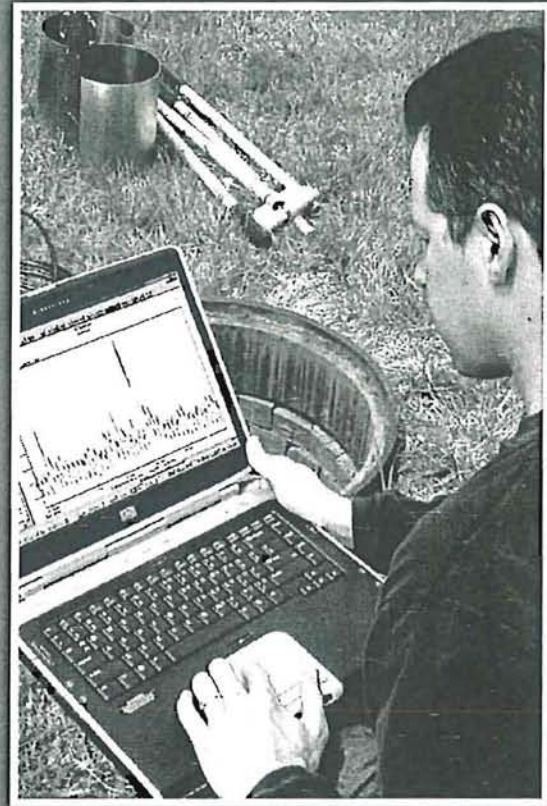


Proposal for
**Engineering Services for 2008
Sanitary Lift Station Upgrades –
Bellagio and Napier**

February 21, 2008



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

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

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 185 engineers, architects and specialized technicians strives to fulfill the company's mission, Helping Build Better Communities for Tomorrow.

OHM is very familiar with the project requirements
Our staff understands specific City concerns
Members of our project team have worked on recent
City of Novi pumping station upgrades

OHM
Advancing Communities™

February 21, 2008

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



**Re: Engineering Services for
2008 Sanitary Lift Station Upgrades – Bellagio and Napier**

Dear Ms. Kalinovik:

Orchard, Hiltz & McCliment, Inc. (OHM), is pleased to submit this proposal to provide consulting engineering services for the 2008 Sanitary Lift Station Upgrades. We have successfully performed this type of work for a number of communities throughout Southeastern Michigan. In Oakland County alone, we have performed projects in the communities of Auburn Hills, Farmington, Farmington Hills, Novi, Oak Park, Orion Township and Rochester Hills, as well as numerous cities in Wayne and Washtenaw Counties.

We understand the overall goal of the project is to refurbish the existing sanitary lift stations as cost-effectively as possible, standardizing the lift station design to meet City standards and provide exceptional engineering service.

As outlined in our proposal, we are very qualified to prepare and administer the construction documents for the improvements at the Bellagio and Napier sanitary lift stations. We understand how to successfully facilitate projects from the initial study phase through construction close out. We are prepared to work closely with the City, and our staff is comfortable with and effective in presenting projects for the City Council, as well as at public informational meetings should they be required.

In your review of our qualifications, please consider the following key aspects of our project approach and team:

- OHM did the original evaluation and study to determine the proposed improvements. Therefore, we are very familiar with the project requirements.
- Our staff has worked on several City of Novi projects and is familiar with the City's standards and processes. Also, we understand specific City concerns, such as the specifics of temporary bypass requirements.
- Members of our project team have worked on several of the recent City of Novi pumping station upgrades, including Hilton, Lanny's, Country Place, and Stonehenge Pumping Station Improvements. We understand that the City has been pleased with our performance on all these projects.

Enclosed is our proposal for the services we believe will accomplish your goals. Please call me or Sherril Wright, PE 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 2008 Sanitary Lift Station Upgrades.

Respectfully,
Orchard, Hiltz & McCliment, Inc.

A handwritten signature in cursive script, reading "Vyto Kaunelis", written over a horizontal line.

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

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Section 5 – Fee Proposal

Exhibit A



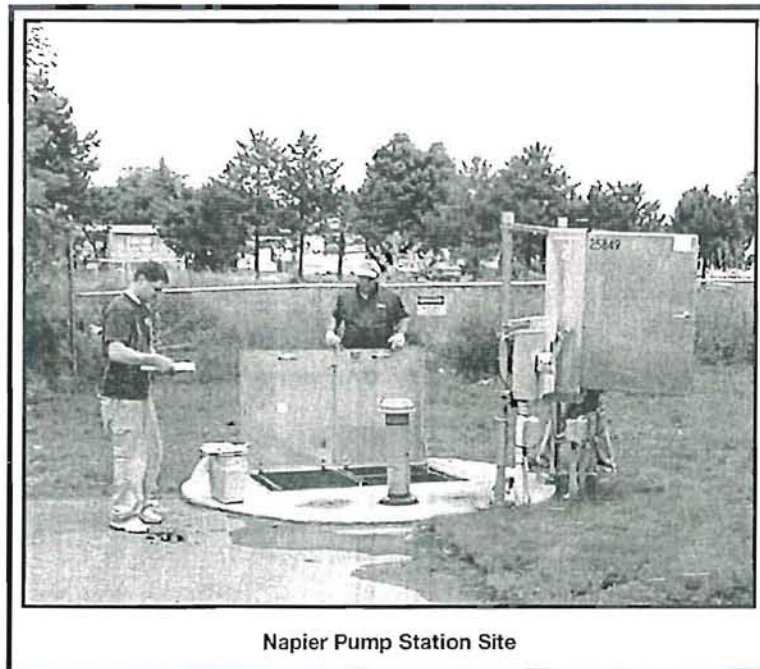
Section 1 – **Project Understanding and Approach**
Background of the Pump Stations
Project Understanding
Value Added Items
Project Approach

Background of the Pump Stations

The Bellagio sanitary duplex pump station was constructed roughly 20 years ago. The station consists of a 6 foot diameter pre-cast concrete wet well housing 2 ABS AF60-4EX pumps, rated for 367 gpm at 32 feet TDH. A separate valve vault and meter vault contains one magnetic flow meter that meters the discharge from the pump station. The pump station discharges to a 6-inch diameter force main that is routed northerly approximately 670 feet in length. There is no emergency backup power on site. Access to the site is from Beck Road by a bituminous driveway. The station is located within the Beck Road right-of-way so no additional easements would be required.

The Bellagio pumps are currently discharging between 225 to 275 gpm, so some excessive wearing of the pumping equipment can be seen or when the pumps were replaced smaller pumps were installed than the station was initially designed for. Although, the later scenario does not appear realistic, since the current pumps have a 6.4 horsepower motor, while the pumps initially installed were supplied with a 4 horsepower motor.

The Napier station was constructed as part of the initial Island Lake Development in the early 1990s. The station is comprised of an 8-foot diameter pre-cast concrete wet well that contains 2 Flygt 3127 pumps, rated for approximately 700 gpm at 31 feet TDH and supplied with 10 horsepower motors. A separate valve vault with check and isolation gates are provided on the pump discharges for flow control and pump isolation. Flow is metered through the station with the Multitrode Control unit. There is no emergency backup power for this site. Access to the site is from Island Lake Road off of Napier by a bituminous drive. The Napier station is located within a twenty foot easement approximately 60 feet in length.



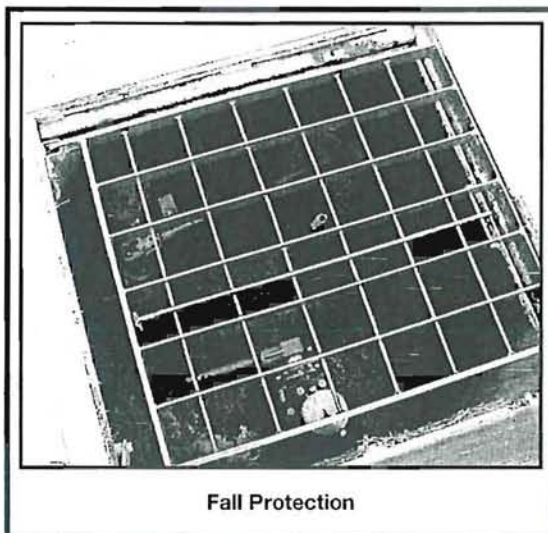
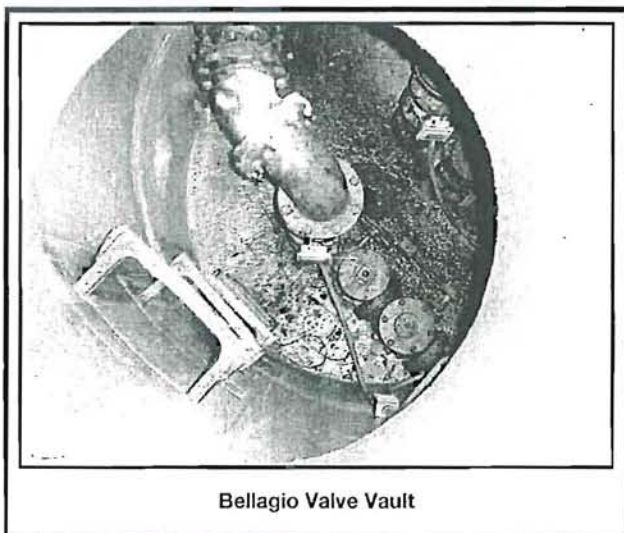
Project Understanding

The Request for Proposal (RFP) issued by the City of Novi on February 8, 2008, outlines the services requested by the City. The City requests a scope of work that encompasses the design, bidding assistance; construction administration and construction observation associated with improvements at the Bellagio and Napier Road sanitary pump stations.

OHM initially inspected these two pump stations as part of the CMOM Phase II, Pump Station Investigation Task 7 work. Each of the stations components was inspected and improvements were recommended. These recommendations were the basis for the RFP issued.

A basic description of the requested improvements as listed in the RFP is as follows:

- Replacement of the submersible pumps, floats, and control panel and system at the Bellagio pump station. Additionally, upgrade from 230 volt, single phase power to 480 volt, 3 phase.
- Replacement of the corroded galvanized guiderails, lift chains and brackets with stainless steel at the Bellagio pump station
- Installation of natural gas generators at each of the pump station sites, Napier Road and Bellagio.
- Fall protection and an access hatch to be replace the existing manhole cover on the valve vault at the Bellagio pump station.
- Improve site access drive at Bellagio pump station so that a vector truck can safely access the site.
- Relocate or install new junction boxes at Bellagio pump station.
- Review background information for the Napier Road pump station to determine revised build out flows to verify required pump sizing.
- Conduct topographic surveys at each pump station location to verify generator location and grading. The Bellagio station is located within the Beck Road right of way, while the Napier station is located in a private easement dedicated to the City. The easement document for Napier is available for use during design.
- Project completion in 2008.



Value Added Items

OHM is proposing as part of our base services the following value added items. These items will in particular address time savings and address the project schedule as proposed in the RFP. We are proposing four items that will add value to the project. The items are as follows:

No additional costs are associated with these value added items

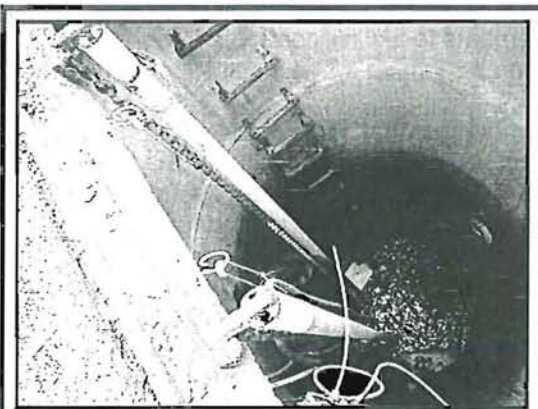
- **Equipment Procurement** – This item will address the project schedule, while maintaining project quality at no additional cost.
- **Preliminary System Hydraulics** – With our hydraulic software we were able to cost-effectively evaluate the preliminary hydraulics for the station. This will save time in the project by quickly sizing the proposed equipment and being able to receive equipment proposals.
- **Electrical Issues** – By coordinating the electrical service and control panel SCADA requirements, these issues will in the long run save the City money by planning appropriately.
- **Permitting** – Our expertise in working with agencies that provide permit review services, OCDC and MDEQ, will be beneficial in saving project time. By communicating early in the project with the agencies we can pave the way to easier and timely reviews.

A further description of our value added items are as follows:

Equipment Procurement

To accommodate the project's schedule, OHM recommends that the long lead items, submersible pumps and natural gas generator equipment, which typically take from 8 – 12 weeks for fabrication and delivery, be procured early. This strategy would effectively "fast-track" the equipment delivery, while other activities would be simultaneously conducted and maintain the desired 2008 completion date by the City. Our attached project schedule reflects this methodology since without it; the desired completion date could not be realized.

OHM proposes to assemble submersible pump, controls and generator specifications from 3 suppliers and negotiate a final purchase price and delivery schedule. By soliciting bids from 3 suppliers this will meet the City Council requirements for competitive bidding, while maintaining equipment quality. We would propose to use the same three pump suppliers that the City reviewed and decided upon during the Hudson Pump Station Improvements to avoid duplication of work. For the generators we would propose to review the generation equipment that the City currently has installed (Generac and Cummins) and discuss the pros and cons with the City during the kickoff meeting.



Bellagio Wet Well and Submersible Pumps

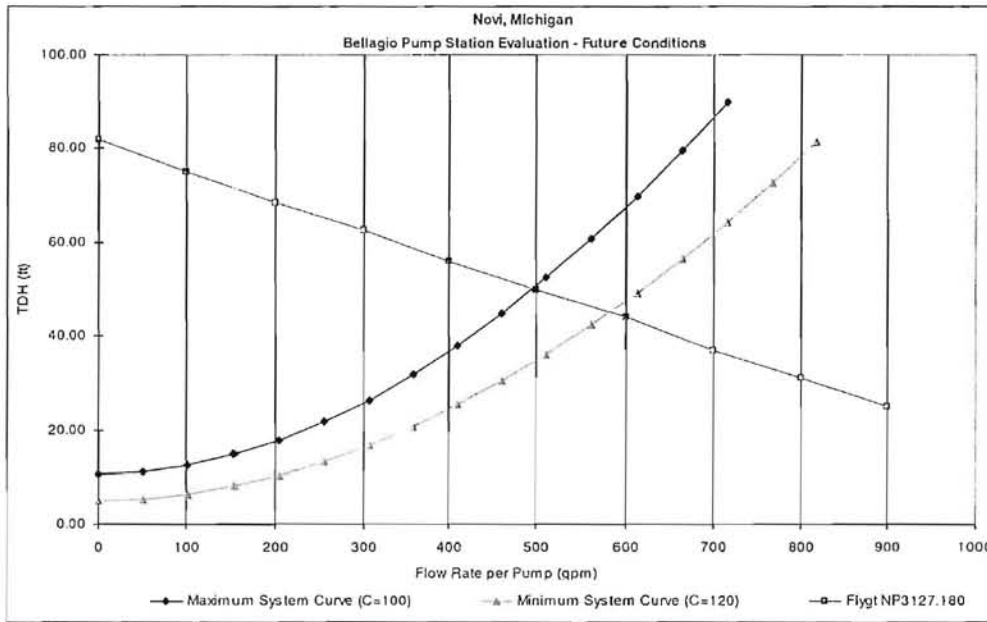
Once the price and schedule are negotiated, the City would enter into a direct purchase agreement with the selected equipment manufacturers. Additionally, OHM would structure the installation contract to assign responsibility of this equipment, as far as delivery, testing, and start-up issues, to the selected installation Contractor. This would ensure that complete coverage of the equipment is covered even though the equipment would be procured by the City under a separate contract.

Preliminary System Hydraulics

In order to procure the submersible pumps early in the project schedule, a clear understanding of the pump station hydraulics needs to be determined. OHM has developed

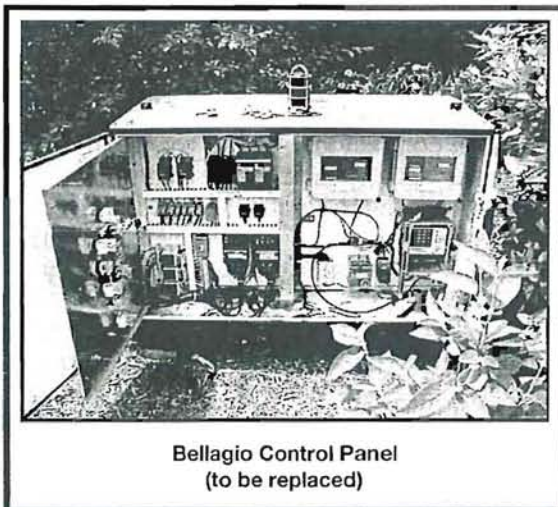
preliminary hydraulic system curves for the proposed station. Final coordination of the pump start and stop elevations, as well as the force main discharge elevation, need to be finalized. Once we have this information, we will contact the selected pump manufacturers and begin the submersible pump procurement process as discussed above.

Since OHM has developed software that will allow for the quick and accurate system head curve calculations, this step can be completed promptly once the engineering contract is awarded by Council. However, we have prepared preliminary system curves for the Bellagio station and contact the Flygt pump manufacturer's representative, to initiate the conceptual design for the pumps. Additionally, this approach will allow us to fast track the sizing of the natural gas generators, since the Napier station is already sized.



Electrical Issues

An area of concern is the existing 230 volt, single phase service that services the Bellagio pump station. As requested in the RFP, the City desires to upgrade the electrical service at this site to 480 volt, 3 phase service. Coordination with DTE Energy early in the project to confirm electrical service upgrades will be required. Upon completion of the preliminary hydraulics, we will contact DTE with the necessary service and schedule requirements to aid in coordinating the electrical upgrades prior to assignment to the installation contractor.



Additionally, we note that the City is planning for future SCADA improvements. The existing panel at the Bellagio pump station will be replaced with a new control panel that will provide for space to accommodate the future SCADA system. OHM will coordinate the space requirements with the City Engineering group during the pump procurement process.

The existing junction box would be moved or relocated to correct a compliance issue related to NFPA. We will address this issue on the installation contract plans.

Permitting

Due to the proposed project schedule, permitting will be a critical issue. Having completed many similar type projects, we note obtaining a permit can at times be considered a lengthy process.

We will begin the permitting process by completing the MDEQ Part 41 permit application. This document, along with signed and stamped drawings and project manual will be forwarded to the City of Novi for forwarding to the Oakland County Drain Commissioner (OCDC). OCDC will review the package and upon completion, typically 1-2 weeks, forward the documents to the Southeast District Office of the MDEQ. Once at the MDEQ, review and comment periods have varied, but no less than 3 – 4 weeks should be assumed. We have allowed for 5 weeks of permit review time for this project.

As the project nears receiving bids, OHM will contact the MDEQ to discuss the project and offer our assistance in addressing questions that the MDEQ may have. The project is scheduled such that we will be advertising and receiving bids prior to receiving comments from OCDC or MDEQ, in order to meet the schedule listed in the RFP. Although possible, this approach involves some risk in that review comments may not be able to be incorporated into the design until after bidding. This could result in a change order that the City may need to execute in order to receive a construction permit.

Project Approach

Design Phase Services

Upon authorization by the Novi City Council and City Engineer we will initiate the design of the improvements to the Napier and Bellagio sanitary lift stations. The scopes of services included within each task are listed below:

1. Meet with the City Engineering and DPW staff at a project kickoff meeting, followed by on-site inspections of the pump stations.
2. Review the background information available for the Napier pump station, including the original basis of design and the CMOM Phase I calculations to verify that the station pumps do not need to be upsized to meet the future build out for the service area.
3. A topographic survey for each of the pump station sites will be conducted. Survey will include a tree survey indicating type, size and condition of trees measuring 6-inch or larger. Additionally, the landscaping around the Bellagio lift station will be surveyed to be able to replace the landscaping in kind following the generator installation.
4. Prepare preliminary pump hydraulics for the Bellagio pump station and meet with City Engineering to discuss pump options, preferences and options. Finalize hydraulic calculations following that meeting.
5. Prepare "Bidding Proposals" for the pump and natural gas generator equipment that will outline the basic requirements of the equipment. Review proposals and negotiate purchase price and delivery of equipment. It is critical that the equipment be received by the end of August 2008 to ensure installation within 2008.
6. Upon final determination of pump horsepower and generator sizing for the Bellagio pump station, the local utility companies, DTE and Consumer's Energy, will be contacted to begin the coordination process for electrical and natural gas requirements at each locations. Coordination for the generator at Napier will be based on the existing 10 horsepower motors, and will begin upon commencement of the project.
7. Review the access road geometry to accommodate vector truck traffic.

8. Prepare 30% and 90% plans and specifications for the City's review and comments. We anticipate having a design review meeting at each of the stages with the City to aid in maintaining the project schedule. At this meeting, we would walk through the design of the project with the City staff and would encourage all interested City staff to attend to gain their timely input.
9. Construction cost estimates would be provided at both the 30% and 90% design submittals for discussions with the City and/or adjustments to the project if required.
10. Prepare and submit the Part 451 permit application to the City for distribution to Oakland County and the MDEQ. We have assumed that there will be no wetland or floodplain permit applications required for these projects. Permits will need to be obtained prior to any construction beginning.
11. A soil erosion and sedimentation control plan for the project will be created and included in the 90% review set to the City. Any permitting fees will be the responsibility of the City.
12. Assistance during the bidding phase will also be provided. OHM will prepare and distribute the bidding document to prospective bidders.
13. OHM will coordinate and conduct a mandatory pre-bid meeting with prospective bidders. We would request that Engineering, Construction and DPW staff be available for field visits after the pre-bid meeting.
14. Bids received will be tabulated and reviewed. A letter of recommendation to the City will be prepared and distributed to the City.

Construction Administration and Inspection Services

During this phase of the work, OHM will provide construction administration services to the City that will include the following services:

1. Regular communication and consultation with the City regarding the progress and status of the project will be provided.
2. Upon award by the City Council, contract documents will be prepared and distributed to the Contractor. Insurance documents and bonds will be reviewed once submitted by Contractor.
3. Attend the pre-construction meeting. OHM will provide coordinate the date of the meeting with the City, prepare invitations to interested parties and manage the meeting. Meeting minutes will be prepared after the pre-construction meeting.
4. Construction inspection during active construction by a full time inspector will be provided.
5. OHM will review the pump and generator shop drawings for conformance with the contract documents.
6. Interpretation of plans and specifications when questions arise during the construction phase will be addressed.
7. Construction staking for generator foundation location will be provided.
8. Preparation of daily reports during active construction and/or when OHM personnel visit the sites will be done.
9. Attend progress meetings and coordination meetings as required.
10. Prepare a final punch list for each site.
11. Coordination of the start up services provided in the construction documents with the general contractor.
12. Preparation and certification of contractor pay estimates on a monthly basis.

13. Diligence in attending to resident concerns and complaints as they become known, as well as promptly communicating those issues directly with City Engineering.
14. As part of our construction phase services, OHM will administer and enforce the soil erosion and sedimentation control plan as an agent for the City of Novi under the Authorized Public Agency (APA) program in compliance with the City of Novi Authorized Public Agency SESC Program Manual. OHM will conduct soil erosion and sedimentation control inspections of the project for compliance with the approved soil erosion and sedimentation control plan. Inspections will be completed by an individual that is certified by the Michigan Department of Environmental Quality under Part 91. Inspections will occur at regular intervals. OHM will institute corrective measures in the field to prevent soil erosion and sedimentation as required.
15. Following substantial completion of construction, this phase will include submittal to the City Engineering Department the project reports and documents, as well as a recommendation regarding final acceptance of the project. Within this phase, OHM will prepare construction record (as-built) 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 (AutoCad file) of the record drawing in City format to the Engineering Department within three (3) months following substantial completion of the project.

The construction phase services also include providing on-site observation during active construction to document that the construction is completed in compliance with the plans, specifications, and contract documents. OHM will witness below grade construction efforts, as well as critical items, such as equipment unloading, bypass pumping, electrical upgrades, pump installation and generator installation. Items that are above grade and of a non-critical nature will be witnessed on a part-time inspection effort (i.e. valve hatch and fall protection, etc.). Several assumptions were made in preparing the construction engineering budget for this project. Variations in these assumptions may impact the proposed fee for this project. These assumptions are as follows:

1. The construction period was assumed to be completed in 1 month.
2. Active construction as described above was assumed to be 120 hours of effort.
3. Shop drawing effort was determined by assuming two submittals of information (one initial and one re-review submittal).
4. Review of up to 3 pay estimates was included.
5. Processing up to 1 contractor change orders was included. Redesign work associated with change orders is not included.

Insurance/Additional Requirements

OHM's current insurance policies meet or exceed all of the City's insurance requirements. These policies will be maintained throughout the project.

We do, however, have reservations over the "Additional Requirements – Indemnity", sub-section 1. As sub-section 1 is currently written, our Professional Liability Policy will not fully cover OHM and therefore provide the insurance protection to the City. We recommend the following insurable language be considered:

"The Contractor agrees, to the fullest extent permitted by law, to indemnify and hold harmless the City against damages, liabilities and costs arising from the negligent acts of the Contractor in the performance of professional services under this Agreement, to the extent that the Contractor is responsible for such damages, liabilities and costs on a comparative basis of fault and responsibility between the Contractor and the City. The Contractor shall not be obligated to indemnify the City for the City's own negligence".

PRELIMINARY SYSTEM HYDRAULICS AND PUMP CURVE

PROJECT: City of Novi, Michigan
Bellagio Pump Station

PROJECT NUMBER: RFP

Enter Pump Curve

NP 3127.180

Q (gpm) rpm	Q	Head (feet)
716		
664		
613		
562		
511		
460	900	25.00
409	800	31.00
358	700	37.00
307	600	44.00
256	500	50.00
204	400	56.00
153	300	62.50
102	200	68.50
51	100	75.00
0	0	82.00

Static Elevations:

	Maximum Condition	Minimum Condition
Discharge Elevation	930.00	930.00
Wet Well Elevation	919.46	925.00
Per Pump Duty Point Q (gpm)=		460
Total Duty Point Q (gpm)=		460
Maximum Static Head =		10.54
Minimum Static Head =		5.00
# Pumps =		1

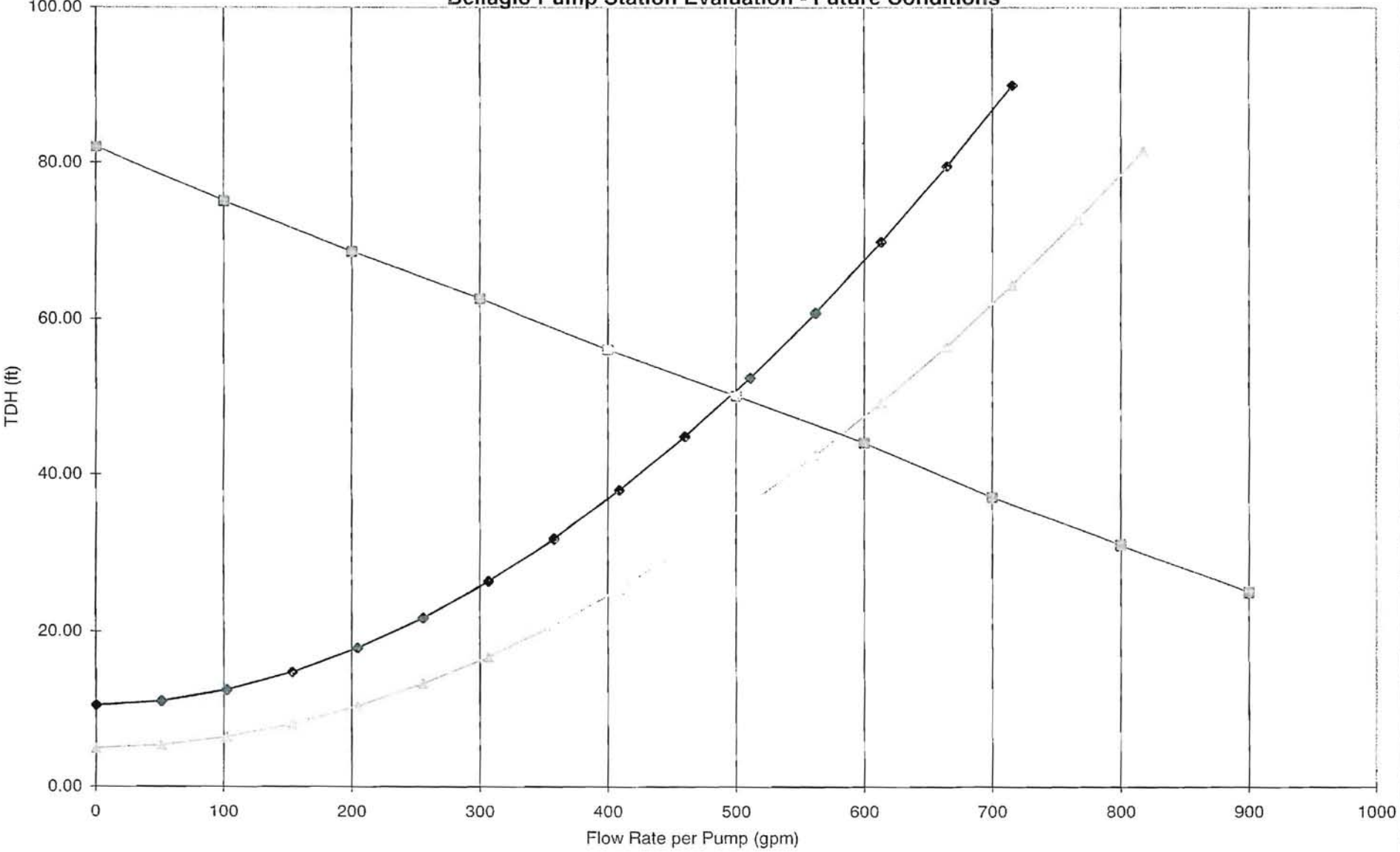
Wet Well Information:

	Existing @370 gpm	Proposed @ 460 gpm
Diameter (feet):	6	6
Pump Stop Elevation	916.5	916.5
Pump Start Elevation	919.46	921.00
Working Depth (feet):	2.96	4.50
Volume (gallons):	626	952
Motor Cycle Time (minutes):	6.8	8.3
Average Flow Rate (gpm)	24.24	24.24
Fill Time (minutes)	25.8	39.3

5 HP to 7.5 HP Motor Cycle Time 5-8 minutes
10 HP pump Motor Cycle Time 8-10 minutes

	Description	Crown El. (ft)	Dia (in)	Area (ft^2)	L (ft)	Quan.	K	C Design	C Min	Max Case Flow %	Min Case Flow %
1	Exit Loss		6	0.20		1	1	100	120	100	100
2	Friction		6	0.20	620			100	120	100	100
3	45 degree bend		6	0.20		1	0.25	100	120	100	100
4	Friction		6	0.20	10			100	120	100	100
5	45 degree bend		6	0.20		1	0.25	100	120	100	100
6	Friction		6	0.20	35			100	120	100	100
7	Tee (Pump Conn)		6	0.20		1	0.7	100	120	100	100
8	Friction		6	0.20	10			100	120	100	100
9	Y Fitting		6	0.20		1	0.7	100	120	100	100
10	Friction		6	0.20	1			100	120	100	100
11	45 bend		6	0.20		1	0.25	100	120	100	100
12	Elbow		6	0.20		1	0.3	100	120	100	100
13	4" x 5" Conc Inc		6	0.20		1	0.35	100	120	100	100
14	Flow Meter		4	0.09		1	1	100	120	100	100
15	Elbow		4	0.09		1	0.3	100	120	100	100
16	Plug Valve		4	0.09		1	0.4	100	120	100	100
17	Spool Piece		4	0.09	1			100	120	100	100
18	Check Valve		4	0.09		1	2.5	100	120	100	100
19	Friction		4	0.09	6			100	120	100	100
20	Elbow		4	0.09		1	0.3	100	120	100	100
21	Friction		4	0.09	5			100	120	100	100
22	(pump)		4	0.09				100	120	100	100
23	Entrance		4	0.09		1	0.5	100	120	100	100
24				0.00				100	120	100	100
25				0.00				100	120	100	100
26				0.00				100	120	100	100
27				0.00				100	120	100	100
28				0.00				100	120	100	100
29				0.00				100	120	100	100
30				0.00				100	120	100	100
31				0.00				100	120	100	100
32				0.00				100	120	100	100
33				0.00				100	120	100	100
34				0.00				100	120	100	100
35				0.00				100	120	100	100

Novi, Michigan
Bellagio Pump Station Evaluation - Future Conditions



◆ Maximum System Curve (C=100) ▲ Minimum System Curve (C=120) ■ Flygt NP3127.180

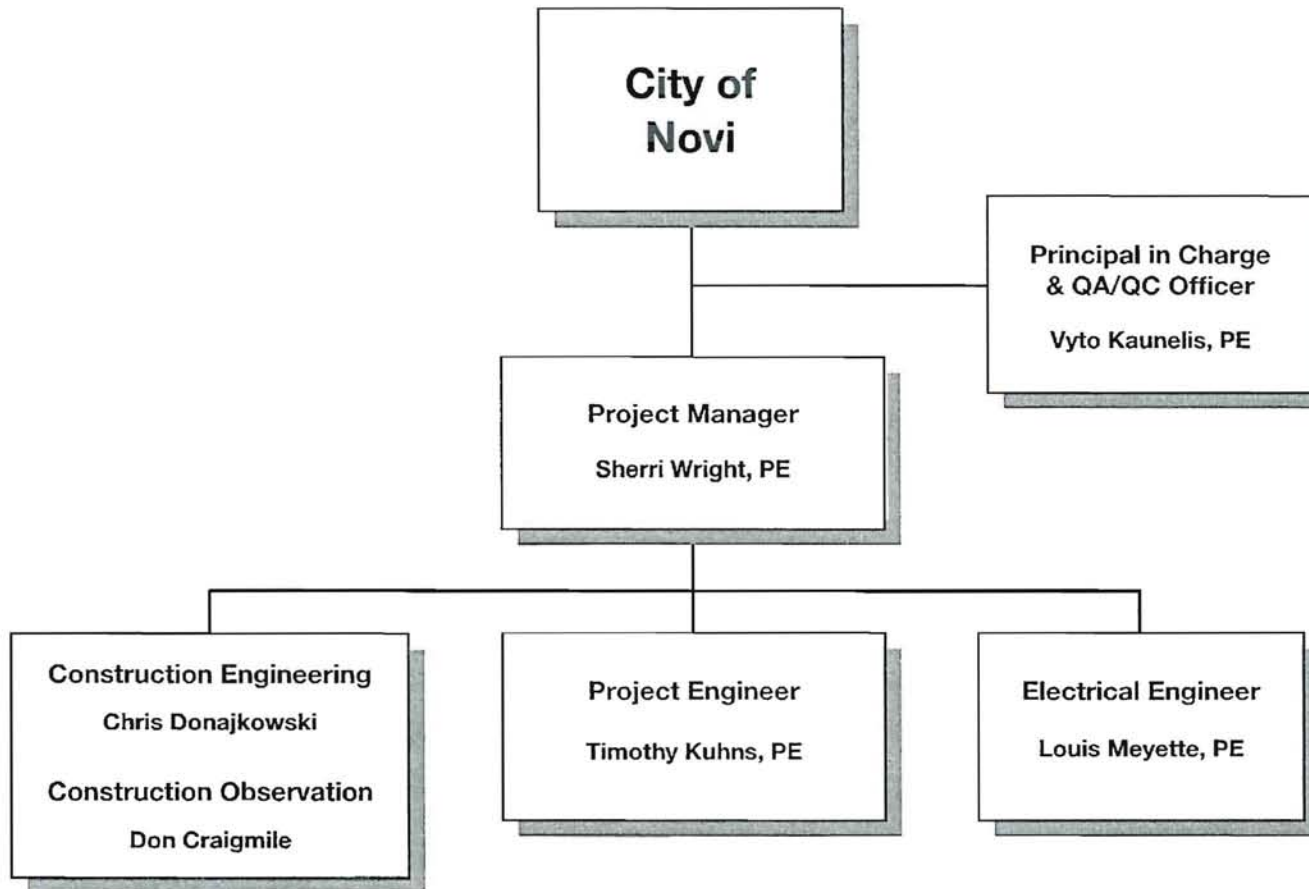
Engineering Services for
2008 Sanitary Lift Station Upgrades – Bellagio and Napier

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

Team Organizational Chart

Engineering Services for
2008 Sanitary Lift Station Upgrades – Bellagio and Napier

February 21, 2008





Background

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

32 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

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

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. This project is planned to extend over several years. Tasks include the analysis of the existing system, development of a flow monitoring program with a subsequent analysis of field data, a capacity analysis of the sanitary sewer system, performing of a sanitary sewer evaluation study, assisting the City staff in preparation of reports to the regulating agencies, e.g. the MDEQ, and

Vytautas (Vyto) Kaunelis, PE

Principal in Charge



review of current staffing and training programs in the City along with maintenance and management procedures, historic maintenance records and procedures, and the development of a customer compliant tracking method.

SRF Application-Merriman & Herman Sanitary, City of Romulus, MI – 2004

Project Manager for a Project Plan on behalf of the City of Romulus meeting the requirements of the State Revolving Fund Project Plan Preparation Guidance document. The study area was Merriman Road between Eureka Road and Pennsylvania Road and Herman Street from Ozga Street west to the dead end. The residences along these roads are served by septic systems. These aging systems were beginning to fail. This Project Plan evaluated several alternatives, with the most feasible of these alternatives to construct sanitary sewer along these roads to enable the residents to connect to public sewer. The proposed sanitary sewer along Merriman Road would be approximately 4,600 lft of 15-inch and along Herman Street would be approximately 2,000 lft of 10-inch.

Wet Weather Modeling

Mr. Kaunelis has spent a large proportion of his career working on wet weather impacts to municipal infrastructure and the receiving waters to which they are tributary. This has ranged from projects with relatively defined existing methodologies, such as flood insurance studies to projects with a strong research component, such as the investigation of water quality impacts of new combined sewer overflow control facilities as part of the Rouge River National Wet Weather Demonstration Project.

Most recently, Mr. Kaunelis has focused on wet weather flows in sanitary sewer systems, using tools such as the Antecedent Moisture Model. He has worked in assisting regional systems, such as the North Huron Valley / Rouge Valley System and the Ypsilanti Communities Utilities Authority System. He has also worked with local communities such as Novi, Romulus, Westland, Huron, and Scio in realistically quantifying the state of the existing system as well as developing affordable action plans to meet the MDEQ's Sanitary Sewer Overflow Policy.

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

Bachelor of Science –
Environmental Engineering,
Michigan Technological
University, Houghton,
Michigan, 1987

Professional Registration

Professional Engineer, State
of Michigan, 1992

Professional Certifications

Certified Construction
Specifier, 1994

Professional Development

- Biological Nutrient
Removal Design, 1993
- Manhattan College
Summer Institute for
Treatment of
Municipal, Hazardous
and Toxic
Wastewaters, 1994
- Water Environment
Federation
Conference,
Optimizing Clarifier
Performance, 1996

Professional Affiliations

- American Water
Works Association
- Water Environment
Federation
- American Society of
Civil Engineers

Experience

1 year at OHM, 20 years of
experience with other firms

Ms. Wright has experience specializing in the development, design, and construction of infrastructure facilities for municipalities. Ms. Wright is a project manager responsible for report writing, contract document preparation and owner/agency liaison services during the design of wastewater collection/treatment facilities and water distribution/treatment facilities. She provides construction contract administration and contractor liaison services during construction of these projects and writes performance certifications after completion.

Previous Experience

Municipal Wastewater Treatment & Pumping

City of Novi Lanny's Pump Station and Force Main Improvements

Project manager and design engineer for a submersible pump station, generator building and 14-inch force main to serve the growing westerly portion of the City of Novi. The 11,000 lineal feet of force main was directionally bored.

City of Novi Country Place and Stonehenge Pump Station Improvements

Project manager and design engineer for submersible pump station upgrades and each facility. Bypass provisions and natural gas standby generators were provided for emergency conditions.

Ypsilanti Community Utilities Authority (YCUA) WWTP Expansion

Project engineer for the design of 17 MGD activated sludge treatment facility with biological phosphorus removal capabilities. Additional design included screening, grit removal, primary treatment, and tertiary filtration. Multiple pumping systems were designed for the treatment systems and the existing scum facilities modified.

City of Saline

- South Side Pump Station Rehabilitation — Project manager/engineer for the rehabilitation of an existing 2,000 gpm dry pit station to a submersible pump station. The project also included a standby generator.
- WWTP Tertiary Filter Upgrades — Project manager and engineer for the replacement of the existing traveling bridge filter equipment. Facilities were rated for 1.8 MGD and equipment was pre-purchased to expedite the project timeline.
- WWTP Primary Tank Drive Replacement — Prepared contract for the replacement of the primary tank drive. Coordinated construction efforts.

Brighton Township WWTP

Project manager for design of 2.1-MGD WWTP. Design included preliminary treatment, secondary treatment using an oxidation ditch, tertiary treatment, and UV disinfection. The project also involved the design of laboratory and maintenance facilities, chemical feed systems, and sludge handling facilities.

City of Adrian, M-52 Pump Station and Force Main

Project manager and design engineer for a submersible pump station and 12-inch force main to serve the growing westerly portion of the City of Adrian. The 6,000

Sherri A. Wright, PE

Project Manager



lineal feet of force main was directionally bored to elevated restoration concerns along the highly developed Maple Road. Bypass provisions and standby generation connections were provided for emergency conditions.

Lenawee County Drain Commissioner

Country Club Drive Pump Station Rehabilitation, Adrian Township – Project manager and design engineer for the rehabilitation of an existing dry-pit pump station to upgrade for wet weather flows. The project included pump and valve replacement, installation of metering and SCADA control equipment and electrical upgrades. Bypass pumping was required around the station during modifications.

City of Manistique WWTP Improvements

Project engineer for the upgrade of an existing facility to a treatment capacity of 2.0 MGD. Improvements included revisions to the preliminary process, primary tanks, and conversion of the existing rotating biological contactors to conventional activated sludge using fine pore aeration.

Village of Dexter WWTP Upgrades

Project manager and engineer for the retrofit of a 670,000 gpd rotating biological contactor facility to convention activated sludge with biological phosphorus removal capabilities. Additionally, pretreatment, primary pumping, primary treatment, final settling tanks, return and waste pumping systems, tertiary filters, tertiary pumps and disinfection facilities were improved.

Dexter Township

- Multilake Area Water and Sewer Authority, Sanitary Sewer Improvements and WWTP – Project manager for the preparation of contract documents and general engineering for a low pressure grinder collection system, one submersible and two sewage booster stations, transmission main, and a 400,000 gpd SBR treatment facility.
- Loch Alpine Sanitary Authority, WWTP Master Plan and Improvements – Prepared a master plan to evaluate the treatment facility and to identify performance improvements. Upgrades included installation of an additional trickling filter mechanism and upgrades to the recycle pumps.

City of Walled Lake-Novu WWTP Expansion

Assisted in the preparation of contract documents for the construction of an administration building, blower building, advanced secondary treatment with fine bubble aeration and provisions for future biological nutrient removal aeration and final settling tanks, sludge storage facilities, and extensive revisions to the existing equipment and building to facilitate the expansion of the plant to 3.5 MGD. Also provided office coordination and shop drawing review during construction.



Background

Mr. Donajkowski has 22 years of experience in civil engineering construction supervision with MDOT, Townships, Cities, and private developments projects. He currently provides construction supervision services for major road and utility improvement projects in various Southeastern Michigan communities. He tracks project budgets through the daily monitoring of pay quantities and reports significant changes in quantities and any claims directly to the project manager.

Mr. Donajkowski has taken the MDOT office technician course to appropriately maintain project records for state-funded local government projects. He also provides technical assistance to OHM's design departments on pavement and utility plan municipal design projects.

Relevant Experience

OHM Experience

Manhole Rehabilitation Project, City of Novi, MI – Ongoing

Construction project manager for assisting in the contract administration and construction observation of the first phase of the manhole rehabilitation project.

Assisted in contract administration, field observation and attended the construction meetings for the following projects for the University of Michigan:

- **Under the supervision of Glenn Rittenger:**
 - North Campus Storm Sewer Relief Projects
 - Phase I – Bonisteel Boulevard
 - Phase II – Murfin Road to the Computer Science Engineering Building
 - Biomedical Engineering Building Expansion (site development) observation
- **Under the supervision of Brian Zybur:**
 - North Campus Chilled Water Projects, Phases I & II
 - Computer Science Engineering Building, (site development) observation
- **Under the supervision of Tom Keast:**
 - NC-8 Parking Lot

Peavy Road Force Main Project, Marion Township, MI – 2006

Construction project manager for a 10" HDPE SDR-11 Sanitary Force Main, Directional Drilling Method 1314 LFT of replacement of a active force main

Manhole Rehabilitation Project, Village of Dexter, MI – 2006

Construction project manager for assisting in the contract administration and construction observation of the first phase of the manhole rehabilitation project.

Phase I & II Design - 20-inch Water main extension, Charter Township of Brighton, MI – 2006

Construction project manager for the extension of the 20-inch water main from the Livingston County Water Authority. Phase I included approximately 1,900 feet of main. Phase II extended the 20-inch main along Whitmore Lake Road for approximately 500 feet, 400 feet was directionally drilled using ductile iron pipe. An 8-inch extension was constructed across to Weber Drive to connect the Country Club Annex Subdivision, which included a meter pit.

Education

Associates in Applied Science, Concrete Technology, Alpena Community College

Professional Certifications

- Certified, Storm Water Management - Part 31 and Part 91, State of Michigan, Soil Erosion and Sedimentation Control of the Natural Resources and Environmental Protection Act.
- Certificate of Public Works Program - Sewer Line, Water Line, Street & Highway Construction, University of Toledo, Division of Continuing Education
- Certified Highway Construction Office Technology, MDOT, Bureau of Highways Field Manager
- Certificate in Concrete Paving / Bridge Module, MDOT
- Michigan Certified Concrete Technician, Level II

Experience

22 years of experience, 2 with OHM

Chris Donajkowski

Construction Engineering Technician



Kensington Street Improvements, Village of Dexter, MI – 2005

Construction project manager for this project, contract administration, and construction engineering for the water main, storm sewer, and paving improvements on Kensington Street from Ann Arbor Street to Grand Street.

Previous Experience

Western Townships Utilities Authority – Resident engineer responsible for the construction of Section 1C: Haggerty Road Interceptor, a five-mile interceptor connecting two equalization basins/pump stations, 36-60-inch diameter with 50 percent of construction tunneled.

North Campus Chilled Water project, University of Michigan, Phase I & II – Observation of the chilled water main construction to six of the north campus facilities. Review of the Walgreen Center chilled water routing and specifications.

Bemis Road Reconstruction, City of Saline, MI – Performed inspection and office administration services, including improved geo-metrics, new water main and storm sewer. An MDOT funded project.

MRF Entrance Road II, City of Ann Arbor, MI – Performed inspection and office administration services for the project which included 1 mile of reinforced concrete pavement.

Traver Creek Broadway Culvert, Washtenaw County Drain Commissioner – Inspection and office administration services for the improvements including reconstruction of side slopes, new box culvert, reconstruction of Broadway Street and storm sewer.

M-61 and M-18 CSO Project, City of Gladwin, MI – Inspection and office administration services for the, \$2.1 million project funded by the City, the FHA and MDOT. Involved sewer separation, removal and replacement of sanitary sewer main, water main, new storm sewer main and total reconstruction and widening of M-18 from Main Street (M-61) to First Street.

Water Street Reconstruction CSO Project, City of Saugatuck, MI – Performed resident engineering services, which included horizontal and vertical control for the total reconstruction of Water Street.

North Hamilton Street Reconstruction, City of Ypsilanti, MI – Performed inspection and office administration for this project, which included storm sewer, funded by the City, FHA and MDOT.

Willowbrook Road Widening and Reconstruction, Branch County, MI – Inspection and office administration services for this project, including storm drainage improvements with curb and gutter, funded by Branch County and MDOT.

Laurel Gardens, Ann Arbor Township, MI – Inspected utilities for this site condominium project.

Livonia Marriott – Inspected the proper placement of reinforcing rebar for floors and columns, proper spacing and height of post tensioning cables, block outs, monitoring the placement of concrete and post tensioning of the cables.

Wurtsmith Air Force Base, Oscoda, MI – Inspected the active main landing strip one-mile long asphalt overlay. Duties included extractions, density and smoothness testing.



Background

Mr. Kuhns has worked extensively in the planning, design, and rehabilitation of water distribution and sanitary collection systems. His experience with the rehabilitation of sanitary collection systems includes work with Infiltration and Inflow removal, which involved extensive experience with several footing drain disconnection programs within the City of Farmington, City of Westland, and City of Romulus.

Relevant Experience

Hilton Pump Station, City of Novi, MI – 2006

Project Engineer responsible for the planning and design of the rehabilitation of the Hilton Pump Station along Haggerty Road. The project involved the field inspection, planning, design, and construction observation of the pump station rehabilitation to ensure that the pump station had adequate capacity to handle existing and future peak flows.

Section 36 Sanitary Sewer Pump Station, Superior Township, MI – 2005

Project Engineer responsible for the planning and design of the new pump station along Ridge Road. The project also involved the complete design of the project including approximately 4,500 lineal feet of sanitary sewer, acquisition of easements, and utility coordination.

Brown Road Sanitary Sewer Pump Station, Orion Township, MI – 2005

Project Engineer responsible for the planning and design of both a new pump station along Joslyn Road and the existing pump station retrofit along Judah Road. The project also involved the complete design of the project including approximately 15,000 lineal feet of sanitary sewer, acquisition of easements, and utility coordination.

Sanitary Collection System Master Plan, Ypsilanti Community Utilities Authority (YCUA), MI – 2006

Project Engineer responsible for the development of the sanitary collection system master plan, hydrologic model, and hydraulic model for YCUA that determined which portions of the Authority system that over capacity and to identify system improvements required for future development conditions.

Sanitary Collection System Master Plan, Charter Township of Huron, MI – 2005

Project Engineer responsible for the development of the sanitary collection system master plan and hydraulic model for Huron Township that determined which portions of the Township could be served by the Township's available capacity and to identify system improvements required for ultimate development conditions.

Water System Master Plan, Charter Township of Huron, MI – 2005

Project Engineer responsible for the preparation of a water system master plan and hydraulic model for Huron Township to identify transmission main routes, future service districts, and sizes of mains for serving areas of future growth.

Water System Master Plan, City of Lincoln Park, MI – 2006

Project Engineer responsible for the preparation of a water system master plan and hydraulic model for the City of Lincoln Park to analyze system pressures and develop a capital improvements program, which would address the City's aging

Education

- Course work in Civil Engineering, Wayne State University, 2004
- Master of Science in Civil Engineering, Michigan State University, 2000
- Bachelor of Arts in Economics and International Relations, Michigan State University, 1998

Professional Certifications

Storm Water Operator, 2002

Professional Registration

Registered Professional Engineer, State of Michigan, 2004, License #51854

Professional Development

Hec-Ras 3.1 Training, 2005
Leaderease Leadership Training, 2006

Experience

9 years of experience, 3 with OHM

Timothy Kuhns, PE

Project Engineer



infrastructure issues.

Water System Master Plan, City of Dearborn, MI – 2006

Project Engineer responsible for the preparation of a water system master plan and hydraulic model for the City of Dearborn to analyze system pressures and develop a capital improvements program, which would address the City's aging infrastructure issues.

Water System Plan & DWRP Project Plan, City of Hancock, MI – 2006

Project Engineer for a City-wide master plan focused on developing a redundant water source and internal water distribution system improvements. The project also involved the creation of a Project Plan that will be used for securing funding through the Drinking Water Revolving Fund program offered through the State of Michigan.

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

18 years of experience, 3 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

Hilton Pump Station Upgrades, City of Novi, MI – 2007

Lead Construction Observation Technician on this project, which consisted of replacing the existing valves, guide rails, controls, control panel and the installation of a back up generator.

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

Don Craigmile

Construction Engineering Technician



OHM

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 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.

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

Bachelor of Science in
Electrical Engineering,
Michigan Technological
University, 1989

Licenses

Professional Engineer, State
of Michigan

Experience

18 years of experience

Professional Association

ASHRAE

Mr. Meyette is responsible for electrical systems and mechanical systems design and specifications. He has vast experience with electrical lighting, controls, power distribution systems, and other related systems. Mr. Meyette is also responsible for the coordination of Hitch construction administration services including design constructability reviews and providing design professional's opinion of probable cost.

Mr. Meyette joined Hitch division of OHM in 2007, contributing eighteen years of experience, with a strong understanding of electrical systems, design, construction, operation and maintenance. He designed electrical power distribution systems and process controls for the pulp and paper industry in his previous employment history. Mr. Meyette also served as a designer for tooling control systems for automotive assembly before becoming a valuable member of our team.

Mr. Meyette's employment experience includes project management for a general contracting firm, MJO Contracting of Houghton, Michigan. He occupied this position for more than 5 years. This employment experience afforded him responsibility for scope determination, estimation, design, and construction of projects supporting commercial and municipal facilities. The construction of numerous commercial facilities as a project manager adds to his varied background and expertise. Previous experience with performance review and evaluation of contract specifications contributed to Mr. Meyette's thorough knowledge of construction methods, contract supervision, and project management.

Relevant Experience

L'Anse Wastewater Treatment Facility Upgrade, L'Anse, MI – 2003

The General Contractor's Project Manager for construction of miscellaneous treatment facility upgrades including a duplex pump lift station, discharge piping, slide rails, and pump controls.

Crystal Falls Township Water System Upgrades-Contract Two, Crystal Falls Township, MI – 2007

The General Contractor's Project Manager for a new potable water wells, pumps, control system, and backup generators.

Hancock DWRP Improvements, Hancock, MI – 2007

Project Electrical Engineer assisting in pump and instrumentation selection for upgrades to municipal water system.

Baraga Armory Remodeling Project, Department of Military and Veterans Affairs – 2007

Project Manager for a 1,400 square foot kitchen addition to the Baraga Armory. The project included the remodeling of an existing storage and supply area to meet the Department of Military and Veterans Affairs requirements. Responsibilities include scheduling and conducting progress meetings to evaluate contractor progress as well as reviewing pay requests and shop drawings.

Kingsford Armory Remodeling Project, Department of Military and Veterans Affairs – 2007

Project Manager for the remodeling of the existing vehicle storage and maintenance areas for the Kingsford Armory. The project included the construction of new offices, break room, and equipment and storage mezzanines to meet the Department of Military and Veterans Affairs requirements. Responsibilities include scheduling and conducting progress meetings to evaluate contractor progress as well as reviewing pay requests and shop drawings.

Building Addition, Josephson Nursing Home – 2006/2007

Project Mechanical and Electrical Engineer responsible for electrical and mechanical systems upgrades for the proposed 12,000 s.f. nursing home addition including new community/activity space and extensive remodel to existing facility.

Relevant Prior Experience

Pat's Foods, Campioni Enterprises – 2004

Project Manager for the Design and Build of a new 23,000 s.f. grocery Store in L'Anse, Michigan. As the owners representative responsibilities included communicating design issues with the owner and maintaining progress schedule and cost control for the construction of this facility. Project included the demolition of an existing building and the construction of a new facility within the constraints of a limited site with significant grade differentials.

Calumet Readiness Center, Department of Management and Budget – 2003

General Contractor's Project Manager for the construction of the new facility in Calumet, Michigan. Responsibilities included working with the Department of Management and Budget to oversee materials, equipment and manpower on the site to assure the project was completed on schedule and within budget. Oversaw multiple subcontractors and worked closely with the design professionals at Hitch.

Baraga Water Treatment Facility Improvements, Village of Baraga, MI – 2003

General Contractors Project Manager for the improvements to this existing facility in Baraga, Michigan. Project included the construction of new filters and related equipment to increase capacity of the system by 50%. The construction was completed without interruption of domestic water service to the residents of the Village of Baraga.

Keweenaw Mountain Lodge Addition, Keweenaw County, MI – 2006/2007

General Contractors Project Manager for the addition and renovation of this existing local landmark. Project responsibilities included scheduling necessary materials, equipment and personnel in order to meet the project schedule. Maintaining costs in this project was also a responsibility. The project included additional planning in order to accommodate the winter construction schedule.

**Engineering Services for
2008 Sanitary Lift Station Upgrades – Bellagio and Napier**

Section 3 – Proposed Schedule

Proposed Schedule

Task	Duration	2008								
		April	May	June	July	August	September	October	November	
Design										
Project Award	1 day	◆ 4/7								
Scope verification Meeting with City	1 day	◆								
Field Visit with City Personnel	1 day	◆								
Review Background Information	1 week									
Topographic Surveys for each Pump Station	1 week									
Finalize Hydraulic Calculations	1 week									
Receive Pump and Generator Proposals / Negotiate Price and Delivery Options	2 weeks									
Prepare 30% Engineering Plans	2 weeks									
Coordination with Utility Companies – Gas & Electric	3½ weeks									
City Review Meeting	1 day		◆							
Prepare Construction Documents	2 weeks									
Prepare Construction Cost Estimate	1 week									
City Review Meeting	1 day		◆							
Submit for Permit	4 weeks									
Equipment Shop Drawing Preparation	2 weeks									
Equipment Shop Drawing Review	1 week									
Equipment Manufacturer and Delivery	10 weeks									
Bidding Phase										
Advertise	3 weeks									
Address Contractor Questions / Prepare Addenda	2 weeks									
Bids Due	1 day						◆ 7/25			
Evaluate Bids / Prepare Letter of Recommendation	1 week									
Award by City Council	1 day							◆ 8/19		
Contract Document Preparation and Review	1 week									
Construction Phase										
Preconstruction Conference	1 day							◆ 8/28		
Shop Drawing Review & Delivery	1 week									
Construction Inspection	6 weeks									
Lift Station(s) Start-Up	1 week									
Record Drawing Preparation	2 weeks									
Project Completed	-									◆ 11/10

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

Engineering Services for
2008 Sanitary Lift Station Upgrades – Bellagio and Napier

Task	Principal in Charge	Project Manager	Professional Engineer I	Electrical Engineer	Surveyor	Engineering Technician IV	Engineering Technician II	Computer Technician II	Administration	Total Hours per Task
	Vyto Kaunelis	Sherri Wright	Tim Kuhns	Louis Meyette	Gary Witt	Chris Donajkowski	Don Craigmile	Deborah Gibson	Connie Downs	
	\$140	\$110	\$95	\$95	\$100	\$98	\$74	\$74	\$60	
Design Phase										
Kickoff Meeting and Field Visit		4	4							8
Review Background Information			2	6						8
Topographic Survey					20					20
Utility Coordination				2						2
Equipment Procurement		4	2	5						11
Prepare 30% Engineering Plans			10	12				8		30
QA/QC Review	1									1
Final Engineering Documents			14	22				12	6	54
QA/QC Review	2									2
Permit Preparation and Submittal		2								2
Pre-Bid Meeting		1	2							3
Address Contract Questions Addenda Prep		2	4	2						8
Receive and Review Bids Letter of Recommendation		2	2							4
DESIGN PHASE SUBTOTALS	3	15	40	49	20	0	0	20	6	153

Engineering Services for
2008 Sanitary Lift Station Upgrades – Bellagio and Napier

Task	Principal in Charge	Project Manager	Professional Engineer I	Electrical Engineer	Surveyor	Engineering Technician IV	Engineering Technician II	Computer Technician II	Administration	Total Hours per Task
	Vyto Kaunelis	Sherri Wright	Tim Kuhns	Louis Moyette	Gary Witt	Chris Donajkowski	Don Craigmile	Deborah Gibson	Connie Downs	
	\$140	\$110	\$95	\$95	\$100	\$98	\$74	\$74	\$60	
Construction Phase										
Contract Document Preparation and Review		2								2
Preconstruction Conference						3	3			6
Shop Drawing Review & Delivery		1	2	4						7
Progress Meeting / Coordination						8	8			16
Construction Staking					8					8
Pay Request Processing						8				8
Construction Inspection Daily Report Preparation						12	120			132
Lift Station(s) Start-Up Assistance Punch List Preparation			4	8			8			20
Record Drawing Preparation							2	6		8
CONSTRUCTION PHASE SUBTOTALS	0	3	6	12	8	31	141	6	0	207

Total Hours per Employee Classification:	3	18	46	61	28	31	141	26	6	360
Total Cost per Employee Classification:	\$420	\$1,980	\$4,370	\$5,795	\$2,800	\$3,038	\$10,434	\$1,924	\$360	\$31,121



Livonia, Pontiac, Auburn Hills, Lansing

34000 Plymouth Road
Livonia, MI 48150

2008 RATE SCHEDULE *

Principal	\$ 145.00
Senior Associate	\$ 140.00
Associate	\$ 135.00
Manager	\$ 135.00
Professional Engineer IV	\$ 131.00
Professional Engineer III.....	\$ 110.00
Professional Engineer II	\$ 104.00
Professional Engineer I	\$ 95.00
Graduate Engineer III	\$ 100.00
Graduate Engineer II	\$ 90.00
Graduate Engineer I	\$ 85.00
Technician IV.....	\$ 98.00
Technician III	\$ 87.00
Technician II	\$ 74.00
Technician I	\$ 60.00
Engineering Aide	\$ 45.00
Professional Surveyor	\$ 108.00
Graduate Surveyor	\$ 85.00
Surveyor III.....	\$ 84.00
Surveyor II	\$ 80.00
Surveyor I	\$ 65.00
Surveyor Aide.....	\$ 45.00
GIS Analyst III.....	\$ 120.00
GIS Analyst II.....	\$ 100.00
GIS Analyst I	\$ 85.00
DB/AD Developer	\$ 155.00
IT Technician III	\$ 150.00
IT Technician II	\$ 125.00
IT Technician I	\$ 85.00
Administrative Support	\$ 48.00
Clerical Aide	\$ 38.00

* OHM bears the overhead costs (i.e. mileage, equipment, communications, faxing, copying, etc.) for providing the services proposed herein.

**Engineering Services for
2008 Sanitary Lift Station Upgrades – Bellagio and Napier**

Section 5 – Fee Proposal
Exhibit A
