



# CITY of NOVI CITY COUNCIL

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Agenda Item 3  
September 10, 2007

**SUBJECT:** Approval to award a contract for engineering services for Capacity Management Operations and Maintenance (CMOM) Phase III activities (sanitary sewer pilot program, cleaning and televising, and flow monitoring) to Orchard, Hiltz and McCliment for \$96,100.

**SUBMITTING DEPARTMENT:** Engineering *RJA*

**CITY MANAGER APPROVAL:** *[Signature]*

EXPENDITURE REQUIRED	\$96,100
AMOUNT BUDGETED	\$216,000
APPROPRIATION REQUIRED	N/A
LINE ITEM NUMBER	592-592.00-936.500

### BACKGROUND INFORMATION:

The City of Novi has experienced significant growth in the past 10 to 15 years and is anticipating that this growth will continue. In the face of rapid growth and changing conditions, the City leadership decided that a better understanding was needed of the capacity available in the existing sanitary sewer system, and of the improvements required to meet future demands at the time of build-out. To accomplish this goal, the City initiated the sanitary sewage *Capacity, Management, Operations and Maintenance (CMOM)* Program in 2004. The first two phases of the program have included an investigation of the existing capacity of the system, an inventory of pump stations, flow metering at key locations throughout the City to identify potential areas of inflow and infiltration problems, an investigation of key areas of the City prone to inflow and infiltration, and the development of a list of projects to add to the City's capital improvements program. The project list includes this project, which is the third phase of the CMOM program.

The engineering tasks to be completed in the third phase include:

- A. Design, bidding, construction engineering services and a reporting phase for a pilot program within a designated area (upstream of the Country Place pump station in Section 35) for inflow and infiltration removal based on the results of the Sanitary Sewer Evaluation Survey (SSES), which was completed in CMOM Phase II.
- B. The cleaning and televising of areas identified as Tier II areas in the SSES.
- C. Additional flow metering of priority areas of the City.

Water that results from Inflow and infiltration to the City's sanitary sewage collection system must be removed because it otherwise gets conveyed to and treated by the wastewater treatment plant. This essentially means that the City's collection and treatment capacity is diminished by collecting and treating the clean water that is introduced by inflow and infiltration.

The outcome of the project will not only include the removal of inflow and infiltration (or I/I) from the portion of the sanitary sewer system that is tributary to Country Place sanitary pump station, but it will also provide an analysis of the cost to remove I/I and analyze the feasibility of additional projects to remove I/I from the City's system. Additionally, the older sanitary sewers in the system will be televised and analyzed for potential problems to be addressed as capital improvement projects in the future. The project will also continue to meter sanitary sewer flows to provide additional data on the performance of the City's sanitary sewage collection system.

The attached Request for Proposals for design and construction engineering services was sent to the six firms that City Council pre-qualified for utility-related projects. Five proposals were received and each was evaluated using the *Qualifications-Based Selection* process by staff from both the Water & Sewer and Engineering Departments. For this project, a greater emphasis was placed on the each firm's proposed approach to the project because of the complex nature of the project scope, and a lower weight was assigned to the proposed fee.

The following table summarizes the results of the proposal review process:

Firm	Total Fee (Tasks A, B and C)	Staff Review Score	Proposal Rank
Anderson Eckstein & Westrick	\$200,433.80	485	5
Fishbeck Thompson Carr & Huber	\$105,575.00	505	4
<b>Orchard Hiltz &amp; McCliment</b>	<b>\$96,100.00*</b>	<b>790</b>	<b>1</b>
Spalding DeDecker	\$104,824.00	590	3
URS Corporation	\$88,640.00	630	2

\*Note: Includes a \$27,168 fee reduction for City staff to perform some Task A and C field monitoring.

Of the five firms that submitted proposals, Orchard Hiltz and McCliment (OHM) presented the best, most comprehensive proposal as ranked by DPW/Water & Sewer and Engineering reviewers. While OHM did not present the lowest fee, OHM's proposal meets and exceeds the expectations of staff and also presents several ideas to save costs on some of the tasks. Specifically, OHM's proposal suggests using City staff to self-perform some of the field monitoring tasks during, which results in a savings in engineering fees of \$27,168 thus lowering OHM's fee to \$96,100. DPW Director Benny McCusker has confirmed that DPW and Water & Sewer staff will take on this portion of the field work during the I/I removal evaluation of the pilot program (Task A) and for flow metering (Task C). URS had the 2<sup>nd</sup> highest proposal yet the lowest fee; however, URS presented a schedule that shows completion in late 2008, while OHM's schedule calls for work to begin this fall and be completed by the end of May 2008.

OHM previously completed Phases I and II of the CMOM program and brings significant knowledge, experience and continuity to benefit this project. Several of the staff members listed in the proposal have a thorough knowledge of Novi's sanitary sewage collection system.

**RECOMMENDED ACTION:** Approval to award a contract for engineering services for Capacity Management Operations and Maintenance (CMOM) Phase III activities (sanitary sewer pilot program, cleaning and televising, and flow monitoring) to Orchard, Hiltz and McCliment for \$96,100.

	1	2	Y	N
<b>Mayor Landry</b>				
<b>Mayor Pro Tem Capello</b>				
<b>Council Member Gatt</b>				
<b>Council Member Margolis</b>				

	1	2	Y	N
<b>Council Member Mutch</b>				
<b>Council Member Nagy</b>				
<b>Council Member Paul</b>				

**SCORING SUMMARY**

**Project Description:** CMOM Phase III Tasks

**RANK 1= LOW, x= BEST (x = number of firms repounding)**

	<i>Item weight:</i>					
	10	5	2	3	5	
<b>TOTAL SCORES</b>	1	2	3	4	5	Rank
Anderson Eckstein & Westrick	4	13	11	11	10	5
Fishbeck Thompson Carr & Huber	12	14	8	10	11	4
Orchard Hiltz & McCliment	8	16	18	18	18	1
Stantec	17	11	11	9	11	3
Spalding DeDecker	19	6	12	12	10	2
URS Corporation						
	<b>NO PROPOSAL</b>					
<b>TOTALS</b>	60	60	60	60	60	

**SCORING CRITERIA**

1. Engineering Fee
2. Evaluation Schedule
3. Evaluation of Approach, Statement of Understanding of Project, and proposed staff
4. Analysis of subjective statements applicable to the project as required on the RFP (Value added items)
5. Evaluation of past performance on City projects

**FEE PROPOSAL RESULTS FOR CMOM PHASE III TASKS**

	AEW	FTC&H	OHM	Spalding DeDecker	URS
Design Phase (not-to-exceed fee)	\$ 22,417.00	\$ 19,535.00	\$ 19,022.00	\$ 9,300.00	\$ 8,600.00
% of Construction	18.13%	9.50%	12.70%	11.40%	9.00%
Construction Cost Estimate	\$ 216,000.00	\$ 216,000.00	\$ 216,000.00	\$ 216,000.00	\$ 216,000.00
Estimated Construction Phase	\$ 39,160.80	\$ 20,520.00	\$ 27,432.00	\$ 24,624.00	\$ 19,440.00
Reporting/Metering Phase	\$ 32,276.00	\$ 28,185.00	\$ 21,578.00	\$ 23,600.00	\$ 28,500.00
Total Estimated Fee	\$ 93,853.80	\$ 68,240.00	\$ 68,032.00	\$ 57,524.00	\$ 56,540.00
<b>Task B--Cleaning and Televising (Tier II)</b>					
Total Fee	\$ 60,022.00	\$ 17,485.00	\$ 16,909.00	\$ 23,800.00	\$ 12,900.00
<b>Task C--Flow Monitoring</b>					
Total Fee	\$ 46,558.00	\$ 19,850.00	\$ 38,225.00	\$ 23,500.00	\$ 19,200.00
<b>GRAND TOTAL</b>	\$ 200,433.80	\$ 105,575.00	\$ 123,166.00	\$ 104,824.00	\$ 88,640.00
<b>Staff Review Score</b>	485	505	790	590	630
<b>SCORE</b>	5	4	1	3	2

REVIEWER:

Hayes

Project Description:

CMOM Phase III Tasks

RANK 1= LOW, x= BEST (x = number of firms repending)

SCORES	Item weight:					Totals	Rank
	10	5	20	10	5		
	1	2	3	4	5		
Anderson Eckstein & Westrick	1	3	3	2	3	120	5
Fishbeck Thompson Carr & Huber	3	3	3	4	3	160	2
Orchard Hiltz & McCliment	2	4	4	5	4	190	1
Stantec	No proposal						
Spalding DeDecker	4	3	2	2	2	125	4
URS Corporation	5	2	3	2	3	155	3

TOTALS

15 15 15 15 15

**COMMENTS**

Anderson Eckstein & Westrick	Highest fee proposed; provided a very detailed description of AEW's project understanding; good and detailed approach; no explicit mention of value-added ideas to implement; some concerns on staff & their availability to the project; however, Hala Baroudi is highly qualified for this type of work.
Fishbeck Thompson Carr & Huber	Low fee; good understanding with a logical approach; other than recommending the use of a control basin, no specific mention of value-added ideas; staff team appears adequate.
Orchard Hiltz & McCliment	Fee includes options for city to perform some tasks to reduce overall fee; reasonable schedule; clear, detailed understanding and approach; several value-added ideas offered that stem from OHM's experience working on CMOM Phases I & II. Highly qualified project team with lots of relevant experience, and a solid understanding of "big picture" sanitary issues.
Stantec	
Spalding DeDecker	Low fee; adequate project understanding; approach is a bit light on details; no real value-added concepts offered. Other than Maria, not a lot of SSES, I/I monitoring, or other study experience on staff team.
URS Corporation	Lowest fee; a very detailed approach but little mention of project understanding. Schedule shows spring 2008 start but w/ no explanation. It may prove to be difficult for field work to be performed by staff from Ohio; PM appears to be well qualified to lead the proposed team, though.No explicit mention of value-added concepts.

**SCORING CRITERIA**

1. Engineering Fee
2. Evaluation of Schedule
3. Evaluation of Approach, Statement of Understanding of Project, and proposed staff
4. Analysis of subjective statements applicable to the project as required on the RFP (Value added items)
5. Evaluation of past performance on City projects

Co

Coburn

Project Description:

CMOM Phase III Tasks

RANK 1= LOW, x= BEST (x = number of firms repending)

SCORES	Item weight:					Totals	Rank
	10	5	20	10	5		
Anderson Eckstein & Westrick	1	4	3	4	3	145	3
Fishbeck Thompson Carr & Huber	3	4	2	1	2	110	5
Orchard Hiltz & McCliment	2	3	4	4	4	175	2
Stantec							
Spalding DeDecker	5	3	2	1	2	125	4
URS Corporation	4	1	4	5	4	195	1

TOTALS	15	15	15	15	15		
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**COMMENTS**

Anderson Eckstein & Westrick	Relevant experience in other communities, understands the scope, offered meters
Fishbeck Thompson Carr & Huber	Good suggestion in scope, relevant experience, reassurance of QAQC program, lacking approach
Orchard Hiltz & McCliment	Excellent approach, history with project is value added, offers cost saving measures using staff
Stantec	
Spalding DeDecker	
URS Corporation	Excellent cost saving ideas, good scope, lost me on the schedule

**SCORING CRITERIA**

1. Engineering Fee
2. Evaluation of Schedule
3. Evaluation of Approach, Statement of Understanding of Project, and proposed staff
4. Analysis of subjective statements applicable to the project as required on the RFP (Value added items)
5. Evaluation of past performance on City projects

**REVIEWER:** Scott Roselle

**Project Description:** CMOM Phase III Tasks

**RANK 1= LOW, x= BEST (x = number of firms reponding)**

<b>SCORES</b>	<i>Item weight:</i>					Totals	Rank
	10	5	20	10	5		
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>		
Anderson Eckstein & Westrick	1	3	2	3	3	<b>110</b>	5
Fishbeck Thompson Carr & Huber	3	3	2	3	3	<b>130</b>	3
Orchard Hiltz & McCliment	2	4	5	4	5	<b>205</b>	1
Stantec							
Spalding DeDecker	4	3	4	3	3	<b>180</b>	2
URS Corporation	5	2	2	2	1	<b>125</b>	4
<b>TOTALS</b>	15	15	15	15	15		

**COMMENTS**

Anderson Eckstein & Westrick	Pricing not even close.
Fishbeck Thompson Carr & Huber	Sound proposal, Not the team for this project.
Orchard Hiltz & McCliment	Past work on CMOM I,II exemplary, Project team has proven excellence. Nassco rating system a plus
Stantec	
Spalding DeDecker	Very good proposal, Construction services committed to what is best for Novi.
URS Corporation	Schedule does not meet our time line.

**SCORING CRITERIA**

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2. Evaluation of Schedule
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5. Evaluation of past performance on City projects

REVIEWER:

Tim Sikma

Project Description:

CMOM Phase III Tasks

RANK 1= LOW, x= BEST (x = number of firms repoding)

SCORES	Item weight:					Totals	Rank
	10	5	20	10	5		
Anderson Eckstein & Westrick	1	3	3	2	1	110	4
Fishbeck Thompson Carr & Huber	3	4	1	2	3	105	5
Orchard Hiltz & McCliment	2	5	5	5	5	220	1
Stantec							
Spalding DeDecker	4	2	3	3	4	160	2
URS Corporation	5	1	3	3	2	155	3

TOTALS	15	15	15	15	15		
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**COMMENTS**

Anderson Eckstein & Westrick	Approach looked too generic. They plan to use NASSCO for sewer evaluation.
Fishbeck Thompson Carr & Huber	The control basin does not seem feasible. Monthly status reports sounds good. They wanted to re-evaluate the manhole structures.
Orchard Hiltz & McCliment	OHM knows the program. We will have less ramp up time. They want to use a standard ranking program like NASSCO. They have worked well with our employee's in the past.
Stantec	
Spalding DeDecker	Metering specifically looked like a good approach. Thinking the technical staff may need corporate support to complete the project.
URS Corporation	URS wanted to use NASSCO program. They said they we could use their meters. Their timeframe was too long.

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**NOTICE - CITY OF NOVI  
REQUEST FOR PROPOSALS**

**Engineering Services for  
Capacity Management Operations and Maintenance Phase III Tasks**

The City of Novi will receive sealed proposals for **Engineering Services for CMOM III Tasks** according to the specifications of the City of Novi.

Sealed proposals will be received until **3:00 P.M.** prevailing Eastern Time, **Wednesday, August 15, 2007**. Proposals shall be addressed as follows:

**CITY OF NOVI  
CAROL J. KALINOVIK, PURCHASING DIRECTOR  
45175 W. Ten Mile Rd.  
Novi, MI 48375-3024**

All proposals must be signed by a legally authorized agent of the proposing firm.  
**ENVELOPES MUST BE PLAINLY MARKED**

**“ENGINEERING SERVICES FOR  
CMOM III TASKS”**

**AND MUST BEAR THE NAME OF THE PROPOSER.**

The City reserves the right to accept any or all alternative proposals and award the contract to other than the lowest bidder, to waive any irregularities or informalities or both; to reject any or all proposals; and in general to make the award of the contract in any manner deemed by the City, in its sole discretion, to be in the best interest of the City of Novi.

Carol J. Kalinovik  
Purchasing Director  
[ckalinovik@cityofnovi.org](mailto:ckalinovik@cityofnovi.org)

Notice dated: July 27, 2007

**REQUEST FOR PROPOSALS  
CITY OF NOVI**

**ENGINEERING SERVICES FOR  
CAPACITY MANAGEMENT OPERATIONS AND MAINTENANCE PHASE III TASKS**

July 27, 2007

This Request for Proposals (RFP) for **CAPACITY MANAGEMENT OPERATIONS AND MAINTENANCE PHASE III TASKS** is being sent to the firms selected in the Utility Qualification Process completed on March 19, 2007.

**Project Description**

The City of Novi has experienced significant growth in the past 10 to 15 years and is anticipating that this growth will continue. In the face of rapid growth and changing conditions, the City leadership decided that they needed a better understanding of the capacity available in the existing sanitary sewer system and the improvements required to meet future demands at the time of build-out. To accomplish this goal, the City initiated the *Capacity, Management, Operations and Maintenance (CMOM) Program*. The first two phases of the program have investigated the existing capacity of the system, provided an inventory of pump stations, provided flow metering at key locations throughout the City to identify potential areas of inflow and infiltration problems, investigated key areas of the City prone to inflow and infiltration, and provided a list of projects to add to the City's capital improvements program, including this project which is the third phase of the CMOM.

The engineering tasks in the third phase include:

- A. Design, bidding, construction engineering services and a reporting phase for a pilot program within a designated area of the City for inflow and infiltration removal based on the results of the Sanitary Sewer Evaluation Survey (SSES), completed in CMOM Phase II (excerpts of the SSES report is attached in Exhibit B). The pilot program area is identified in Figure 1-1 of the SSES report.
- B. The cleaning and televising of areas identified as Tier II areas in the SSES. The Tier II area is identified in Figure 1-1 of the SSES report in Exhibit B of the RFP.
- C. Additional flow metering of priority areas of the City as identified in Task 6 Technical Memorandum, attached in Exhibit B.

A further discussion of the scope of work is presented below. The project shall be complete within 240 days from the notice of award, including construction.

**SCOPE OF SERVICES**

The selected consultant shall conduct the following activities:

**Task A: Pilot Program**

Upon authorization by the City Council and the City Engineer, the Consultant shall:

- Meet with DPW and Engineering personnel to verify the scope of the project and identify necessary information to proceed with the project.
- Review the CMOM Phase 1 report and SSES report.
- Complete the following scope of work:
  - prepare plans and specifications for bidding of construction contract to repair the priority areas as identified in the SSES report (pilot study), which includes the repair of pipes and manholes and televising the Tier 1 areas to establish a baseline,
  - oversee the construction contract to repair areas identified by televising as problem areas,
  - map the repairs on GIS and document the repairs in a database,
  - meter the flow from areas following repair to determine effectiveness of program,

**REQUEST FOR PROPOSALS  
CITY OF NOVI**

**ENGINEERING SERVICES FOR  
CAPACITY MANAGEMENT OPERATIONS AND MAINTENANCE PHASE III TASKS**

**July 27, 2007**

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The engineering tasks in the third phase include:

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- B. The cleaning and televising of areas identified as Tier II areas in the SSES. The Tier II area is identified in Figure 1-1 of the SSES report in Exhibit B of the RFP.
- C. Additional flow metering of priority areas of the City as identified in Task 6 Technical Memorandum, attached in Exhibit B.

A further discussion of the scope of work is presented below. The project shall be complete within 240 days from the notice of award, including construction.

**SCOPE OF SERVICES**

The selected consultant shall conduct the following activities:

**Task A: Pilot Program**

Upon authorization by the City Council and the City Engineer, the Consultant shall:

- Meet with DPW and Engineering personnel to verify the scope of the project and identify necessary information to proceed with the project.
- Review the CMOM Phase 1 report and SSES report.
- Complete the following scope of work:
  - prepare plans and specifications for bidding of construction contract to repair the priority areas as identified in the SSES report (pilot study), which includes the repair of pipes and manholes and televising the Tier 1 areas to establish a baseline,
  - oversee the construction contract to repair areas identified by televising as problem areas,
  - map the repairs on GIS and document the repairs in a database,
  - meter the flow from areas following repair to determine effectiveness of program,

- determine the value of repair based on estimated increased flow gained from repair,
  - prepare a report to document the findings of the pilot study (such as cost effectiveness, recommendation for revised procedures for next rehabilitation area, procedure for reinspection in three years and other information that would be valuable in determining the usefulness and value of the pilot study).
- The Consultant shall submit five (5) sets of plans and cost estimates for review to the City Engineer at 30% complete.
  - The Consultant shall submit five (5) sets of plans and two (2) sets of specifications at 90% complete for review and comment. The front-end documents will be provided by the City of Novi, the specifications shall be prepared by the Consultant, and contract documents shall be prepared, printed, assembled, and distributed by the Consultant. The Consultant shall also provide all plan sets required for permit application submittal to any agencies as required. All bidding activities shall be coordinated through the Engineering and Purchasing Departments.
  - A revised construction cost estimate shall be provided at the time of 90% review by the City.
  - The plans shall be designed in accordance with the City of Novi Design and Construction Standards, Chapter 11, Novi Code of Ordinances and RCOC requirements as applicable.
  - As a part of the Design Phase, the Consultant shall prepare bid documents and provide assistance to the City Engineering and Purchasing Departments with the bidding of the project, including coordinating and facilitating the pre-bid meeting, preparation of contract addenda, plan revisions, responding to bidder inquiries, review of bids, and recommendation of award to City Engineering.
  - Contract administration services shall include, but not be limited to: reviewing shop drawings furnished by the contractor at the pre-construction meeting, coordinating and running the pre-construction meeting, ensuring compliance with contract documents, regular consultation with City Engineering, interpretation of plans and specifications, preparation and certification of pay estimates, staking, full-time construction inspection during active construction, and materials testing along with final testing and project review. The Consultant must also promptly attend to resident concerns and complaints as they become known.
  - Construction phase services shall also include submittal to City Engineering of all project reports and documents, and written recommendation regarding final acceptance of the project. The Consultant, within this phase, shall also prepare record drawings and transmit one (1) digital copy of as-built plan in .tif format (400 dpi minimum), two (2) plan copies, and a CD containing the digital file of the record drawings in the City standard format (AutoCAD), and provide such information to the Engineering Department within three (3) months following substantial completion of the project.
  - During the construction phase the Consultant shall be responsible for administering and enforcing the soil erosion and sedimentation control plan as an agent for the City under the Authorized Public Agency (APA) program in compliance with the City of Novi *Authorized Public Agency Soil Erosion and Sedimentation Control Program Manual*. The Consultant shall also be responsible for soil erosion and sedimentation control inspections of the project for compliance with the approved soil erosion and sedimentation control plan. The inspections must be completed by an individual who has current certification through the Michigan Department of Environmental Quality under Part 91. The inspections must occur at regular intervals and soil erosion and sedimentation control inspection logs must be maintained and provided to City staff as required. The Consultant shall also be responsible for instituting corrective measures in the field to prevent soil erosion and sedimentation as required, and for overseeing the Contractor's Storm Water Operator.
  - The consultant may be required to attend one City Council meeting and one public information meeting as part of this task.
  - The Consultant shall submit five (5) sets of the report to the City Engineer at 90% complete for review and comment

- determine the value of repair based on estimated increased flow gained from repair,
  - prepare a report to document the findings of the pilot study (such as cost effectiveness, recommendation for revised procedures for next rehabilitation area, procedure for reinspection in three years and other information that would be valuable in determining the usefulness and value of the pilot study).
- The Consultant shall submit five (5) sets of plans and cost estimates for review to the City Engineer at 30% complete.
  - The Consultant shall submit five (5) sets of plans and two (2) sets of specifications at 90% complete for review and comment. The front-end documents will be provided by the City of Novi, the specifications shall be prepared by the Consultant, and contract documents shall be prepared, printed, assembled, and distributed by the Consultant. The Consultant shall also provide all plan sets required for permit application submittal to any agencies as required. All bidding activities shall be coordinated through the Engineering and Purchasing Departments.
  - A revised construction cost estimate shall be provided at the time of 90% review by the City.
  - The plans shall be designed in accordance with the City of Novi Design and Construction Standards, Chapter 11, Novi Code of Ordinances and RCOE requirements as applicable.
  - As a part of the Design Phase, the Consultant shall prepare bid documents and provide assistance to the City Engineering and Purchasing Departments with the bidding of the project, including coordinating and facilitating the pre-bid meeting, preparation of contract addenda, plan revisions, responding to bidder inquiries, review of bids, and recommendation of award to City Engineering.
  - Contract administration services shall include, but not be limited to: reviewing shop drawings furnished by the contractor at the pre-construction meeting, coordinating and running the pre-construction meeting, ensuring compliance with contract documents, regular consultation with City Engineering, interpretation of plans and specifications, preparation and certification of pay estimates, staking, full-time construction inspection during active construction, and materials testing along with final testing and project review. The Consultant must also promptly attend to resident concerns and complaints as they become known.
  - Construction phase services shall also include submittal to City Engineering of all project reports and documents, and written recommendation regarding final acceptance of the project. The Consultant, within this phase, shall also prepare record drawings and transmit one (1) digital copy of as-built plan in .tif format (400 dpi minimum), two (2) plan copies, and a CD containing the digital file of the record drawings in the City standard format (AutoCAD), and provide such information to the Engineering Department within three (3) months following substantial completion of the project.
  - During the construction phase the Consultant shall be responsible for administering and enforcing the soil erosion and sedimentation control plan as an agent for the City under the Authorized Public Agency (APA) program in compliance with the City of Novi *Authorized Public Agency Soil Erosion and Sedimentation Control Program Manual*. The Consultant shall also be responsible for soil erosion and sedimentation control inspections of the project for compliance with the approved soil erosion and sedimentation control plan. The inspections must be completed by an individual who has current certification through the Michigan Department of Environmental Quality under Part 91. The inspections must occur at regular intervals and soil erosion and sedimentation control inspection logs must be maintained and provided to City staff as required. The Consultant shall also be responsible for instituting corrective measures in the field to prevent soil erosion and sedimentation as required, and for overseeing the Contractor's Storm Water Operator.
  - The consultant may be required to attend one City Council meeting and one public information meeting as part of this task.
  - The Consultant shall submit five (5) sets of the report to the City Engineer at 90% complete for review and comment

- The Consultant shall submit five (5) sets of the final report to the City Engineer along with a CD containing a .pdf version of the report.

**Task B: Cleaning and Televising (Tier II areas)**

Upon authorization by the City Council and the City Engineer, the Consultant shall:

- Meet with DPW personnel to verify the scope of the project and identify necessary information to proceed with the project.
- Complete the following scope of work:
  - Prepare plans and specifications for bidding of contract to televise and clean the Tier 2 areas to assess the sanitary sewer for deficiencies and to determine appropriate rehabilitation as recommended in the SSES.
  - oversee the construction contract to for televising and cleaning,
  - map the problem locations on GIS and document the problems in a database,
  - determine the value of repair based on estimated increased flow gained from repair,
  - prepare a report to document the findings of the televising and cleaning and provide recommendations for future work.
- The Consultant shall submit five (5) sets of the report to the City Engineer at 90% complete for review and comment
- The Consultant shall submit five (5) sets of the final report to the City Engineer along with a CD containing a .pdf version of the report.

**Task C: Flow Monitoring**

Upon authorization by the City Council and the City Engineer, the Consultant shall:

- Meet with DPW personnel to verify the scope of the project and identify necessary information to proceed with the project.
- Complete the following scope of work:
  - Review, coordinate, recommend and assist the DPW in the purchase of five new flow meters as recommended in the Task 6 report.
  - Continue sub-district flow monitoring of Area G (see Figure 3 of Task 6 Technical Memorandum, attached) using the criteria established in the Task 6 report.
  - Collect the meter data, review and analyze using criteria in Task 6 report.
  - Provide recommendations for additional work based on the result of the flow monitoring.
- Summarize the results of the work in a report detailing the methodology, process, or task associated with the scope of work.
- The Consultant shall submit five (5) sets of the report to the City Engineer at 90% complete for review and comment,
- The Consultant shall submit five (5) sets of the final report to the City Engineer along with a CD containing a .pdf version of the report.

**DOCUMENT AND FILE FORMAT**

All documents shall be submitted to the City of Novi in an electronic format as specified by the Engineering Department.

Documents: MS Word

maps/drawings: ArcView layouts print file or AutoCAD format (.dxf)

Digital copies of files, maps, or drawings:  
files: ArcView Shape file, AutoCAD,

All digital data should correspond to:

- The Consultant shall submit five (5) sets of the final report to the City Engineer along with a CD containing a .pdf version of the report.

**Task B: Cleaning and Televising (Tier II areas)**

Upon authorization by the City Council and the City Engineer, the Consultant shall:

- Meet with DPW personnel to verify the scope of the project and identify necessary information to proceed with the project.
- Complete the following scope of work:
  - Prepare plans and specifications for bidding of contract to televise and clean the Tier 2 areas to assess the sanitary sewer for deficiencies and to determine appropriate rehabilitation as recommended in the SSES.
  - oversee the construction contract to for televising and cleaning,
  - map the problem locations on GIS and document the problems in a database,
  - determine the value of repair based on estimated increased flow gained from repair,
  - prepare a report to document the findings of the televising and cleaning and provide recommendations for future work.
- The Consultant shall submit five (5) sets of the report to the City Engineer at 90% complete for review and comment
- The Consultant shall submit five (5) sets of the final report to the City Engineer along with a CD containing a .pdf version of the report.

**Task C: Flow Monitoring**

Upon authorization by the City Council and the City Engineer, the Consultant shall:

- Meet with DPW personnel to verify the scope of the project and identify necessary information to proceed with the project.
- Complete the following scope of work:
  - Review, coordinate, recommend and assist the DPW in the purchase of five new flow meters as recommended in the Task 6 report.
  - Continue sub-district flow monitoring of Area G (see Figure 3 of Task 6 Technical Memorandum, attached) using the criteria established in the Task 6 report.
  - Collect the meter data, review and analyze using criteria in Task 6 report.
  - Provide recommendations for additional work based on the result of the flow monitoring.
- Summarize the results of the work in a report detailing the methodology, process, or task associated with the scope of work.
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Digital copies of files, maps, or drawings:  
files: ArcView Shape file, AutoCAD,

All digital data should correspond to:

Project – State Plane Coordinate System  
Michigan, South Zone – 6401  
Datum – NAD83, NAVD 88

Spheroid – GRS1980  
Units – International Feet

### CONSULTANT QUALIFICATIONS

The Consultant has been pre-qualified to provide engineering consulting services for 2007-2008 Utility Projects.

### CONSULTANT SELECTION

As a pre-qualified consultant, the selection for this utility project will be based on an evaluation of the fee proposal, which is labeled as Exhibit A, in addition to the Consultant's project understanding, approach, schedule, staffing plan, past performance on City engineering projects, and value-added concepts that would improve the overall project (relative to cost savings, time savings, innovation, etc.).

By submitting a proposal, the Consultant agrees that neither the firm, sub-contractors, nor suppliers will discriminate against any person with respect to hiring or employment on the basis of religion, race, color, national origin, age, sex, height, weight, marital status, or a handicap that is unrelated to the individual's ability to perform tasks particular to a job or position.

The selected consultant will enter into an agreement with the City of Novi to perform the services listed in this Request for Proposals. The City's standard Consulting Engineering Agreement is included as Exhibit C.

### PROPOSAL SUBMITTALS

To be considered, sealed fee proposals (an UNBOUND original and five copies) must arrive at the Purchasing Department, 45175 W. Ten Mile Road, Novi, Michigan 48375 on or before **3:00 P.M.** Prevailing Eastern Time, **Wednesday, August 15, 2007** addressed to **Carol J. Kalinovik, Purchasing Director, and clearly labeled CMOM PHASE III**. There will be no exceptions to this requirement and the City of Novi shall not be held responsible for late, lost, or misdirected proposals. Submitted proposals shall include:

- The proposed approach to the project, in detail (including any value-added concepts that would improve the overall project (i.e., cost savings, time savings, innovation, etc.).
- The completed fee proposal (Exhibit A)
- A proposed schedule for the project including design and construction phase
- A rate sheet or fee schedule depicting the Consultant's hourly rates that could be applied to additional work as may be necessary, for each category of staff that would work on the project.

Because of the nature of the project, the proposals will be evaluated based on an increased emphasis on the consultant's proposed approach. Therefore, the evaluation criteria will be weighted as follows:

Engineering Fee	20%
Evaluation of the Schedule	10%
Evaluation of Approach, Statement of Understanding of Project, and proposed staff	40%
Analysis of subjective statements applicable to the project as required on the RFP (Value added items)	20%
Evaluation of past performance on City projects	10%

All proposals must remain valid for one hundred twenty (120) days from due date and cannot be withdrawn during this period.

Project – State Plane Coordinate System  
Michigan, South Zone – 6401  
Datum – NAD83, NAVD 88

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Questions regarding this Request for Proposals may be directed to:

City Engineer, Rob Hayes, P.E. (248) 735-5606

-or-

Civil Engineer, Brian Coburn, P.E. (248) 735-5632

The City of Novi reserves the right to accept any or all alternative proposals and to award the project to other than the firm with the lowest fee proposal, waive any irregularities or informalities, or both, to reject any or all proposals, and in general, to make award in any manner deemed by the City, in its sole discretion, to be in the best interests of the City of Novi.

**Exhibits**

- A - Fee Proposal
- B- Background Information
  - i. SSES Report (Executive Summary)
  - ii. SSES Report (Conclusions and Recommendation)
  - iii. Task 6 Report
- C - Engineering Consultant Agreement

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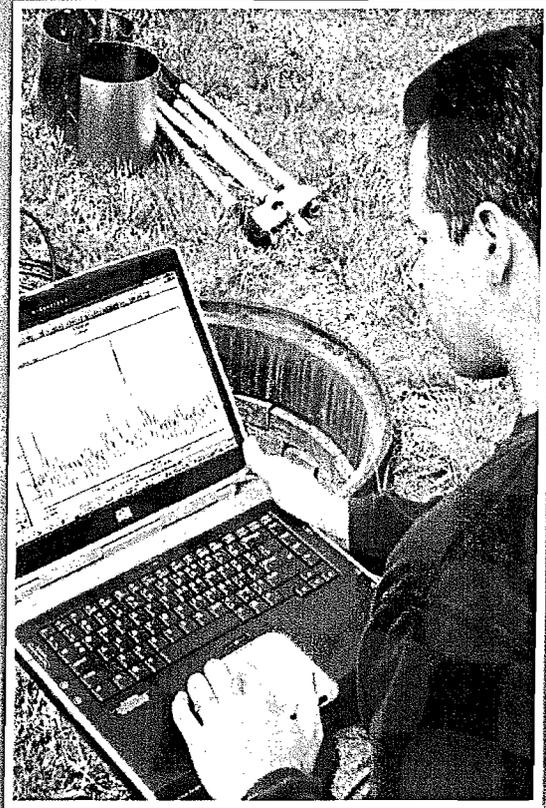
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# Proposal

## Engineering Consultant Services: Assistance with Capacity Management, Operations and Maintenance Activities Phase III

August 15, 2007



Engineering Advisors Engineering Advisors Engineering Advisors Engineering Advisors Engineering Advisors Engineering Advisors Engineering Advisors



Attn: Carol J. Kalinovik  
Purchasing Director  
City of Novi  
Purchasing Department  
45175 W. Ten Mile Road  
Novi Michigan 48375

*OHM, with our division, Hitch, is an award winning consulting engineering firm focused on serving government agencies on infrastructure issues. Every day, our staff of more than 180 engineers, architects and specialized technicians strives to fulfill the company's mission, Helping Build Better Communities for Tomorrow.*

Experienced staff will keep the project moving forward cost effectively  
Experts on I/I in sanitary sewer systems  
Firm understanding of the City's vision  
Excellent working relationship with City staff

# OHM

*Advancing Communities™*

August 15, 2007



Carol J. Kalinovik, Purchasing Director  
City of Novi  
Purchasing Department  
45175 W. Ten Mile Road  
Novi, MI 48375-3024

**Re: Proposal: Engineering Services for  
Capacity Management Operations for Maintenance Phase III Tasks**

Dear Ms. Kalinovik:

Orchard, Hiltz & McCliment (OHM), is pleased to provide our proposal to assist the City of Novi in continuing implementation of the Capacity Management, Operations and Maintenance (CMOM) activities, Phase III. We understand the overall goal of the CMOM program is to maintain and improve the infrastructure to meet the City's needs proactively, rather than allowing the system to slowly deteriorate through deferred maintenance.

We believe that OHM offers significant advantages to the City due to the following:

- ▶ Having worked on the first two phases of CMOM, we **understand the City's vision** for the program and have an **excellent working relationship** with the City's staff. Continuing to utilize a well-functioning team is much more efficient than training a new team. We pride ourselves on maintaining the right mix of senior staff with the "big picture" understanding combined with the energy and innovative technical abilities of the junior staff to provide excellent services on a cost-effective basis.
- ▶ We will utilize the **Antecedent Moisture Model** to adjust for changing climatological conditions in the pre and post monitoring evaluations. With this model, you can have **confidence in comparing flow data** under different conditions.
- ▶ We propose to use the **NASSCO PACP** standard for internal pipe inspection work. This will help to ensure that current and future evaluations are as **consistent** as possible.

Enclosed is our proposal for the services we believe will accomplish your goals. Please call me or Robert Czachorski at (734) 522-6711 for any questions or if you need any additional information for your evaluation. We are very enthused about the opportunity to continue to work with the City of Novi on your ongoing CMOM program.

Respectfully  
ORCHARD, HILTZ & McCLIMENT, INC.

A handwritten signature in black ink, appearing to read "Vyto Kaunelis", is written over a horizontal line.

Vyto Kaunelis, P.E.  
Environmental & Water Resource Director



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The logo for OHM, consisting of the letters "OHM" in a bold, sans-serif font. Above the letters is a faint, circular graphic element.



**Engineering Services for  
CMOM III Tasks**

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**Section 1 – Project Approach**  
Statement of Understanding of Project  
Work Plan  
Value Added Items

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## Introduction

In providing a context for the current project, it is important to understand the City's overall objectives, which are summarized below. The initial 2004 Project Understanding also helps to show how the current project fits in with the overall program.

The City of Novi initiated a Capacity Management, Operations and Maintenance (CMOM) Program in 2004. The Statement of Understanding, from our proposal of May 19, 2004 (shown below), summarized our understanding of what the City was trying to accomplish in the proposed three phase program. In reviewing this document and the current status, it is clear that tremendous progress has been made, such as:

- The City has a computer model of the sanitary sewer system. It shows that capacity is available in the sanitary sewers for current and near-term development, after completion of the initial improvements (Lanny sewer and Pumping Station upgrades).
- A robust tracking system that automatically updates the model to understand the impacts of new development and identification of a need to initiate additional capacity purchase to serve additional development for build-out conditions.
- Integration of the CMOM project into the City departments, particularly DPW and Engineering, to appropriately utilize staff and consultants to achieve both short and long-term goals cost-effectively.
- Definition of the City's needs for CMMS and SCADA so RFPs can be issued and appropriately implemented with realistic expectations of costs and benefits.
- Implementation of a Sewer System Evaluation Survey (SSES) in the first high priority area and development of a pilot rehabilitation program to evaluate the effectiveness of manhole rehabilitation.

An important part of the program will continue to be the "hand off" of processes and procedures from the consultant activities to the City of Novi. Although some tasks may continue to be performed by OHM or another consultant (e.g. sewer rehabilitation construction inspection), the City staff will have the understanding and tools needed to perform those tasks. City administration can then make the analyses to determine if those activities are more cost-effectively handled with City forces or by one of its qualified consultants.

## 2004 Project Understanding

The City of Novi is a growing, affluent community that is approximately 60% developed. The City leadership has recognized the importance of better managing their sanitary sewer system in order to meet MDEQ and customer expectations, including ensuring that adequate capacity is available for new development. Many aspects of an appropriate sewer system management program are already in place. However, known gaps need to be filled and existing programs need to be evaluated in order to have:

- confidence in the current state of the system,
- identification of the improvements needed to maintain good sewer performance, and
- recognition of the improvements needed where sewer performance is not being met at the desired levels.



## Statement of Understanding of Project

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OHM

The regulatory agencies, US EPA and MDEQ, have recently developed guidance programs and new standards to address sanitary sewer systems. Unfortunately, the new standards are significantly more restrictive than the old standards and all the implications are not yet known, since there is some negotiation on the standards that is still underway (e.g. Novi standard in 1990 of 1.29" rain in 10 hours, compared to MDEQ desired standard of a 25-year / 24-hour storm of 3.9" under growth conditions).

Although the City of Novi system is newer than most communities and much less responsive to rain events, it still is projected to be incapable of meeting the new standard in all areas, particularly as growth continues to occur. Some known problems are older sewers near Walled Lake that have many leaky joints, and manholes along the interceptor operated by the Oakland County Drain Commission (OCDC) in floodplain areas that are subject to inundation. Furthermore, due to the tighter standard, leakage sources that may have previously been considered minor, acceptable problems may now require action as part of a capital improvement program, which needs to be defined.

Additionally, despite the best efforts to control flows, additional capacity may be needed. If so, now may be an excellent time to purchase available capacity in the NHV/RV System from the WTUA communities due to their desire to sell excess capacity at a time when demand is weak.

The guidance document developed by the EPA to assist communities with their sanitary sewer systems is called CMOM, which stands for Capacity Management, Operations and Maintenance. Novi is one of the very few communities in Michigan that has attempted to implement this program. Consequently, the City has recognized the need to provide a good analysis of the system, develop and evaluate alternatives, and proceed with the necessary improvements.

Furthermore, the City has recognized that the appropriate capital improvements will allow them to do a much better job of operations and maintenance by minimizing or eliminating some of the problem areas. For example, shallow sewers in the southeast portion of the City have led to the need for several lift stations, a relatively high maintenance item. A deeper sewer that may be needed for capacity issues could potentially be designed to serve the dual purpose of eliminating the lift stations.

The City leadership is asking good questions, such as, "Where will the City sanitary sewer system be at 5, 10, and 20 years from now?" and "Is our fee structure defensible, in light of the Bolt vs. Lansing decision?" Many components of the answer to those questions are available. What is needed from this study is to take each component, evaluate it, develop good information for those components not yet available, and provide a sound technical basis for good decision-making by the City. Furthermore, a global evaluation needs to be completed very quickly so that a broad understanding of the system is available to guide immediate prioritization and decision-making. This will also help guide scheduling the technical tasks to ensure that the detailed information is available on a timely basis to make the decisions that require a finer level of detail.

### CMOM Phase III Understanding

The City has proactively created a CMOM program to manage infiltration and inflow (I/I) in their sanitary sewer system. This will maximize the available capacity for new development and will minimize the cost to residents for treatment and wet weather control facilities. The City has recognized the importance of a continuous program to ensure that system issues are addressed in a timely manner, rather than allowing a slow deterioration that eventually results in an expensive, large-scale rehabilitation / replacement program.

The pilot rehabilitation program in the southeast part of the City is intended to complete the process for the first sub-area. This will help to identify and resolve any "bugs" in the program and ensure that the program is effective in achieving the City's goals and objectives. For example, one of the most challenging aspects of the program is to assign a flow rate for each element of the system to be rehabilitated so a good cost comparison can be made. Since the flow will vary based on antecedent moisture and climatological



## Statement of Understanding of Project

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conditions, an appropriate modeling tool will be needed to relate the conditions for the pre and post monitoring evaluation.

The results of the CMOM Phase III program are expected to create the template for the ongoing future work by the City and/or its qualified consultants. Therefore, it is critical that issues are identified and addressed in the pilot program.

### Work Plan

Requirements identified in the Scope of Services and Document and File Format sections of the Request for Proposals are understood to be part of the Work Plan, but are not repeated below for simplicity. Specific tasks to complete this project are as follows:

#### Task A – Pilot Program

(Work associated with the Tier I cleaning, televising, and evaluation are included in Task B for simplicity. The results will be included in the Task A report.)

1. A project start / scope verification meeting will be held with the City to establish good lines of communication and initiate the project with a clear understanding of expectations. The CMOM Phase I report and the SSES report will be utilized as background information for the meeting. Since OHM has conducted the previous CMOM work, it is expected that the initial general coordination efforts will be minimal and all three tasks specified in the RFP can be covered at the same meeting. By doing a small amount of work before the meeting, we also propose to review the results of tasks A2, B2, and C2 at this meeting. Discussion will also be held with the City on coordination to ensure that all private inflow sources identified in the SSES are eliminated by the time post-rehabilitation monitoring is initiated.
2. Proposed technical specifications and front-end documents for the manhole rehabilitation have previously been delivered to the City as part of CMOM Phase II. The document, along with a map showing the repair work needed at each manhole, will be reviewed with the City in Task A1. Comments from the City will be addressed and the document finalized. It is expected that the detailed manhole inventories would be available to the contractors, but not included in the bid documents.
3. A flow meter will be installed on the outlet from the pilot area. It is anticipated that this will be a data-logger installed on the County Place Pumping Station. (It is anticipated that this will be a City-owned device procured in coordination with Task C.) Depending upon the pump cycle time and the physical layout, it may be better to utilize a depth and velocity meter at an upstream manhole. A decision will be based on a physical evaluation in the field. The duration of the pre-rehabilitation flow metering phase is expected to be 2 months.
4. An antecedent moisture model will be prepared for pre-monitoring conditions based on the flow metering data. This model will account for antecedent moisture and climatological conditions. The Eight Mile Meter data will be obtained and the existing model run for the same time period as a comparison. It is anticipated that this will allow for a good subarea to overall system comparison for pre and post monitoring conditions.
5. A public information meeting will be held to inform the public about the goals of the project and how the construction may impact them.
6. We will assist the City in the bidding phase, including coordinating and facilitating the pre-bid meeting, preparation of contract addenda, document revisions, responding to bidder inquiries, and recommendation of award to City Engineering.

## Statement of Understanding of Project



7. Construction administration and construction phase services will be provided consistent with the City's requirements as stated in the Scope of Services. Summaries of the tasks are given below.
8. Organize, conduct and document the pre-construction meeting.
9. Provide the contractor with a list of submittals, review submittals and provide copies to the contractor and City.
10. Contract administration, including processing of pay requests, issuing of change orders, responding to resident concerns, soil erosion and sedimentation control enforcement and project supervision.
11. Construction observation including SESC enforcement and daily log of SESC conditions. We have assumed that the construction project will take 31 work days at part time observation for a total of 220 hours of construction observation.
12. After completion of the project, complete final inspections, punch-lists and certificate of substantial completion. As-built plans are expected to consist of a revised GIS map showing the manholes that were rehabilitated and the type of work performed.
13. Post-rehabilitation flow metering will be conducted after substantial completion of the construction. The identical metering set-up will be used as conducted in the pre-rehabilitation phase and the duration is expected to be 2 months. A revised model will be developed based on the post-rehabilitation monitoring.
14. Flow estimates for total pilot area rehabilitation will be developed based on the difference between the pre-rehabilitation and post-rehabilitation models. The models will be run to provide multiple statistics, such as annual volumes (treatment cost savings) and 10 year frequency peak flow rates (wet weather / peak flow capacity purchase needs reduction) to be utilized in the cost-effectiveness analysis. Judgments will be made to assign the flow reductions back to individual sources utilizing the changes in the hydrographs and the previously estimated flow rates.
15. The original cost-effectiveness analysis will be re-run with actual costs and flow information. An evaluation will also be made of the pipeline internal inspection results. In essence, we should have a total picture of all the sources of I/I, the effectiveness of the high priority I/I removal, and the remaining flows in the system.
16. The results of the analyses and evaluations will be summarized in a brief report. Five (5) copies of the report will be submitted for the City's review at the 90% complete stage. Comments will be addressed and five (5) copies of the final report will be delivered to City Engineering along with a CD containing a PDF version of the report. Technical data will be included as appendices. Results from all tasks will be bound in one final document. A presentation will be made to City Council, if desired.

### Task B – Cleaning and Televising

1. See Task A1
2. Proposed technical specifications, and front-end documents, for the cleaning and televising of the Tier I and Tier II sewers will be prepared. A map will be prepared using the City's GIS information showing the specific sewers to be cleaned and televised. It is expected that the detailed manhole inventories would be available to the contractors, but would not be included in the bid documents.

We anticipate utilizing the NASSCO Pipeline Assessment and Certification Program (PACP) standards as the basis for the contractor requirements. This will maximize the usefulness of the inspection work for the City by utilizing industry-accepted standards of quality, making the data easily available in GIS and CMMS programs, and encouraging standardized nomenclature in reports and discussion.

The document will be reviewed with the City in Task A1. Comments from the City will be addressed and the document finalized.

3. Assist the City in the bidding phase, including coordinating and facilitating the pre-bid meeting, preparation of contract addenda, document revisions, responding to bidder inquiries, and recommendation of award to City Engineering.
4. Oversight of the contract for cleaning and televising will be performed. It is expected that on-site inspection of the contractor will not be required, but we have allowed for 40 hours of field assistance to answer questions, assist in decision-making and coordination if problems are encountered, and to verify that the work is being conducted in accordance with the contract requirements.
5. Obtain the data from the contractor and review the format to ensure that it is transferring appropriately into the City's GIS and into a database. We will work with the contractor to resolve any problems.
6. The video of large sources of I/I and serious structural problems will be reviewed based on the contractor's summary information. In addition, spot-checking of the video will be conducted to get a general feeling for the condition of the sewers and judgments made by the equipment operators.
7. In concert with Task A15, judgments will be made on the I/I flow rates in each reach of sewer, the cost to rehabilitate the sewer to remove the I/I, and the level of I/I removal expected. A cost-effectiveness analysis will be prepared for each reach of sewer with a significant amount of I/I.
8. The results of the analyses and evaluation will be summarized in a brief report. Technical data will be included as appendices. Procedures will be consistent with Task A16.

### Task C – Flow Monitoring

1. See Task A1
2. Assist the City in procurement of flow meters. Based on the previous experience in CMOM I and II, we anticipate recommending ISCO flow meters with appropriate accessories. We also expect to discuss the possibility of acquiring one pumping station data logger.
3. Area G will be subdivided into smaller districts for flow monitoring. Since Area G is along the downstream end of the interceptor, the districts may be smaller than usual and the potential metering locations may be more limited. Potential monitoring locations will be identified in the field. A draft monitoring plan will be prepared and submitted to the City for review.
4. The flow metering equipment will be installed at the selected sites. Metering will be conducted at up to 5 locations for a period of 4 months (i.e. one meter will likely be utilized for the pilot area monitoring). Meter data will be collected every 2 weeks. Data will be reviewed in the field to ensure that the results look reasonable. If problems are noted, an entry will be performed to clean the sensor. It has been assumed for budget purposes that a maximum of one cleaning per month for each meter will be necessary.
5. The flow metering data will be compiled and checked to make sure that the results are reasonable. The data will then be analyzed using the criteria in the Task 6 report, recognizing that the criteria are guidelines, and that appropriate judgments will need to be made. Comparisons will be made to previous flow metering data on the overall system as well as concurrent data from the Eight Mile Meter to understand overall climatological conditions.
6. The analysis will be reviewed with the City. Based on the data, along with the collective understanding of the sewer system, recommendations will be made on the need for further action in Area G.
7. The data, analyses, and recommendations will be summarized in a brief report. Technical data will be included as appendices. Procedures will be consistent with Task A16.

# Statement of Understanding of Project

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## Optional Tasks

### Optional Task 1

The City crews have the capability to install, maintain, and download data from the flow meters. If the crew has time available, the City could elect to do this work themselves for Task A.

### Optional Task 2

Similar to Optional Task 1, the City could elect to do the meter installation, maintenance, and data download on the meters for Task C. If desired, some allowance for as-needed assistance during the metering could still be provided (smaller deduction).

### Optional Task 3

The City has benefited in the past from miscellaneous assistance of Mr. Frank Naglich. We have assumed the use of 5 hours per week of as-needed assistance by Mr. Naglich for the 240 day contract duration.

## Value Added Items

We have summarized a few of the key value added items that we included in our project approach below:

- a) We intend to utilize the NASSCO PACP standard for the internal pipe inspection work. Ms. Carrie Ricker, PE, one of the key staff on this project, is certified in PACP and will assist in utilizing and evaluating this process for the City's needs. This will minimize efforts for data transfer to the GIS and the City's future CMMS. It also helps to ensure that the current and future evaluations are as consistent as possible, regardless of which qualified contractor performs the work. If it is as helpful as we expect, we will also assist the City in defining the training and certification needs for its staff on PACP.
- b) One of the most challenging aspects of this program is expected to be the flow evaluations. Flow monitoring pre and post rehabilitation will occur under different antecedent moisture and climatological conditions. A similar problem on Wayne County's Downriver System in 1995 led Mr. Robert Czachorski, PE, PH, to develop a new modeling technique called the Antecedent Moisture Model. This model has successfully been used on many systems in Michigan and Illinois, including Novi, and has been approved by MDEQ. Use of this model will result in an effective comparison of pre and post rehabilitation flows in a very efficient manner. A demonstration of our proposed methodology for an example community is available upon request.
- c) Since OHM has done the previous CMOM work, we can utilize the initial meeting to address all three tasks and also to review the draft documents for Tasks A2, B2, and C2. This will ensure that the project gets off to a quick start to optimize use of the available schedule. It also maximizes the effectiveness of the City's staff time with this project. This is just one small example of how our time will be spent adding value, not re-learning what has already been done in CMOM I and II.



**Engineering Services for  
CMOM III Tasks**

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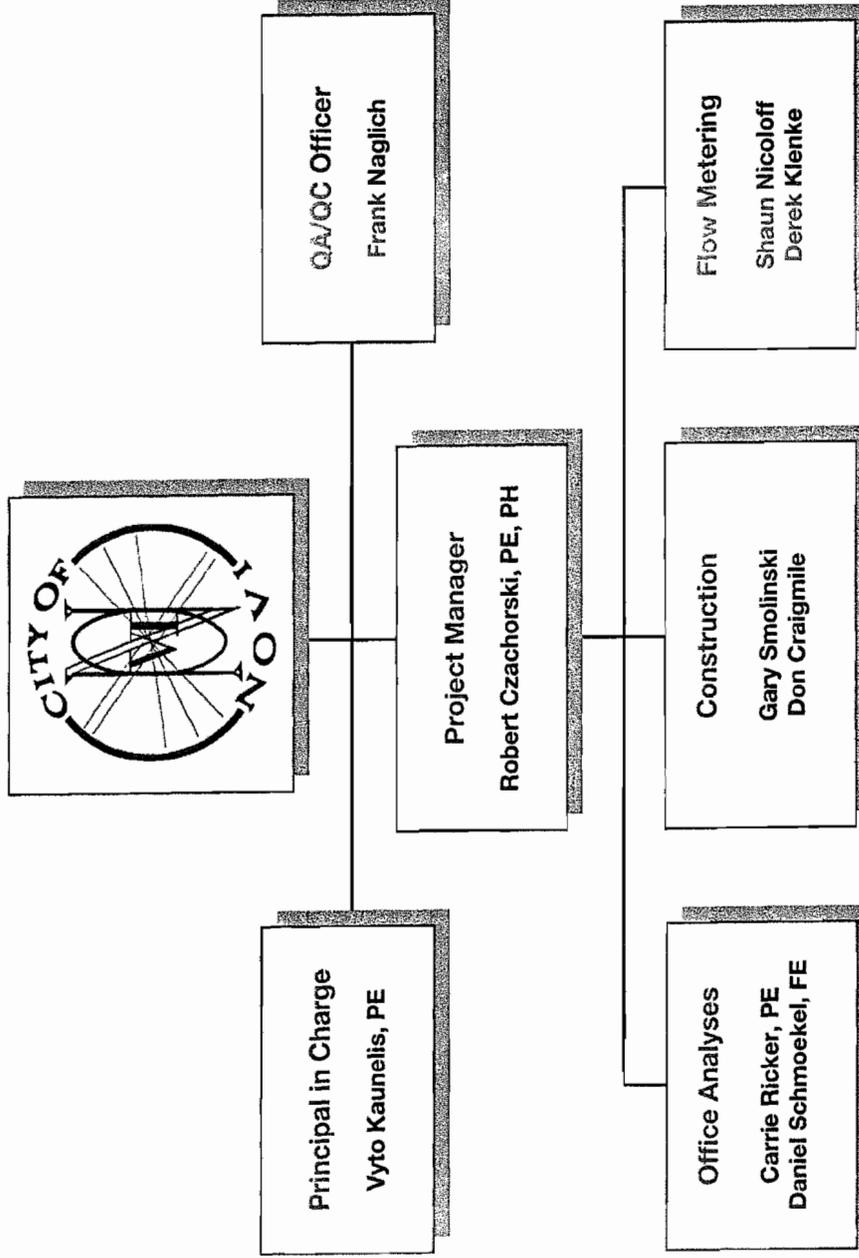
Section 2 - **Project Team**  
Team Organizational Chart  
Resumes

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**Team Organizational Chart**

**Engineering Services for  
CMOM III Tasks**

**August 15, 2007**





## Background

### Education

- Masters of Science in Hydraulics in Civil Engineering, University of Michigan, 1996
- Bachelors of Science in Civil Engineering, University of Michigan, 1994

### Professional Registration

- Professional Engineer, State of Michigan, 1998 License Number: 43827
- Professional Hydrologist, American Institute of Hydrology, 1999 Number: 99-H-1520

### Professional Affiliations

- American Institute of Hydrology - Registered Professional Hydrologist
- Michigan Water Environment Association - Collection System Committee Member
- Michigan Water Environment Association - Member, Past Vice President
- Southeast Michigan Council of Governments, Regional GIS Coordination Committees - Member
- Water Environment Federation - Member

### Awards

Developed new hydrologic model for antecedent moisture to improve the state-of-the-art in SSO Analysis, WEFTEC Award – 2001

Mr. Czachorski has 13 years of experience in consulting with a primary focus on water resources and municipal engineering. He has been a project manager for dozens of water resources projects and has been the client representative for the Ypsilanti Community Utilities Authority and Brighton Township, Michigan. He is responsible for managing and overseeing a variety of projects for water, sewer and storm water systems, as well as mentoring, managing and developing a project staff of 8 to 10 people.

Mr. Czachorski has developed a specialty and expertise in sanitary collection systems and wet weather issues. He has published several papers that highlight many unique insights and techniques for system analysis, including a new hydrologic model for antecedent moisture impacts on sewer systems, which resulted in a WEFTEC 2001 Award. He has presented this work to the State of Michigan Department of Environmental Quality SSO task force, the Illinois Association of Wastewater Agencies and several other technical committees. He has conducted sanitary sewer studies for which he performed flow metering analysis, I/I studies and hydrologic and hydraulic models for some of the largest collection systems in the State of Michigan.

Mr. Czachorski has performed water and sewer master plan studies for over 30 municipal utility systems throughout Michigan. His experience also includes managing design projects for water mains, booster stations, storage tanks, sewer systems and sanitary pump stations. Recently, he has used the antecedent moisture model for several projects that include the City of Novi, Wayne County and the Ypsilanti Communities Utilities Authority.

His knowledge of Geographic Information Systems (GIS) includes software, hardware, as well as new CAD and GIS based water and sewer modeling software. Mr. Czachorski has managed GIS projects including GPS survey, mapping and databases, as well as prepared and presented GPS and GIS workshops for municipalities, resulting in new business development.

### Relevant Experience

#### **Clinton-Oakland Sanitary Disposal System – Reporting System, Oakland County Drain Commissioner, MI – Ongoing**

Project manager for upgrades to the management and reporting system for this sewer disposal system serving 9 communities and over 250,000 people. The new system provides methodologies and tools for billing the local communities based on actual meters flows from nearly 60 flow meters in the system. Antecedent moisture models were developed to review meter flows for accuracy during wet weather periods.

#### **Sanitary Overflow Correction Program, City of Owosso, MI – Ongoing**

Developed a Sanitary Sewer Overflow (SSO) correction program for the City as part of their Administrative Consent Order (ACO) from the MDEQ. Project efforts included analyzing flow-metering data, developing a hydrologic and hydraulic model, evaluating alternatives and preparing a project plan for State Revolving Loan Financing. An antecedent moisture model was used to develop a cost effective SSO

# Robert S. Czachorski, PE, PH

Project Manager

OHM

correction strategy that combines source removal with retention, saving the City several million dollars compared to traditional approaches.

## **Sanitary Sewer Antecedent Moisture Model & Master Plan Update, Ypsilanti Community Utilities Authority, MI – 2006**

Prepared an antecedent moisture model study to update the Authority's master plan recommendations. Previous modeling by other consultants was overly conservative, resulting in over-sized facilities that did not make sense to the Authority. The more accurate modeling, combined with an aggressive flow management strategy reduced the required capital improvements in the system from \$26 Million to \$6 Million.

## **North Huron Valley / Rouge Valley Interceptor System (NHVRV) - Antecedent Moisture Model, Wayne County, MI – 2005-2006**

Performed an antecedent moisture model of the Wayne County NHV/RV Interceptor System to evaluating sizing of a regional tunnel to controlling sanitary sewer overflows (SSOs) using a frequency-based approach. The scope of the study included developing an antecedent moisture model for the system, which collects sewage from fifteen (15) communities, performing hydraulic modeling to simulate a long period of record, comparing modeling results to observed metering data to assess model performance, and using the model to perform the frequency analysis to size the tunnel.

## **Sanitary Master Plans and Wet Weather Studies, Various Communities**

Performed numerous sanitary master plans and studies for communities through Michigan. Sewer studies included flow monitoring programs, inflow and infiltration analysis, SSES programs, system modeling, antecedent moisture analysis, design storm event simulation and preliminary engineering design for improvements. Systems analyzed have included some of the largest sanitary collection systems in the State of Michigan, including:

- Wayne County – North Huron Valley / Rouge Valley System
- Ypsilanti Communities Utilities Authority
- City of Novi
- Wayne County Downriver Sanitary Collection System
- South Macomb Sanitary District
- Western Townships Utilities Authority
- West Bloomfield Township

## **Martz Road Pump Station Antecedent Moisture Model, Ypsilanti Communities Utilities Authority, MI – 2006**

## **Sanitary Collection System Study and CMOM, City of Novi, MI – 2005**

## **Brown Road Sanitary Lift Stations, Orion Township, MI – 2004**

## **Sanitary Collection System Master Plan, Brighton Township, MI – 2004**

## **Sanitary Collection System Model and Master Plan, West Bloomfield Township, MI – 2004**

## **Papers & Presentations**

- "Innovative Use of Technology for Implementing a CMOM Program in the City of Novi, Michigan," WEFTEC, September, 2005
- "Lessons Learned During Design, Construction & Operation of 50 Flow Meters, Genesee City, MI", WEF Collection System Conference, 2004
- "The Application of System Identification to Inflow and Infiltration Modeling and Design Storm Event Simulation for Sanitary Collection Systems," WEFTEC, September, 2002
- "On the Modeling of Inflow and Infiltration Within Sanitary Collection Systems for Addressing Nonlinearities Arising from Antecedent Moisture Conditions," WEFTEC, October, 2001

## **Experience**

13 years of experience, 3 with OHM



#### **Education**

- Masters of Science in Civil Engineering, University of Michigan, 1984
- Bachelors of Science in Civil Engineering, University of Michigan, 1976

#### **Professional Registration**

Professional Engineer, State of Michigan, 1979  
License Number: 27579

#### **Professional Affiliations**

- Water Environment Federation
- American Public Works Association

#### **Experience**

31.5 years of experience – 10 years with Wayne County Department of Environment, 18 years with another Southeastern Michigan-based consulting engineering firm, and 3.5 years with OHM

#### **Background**

Mr. Kaunelis is the director of the Environmental and Water Resources Group (EWRG) at OHM and is responsible for the overall EWRG Mission to provide innovative and quality solutions to the variety of environmental issues facing communities today.

In several positions with Wayne County, including several years as the appointed Drain Commissioner, he dealt with numerous projects. Initiation and completion of all projects achieved the desired results and generally resulted in a high level of satisfaction for the customer. This was particularly important for Wayne County due to a low level of trust from factors pre-dating the administration for which he worked. This experience has provided a public sector perspective on implementation of successful projects.

During his 10 years at Wayne County, Mr. Kaunelis had an opportunity to oversee the operation of four major sanitary collection / transportation systems (North Huron Valley / Rouge Valley, Northeast, Downriver, and South Huron Valley) and two wastewater treatment plants (Downriver and South Huron Valley). Each of the systems had to deal with a variety of major improvements, such as wet weather flow control facilities. Also, a unique set of flow metering and modeling techniques were developed for each of the systems to ensure that customer communities were receiving the appropriate level of service for which they had contracted and “fair and equitable” cost allocation.

In addition to his work in managing Wayne County systems, Mr. Kaunelis served as a representative on DWSD partnering initiatives such as the GDRSS modeling and metering programs, the combined sewer overflow (CSO) cost allocation, and rate issues identification and resolution. This afforded him the opportunity to develop an understanding of the other major regional sewer systems in southeast Michigan.

While employed with another Southeastern Michigan-based consulting engineering firm, Mr. Kaunelis held various positions ranging from Student Engineer in 1975 to Vice President in 1993. Mr. Kaunelis worked on, and eventually led, a team of 10 engineers and technicians in the successful completion of a variety of water, wastewater and infrastructure projects for a number of communities and industries in Michigan and the surrounding area. This included work on over 20 water system analyses.

Mr. Kaunelis also served on the State of Michigan Combined Sewer Overflow and Sanitary Sewer Overflow Policy Development Committees.

#### **Relevant Experience**

##### **Clinton-Oakland Sanitary Disposal System – Reporting System, Oakland County Drain Commissioner, MI – Ongoing**

Principal in Charge for upgrades to the management and reporting system for this sewer disposal system serving 9 communities and over 250,000 people. The new system provides methodologies and tools for billing the local communities based on actual meters flows from nearly 60 flow meters in the system. Antecedent moisture models were developed to review meter flows for accuracy during wet weather periods.

# Vytautas (Vyto) Kaunelis, PE

Principal in Charge

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## **Representative to DWSD Technical Advisory Committee, Wayne County DOE – Ongoing**

The Detroit Water and Sewerage Department (DWSD) has initiated a partnering effort with the water system customers, called the Technical Advisory Committee (TAC). Mr. Kaunelis has been hired by Wayne County DOE to represent the interests of the Wayne County Communities on the TAC. He serves on the Contracts and Rates Committees and chaired a Sub-group to the Rates Committee dealing with Peak Hour rates.

## **Capacity, Management, Operation and Maintenance Plan, City of Novi, MI – 2005**

QA/QC Officer to develop a comprehensive Capacity Management, Operation, and Maintenance plan for the City of Novi.

## **Flow Metering, I/I Analysis, SSES**

Mr. Kaunelis has developed an understanding of sewer systems through his work on many municipalities in Michigan, including Lansing, Grand Rapids, Midland, Adrian, Warren, Sault Ste. Marie, Saginaw, Royal Oak, Dearborn, Romulus, Westland, Scio, and Novi. Starting with flow metering, then performing Infiltration/Inflow (I/I) Studies, and, when needed, sanitary sewer evaluation studies (SSES), he developed and implemented plans to achieve the necessary level of performance. Follow up metering programs were typically conducted to verify the performance of the system after rehabilitation.



## Background

### Education

- Master of Science in Civil Engineering, Wayne State University
- Bachelor of Science in Civil Engineering, Wayne State University

### Professional Registration

Professional Engineer, State of Michigan, State of Florida

### Professional Affiliations

- Fellow, American Society of Civil Engineers
- Member, American Society for Testing & Materials Concrete Pipe Committee C-13; Subcommittee Chairman, 1991-1995
- Member, American Society for Testing & Materials Plastic Pipe Committee F-17
- Member, Water Environment Federation

### Experience

56 years of experience

Mr. Naglich has extensive experience working on the City of Novi sewer system, including the CMOM Phase I and II programs with OHM. He began working with JCK & Associates in 1988, after 29 years of employment experience with one of the most rapidly developing counties in Michigan and in the United States. He was Chief Engineer at Oakland County and was responsible for planning, design, financing, and administration of construction of water, sewerage, and wastewater treatment facilities throughout the County. Mr. Naglich was responsible for overseeing all phases of the development of the Clinton-Oakland Interceptor System, from master planning through construction plan preparation through management of construction. His extensive experience and familiarity with this region and its officials provides a valuable resource for both private and municipal clients. Mr. Naglich has gained a reputation nationally as an expert in pipelines through his long involvement in American Society for Testing and Materials specifications writing committees.

## Major Project References

### Sanitary Interceptor Systems

Clinton-Oakland Sewerage Disposal System; North Huron Valley-Rouge Valley Wastewater Control System; Huron-Rouge Sewerage Disposal System; Northwest Oakland County Interceptor System; Novi Sanitary Trunk Sewer; Middle Rouge Interceptor; Grosse Pointe Shores Interceptor.

### Storm Drainage

Twelve Towns Relief Drains; Port Huron Relief Sewers; Roseville Storm Sewer Relief; Wyandotte/ Downriver Storm Drainage; Berkley Sewer System Improvements.

### Local Municipal Sewer, Water, and Drainage Projects

Novi; Walled Lake; Troy; Huntington Woods; Beverly Hills; Farmington Hills; West Bloomfield; Bloomfield Hills; Hazel Park; Commerce; Waterford; Auburn Hills; Rochester Hills; Holly; Redford; Livonia; Grosse Pointe Farms; East Lansing; Beulah.

### Wastewater Treatment Facilities

Milford; Holly; Oakland University; Walled Lake-Nov; French Landing; Wyandotte; East Lansing; Ford Motor Company, Meriden, Connecticut.

### Private Residential and Commercial Developments

Northland Center; Thompson-Brown; Livonia Mall; Deeplands Corporation; Sam Frankel; Ed Rose; Robertson Brothers; Slavik Homes.

### Committee Involvements

SEMCOG 208 Planning, Governor's Task Force; Detroit-Wayne-Oakland Sewerage Coordination; SEMCOG CSO Planning; Wayne County Huron Valley Rate Review; Rouge Remedial Action Plan; Professional Engineering Examiners.

### Novi Project Experience

- Technical expert involved with various aspects of the CMOM Phase I and II projects.
  - Coordination between Novi and MDEQ, Oakland County, and Wayne County on
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# Frank M. Naglich, PE

QA/QC Officer

OHM

North Huron River Valley/Rouge River Valley wastewater system, relating to contracts, costs, flow capacities, and state abatement orders. Duties include participation and input in Technical Committee meetings dealing with design, operation, management, and financing of improvements.

- Project engineer and manager for Novi on the Walled Lake-Novı Wastewater Treatment Plant capacity expansion and for the sludge storage tank enlargement.
- Planned, coordinated, and managed the engineering and contractual activities to establish the exchange of wastewater flow capacities between Novi, Commerce Township, and Oakland County in northeast Novi and southwest Commerce Township.
- Assisted in the development of an MDEQ Tracking System for flow capacities in Novi's sanitary sewer collection system.
- Arranged for a temporary lease of wastewater flow capacity in the Livonia portion of the Middle Rouge Interceptor to avert a building moratorium in Novi while the North Huron Valley system enlargements were being completed.
- Prepared a study of all of Novi's current and future wastewater needs and assisted the city's financial department to establish an appropriate tap fee schedule. Similarly, assisted in creating a tap fee schedule for the city's water supply system. By request, have reviewed Detroit's water rate schedule for the city.
- Managing the city's ongoing wastewater infiltration/inflow and sewer system evaluation surveys to monitor and protect the city's flow capacities. Recommendations are made to the Water and Sewer Department where correction and rehabilitation of sewers is required based on data obtained from flow meters installed in pipelines in various districts.
- Responsible for submitting monthly reports of wastewater flow charts to the MDEQ for the city's contribution to the Wayne County interceptor system. Also prepare a Work Plan of the city's sanitary sewer system management and operation that is updated and submitted annually.

## Consultant and Expert Witness Experience

- Tri-County Pipe vs. Hardrives Construction Company, West Palm Beach, Florida (concrete storm drainage pipeline leakage issue);
- A-Lok vs. Press-Seal Gasket Company, Fort Wayne, Indiana (sewer pipe gasket patent infringement lawsuit);
- Tonto Construction Company vs. Oklahoma City, Oklahoma (sanitary interceptor settlement problem);
- Auburn Hills/Orion Township, Michigan Annexation (presentation of sewerage issues to State Boundary Commission);
- Shorr Property Zoning;
- Canton Township, Michigan (report on sanitary sewer considerations in re-zoning matter)



## Background

### Education

Bachelors of Science in Civil and Environmental Engineering, University of Michigan, 2001

### Professional Registration

Professional Engineer, State of Michigan, 2006

### Professional Affiliations

- Vulnerability Training 2003
- Facilitation Skills Training, 2000
- Microsoft Project Training, 2000
- HEC-RAS Training, 2000, 2002

### Experience

7 years with OHM

Ms. Ricker represents municipal clients conducting study and design work associated with utility planning, storm water management, and hydraulic and hydrologic modeling. Her background in environmental work and hydraulics has allowed her to perform numerous tasks involving various MDEQ permit applications. Ms. Ricker has experience creating and modifying telemetry systems to best utilize system operations. These operations include maximizing storage benefit, data storage, alarming and offsite corrections and modifications to the system.

### Relevant Experience

#### **Water System SCADA, City of Novi, MI – 2007**

Project Engineer responsible for evaluating the City's system for the introduction of supervisory control and data acquisition (SCADA). Prepared performance based specifications for SCADA.

#### **State Revolving Fund Project Plan, City of Auburn Hills, MI – 2007**

Project Engineer responsible for a State Revolving Fund (SRF) grant application and associated project plan. Evaluated alternatives to improve storm water quality in the Galloway Ditch as it passes through the City of Auburn Hills Fieldstone Golf Course.

#### **Sanitary Collection System Study and CMOM, Phase II, City of Novi, MI – 2006**

Project engineer for the development of the City of Novi sanitary collection system study and Capacity Operation, Management and Maintenance (CMOM) program, Phase II. Evaluated the City's system for the introduction of supervisory control and data acquisition (SCADA). Prepared performance based specifications for SCADA.

#### **DWSD Peaking Factor, City of Auburn Hills, MI – 2006**

Project engineer for the review of the City's telemetry system to address the concerns with peak flow rates during summer months. Review meter data and assess the City's peaking factor as assigned by the Detroit Water and Sewerage Department, DWSD.

#### **State Revolving Fund Project Plan, Scio Township, MI – 2006**

Project Manger responsible the State Revolving Fund (SRF) grant application and the required project plan. Evaluated alternative solutions to improve water quality in Scio Township including inflow and infiltration removal and pump station upgrades.

#### **Disinfection Byproducts Rule Phase 2, City of Auburn Hills, MI – 2006**

Project Engineer for the City of Auburn Hills Disinfection Byproducts Rule Phase 2 (DBP2). Determined sampling locations for DBP2 compliance. Submitted the City's DBP2 application on their behalf.

#### **Sanitary Sewer Overflow Correction Plan, City of Owosso, MI – 2006**

Project engineer for the City of Owosso Sanitary Sewer Overflow (SSO) Correction Plan. Reviewed the manholes inspections and performed a cost effective analysis on the manholes that should be rehabilitated. Assisted in the antecedent moisture modeling of two sewer sheds within the City of Owosso. Used EPA SWMM to evaluate the City's sanitary sewer system under a 10 year flow occurrence. Evaluated alternatives to prevent future SSOs.

# **Carrie E. Ricker, PE**

Project Engineer

The logo for OHM (O'Brien Kreitzberg) features the letters 'OHM' in a bold, sans-serif font, positioned below a stylized graphic of a building or structure.

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## **Ore Lake Low Pressure Sewer Study, Hamburg Township, MI – 2006**

Project engineer responsible for the evaluation of the existing low pressure sanitary sewer system around Ore Lake within Hamburg Township. Determined capital improvements to help the Township maintain the aging sanitary sewer system.

## **Manhole Inspection and Rehabilitation Study, Scio Township, MI – 2005**

Project Manager responsible for this study. Incorporated manhole inspections conducted by two different companies in 1998 and 2003. Managed a field crew to conduct additional inspection as needed. Reviewed all manhole data and determined those manholes that would be cost effective to rehabilitation for the removal of inflow and infiltration.

## **Inflow and Infiltration Removal Study, Scio Township, MI – 2005**

Project Manager responsible for project budget and schedule. Worked with other departments and sewer televising partner to conduct the Sanitary Sewer Evaluation Survey (SSES) portion of the project. Determined potential cost effective solutions to remove inflow and infiltration from the Township's sanitary sewer collection system.

## **Sanitary Collection System Study and CMOM, City of Novi, MI – 2004**

Project engineer for the development of the City of Novi sanitary collection system study and Capacity, Operation Management and Maintenance (CMOM) program. The collection system serves approximately 50,000 people and discharges to three different sewer systems. The majority of flow is tributary to the North Huron Valley / Rouge Valley Interceptor System, and portions of the system discharge to the Commerce Township WWTP and to the Walled Lake WWTP. Project included performing flow monitoring at six local sites and collecting flow data from six regional flow meters to assess rainfall / flow relationships in the system. Data collected was used to perform an inflow and infiltration analysis and capacity assessment for the system. Findings from the analysis were used to develop recommended improvements to ensure the long-term integrity and capacity of the system. Several tools were developed to simplify and automate the process of issuing sewer permits and reporting of information to the MDEQ, including a Part 41 sewer permit tracking system.

## **Sanitary Collection System Master Plan, Augusta Township, MI – 2004**

## **Novi Road Grand River and Ten Mile Road Phase II, RCOC – 2002 to 2005**

## **Sanitary Master Plan, Charter Township of Scio, MI – 2003 to 2004**

## **Inflow and Infiltration Study (I/I), Charter Township of Scio, MI – 2003**

## **Inflow and Infiltration Study (I/I), City of Sylvan Lake, MI – 2002**

## **Sanitary Sewer Evaluation Survey (SSES), City of Sylvan Lake, MI – 2002**

## **US-12 Hydraulic Study Phase II, MDOT – 2002 to 2003**



## Background

### Education

Bachelors of Science in Civil Engineering, Michigan Technological University, 2006

Mr. Schmoekel works extensively in the rehabilitation of sanitary collection systems. His experience with the rehabilitation of sanitary collection systems includes substantial infiltration and inflow removal. He has worked on several Sanitary Sewer Evaluation Surveys (SSES), expanding his field experience with smoke testing, manhole evaluation and digital sanitary sewer evaluations.

### Professional Registration

Engineer-in-Training: 2006

Mr. Schmoekel prepares Project Plans required by the Michigan Department of Environmental Quality State Revolving Fund and Drinking Water Revolving Fund to assist communities in obtaining low interest loans for infrastructure improvements. These Project Plans include detailed project background, analyses of environmental impacts and mitigation, and a comparative analysis of alternatives for cost-effective system improvements.

### Professional Affiliations

American Society of Civil Engineers: Member  
2006- present

## Relevant Experience

### Experience

1 year with OHM

### **Capacity Management, Operations and Maintenance Phase II, City of Novi, MI 2006**

Project Engineer of a multi-tasked project that included tasks such as manhole investigations, smoke testing, sanitary sewer flow metering, pump station investigations and draw down tests, and conducting a needs assessment for the City to assist the City with SCADA and CMMS selection. Engineering activities focused on preparation of construction documents for manhole rehabilitation pilot study.

### **State Revolving Fund Project Plan, Village of Maybee, MI – 2007**

Project Engineer for development of a State Revolving Fund (SRF) Project Plan for the Village. Engineering activities focused on inflow and infiltration evaluations and needed lagoon maintenance and expansion.

### **Sanitary Sewer Evaluation Survey, Village of Maybee, MI – 2007**

Project Engineer for the evaluation of sanitary sewers for the Village. The study included digital observation, inspection and smoke testing of sanitary sewers throughout the Village.

### **State Revolving Fund Project Plan, City of Owosso, MI – 2007**

Project Engineer for an SRF project plan. Evaluated alternative solutions to improve water quality in the City of Owosso through inflow and infiltration removal and sanitary sewer overflow correction plans.

### **Sanitary Sewer Overflow Correction Program, City of Owosso, MI – 2007**

Project Engineer for a Sanitary Sewer Overflow (SSO) correction program. Evaluated sanitary structures throughout the City and made cost-effective manhole rehabilitation recommendations for approximately 900 manholes located throughout the City.

### **SRF Project Plan, Hamburg Township, MI – 2007**

Project Engineer for development of a SRF Project Plan for the Township. Assisted in evaluating overflow correction techniques for a portion of the Township. Prepared a cost-effective analysis for rehabilitation of an approximate 130 connection sanitary sewer system in the Township.

**Daniel A. Schmoekel, FE**  
Project Engineer

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**SRF Project Plan, City of Auburn Hills, MI – 2007**

Project Engineer for the development of a SRF Project Plan for the City. Engineering activities focused on evaluating multiple sites for storm water best management practices.

**DWRF Project Plan, Scio Township, MI – 2007**

Project Engineer for the development of a DWRF Project Plan for the Township. Engineering activities focused on developing a redundant water source and upgrade of the existing transmission main from the West High Treatment Facility to Scio Township.

**Sanitary Sewer Rehabilitation, Orion Township, MI – 2006**

Project Engineer for the evaluation of sanitary sewers in the Keatington and Bunny Run subdivisions in Orion Township. Work included digital observation of sanitary sewers in Keatington and Bunny Run Subdivisions and assistance in preparing sanitary sewer rehabilitation contract documents for the Bunny Run Subdivision.



## Background

### Education

Associate's Degree in  
Applied Science in Concrete  
Technology, Alpena  
Community College, 1986

### Professional Certifications

- Troxler Operator, 2001
- Certified Level II  
Concrete Technician  
with ACI and MCA, 1986  
through present.

### Experience

21 years of experience, 18  
with OHM

Mr. Smolinski has been employed with Orchard Hiltz & McCliment, Inc. for 18 years and is currently one of two District Managers for OHM's Construction group. He is responsible for the Construction Group's involvement in such communities as the City of Westland, Huron Township, Plymouth Township, Northville, the City of Ypsilanti, Ypsilanti Township, Superior Township, Scio Township, the Village of Dexter, and the City of Lincoln Park. As District Manager, Mr. Smolinski provides technical expertise to the construction staff, advises clients of alternate methods or recommends specific solutions to solving problems, monitoring project budgets and schedules, assures compliance with engineering principles, and assists the Field Client Representatives in the resolution of complaints, project claims, delays, and processes to streamline project issues.

Prior to becoming a District Manager at OHM, Mr. Smolinski worked as a Field Client Representative, during which time he performed as the project manager on many different types of construction projects. The types of projects he managed included utility projects, paving projects, bridge projects, and pump stations. Before becoming a Field Client Representative he functioned as an Inspector with OHM.

Prior to his employment with OHM, Mr. Smolinski was involved in the quality control of concrete and bituminous placement, in-place density testing, and various laboratory experiences ranging from sieve analysis, bituminous extractions, aggregate index factor calculations and determinations of maximum unit weight of paving materials.

## Relevant Experience

### As District Manager

#### City of Novi

Mr. Smolinski was Project Manager on the Hilton Pump Station Upgrades in 2007, which consisted of replacing the existing valves, guide rails, controls, control panel and the installation of a back up generator. Mr. Smolinski's duties included the construction engineering and the contract administration for this project.

#### City of Westland

As District Manager in Westland, Mr. Smolinski provides technical expertise to the construction staff, advises clients of alternate methods or recommends specific solutions to solving problems, monitoring project budgets and schedules, assures compliance with engineering principles, and assists the Field Client Representatives in the resolution of complaints, project claims, delays, and processes to streamline project issues.

- Henry Ruff Reconstruction, 2005
- Newburgh Road Reconstruction, 2004
- Palmer Road Reconstruct, 2004
- 2004 Westland Local Roads, 2004

#### Huron Township

As District Manager in Westland, Mr. Smolinski provides technical expertise to the construction staff, advises clients of alternate methods or recommends specific solutions to solving problems, monitoring project budgets and schedules, assures

# Gary M. Smolinski

## Construction Group District Manager



compliance with engineering principles, and assists the Field Client Representatives in the resolution of complaints, project claims, delays, and processes to streamline project issues.

- Sanitary Sewer Manhole Inspection, 2007
- Evergreens Subdivision, 2004-2005
- Pinegroves Condominiums, 2005
- Claremont Subdivision, 2004

### Plymouth Township

As District Manager in Plymouth Township, Mr. Smolinski provides technical expertise to the construction staff, advises clients of alternate methods or recommends specific solutions to solving problems, monitoring project budgets and schedules, assures compliance with engineering principles, and assists the Field Client Representatives in the resolution of complaints, project claims, delays, and processes to streamline project issues.

- Beacon Hills SAD, 2005
- Plymouth Hills SAD, 2005
- Napier Road, 2002

### Northville

- Grace Avenue, 2005
- Springfield Road, 2004

### City of Ypsilanti

- Lowell Street, 2007
- Central Business District, 2004-2005
- Martin Place, 2004
- Ainsworth, 2004
- Gerganoff Subdivision, 2004
- Martin Place Subdivision, 2004
- Normal Park, 2004

### Ypsilanti Township

- Seaver Farms, 2006-2007
- DWSD 2nd Connection, 2004-2005
- Creekside Subdivisions, 2003-2005
- South Harris Road, 2004
- Pressure Reducing Valves

### Superior Township

- Superior Twp Booster Station, 2006
- Geddes Road 16" Water Main (DWSD 2nd Connection), 2005
- Section 36, 2005
- Prospect Point, 2004

### Scio Township

- Scio Emergency Connection, 2006
- Tech Park West, 2005
- Gallery Park, 2004
- Dino Drive, 2003

### Village of Dexter

- Kensington Street, 2006
- Fourth Well Addition, 2004-2005
- Alpine Street, 2005
- Fifth Street Drainage Improvements, 2004

### Professional Development

- 14th Annual Michigan Public Service Institute, APWA, 2006
- Construction Safety - The Roles, Responsibilities and Control of Hazards for the Consulting Engineer, ACEC/M, 2005
- Michigan Public Service Institute, 2005
- InfoTech and MDOT, Field Manager Software, 2003
- Michigan Department of Transportation, Office Technician Seminar, 2001
- Michigan Concrete Association/American Concrete Institute, Concrete Paving Technician Level II Seminar, 2001
- Michigan Department of Transportation, Concrete Paving and Structures Training, 1999
- American Consulting Engineers Council/MI, Field Manager Training, 1999
- Michigan Department of Transportation, Construction Project Record Keeping System (CPRKS) Seminar, 1994
- Michigan Concrete Paving Association, Highway Concrete Construction Level II Training, 1994
- American Consulting Engineers Council, Office Management Procedures Course, 1992
- Michigan Department of Environmental Quality, Phase I and II Training Courses, 1992
- Michigan Concrete Paving Association, Concrete Paving Inspector's Training Course, 1991



### Background

#### Education

Olivet College, 1971-1972

#### Professional Development

- MDOT Bituminous Paving Certification
- State of Michigan Course Training
  - Water Distribution
  - Hydraulics for water supply
  - Water Chemistry
  - Confined Space
  - Basic Electricity

#### Experience

19 years of experience, 4 years with OHM

Mr. Craigmile performs daily on-site observation of water, sewer and related utilities construction for various OHM client communities and authorities. His extensive background includes water and sewer installation and rehabilitation projects utilizing open cut, jack & bore, Insituform, slip lining, and other methods to install and rehabilitate these systems. He has performed as a resident project representative responsible for construction of lift stations, PRV vaults, water tower erection and booster station installation, as well as widening and re-surfacing of road way projects for all pavement elements such as curb & gutter, aggregate, bituminous, and concrete pavement placement.

While employed by the Charter Township of Scio, Mr. Craigmile was responsible for the maintenance of both the water and sanitary sewer systems in the community. His daily activities included repair of water main and sewer breaks, pump station maintenance, water system sampling, general maintenance of the system appurtenances and obtaining system records for water pumping and sewer discharges. He also assisted in providing an appropriate level of materials and equipment for maintaining the system properly and carried an S-2 MDPH water and sewer distribution system license while employed with the Township.

### Relevant Experience

#### **Oak Park Washtenaw Heights Drain Improvements, Pittsfield Township, MI – 2006**

Lead Construction Observation Technician responsible for substantial compliance with design plan specification, local ordinances, and state regulations. Construction required rehabilitation and replacement of a rapidly decaying 1929 storm sewer. The project, designed for the Washtenaw County Drain Commissioner's Office, involved the replacement of 2,200 feet of main line storm sewer and 50 surrounding storm inlets. In addition, to minimize impacts to the active neighborhoods above, the project utilized 2,800 feet of cured-in-place pipe rehabilitation technologies to repair pipes without surface excavation.

#### **Construction Services - Centex of Romulus Phase I & II, City of Romulus, MI – 2006**

Lead Construction Observation Technician for all paving activities for sanitary pump station servicing the development and approximately 2 miles of concrete residential streets. Worked closely with the Building Department to coordinate the release of occupancy permits as the project developed.

#### **Falkirk Subdivision, Charter Township of Huron, MI – 2005**

Construction Observer for the 80-acre single-family residential home site with 180 lots located on Will-Carleton Road in Huron Township. OHM's involvement with this project included observation, construction administration and construction engineering for the site's infrastructure, which includes approximately 9,200 feet of sanitary sewer, 11,100 feet of water main, 13,400 feet of storm sewer and 1 3/4 miles of HMA paving.

#### **Central Business District Water Main and Paving, City of Ypsilanti, MI – 2004**

Mr. Craigmile was resident project representative responsible for contract

## **Don Craigmile**

### **Construction Engineering Technician**

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compliance, field observation, and adherence to design plans for this \$4.3 million water main and paving replacement project in the City of Ypsilanti. The work included complete water main replacement along with sanitary sewer lead and water service replacement for all non complying leads such as “orangeburg” sanitary services, as well as lead and galvanized water service leads. Pavement replacement occurred to bring the road cross section up to acceptable load standards capability as part of the City’s road millage program. Significant challenges including a multitude of unknown utility conflicts, abandoned structures, contaminated soils and narrow road right-of-ways in this downtown area created daily issues which were successfully addressed and resolved.

#### **Clarkesville Water Main and Paving, City of Ypsilanti MI – 2004**

Mr. Craigmile was resident project representative responsible for contract compliance, field observation, and adherence to design plans for this \$3.8 million water main and paving replacement project in the City of Ypsilanti. The work included complete water main replacement along with sanitary sewer lead and water service replacement for all non complying leads such as “orangeburg” sanitary services, as well as lead and galvanized water service leads.

#### **West Michigan Avenue Pump Station, Ypsilanti Community Utilities Authority, Ypsilanti MI – 2003**

Responsible for contract compliance, field observation, and adherence to design plans for slip-lining 3,000 linear feet of existing ten inch diameter cast iron sanitary sewer force main using HDPE pipelining techniques along with manhole repair and rehabilitation. Bypass pumping of sewer flows was utilized involved with this rehabilitation.

#### **Various Site Development Projects, (Hawthorn Forest, Claremont and Fox River Subdivisions) Huron Township MI – 2003-2004**

Mr. Craigmile was resident project representative Responsible for field observation, and compliance with Township specifications for several new single family subdivisions consisting of 200 – 300 residential homes. Observed the installation of all sanitary and storm sewer, water main and pavement elements, such as curb and gutter, gravel asphalt and concrete.

#### **Golfside Interceptor Sewer Rehabilitation, Ypsilanti Community Utilities Authority, Ypsilanti MI – 2002**

Responsible for contract compliance, field observation, and adherence to design plans for the rehabilitation of over 2,500 linear feet of existing ten, twelve, and eighteen-inch diameter sanitary sewer trunk lines. The rehabilitation techniques utilized included open cut repairs, slip lining with HDPE pipe as well as Insitform procedures to rehabilitate deteriorated portions of the system. Rehabilitation of deteriorated manholes was also a part of this project.

#### **Frenchtown Water Main Rehabilitation Project, Frenchtown Township, MI – 2000-2001**

#### **Low Pressure Sanitary Sewer Force Main, Brighton Township, MI – 2001**



## Background

### Education

Environmental Technology,  
Schoolcraft College Michigan,  
Projected graduation 2008

### Professional Development

Intro to ArcGIS, 2002

### Training

Confined Space Trained, 2006  
First Aid CPR Certified, 2003

### Experience

3 years

Mr. Nicoloff serves the EWRG group at OHM as an Engineering Technician. He is in charge of field data collection, including field metering programs. His vast knowledge of multiple GPS platforms, which range from traditional to personal digital assistance (PDA), and his experience in utility structure inspection are among his field skills.

During his three years with OHM, Mr. Nicoloff worked with the OHM Survey and Construction groups. As a survey technician, he has experience working level loops, staking, grading, and has gained experience using a geodimeter and other surveying instruments. Mr. Nicoloff has also been an observer for our construction department where he was in charge of overseeing various utility construction projects, and completing daily reports (IDR) to create as-built site plans.

In the last year, Mr. Nicoloff has been involved in numerous environmental projects. Some of his tasks included footing drain disconnections, IDEP field investigations, TCE monitoring, velocity, manhole entry/attendant, sampling and analysis.

Mr. Nicoloff has an abundant amount of field experience locating, inspecting, and mapping utilities. Using his survey and construction experience, with the GIS technology, Shaun is exceedingly precise in his digital mapping capabilities. His background in data conversion and development will assure solid procedural organization and confidence in interpretation of plans and As-built drawings.

## Relevant Experience

### **SSES Flow Metering Investigation Study, Orion, MI – 2006-2007**

Mr. Nicoloff worked as an Engineering Technician performing the installation and removal of 9 flow meters and 3 rain gauges. Field responsibilities include weekly download and analysis of all metering data.

### **2006 Flow Metering, Scio, MI – 2006**

Mr. Nicoloff worked as an Engineering Technician performing the installation and removal of 5 flow meters and a rain gauge. Field responsibilities include weekly download and analysis of all metering data.

### **SSES Flow Metering, Auburn Hills, MI – 2006**

Mr. Nicoloff worked as an Engineering Technician performing the installation and removal of 5 flow meters. Field responsibilities include weekly download and analysis of all metering data.

### **CMOM Phase 2 – Sewer Physical Condition Investigation, Novi, MI – 2006-2007**

As an Engineering Technician, Mr. Nicoloff was in charge of completing all field work including inspection, measurements, and photos of 26 manholes. He also helped to prepare an inspection report analyzing the field results and recommending the appropriate rehabilitation for each manhole.

### **CMOM Phase 2 – Pump Station Inventory and Drawdown Test, Novi, MI – 2006**

As an Engineering Technician, Mr. Nicoloff participated in recording pump station information and performing drawdown test on multiple stations. He used the

# Shaun Nicoloff

## Engineering Technician

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information collected to determine pumping rates of each pump station.

### **Westland RPO Footing Drain Disconnect, Westland, MI – 2006**

As an Engineering Technician, Mr. Nicoloff was in charge of all communication between the construction companies and homeowners. Mr. Nicoloff is also in charge of scheduling appointments for the installation of sump pumps in the city of Westland. During installations Mr. Nicoloff prepared Daily reports including measurements used to create as-built site plans.

### **Farmington Hills RPO Footing Drain Disconnect, Farmington Hills, MI – 2006**

As an Engineering Technician, Mr. Nicoloff was in charge of all communication between the construction companies and homeowners. Mr. Nicoloff is also in charge of scheduling appointments for the installation of sump pumps in the city of Farmington Hills. During installations Mr. Nicoloff prepared Daily reports including measurements used to create as-built site plans.

### **Sanitary Sewer Investigation, Village of Maybee, MI – 2006-2007**

Mr. Nicoloff worked as an Engineering Technician for the Village of Maybee to oversee all field work for the Sanitary Sewer Investigation. His field responsibilities include GPS and inspection of all sanitary structures, performing smoke tests to determine sources of inflow and infiltration, and install and monitor a pump station meter.

### **Kalamazoo Strom System Conversion, Kalamazoo, MI – 2002-2003**

Mr. Nicoloff worked as a field crew manager, managing a crew on site in Kalamazoo. His Field responsibilities included GPS, inspection, mapping, and quality control for all collected data. Other responsibilities include status reports, client meeting, map creation, and utility editing. Mr. Nicoloff ensured the successful completion of this project, which included over 17,000 structures and approximately 235 miles of pipe.

### **Auburn Hills Utility Updates, Auburn Hills, MI – 2002-2003**

Mr. Nicoloff is in charge of yearly updates for the city of Auburn Hill's GIS. He received a copy of all as-builds plans for new construction areas, and is in charge of collecting new utility structures with GPS, digitally mapping all connectivity, utility attribution, and updating detention and retention basin data.

### **Sylvan Lake Utility Conversion, Sylvan Lake, MI – 2002**

As an Engineering Technician for Sylvan Lake, Mr. Nicoloff was in charge of collecting GPS locations and conditions on all of Sylvan Lake's storm sewer system.

### **Scio Township Water Utility Conversion, Scio Township, MI – 2002**

As a Field Engineer for this project, Mr. Nicoloff was in charge of locating and cleaning the township's entire water utility system. He was responsible for collecting a GPS location, inspecting, flush testing, tagging, and winterizing every hydrant in the township.



## Background

### Education

Bachelor of Science in Civil Engineering, Lawrence Technological University, 2004

### Professional Certifications

Certified Administrator of Part 91, Soil Erosion and Sedimentation Control, of the Natural Resources and Environmental Protection Act (1994 PA 451, as amended), 2004

### Professional Development

Engineer's Assistant, United States Marine Corps, 1998

### Experience

8 years of experience, 4 with OHM

Over the past year, Mr. Klenke has been involved with numerous flow metering and sewer system evaluation projects. In addition, he has expertise in soil erosion and sedimentation control inspection services. His SESC responsibilities included assessing SESC measures, contacting and meeting with contractors to bring deficient sites into compliance, and reporting non-compliant sites to township officials. He has inspected sites ranging in size from less than an acre to more than 50 acres, including lakefront sites, and sites containing wetland areas. In addition to serving Ypsilanti Township, Mr. Klenke has also provided SESC analysis to sites in Superior Township and Huron Township.

### Relevant Experience

Mr. Klenke has been involved in numerous developments that include industrial, commercial and residential sites. Examples include:

#### Ypsilanti Township

- Baker's Square (0098-04-1036)
- Huron Meadows Condominiums (0098-01-0116)
- Creekside Village West (0098-99-0383)
- Green Farms (0098-00-0303)
- River Grove (0098-01-0376)
- Veridian Systems (0098-03-1026)
- Latter Rain (0098-00-0276)
- Willow Run High School (0098-03-1076)

#### Huron Township

- Soil Erosion Control Assistance/Police Station

#### Superior Township

- SESC Assessment/Pro-line

Duties performed on these sites included inspection of commercial and residential soil erosion control, methods to monitor the quality and function of the proposed measures, and report documentations when violations occurred. Many projects were individual residential lots, which required significant interaction with the property owners and adjacent landowners.

Mr. Klenke has also performed general construction inspections in Scio Township, the City of Westland and Ypsilanti Township.

#### Orchard, Hiltz & McCliment – 2002

Computer Technician

- Assist in completion of site and municipal drawings
- Assist survey crews with topographic surveys and construction staking
- Assist in road design

#### GLA Surveyor, Inc – 1998 to 2002

CAD Operator and Field Crew

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# Derek A. Klenke

Project Engineer

  
OHM

- 
- Worked in field collecting data for topographic, ALTA, and boundary surveys
  - Prepared drawings for topographic, ALTA, and boundary surveys
  - Prepared drawings for commercial and residential site plans
  - Met with clients to develop designs for residential site plans

## **United States Marine Corps Reserve – 1997 to 2004**

Engineer's Assistant

- Staked foundation of Butler building for Detroit Curling Club/City of Ferndale Community Center
- Prepared topographic surveys for the design and construction of two parking lots and the expansion of the air museum at Selfridge Air National Guard Base

Provided survey services to MCAS New River, MCB Camp Lejeune, and MCAS Bogue Field, NC as the unit mobilized in support of Operation Enduring Freedom and Operation Iraqi Freedom. Awarded *Navy and Marine Corp Achievement Medal* for “professional achievement in the superior performance of duty” during mobilization.



**Engineering Services for  
CMOM III Tasks**

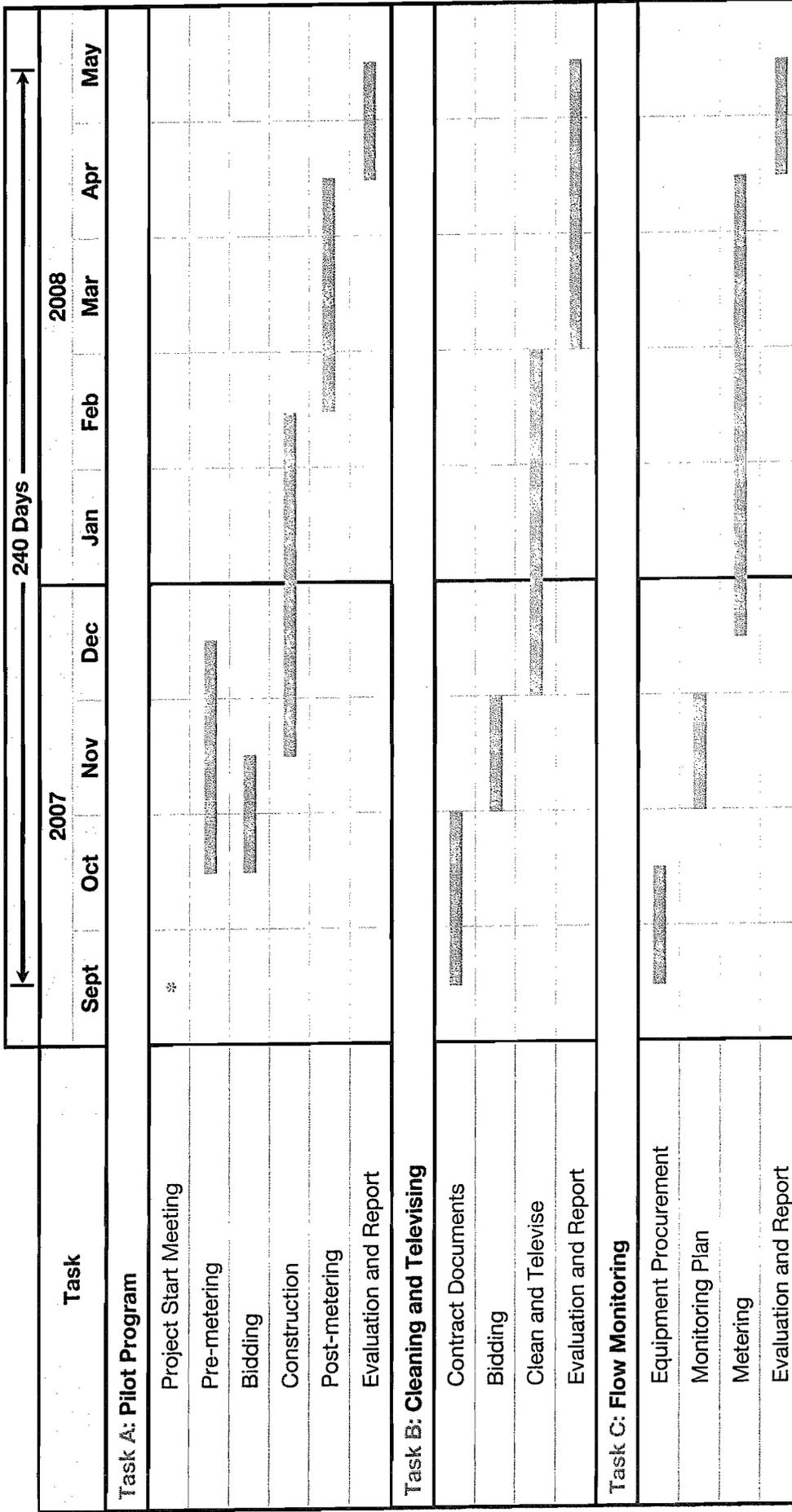
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**Section 3 – Proposed Schedule**

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# Proposed Schedule

Engineering Services for  
CMOM III Tasks





**Engineering Services for  
CMOM III Tasks**

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**Section 4 -- Estimate of Hours  
Rate Schedule**

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# Estimate of Hours

## Design Engineering Services for CMOM III Tasks

Task	Principal in Charge	Project Manager	Professional Engineer I	Graduate Engineer I	Engineering Technician III	Engineering Technician IV	Admin	Total Hours per Task	Direct Expense	Total Cost
	\$130	\$129	\$100	\$82	\$84	\$95	\$59			
Task A: Pilot Program	20	20	71	122	356	96	14	699	\$6,000	\$68,134
Task B: Cleaning and Televising	6	17	29	82	44	4	4	186	0	\$16,909
Task C: Flow Monitoring	8	19	54	109	240	0	4	434	0	\$38,225
<b>Total Hours per Employee Classification:</b>	<b>34</b>	<b>56</b>	<b>154</b>	<b>313</b>	<b>640</b>	<b>100</b>	<b>22</b>	<b>1,319</b>	<b>\$6,000</b>	<b>\$123,268</b>

Optional Task 1: City Monitoring Task A				- 8	- 100					- \$9,056
Optional Task 2: City Monitoring Task C				- 16	- 200					- \$18,112
Optional Task 3: As-needed Services – Frank Naglich		+ 170								+ \$21,930



Livonia, Pontiac, Auburn Hills

34000 Plymouth Road  
Livonia, MI 48150

### 2007 RATE SCHEDULE

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Graduate Engineer I.....	\$ 82.00
Graduate Engineer II.....	\$ 87.00
Graduate Engineer III.....	\$ 96.00
Professional Engineer I.....	\$ 92.00
Professional Engineer II.....	\$ 100.00
Professional Engineer III.....	\$ 105.00
Professional Engineer IV.....	\$ 126.00
Engineering Technician I.....	\$ 59.00
Engineering Technician II.....	\$ 72.00
Engineering Technician III.....	\$ 84.00
Engineering Technician IV.....	\$ 95.00
Professional Surveyor.....	\$ 106.00
Graduate Surveyor.....	\$ 83.00
Surveyor I.....	\$ 65.00
Surveyor II.....	\$ 79.00
Surveyor III.....	\$ 82.00
Surveyor Aide.....	\$ 43.00
GIS Technician I.....	\$ 58.00
GIS Analyst I.....	\$ 83.00
GIS Analyst II.....	\$ 98.00
GIS Analyst III.....	\$ 120.00
Computer Technician I.....	\$ 59.00
Computer Technician II.....	\$ 69.00
Computer Technician III.....	\$ 78.00
DB/AD Developer.....	\$ 150.00
IT Technician I.....	\$ 85.00
IT Technician II.....	\$ 120.00
IT Technician III.....	\$ 145.00
ROW Coordinator.....	\$ 124.00
Word Processor.....	\$ 48.00
Clerical Aide.....	\$ 37.00
Engineering Aide.....	\$ 43.00
Principal.....	\$ 140.00
Senior Associate.....	\$ 134.00
Associate.....	\$ 129.00
Manager.....	\$ 130.00

\* This Rate Schedule is all inclusive. OHM bears the overhead costs (i.e. mileage, equipment, communications, faxing, copying, etc.) for providing the services proposed herein.



**Engineering Services for  
CMOM III Tasks**

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**Section 5 - Fee Proposal**

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**EXHIBIT A  
CITY OF NOVI  
FEE PROPOSAL**

**ENGINEERING SERVICES FOR  
CMOM PHASE III TASKS**

We the undersigned propose to furnish to the City of Novi services consistent with the Request for Qualifications dated January 11, 2007 and Request for Proposals dated July 27, 2007, respectively. Design fees will be paid on an hourly basis for actual work performed to a maximum as proposed. A separate fee schedule is being provided should the City request additional work on an hourly basis.

Project	Phase	Total Fee
Task A – Pilot Program (Tier I Area)	Design Phase (not-to-exceed fee)	\$ 19,022
	Construction Phase Construction Cost Estimate (by engineer for fee determination): \$ <u>216,000</u>	
	<u>12.7</u> % of Construction Cost (from estimate above)	\$ 27,534
	Reporting/Metering Phase (not-to-exceed fee)	\$ 21,578
	<b>TOTAL ESTIMATED* FEE</b>	<b>\$ 68,134</b>
Task B – Cleaning and Televising (Tier II Area)	<b>TOTAL FEE</b>	\$ 16,909
Task C – Flow Monitoring (Area G)	<b>TOTAL FEE</b>	\$ 38,225

\*Total Estimated Fee consists of a not-to-exceed design phase fee (which includes geotechnical costs if applicable) and a fixed percentage construction phase fee which is used to estimate an approximate fee amount based on the cost estimate above. The actual construction phase fee will be established when the project is awarded to a contractor by multiplying the fixed percentage provided and the bid price of the successful bidder. **All three tasks will be awarded to the same consultant.**

**PLEASE TYPE:**

Company Name: Orchard, Hiltz & McCliment, Inc.

Address: 34000 Plymouth Road, Livonia, MI 48150

Agent's Name: John J. Hiltz, P.E.

Agent's Title: Vice President

Agent's Signature: 

Telephone Number: 734-522-6711 Fax Number: 734-522-6427

E-mail Address: john.hiltz@ohm-advisors.com Date: August 15, 2007