injured party in an action-at-law or a suit in equity or other proceedings for redress; bodily injury shall mean bodily injury, sickness or disease and mental injury which may be sustained or claimed by any person or persons; and property damage shall mean the damage and destruction of any property including the loss of use thereof.
- e. The Consultant and the City may agree to arbitrate any disputes with respect to the application of this indemnification clause.

**CITY OF TROY
AGREEMENT FOR ENGINEERING SERVICES
FOR SANITARY SEWER INFILTRATION/INFLOW STUDY**

This agreement is hereby made and entered into this _____ day of _____
2005, by and between the City of Troy (Troy) and _____
(Consultant).

CITY OF TROY:

CONSULTANT:

Louise Schilling, Mayor

Tonni Bartholomew, City Clerk