SM

HURON CONSULTANTS

Civil & Environmental Consulting Engineers

PORT HURON OFFICE
901 Huron Ave, Suite 8
Port Huron, MI 48060
T (810) 966-0680
F (810) 966-0681

CLINTON TOWNSHIP OFFICE
44315 Groesbeck
Clinton Township, MI 48036
T (586) 741-5480
F (586) 741-5483

BURTON OFFICE
3245 Card Drive
Burton, MI 48529
T (810) 603-0766
F (810) 603-0786

WWW.HURONCONSULTANTS.COM

STATEMENT OF QUALIFICATIONS

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CORPORATE OVERVIEW

CORPORATE OVERVIEW

Firm Information

Overview & Background

Huron Consultants (Huron) is a civil and environmental consulting engineering firm headquartered in Port Huron, Michigan. Huron opened its flagship office in 1999 in Port Huron, Michigan and the growth and success has been remarkable. In 2012, Huron reached an important milestone celebrating 15 years in business. Additionally, Huron Consultants was recently recognized as a ***Service-Disabled Veteran Owned Business.***

What separates Huron from other firms is our diversity… diversity of our clients, our projects, and our professional expertise. Huron's successful growth has allowed us to open branch offices in Clinton Township, and Burton, Michigan, poised to serve our clients in Genesee County, Macomb County, Oakland County, St. Clair County, Metro-Detroit and all of Michigan.

Our Mission

To employ innovative sciences and technologies and effectively integrate these into the design, construction, operation and maintenance of our Client's projects; promote stewardship and sustainability in all phases of our work product and employment environment; and establish a mutually beneficial connection with our clients and employees based on trust, ethics and value-driven service.

Who We Are

Huron is a high-quality, client-oriented firm, offering a truly unique style and high level of engineering consulting service.

Our diversity allows us to provide highly responsive and competitive engineering services to municipal, governmental, institutional, commercial, and industrial clients. The firm's owner and senior staff are recognized professional leaders in their respective areas of expertise and have extensive former experience with national and international consulting firms. This experience has enabled us to create a firm that can serve local, as well as national clients.

Primary Services

- Civil Engineering
- Municipal Engineering
- Environmental Engineering
- Land Development
- Survey & Mapping
- Storm Water Management
- Renewable Energy
- Sustainable & Low-Impact Development Design
- Facility Support & Management
- Due Diligence
- Regulatory Compliance
- Geotechnical Engineering
- Water / Wastewater
- Construction Management
- Construction Engineering
- Construction Observation
- Construction Testing

CORPORATE OVERVIEW

Office & Staff Location Map

PORT HURON OFFICE (CORPORATE)
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T (810) 966-0680
F (810) 966-0681

CLINTON TOWNSHIP OFFICE
44315 Groesbeck
Clinton Township, MI 48036
T (586) 741-5480
F (586) 741-5438

BURTON OFFICE
3245 Card Drive
Burton, MI 48529
T (810) 603-0766
F (810) 603-0786

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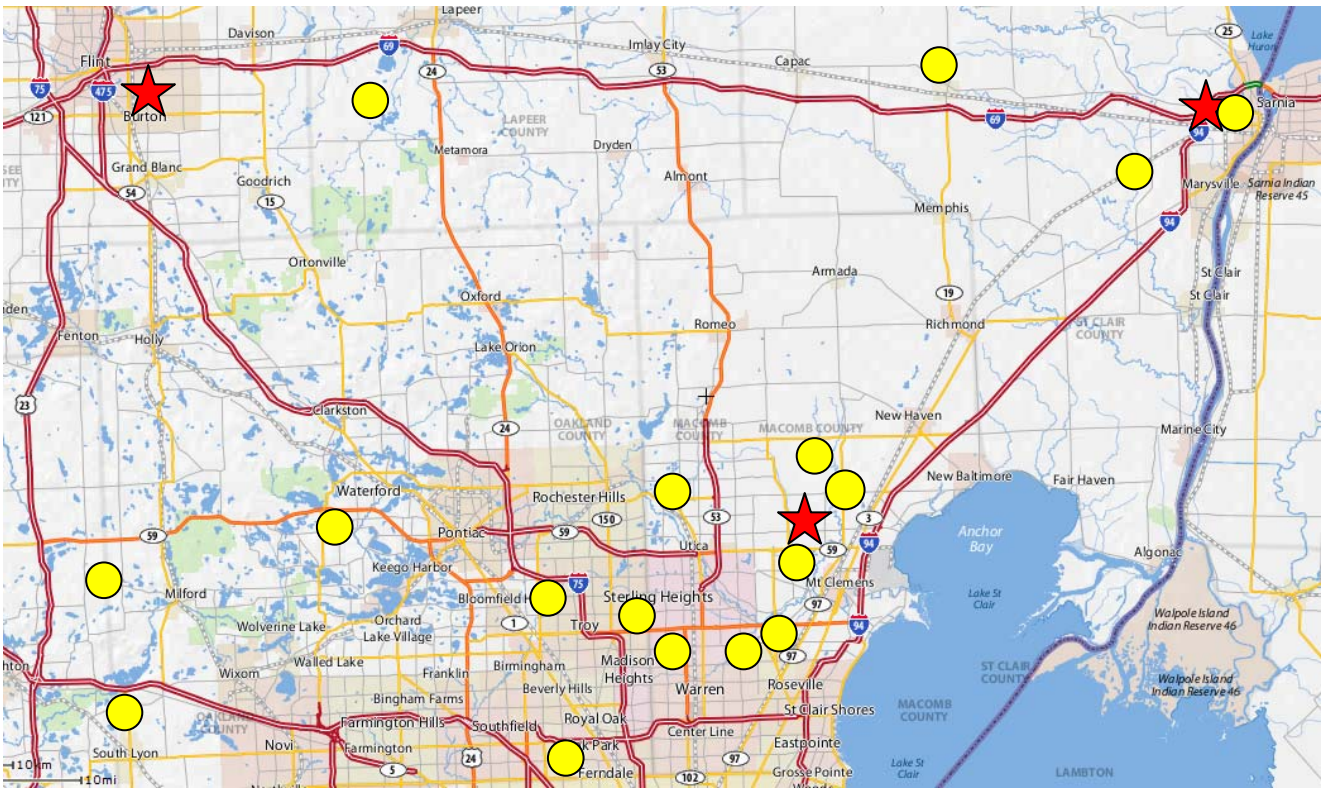

MAP KEY:

Office Location ★

Staff Location ●

QUALITY ASSURANCE / QUALITY CONTROL

(QA / QC)

Overview

Quality Assurance and Quality Control are essential components of daily operations at Huron. We are committed to delivering the highest quality of professional service to our clients. Our cross-functional approach system is developed to ensure our services are designed and produced to meet or exceed our clients' requirements and expectations in the most cost-effective manner.

Our goal is to produce services fit for the purpose and designed right the first time.

Quality / Environmental Management Systems

The Huron professional team is familiar with the International Organization of Standards (ISO) implementing an effective Quality Management System (QMS) and Environmental Management System (EMS) to comply with regulatory, industry, and customer quality requirements. The QMS/EMS applies to all engineering activities that affect the quality of services furnished by Huron. It also defines the basic requirements of the client service contracts and serves as a commitment to our clients.

The Huron QMS/EMS incorporates quality planning and provides a basis for managing project activities allowing us to monitor processes for continual improvement and overall cost control.

The QMS/EMS activities are documented in accordance with written manuals, procedures, instructions, specifications, and drawings that contain appropriate criteria for determining whether prescribed activities have been satisfactorily accomplished. The following outlines the basic principles:

- Accuracy
- Constructability
- Cost Control
- Drawing Clarity
- Milestones
- Thoroughness of Detail
- Value Engineering

Service Process Quality Control

Huron services are planned and performed under controlled conditions that ensure conformance to client requirements, agency having jurisdiction, our QMS/EMS, and applicable standards and regulations. Huron managers are responsible for insuring that qualified personnel are assigned to accomplish work activities and that they are provided adequate facilities, equipment, tools, training, and information to perform their assignment.

Processes affecting the quality of our service are controlled by, but not limited to, the following elements:

- Acceptance Criteria
- Checklists
- Internal Audits
- Maintenance of Equipment
- Policies, Procedures, and Work Instructions
- Process Monitoring
- Resource Management
- Routing & Distribution
- Validation & Control of Computer Software
- Workmanship Standards

Policies & Procedures

Services with impact on public, private, institutional, or regulatory projects must comply with our established procedures and QMS/EMS requirements. Quality procedures are contained in the Huron Policy / Procedures Manual. All procedures address regulatory requirements and are reviewed and approved by Huron executive management.

Document Quality Control

Huron managers are responsible for ensuring that all activities affecting the quality of services are accomplished in accordance with our QMS/EMS. All personnel are responsible for ensuring that the correct revisions of applicable industry codes and standards are used, in accordance with customer requirements.

Each manager with lead responsibility is in charge for all quality controls that define responsibility, authority, issue, use, and revision and control of the plans or construction documents. These controls include but not limited to:

- Format
- Drafting Standards
- Clear, Correct, Complete, and Concise Documents
- Issue Date(s)
- Revisions Updates & Control
- Distribution of Revised Documents
- Records

Huron QA/QC and QMS/EMS procedures are described in further detail in pages following.

QUALITY CONTROL DOCUMENTS

(QA / QC)

OVERVIEW

For the purpose of maintaining quality assurance and quality control, Huron has developed procedures, work instructions and associated forms for use by personnel performing various project functions. Use of these documents is mandatory when performing the associated function where our managers enforce their use. A listing of key project-related documents used by Huron is listed below:

- **Proposal**: This form establishes a project scope of work, budget, and payment terms for acceptance by the client, and must be signed by a Group Manager or a Principal/Director.
- **Project Change Order**: This form establishes a budget for changes in the original scope of work, and is an extension of the Proposal form in that all original contract conditions apply to the Project Change Order.
- **Project Cost Schedule**: This form is used to develop a project budget. This form is also used to track budgets as the work progresses.
- **Professional Subcontractor Services Agreement**: This form outlines contractual responsibilities and performance standards of subcontractors and sub-consultants used by Huron.
- **Project Permit Tracking / Submittals Log**: This form is attached to each project folder inside cover and used for logging permit status and submittals of the project documents.
- **Shop Drawing Log**: This form is used to track shop drawing submittals, review, and approval status.
- **Invoice Log**: This form is used to track submittal and payments of project related invoices. In many cases, this form is integrated with projects 3-Line Diagram used for budget tracking.
- **Property Damage Claims Log**: This form is used to register resident's claims and status related to construction activities.
- **Drawing Revisions Log**: This form is used to track drawings revisions and submittals to project stake holders and various jurisdictional agencies.
- **Value Engineering Tracking Form**: This form is used to track multiple VE proposals to project stake holders and various jurisdictional agencies.
- **Storm Water Operator's Log**: This form is used to track NPDES routine and after rain events inspection visits.

International Organization for Standardization

- **Development Plan Review Log**: This form is used to register private development submittals, revisions, review status, and approval dates.
- **Contractor Claim Log**: This form is used to register contractor's claims and status related to construction activities.
- **Report Tracking Form**: This form is initiated each time a project-related report of any type is originated. The Report Tracking Form stays with the report at all times to track start, completion, and review dates, as well as reviewer comments and distribution date and method. After the report is completed and distributed, the Report Tracking Form is kept with as a record of its completion and distribution. This form is designed to also track the progress of report completion to allow for control of project schedules and improvement of completion times.
- **MISS DIG Staking Request**: This form is used to document calls made to MISS DIG, Michigan's one-call utility locating service. A staking request is made to MISS DIG anytime underground work must be conducted. After necessary information is provided to MISS DIG to initiate the utility staking, MISS DIG assigns a staking ticket number for future reference. The ticket number and date and time of the staking request are recorded on this form, which is kept in the project file. When underground work is conducted on a site, a copy of this form is brought to the site.
- **Site Safety Briefings**: This form is used to document items discussed and attendees at safety briefings that are conducted prior to start of the workday at sites of environmental contamination.
- **Environmental Soil Boring Log**: This form is used to record observations and site information during performance of soil borings conducted during environmental investigations. After the field activities are completed, final drafts of these logs are prepared that can be used as attachments to reports, and the drafts prepared in the field are kept in the project file.
- **Chain-of-Custody Record**: This form is used to record the chain of custody of Environmental/Industrial Hygiene samples collected that are transferred to a laboratory or other third party. If the samples are delivered to a laboratory, a chain of custody record developed by the laboratory may be used in lieu of this form.

QUALITY CONTROL DOCUMENTS

(QA / QC)

- **Geotechnical Soil Boring Log**: This form is used to record observations and site information during performance of soil borings conducted during geotechnical investigations. After the field activities are completed, final drafts of these logs are prepared that can be used as attachments to reports, and the drafts prepared in the field are kept in the project file. The final draft of these logs will also contain results of laboratory testing performed on soil samples collected.

- **Well Sampling Report**: This form is used to record measurements and observations made during collection of groundwater samples. After field activities are completed, final drafts of this form are prepared that can be used as attachments to reports, and the drafts prepared in the field are kept in the project file.

- **Monitoring Well Abandonment Record**: This form is used to record procedures used to abandon groundwater monitoring wells. After field activities are completed, final drafts of this form are prepared that can be used as attachments to reports, and the drafts prepared in the field are kept in the project file.

- **Exposure Pathway Characterization Flowchart**: This form is used to evaluate sites of environmental contamination to determine applicable and potential exposure pathways and receptors. That information can be used to conduct a feasibility analysis and prepare a corrective action plan for the site.

- **Daily Activity Log**: This form is used to document observations and findings noted during field activities, which are not recorded on other field-related forms. This form is designed to be an internal document and is kept in the project file, although a final draft can be prepared for delivery to the client if needed.

- **Telephone Conference Notes**: This form is used to maintain a record of telephone conversations and is kept in the project file in the event that there is a need to refer to it at a later date.

- **Phase I ESA Checklist**: This form is a checklist for use by staff performing Phase I Environmental Site Assessments (ESAs). After the Phase I ESA is completed, the completed form is kept in the project file.

- **Site Inspection Checklist**: This form is a checklist for use in completing field activities associated with a Phase I ESA. Use of this form ensures that the minimum necessary information is obtained while conducting the field research. After the Phase I ESA is completed, the completed form is kept in the project file.

- **Site Walk Checklist**: This form is a checklist for use in obtaining information in the field relating to the subject property while conducting a Phase I ESA. Use of this form ensures that the minimum necessary information relating to the subject property is obtained during the site walk. After the Phase I ESA is completed, the completed form is kept in the project file.

- **Site Walk Checklist – Adjoining Property**: This form is a checklist for use in obtaining information in the field relating to properties adjoining the subject property while conducting a Phase I ESA. Use of this form ensures that the minimum necessary information relating to adjoining properties is obtained during the site walk. After the Phase I ESA is completed, the completed form is kept in the project file.

- **Phase I Environmental Site Assessment Questionnaire**: This form is used to obtain information from the owner and/or operator of a property while conducting a Phase I ESA. Use of this form ensures that a thorough interview is conducted and the minimum necessary information is obtained. This form can be included as an attachment to the Phase I ESA report.

- **Emergency Response Questionnaire**: This form is used to obtain the minimum necessary information needed to conduct an audit of an industrial facility, which will be used to develop a spill prevention plan or other chemical storage and handling procedural document. The information included on this form is used to develop the necessary report or plan. After the project is completed, the form is kept in the project file.

- **Environmental Audit Checklist**: This form is used to obtain the minimum necessary information needed while conducting an environmental compliance audit of an industrial facility. The information included on this form is used to prepare a report of the findings of the audit, and provide recommendations for further action or corrective measures. After the project is completed, the form is kept in the project file.

Each of these project-related forms is kept in the project file or attached to the report, as applicable.

ERROR PREVENTION & DETECTION

(QA / QC)

OVERVIEW

Huron QMS is intended to prevent and detect errors in performing project-related tasks and in preparing reports and other documents required by the project. Prevention and detection of errors occurs at various stages of a project. Some specific activities designed to prevent and detect errors are listed below:

- **Instrumentation**: Various instruments are used to obtain physical, analytical, or other data that is used to derive conclusions and/or make recommendations. These instruments are maintained in accordance with their manufacturer's instructions. All instrumentation is calibrated in accordance with its manufacturer's instructions before being used. Each instrument used is constantly monitored by the personnel using it to immediately detect inconsistent readings or equipment malfunctions.

- **Safety**: Safety of personnel is highly prioritized at Huron Consultants. Safety is a form of protecting workers from errors in judgment that could result in injury or illness. Therefore, appropriate safety measures and personal protective equipment are used in the field, as appropriate for the specific site conditions; i.e., hard hat, goggles, gloves, steel toed boots, respirators, etc. The environmental conditions at a site are constantly monitored to determine the appropriate level of personal protection needed.

- **Sampling Methods**: Sampling conducted for various types of projects is done in accordance with standardized procedures and protocol developed by regulatory agencies and recognized industry experts, such as the Environmental Protection Agency, the Michigan Department of Environmental Quality, and the American Society for Testing and Materials. Procedures and protocol developed by these agencies also specify preservation, handling, and storage requirements based on the analysis to be conducted or intended use of the sample. Representatives of Huron Consultants maintain familiarity with standardized sampling and handling procedures and protocol and adhere to these requirements in order to ensure the quality and integrity of the data obtained from the samples collected.

- **Analysis of Samples**: Analysis of samples is conducted by individuals and/or firms that possess appropriate training and/or certifications for conducting the analysis involved. If a representative of Huron Consultants performs the analysis, the individual will possess the necessary certification and/or qualifications, as defined by the regulating agency. If an outside laboratory or other vendor performs the analysis, that vendor will possess applicable certifications based on their specific industry. These certifications and training ensure that the quality of the data generated is good, and that the data can be relied on.

- **Use of Drawings**: For most projects, detailed drawings indicating the features of the site are utilized to make decisions on the location of the work to be performed. These drawings are obtained from local governmental offices, utility suppliers, architects, engineers, etc. If drawings are not available from other sources that are determined to be reliable, they are developed by Huron Consultants personnel based on measurements and observations obtained at the site.

- **On-Site Briefing**: Before commencement of the on-site work, the Project Manager communicates to the Technician, Staff Engineer, or Staff Professional, and/or the Contractor, the project requirements, safety precautions needed, if applicable, schedule for the work, and other project related information. This briefing ensures that all personnel involved with the project have a common understanding of the objectives and requirements of the project.

- **Report Preparation**: A report is generally the culmination of a project, which provides information about the site, project objectives, results, findings, and recommendations to the client, regulatory agencies, and/or other interested shareholders. All project-related reports are reviewed by a Group Manager and/or a Principal. These reviews are tracked, and comments are documented, on a Report Tracking Form, which is an internal quality assurance document that is used for all reports generated by Huron Consultants.

SUB-CONSULTANTS QUALITY CONTROL

(QA / QC)

OVERVIEW

Huron goes to great lengths to maintain the quality of its work, even when a sub-consultant or a contractor is used to complete a specific task. Sub-consultants and contractors retained by Huron have undergone a pre-qualification screening to verify they have the necessary minimum qualifications and experience. Huron will also contact references to determine their level of satisfaction with the work completed.

PRE-QUALIFICATIONS

As part of the pre-qualification screening, the sub-consultant or contractor provides copies of applicable licenses, certifications, and other documentation that verifies the level of experience and training necessary to perform the work. Other facets of the pre-qualification process may include one or more of the following:

- All sub-consultants are required to execute a service agreement with Huron to provide any consulting, field, or testing services.
- The sub-consultant or contractor is required to provide evidence of reliability of their equipment in completing the required tasks. This is done in an attempt to limit downtime on field assignments, which helps to control the project budget.
- Sub-consultants are required to provide documentation of their quality control and quality assurance procedures. This is especially important for laboratories and others who provide data that is relied upon to formulate opinions or make decisions. Huron performs an annual audit of laboratories it uses to verify their quality control and quality assurance procedures are in place and functional.
- Huron maintains a file for each sub-consultant and contractor it uses. In that file is a copy of the firm's current certificate of insurance that lists limits of liability protection. Huron reviews insurance certificates to verify that the liability protection and limits of liability are appropriate for the work to be performed. Each sub-consultant and contractor is contacted annually to obtain an updated certificate of insurance.
- Each prospective sub-consultant or contractor will be familiar with standards and requirements stipulated by regulatory agencies and/or project requirements. Standardized procedures developed by the Michigan Department of Environmental Quality (MDEQ), the Michigan Department of Transportation (MDOT), and the American Society for Testing and Materials (ASTM), and other jurisdictional agencies, may apply to a project, for which the sub-consultant or contractor will be required to be familiar and will provide evidence of knowledge of the requirements or standards.
- For projects involving unique health and safety issues such as environmental contamination, the sub-consultant or contractor is required to provide a site health and safety plan for review by Huron prior to starting work on the project. The health and safety plan will verify that the sub-consultant or contractor is familiar with the unique health and safety issues and precautions required to protect its workers and others. The plan will also verify that adequate procedures and equipment will be utilized and/or available to protect workers.
- Huron conducts annual audits of the qualifications and certifications of its sub-consultants and contractors to verify that their capabilities and resources have not diminished.

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COMMUNICATIONS

(QA / QC)

Overview

Communication is an essential part of the Consulting engineer role to assure the quality of the finished product in the office and field. Huron will provide the necessary support to maintain focus on quality and communication. Throughout the preliminary phase, design, and construction of the project, Huron will be present and available to meet with the client during all project phases. Telephone numbers, office and cell phones, as well as e-mail addresses, of all contact personnel will be available to the client in order to reach anyone at any time.

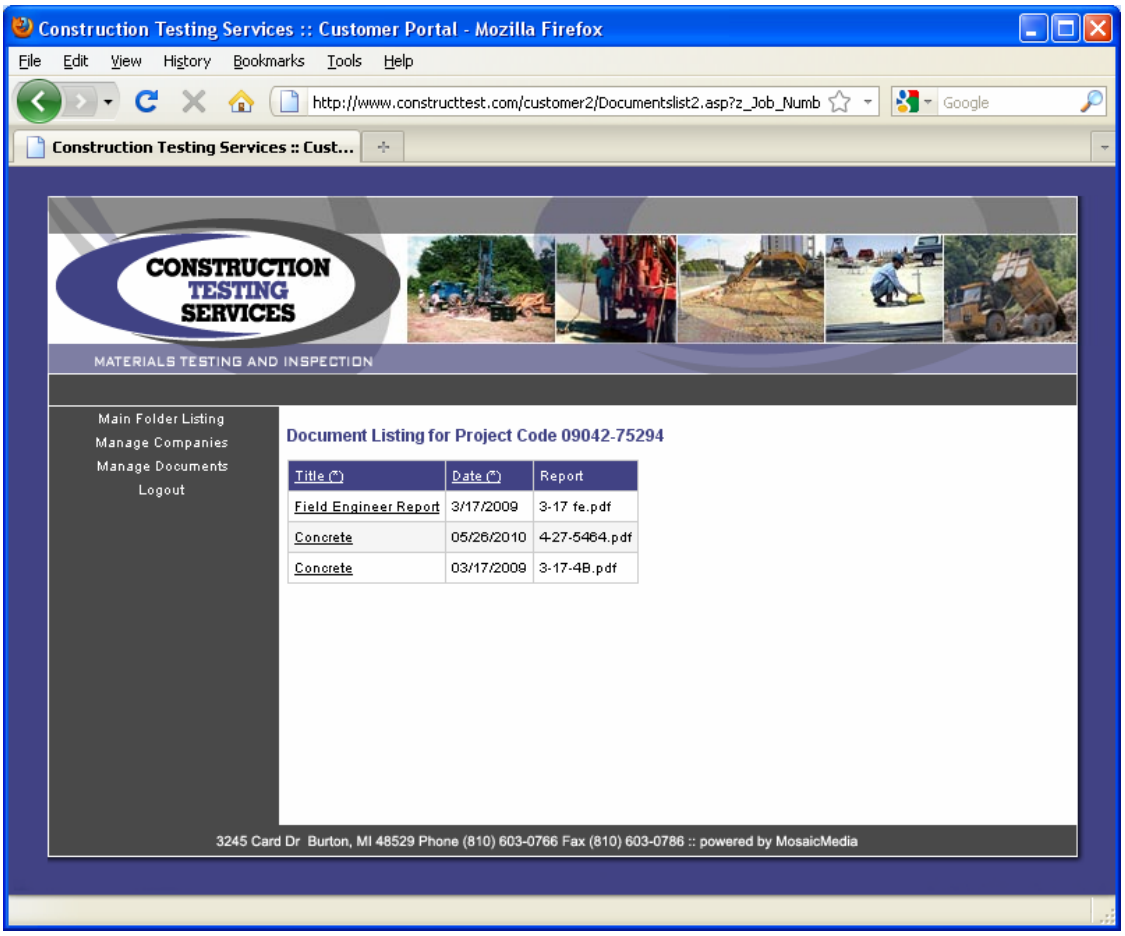
Huron will conduct periodic progress meetings as deemed necessary to keep all involved parties informed on any project in progress. This will also provide a platform to discuss alternates for layout and design.

During the construction phase, Huron will be a communication link between the client and the selected contractor to keep them up to date on the progress of the design and the construction of the project. Project meetings, investigation of field issues, resident issues and contract issues will be reported to the client regarding disposition of these issues and the remedy to the problem.

Website Portal

In addition, Huron offers to create and maintain a password-protected website portal for general communication and project updates at no additional charge. This website (accessible only by Huron and clients) will contain essential information about any project so that key personnel will have immediate, detailed, up-to-date information about any project at any time. Information that will be placed on any project website includes: the project schedule (expected and actual), photos and inspection reports, site plans and details, bid specifications, project budget, and all other pertinent information regarding this project.

Our approach is to make pertinent information easily accessible to key personnel at all times. By making this information available electronically, "real-time" project details can be easily viewed and downloaded at the convenience of the user.



STRATEGIC ALLIANCES

OVERVIEW

One of the fastest growing trends for business today is the increasing number of strategic alliances. Alliances range in scope from an informal business relationship based on a simple contract to a joint venture agreement in which for accountability, Huron is set up as the prime contractor to manage the alliance.

For Huron, strategic alliances are a way to work together with other consultants towards the project goals while not losing individuality or quality. Alliances are a way of reaping the rewards of team effort, and the gains from forming strategic alliances appear to be substantial to our clients.

Huron utilizes our trusted strategic alliances to:

- Reduce project costs
- Achieve advantages of scale, scope and speed
- Enhance project development
- Develop new project ideas
- Expand service development
- Increase innovations
- Diversify in services

Strategic alliances are becoming a more and more common tool for expanding the services of Huron without committing our clients to expensive internal expansions beyond their needs.

SUB-CONSULTANTS

Huron alliances with highly qualified sub-consultants have a track record of our business-to-business collaboration. Our alliances are based on long years of trust and successful project relationships. The following is a list of firms / services that Huron is able to offer our clients:

- Architectural firms
- Mechanical Engineering firms
- Electrical Engineering firms
- Landscape Architectural firms
- SCADA & Instrumentation design firms

FIRM REFERENCES

Existing Clients

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PUBLIC CLIENTS

Huron and its staff have been serving the following municipalities as the consultant engineer, testing engineer, and/or have retained an excellent working relationship in the past several years:

MUNICIPALITY CONSULTANT

City of Orchard Lake Village	Oakland County	Population >	2,400
City of Brown City	Sanilac County	Population >	1,300
City of Croswell	Sanilac County	Population >	2,400
City of Detroit	Wayne County	Population >	714,000
City of Imlay City	Lapeer County	Population >	3,600
City of Lapeer	Lapeer County	Population >	8,800
City of Port Huron	St. Clair County	Population >	30,000
City of Yale	St. Clair County	Population >	1,200
Ira Township	St. Clair County	Population >	5,200
Lenox Township	Macomb County	Population >	10,000
Macomb County		Population >	841,000
St. Clair County		Population >	163,000

MUNICIPALITY CONSULTANT (UNDER PAST FIRMS)

Clinton Township	Macomb County	Population >	95,000
Jackson County		Population >	158,000
Leoni Township	Jackson County	Population >	13,000
Macomb Township	Macomb County	Population >	80,000
Oakland County		Population >	1,202,000

WORKING RELATIONSHIP

Canton Township	Wayne County	Population >	89,000
Chesterfield Township	Macomb County	Population >	40,000
City of Ann Arbor	Washtenaw County	Population >	109,000
City of Burton	Genesee County	Population >	30,000
City of Detroit	Wayne County	Population >	772,000
City Farmington Hills	Oakland County	Population >	78,000
City of Flint	Genesee County	Population >	124,000
City of Grand Blanc	Genesee County	Population >	8,200
City of Marysville	St. Clair County	Population >	9,600
City of St. Clair	St. Clair County	Population >	5,500
City of Sterling Heights	Macomb County	Population >	127,000
City of Oak Park	Oakland County	Population >	29,000
City of Rochester Hills	Oakland County	Population >	68,000
Grand Rapids	Kent County	Population >	772,000

** All population data obtained from the Southeast Michigan Council of Governments (SEMCOG) and/or the State of Michigan census information.*

PRIVATE CLIENTS

In addition to our public clients, Huron and its staff have been serving the following private organizations and firms as the consultant engineer:

Allen Academy School
American Red Cross
Archdiocese of Detroit
Attica Hydraulic
Blue Water Area Transit
Cargill Salt
Celesco Transducer Products
Central Michigan University
Chase Bank
Chippewa Valley Schools
Citizens First Bank
Custer Beer Company
Defiance Testing & Engineering Services
E & A Credit Union
Fifth Third Bank
First Independent Bank
Flagstar Bank
Gestamp US Hardtech
Grupo Antolin
Habitat for Humanity
Heller Machine Tools
Henry Ford Hospital System
Innovative Housing Development
Intertape Polymer
Jones, Lang, LaSalle
Kaumagraph Flint Corporation
Lansing Area Safety Council
Law Offices of Hill Devendorf, P.C.
Lear Corporation
Macomb Hospital
Muffler Man
Oakland Fuels
Port Huron Intermediate School District
Port Huron Hospital
Prestolite Wire, LLC
Rite-Aid Corporation
Roseville School District
Semco Energy
Sensient Flavors
Schefenacker Vision Systems, U.S.A.
Spacerak Corporation
St. Clair County Community College (SC4)
State Farm Insurance
TCF Bank
Tower Automotive
U.S. Manufacturing
ZF Automotive

FIRM REFERENCES

Existing Clients

CONTACT INFORMATION

Huron is extremely proud of our reputation established with clients.

Please feel free to contact the following references regarding our performance and services:

MR. ROBERT WILEY **(810) 364-5369**
County Drain Commissioner
St. Clair County

MR. RONALD TROMBLY **(586) 727-2085**
Supervisor
Lenox Township

MS. LYNN BRYKS-ARNOTT **(586) 469-5298**
Director
Macomb County Facilities Support

MR. BOB CLEGG **(810) 984-9732**
Director of Engineering
City of Port Huron

MR. PHIL HANSES **(989) 224-5160**
County Drain Commissioner
Clinton County

MS. PAT ISELER **(586) 727-2055**
Supervisor
Columbus Township

MR. JOHN OSBORN **(810) 387-3311**
City Manager
City of Yale

MR. DALE KERBYSON **(810) 614-0660**
City Manager
City of Lapeer

COMMUNITY LENOX Township CENTER & PARK

63775 Gratiot • Lenox, Michigan 48050 • (586) 727-2085 • Fax: (586) 727-3188

June 27, 2011

To Whom It May Concern:

Huron Consultants (Huron), and specifically Mr. Sermed K. Saif, PE, has been the consulting engineers for Lenox Township since 1997. Mr. Saif has always provided us with professional engineering counseling and support for various Township departments.

Currently, Huron provides the entire Township's engineering needs, sustaining office hours at the Township Hall, and working closely with our personnel. Services include plan reviews, trunkline utility design, master planning, floodplain management, environmental consulting, construction contract administration and inspection.

On behalf of the Lenox Township Board of Trustees, I would highly recommend Huron Consultants to anyone considering using their services as they provide the highest level of professional services along with quality and promptness.

Should you have any questions, please feel free to contact my office at 586/ 727-2085 ext: 118.

Sincerely,

LENOX TOWNSHIP

Ronald J. Trombly, Jr.
Supervisor

RON TROMBLY *Supervisor* | JODI KETHE *Clerk* | KARON OTTENBACHER *Treasurer* | KAREN TURCHI *Trustee* | MARY E. PAISLEY *Trustee*

City of Yale

111 West Mechanic Street Yale, Michigan 48097 (810) 387-3311 Fax (810) 387-3343

MAYOR
James A. Cronin
mayorjim@yalemi.us

CITY CLERK
Linda Cronin
clerk@yalemi.us

CITY MANAGER
John G. Osborn
jgosborn@yalemi.us

CITY TREASURER
Paul C. Williams
pwilliams@yalemi.us

CITY COUNCIL

Ed Armstrong

Ronald Boggia

David Gardner

Scott Gill

Paul McIvor

Jeff Meharg

POLICE CHIEF
Michael F. Redman
810-387-4201

FIRE CHIEF
Donald Priess II

DPW SUPERINTENDENT
Jerry Sauder
810-387-3688

January 12, 2011

Darin McLaughlin
Huron Consultants
901 Huron Ave.
Suite 8
Port Huron, MI 48060

Dear Darin,

On behalf of the City I want to extend my appreciation for the efforts you and your firm has made over the past year to move forward on numerous projects with the City. While we missed your presence on Monday we had an excellent discussion with Eric and Bill and thank you for hosting the event.

We look forward to the coming year, the completion of the parking lot project and further progress on the water system improvement project, the North Street project and the S. Main Bridge project.

Thank you again for your hard work and hospitality.

Sincerely,

Jim.

James A. Cronin
Mayor

The City of Yale is an Equal Opportunity Employer and Provider. Complaints of discrimination should be sent to:
USDA, Director of Civil Rights, Washington DC 20250-9410 - TDD 202-720-6382

SERVICE PROFILES

CIVIL ENGINEERING

Service Profile

Overview

With a highly experienced staff of professional engineers, surveyors, designers, and technicians, Huron offers complete engineering services that assist municipalities plan and service their communities with development, infrastructure, utilities, and transportation systems.

Huron has developed internal criteria in review, design, and studies; each with written procedures that aid in ensuring satisfaction of ordinances and standards. This schedule of procedures, checklists, and mentoring allows our team members to provide the highest level of engineering expertise to municipal clients and the public.

Municipal Services

- Bicycle Paths & Sidewalks
- Capital Improvement Planning (CIP)
- Computerized Mapping
- Consulting Engineering Services
- County Drains Design
- Drinking Water Revolving Fund
- Emergency Response Planning
- Facility Utilization, Parking & Space Allocation
- Government Regulatory Compliance
- Grant Applications & Administration (CDBG, USDA)
- Illicit Discharge Elimination
- Inspection Services
- LEED Services
- Ordinance Development
- Parks & Recreation Facilities
- Public Education
- Public Participation
- Site Plan & Engineering Plan Reviews
- Special Assessment Districts (SAD) Projects
- State Revolving Loan Fund (SRF) Projects
- Street Construction & Rehabilitation
- Value Engineering
- Vulnerability Assessments
- Water & Sewer Master Planning
- Water & Sewer Trunkline Design

Planning Services

- Capital Improvement Planning (CIP)
- Community Planning
- Corridor Studies
- Design-Build Services
- Downtown Development
- Economic Development
- Market Analysis
- Master Planning
- Ordinance Development
- Plan Reviews
- Zoning and Land Use

Construction Services

- Claim Negotiation
- Construction Contract Administration
- Construction Staking & Layout
- Construction Supervision & Inspection
- Pre-Construction and Progress Meetings
- Progress Pay Estimates
- Project Close-Out Documents
- Project Engineering & Management
- Project Scheduling
- Record Drawings
- Value Engineering

Surveying & Mapping Services

- Aerial Surveys
- ALTA/ACSM Surveys
- Architectural Surveys
- Bathymetric Surveys
- Boundary/Easement Surveys
- Construction Control Layout
- GIS inventory
- Global Positioning System (GPS)
- Hazardous Waste Site Survey
- Hydraulic Surveys
- Property Research
- Right of Way/Easement Acquisition
- Survey Document Review
- Topographic Surveys
- Tree Surveys

Land Development Services

- Apartment & Condominium Complexes
- Commercial Development
- Ecological Design
- Municipal & Public
- Industrial Development
- Mobile Home Communities
- Parks & Recreational Facilities
- Residential Subdivisions

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PROJECT LIFE CYCLE

Service Profile

Overview

The Project Life Cycle refers to a logical sequence of activities to accomplish the project's goals or objectives. Regardless of scope or complexity, any project goes through a series of stages during its life.

Huron retains a diverse team of professionals that is capable of leading the project through its life cycle and providing an effective approach emphasizing participation and partnering.

The following is a brief description of each cycle stage:

Planning Stage

- Feasibility Study
- Programming
- Site Analysis
- Site Selection
- Budget
- Schedule

Design Stage

- Schematic Design
- Survey
- Geotechnical Data
- Schematic Sketches
- Cost Projections
- Design Development
- Design Plans
- Design Details
- Engineering Criteria
- Outline Specifications

Construction Documents Stage

- Final Design
- Final Drawings
- Final Details
- Final Schedule
- Bidding Requirements
- Detailed Specifications
- Revised Cost Projections

Bidding Stage

- Request For Proposals
- Addenda
- Bid Opening

Construction Stage

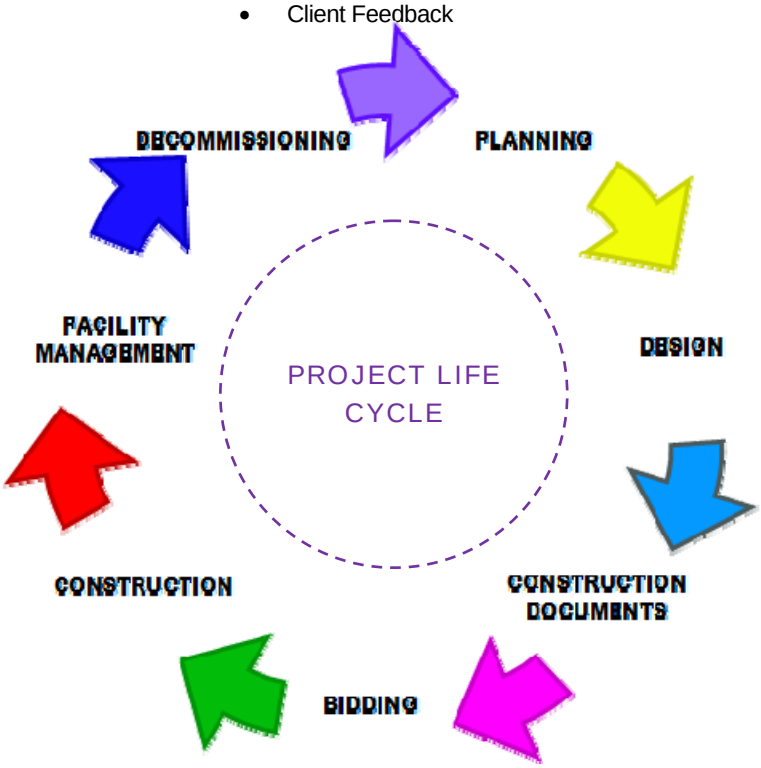
- Mobilization
- Contract Administration
- Progress Payments
- Field Change Orders
- Permits
- Schedules
- Shop Drawings
- Certificates
- Record Documents
- Warranties & Bonds
- Operation & Maintenance Data

Facility Management Stage

- Occupancy
- Operation & Maintenance
- Repairs
- Maintenance Records
- Post Occupancy Analysis
- Warranty Service
- Renovation

Decommissioning Stage

- Evaluation
- Demolition
- Close-Out Reporting
- Client Feedback



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CIVIL ENGINEERING

Municipal Design

MUNICIPAL DESIGN SERVICES

As part of the project design plans and specifications, Huron engineers provide conceptual, preliminary and final design, procurement services, value engineering, specifications, applicable permits, bidding assistance and project administration.

Our designers concentrate on several critical factors such as practicality, cost effectiveness, simplicity of operation and maintenance, producing conservational designs that best fit our client's needs.

During the design phase, the project undergoes several sequential stages of development to insure that the client's needs are met and our QA/QC procedures are satisfied as follows:

1. **Project Scope Verification (5%):** Meet with client to verify project parameters, complete preliminary investigations, budget, schedule, size, location service district…etc.

2. **Internal Kick-Off Meeting (10%):** The design team meets to discuss the project considerations, approach, schedule, and deliverables. This meeting is directed by the project manager and attended by the survey department, designer, engineer, drafter, construction department, and the client representative.

3. **Obtaining Existing Information (15%):** Available local record information is researched and existing utility companies are requested to provide their specific utility information.

4. **Topographic Survey (20%):** Initiate field work order to cover the project construction area. Office work includes verification of Right-Of-Way, property lines, existing easements and public/private utility location.

5. **Preliminary Design (30%):** Provide preliminary alignment, drawings, schedule, and cost estimates. The client is requested to review and approve the recommended design.

6. **Public and Private Utility Review (40%):** Preliminary drawings are supplied to all utility agencies for review and comment. All possible conflicts are addressed at this stage. Alternatives are discussed as applicable.

7. **Permit Documents (60%):** Final location is determined and all applicable permit applications are prepared. Necessary easements documents finalized and project specifications are assembled.

8. **Final Design (90%):** All applicable permits and easements are secured. Permitting agency comments and special conditions are addressed. Internal constructability review is conducted. Plans are forwarded to the client for final review and approval.

9. **Bidding Documents (100%):** Final plans and specifications are assembled creating the "Bid Package". Client specific sections (General Conditions, Bonds, Agreements…etc.) are included.

10. **Bid Advertisement:** Trade publications and local newspapers are used to place the advertisements as authorized by the client. Bidding documents are often scanned and made available for viewing. Hard copies will typically be located at Huron offices for examination and pickup. General contractors and supplier questions / requests for clarifications are addressed and addenda issued as appropriate.

11. **Pre-Bid Meeting:** Frequently, this meeting is facilitated by Huron to insure bidders have a complete understanding of the project scope.

12. **Bid Opening:** Huron will facilitate the bid opening meeting that is attended by the client, bidders, and stake holders. All bids are checked for completeness including the required bonds.

13. **Bid Tabulation and Recommendation:** Bids are checked for responsiveness, balance, and fatal errors. Bidder's qualifications, insurance, and references are checked. As necessary, a Pre-Award meeting may be scheduled with the lowest prospective bidder(s) to discuss the project milestones and schedule. Subsequently, Recommendation of Award will formally be issued to the client.

CIVIL ENGINEERING

Municipal Engineering

Overview

Huron provides complete municipal design, consulting, civil engineering, funding assistance, master planning, contract administration, and construction engineering services that addresses all project aspects of the local community.

Our municipal engineers represent various communities within Macomb, Oakland, St. Clair, Lapeer, and Sanilac Counties. Through long years of municipal service, Huron has proven to be the trusted advisor for the local communities and their population.

Huron municipal services cover a vast range of aspects including:

Municipal Planning

- Capital Improvement Planning (CIP)
- Emergency Response Planning
- Facility Utilization, Parking & Space Allocation
- Parks & Recreation Facilities
- Special Assessment Districts (SAD) Projects
- Street Construction & Rehabilitation

Municipal Design

- Bicycle Paths & Sidewalks
- County Drains Design
- General Drainage Projects
- Parks & Recreation Facilities
- Street Construction & Rehabilitation
- Water & Sewer Trunkline Design

Municipal Regulatory Services

- Site Plan Reviews
- Engineering Plan Reviews
- Ordinance Development
- Government Regulatory Compliance

Municipal Reports & Studies

- Vulnerability Assessments
- Reliability Studies
- Sanitary Sewer Evaluation Studies (SSES)
- Combined Sewer (CSO) Studies
- Sanitary Sewer Overflow (SSO) Studies
- Inflow & Infiltration (I&I) Studies
- Illicit Discharge Elimination Programs (IDEP)
- Hydrologic & Hydraulic Modeling
- Video Inspections
- Leak Detections
- Odor Control
- Asset Management Programs
- NPDES Phase II Assistance
- Watershed Planning & Studies

Municipal Public Utility Master Planning

- Water System Master Planning
- Sanitary Sewer Master Planning
- Water & Sewer User Rates

Municipal Financial Assistance

- Drinking Water Revolving Fund (DWRF) Projects
- Grant Applications & Administration (CDBG, USDA)
- Life Cycle Cost Projections
- Project Financing Alternatives
- State Revolving Loan Fund (SRF) Projects

Municipal Public Participation

- General Consulting Services
- Public Meeting Participation
- Public Office Hours

Municipal Records

- Address Mapping
- Record Drawings
- Scanning & Archiving
- Street Mapping

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CIVIL ENGINEERING

Municipal Infrastructure

MUNICIPAL CAPITAL IMPROVEMENT PROGRAMS (CIP)

Huron continues to work with our municipal clients on their infrastructure improvement projects. The CIP is developed or updated to outline the conditions and any needed updates of the public system. This short range forecast will aid the clients in planning of its capital expenditure, strategic planning and annual budget projections. The CIP may provide other benefits including:

- Systematic evaluation of potential projects.
- Managing debt and consolidation of improvements.
- Public relations and economic development tool.
- Preserving infrastructure efficiency.

MUNICIPAL WATER SUPPLY SYSTEM

Of all municipal services, provision of potable water is perhaps the most vital component of the public services. People depend on water for drinking, cooking, washing, carrying away wastes, and other domestic needs. Water supply systems are used for the collection, transmission, treatment, storage, and distribution of water for homes, commercial establishments, industry, and irrigation, as well as for such public needs as firefighting.

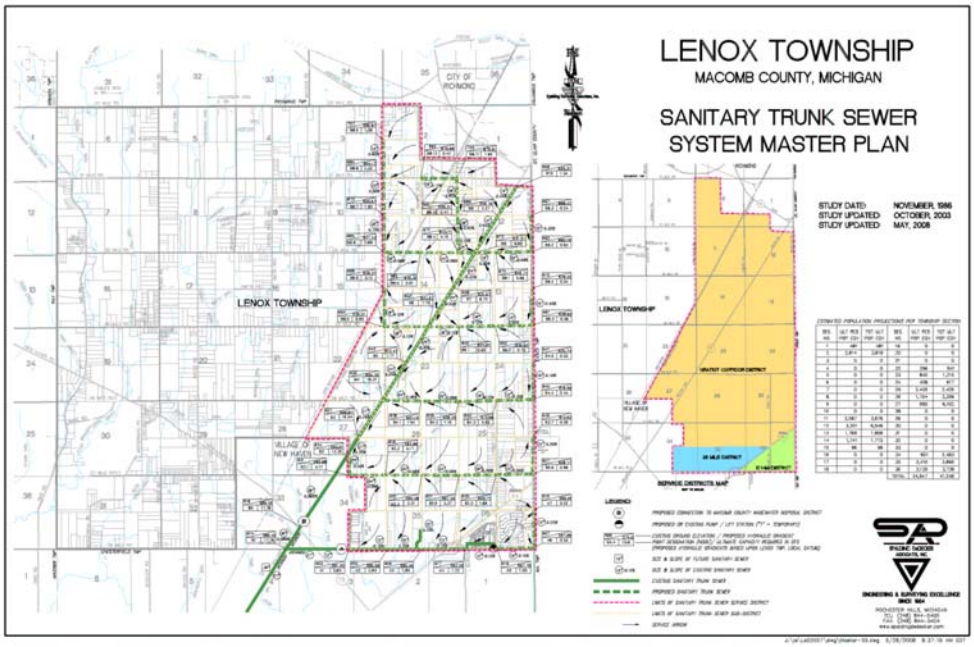
Huron continues to offer various consulting and professional services related to the supply system such as:

- Construction Inspection
- Deficiency Audits
- Demand Forecasts
- Hydraulic Modeling
- Leak Detection Surveys
- Mapping
- Master Planning
- Operation & Maintenance
- Rate Analysis
- Record Drawings
- Reliability Studies
- SCADA Improvements
- Trunkline Design

MUNICIPAL SANITARY SEWER COLLECTION SYSTEM

Is another fundamental component of the domestic service system collecting discharge from residents, commercial, and industrial users. Huron offers various professional services related to the collection system such as:

- Capacity Forecasts
- Combined Sewer Overflow (CSO) Studies
- Construction Inspection
- Hydraulic Modeling
- Illicit Discharge Elimination (IDEP) Programs
- Inflow and Infiltration (I & I) Studies
- Mapping
- Master Planning
- Operation & Maintenance
- Rate Analysis
- Record Drawings
- SCADA Improvements
- Sanitary Sewer Evaluation (SSES) Studies
- Sanitary Sewer Overflow (SSO) Studies
- Trunkline Design



CIVIL ENGINEERING

Municipal Support

Municipal Plan Reviews

As one of the key municipal services, Huron provides full technical reviews of site plans and engineering plans for local conformance with ordinances, standards, and regulations.

All development plans are logged and tagged with the municipal job book, project status board, electronic database, and development map. For effective communications and to expedite this process, all reviews are organized sequentially and distributed to all stakeholders via email and hard copy. The developer and his engineer are also provided with the local code and standards electronically. Our web portal is accessed heavily for this information on a daily basis.

Municipal Office Hours

Huron offers engineering office hours at the municipal offices typically scheduled once a week. Several of our clients take advantage of this NO CHARGE service. Residents, developers, engineers, and utility companies receive our professional services on the spot and face-to-face. This unique setup has proven to minimize uncertainty and misunderstanding dramatically at early stages.

Public Meetings

Our staff typically attends public meetings of the council, planning commission, special meetings and other public meetings as necessary at NO CHARGE (in most cases). We are committed to working hand-in-hand with our clients and other consultants to accomplish project goals.

Dispute Resolution

Huron will assist the municipality, board, departments, planner, attorney, and other consultants, in providing studies, analysis, recommendations, and settlement support.

Pre-Qualifications of Contractors

Huron assists municipalities in monitoring and updating pre-qualified contractor databases including the development of a specific screening criteria and system based on current MDOT pre-qualifications and standards.

Assign New Addresses

This service is provided for residential, commercial, and industrial developments. Huron utilizes electronic drawings to map the entire municipality entering graphically each address at the proper location. These maps are frequently used by various municipal offices such as Building, Fire, Water and Sewer departments.

Municipal Ordinance Development & Updates

We understand that continuous change of federal and state regulations can make it difficult for local communities to maintain a sense of order. As engineering and construction practices evolve, it is essential for local municipalities to maintain a current and practical code of ordinance, policies, and standards. Huron assists communities with preparation, review and update of local ordinances.

Typical ordinance section involvement including but not limited to the following:

- Dewatering Ordinance
- Engineering & Construction Standards
- Erosion & Slope Protection
- Land Development Ordinance
- Pre and Post-Construction Controls
- Private Sanitary Treatment System Ordinances
- Schedule of Fees
- Soil Removal
- Stormwater Management Ordinances
- Sustainable Design
- Water Restriction Ordinance
- Water & Sewer Ordinances
- Water & Sewer Rates
- Wetland & Waterway Protection & Mapping

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CIVIL ENGINEERING

Wastewater Treatment & Management Services

WASTEWATER TREATMENT & MANAGEMENT SERVICES

Huron employs professionals experienced and certified in all aspects of the design and construction of wastewater treatment systems. Huron utilizes our extensive knowledge in providing our clients with the most innovative, cutting-edge technologies available, while continually developing value and cost-effective solutions. Huron continuously looks for ways to implement new designs or technologies, which exceed longevity standards, are sustainable and require a minimum amount of operation and maintenance.

Combined sanitary and storm sewers pose a threat to the environment. Under heavy rainfall or snowmelt, the sewers may back up and force an overflow to human environments, over land, and into surface waters. Such illicit discharges threaten the health of the public, wildlife, and cause detrimental affects to commerce and recreation.

Huron is a passionate advocate for environmental health, and motivated to help those communities which must bear the cost for separation of the utilities to find ways of funding such rehabilitation. Huron strives to keep costs down while ensuring the project is completed successfully.

Huron prides itself on the ability to see a project through, from conception to the final stage of completion. Our diverse team of professionals can handle all facets of project development and oversight from design services, permitting, construction document preparation and construction oversight. We can provide assistance with the following:

Public wastewater treatment:

- Engineered Wetland Treatment Systems
- Traditional Municipal Sewer Systems

Private wastewater treatment:

- Decentralized Wastewater Treatment
- Private Sewer Systems
- Onsite Wastewater Treatment
  (Engineered septic systems)

Other wastewater treatment services:

- Capital Improvement Plans / Master Plans
- Feasibility Assessments / Studies
- Grant / Low-interest Loan Application Assistance
- Pump Stations
- Lift Stations
- MDEQ Part 41 Submittal Packages
- Reliability Studies
- Permitting Assistance
- Reservoirs / overflow storage and treatment
- System Evaluations
- System Rehabilitation

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CIVIL ENGINEERING

Water Resource Management Services

WATER RESOURCE MANAGEMENT SERVICES

A reliable, clean source of water is an essential resource for every community. Huron employs professionals experienced and certified in all aspects of the design and construction of water distribution and treatment systems.

Huron utilizes extensive knowledge in providing clients with the most innovative, cutting-edge technologies available, while continually developing value and cost-effective solutions. Whether involving a water system extension, a water needs feasibility assessment or the evaluation of potential treatment technologies to remove heavy metals or pathogens, Huron continuously looks for ways to implement proven, sustainable technologies to meet the unique needs of each community.

Huron prides itself on the ability to see a project through, from conception to the final stage of completion. Our diverse team of professionals can handle all facets of project development and oversight from design services, permitting, construction document preparation and construction oversight. We have the capabilities to provide assistance with the following:

PUBLIC / PRIVATE WATER SYSTEMS

- Construction Phase Services
- Contractor procurement
- Cost estimating
- Engineering design
- Permitting
- Treatment systems
- Reservoirs, towers and other facilities
- Water main replacements and extensions
- Well head protection and abandonment
- Wells and municipal water supply systems

OTHER WATER RESOURCE SERVICES

- Capital Improvement Plans / Master plans
- Feasibility Assessments / Studies
- Flow Studies
- Grant Assistance
- MDEQ/EPA Compliance Assistance
- Operation & Maintenance (O&M) Services
- Permitting Assistance
- Pumping Stations
- Rate studies
- Storage Facilities
- Water Vulnerability Assessments and Security

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CIVIL ENGINEERING

Watershed, Stormwater & Drainage Management

WATERSHED, STORMWATER & DRAINAGE MANAGEMENT

Regardless of the size or location of a water quality project or problem, we believe that the solution must incorporate a watershed approach, considering both the upstream and downstream impacts of the project. When the project objectives involve drainage and flood control, it is always more efficient to address the challenge with a total watershed approach, considering the entire watershed as the project impact area. While it is not always possible to alter the project scope to match this ideal model, this "watershed mindset" always leads the engineers and scientists at Huron to arrive at a more innovative, long-term design solution with an infinitely higher chance of success than any conventional, site-specific approach can achieve. Consequently, despite the wide variety and scale of challenges, Huron approaches each watershed resources management project with the same basic philosophy:

- The watershed approach is superior, considering upstream influences and downstream effects.
- Take the long and broad view of the costs and benefits of the project.
- The natural, dynamically stable stream provides the ideal model for watercourses.

Huron employs professionals experienced and certified in all aspects of storm water management, flood and soil erosion control, streambank stabilization and regulatory compliance. Huron utilizes our extensive knowledge in providing our clients with the best, most cost-effective solutions used in the industry. Huron continuously looks for ways to implement new designs or technologies to design projects to last longer with little or no maintenance. The practical advantages to our clients are numerous, as described below:

- Watershed approach results in efficient design.
- Designing projects for long term results.
- Cost effective solutions.
- Reduced future O&M costs.
- Off-site costs consideration and benefits.
- Considerations for original soils, grades & contours.

Adherence to this philosophy generally results in a design solution that not only performs the intended function at the end of the project, but also continues to perform for many years with minimal maintenance while providing aesthetic and ecological value.

Huron personnel assist clients with watershed resources management issues ranging from single-site design, single-site Storm Water Pollution Prevention Plans (SWPPP) and remedial recommendations to full-scale watershed planning and improvement activities. Huron is knowledgeable with regard to all aspects of regulatory compliance issues.

Aspects of this assistance include environmental and ecological assessment, project design, plan preparation and specification, construction management, and construction inspection. Huron draws not only on past and current in-house watershed resources projects for experience, but also utilizes new technologies, designs, and materials to continually expand our abilities to provide our clients with a successful project.

This approach provides our staff with an excellent foundation from which to apply innovative approaches to watershed resources management challenges ranging from small to large, simple to complex. Huron offers the following services to help you meet your specific watershed management objectives:

- Plan specific watershed management techniques
- Identify current problem areas
- Identify potential future problem areas
- Develop strategies for proposed developments
- Review plans for proper stormwater management
- Develop proper erosion and sedimentation control
- Perform environmental and ecological assessments
- Design and implement drainage and flood control
- Alternate funding sources assistance
- Construction & project management services

Huron Consultants provides assistance to municipalities with all National Pollutant Discharge Elimination System (NPDES) requirements, including:

- Jurisdictional Storm Water Permit Applications
- Watershed-based Permit Applications
- Annual Progress Reports
- Illicit Discharge Elimination Plans (IDEP)
- Public Participation Plans (PPP)
- Public Education Plans (PEP)
- Storm Water Pollution Prevention Initiatives (SWPPI)
- Watershed Management Plans (WMP)

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CIVIL ENGINEERING

Soil Erosion & Sedimentation Control

SOIL EROSION & SEDIMENTATION CONTROL (SESC)

Huron personnel are knowledgeable and experienced in all aspects of SESC. soil erosion and sedimentation control Licensed by the State of Michigan for Construction Site Storm Water Management and Soil Erosion Inspection, Huron personnel have studied and implemented traditional SESC methods as well as innovative, state-of-the-science methods. Huron seeks out new and better methods to achieve the client's objectives and to meet the ever-changing regulatory agency requirements – requirements that are becoming stricter and more stringently enforced.

Before creating an SESC plan for a project, Huron carefully assesses the site conditions, ensuring that all are considered and factored into the final design. Erosion protection may be the primary aspect of a job, or only a component of a larger project. Regardless of which, the SESC plan and its proper implementation are critical to the success of a project. The benefits offered to Huron's clients are described below:

- Complete, accurate information about site characteristics at the beginning of a project reduces the risk of regulatory challenges to the site selection later in the project, when changes are infinitely more expensive.
- A properly developed and implemented soil erosion and sedimentation control plan improves construction efficiency and greatly reduces the risk of regulatory setbacks.
- The client receives design and implementation solutions that are developed and optimized for the specific, unique circumstances and characteristics of their project.
- Technologically innovative design solutions better protect sensitive environmental receptors, providing a cleaner environment for neighbors of the facility and reducing the environmental liabilities of the owner.

STREAM BANK AND SOIL STABILIZATION

Huron has extensive experience with a variety of soil and stream bank stabilization techniques. Huron's philosophy is that we feel each specific stream bank or soil erosion problem is unique and therefore gets specialized analysis. Factors such as slope length, slope steepness, soil type, vegetation, and proximity of structures are all included in analysis of stream bank / soil stabilization. Once the situation is analyzed, Huron provides a solution which accounts for the structural, aesthetic, and environmental requirements of the particular site. Huron's solutions have included traditional riprap, gabions, sea walls, diffusion basins and retaining walls when no other solution was feasible and more innovative solutions, such as in-stream structures made of stone or tree roots that reduce erosive shear stresses on vulnerable stream banks, or reinforced vegetated mats that provide immediate protection, aesthetic enhancement and environmental sustainability.

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CIVIL ENGINEERING

Flood Control

FLOOD CONTROL

Traditional engineering practices seem to imply that flood control and environmental sensitivity are mutually exclusive. However, protecting property owners from flooding does not have to be achieved at the expense of a healthy river. Traditional engineering designs for flood protection generally involve straightening, widening, and deepening of a channel in order to convey storm water much faster. Unfortunately, these methods produce a number of negative results: A stable, natural channel is often destroyed; greater erosion and sedimentation potential is created by altering the streams natural, "hydrodynamically stable" dimensions; and the flooding problems are not eliminated, they are merely transferred downstream.

Huron's approach to flood control is anything but traditional. Huron employs a watershed-level approach to all of its flood control projects. This means that a watershed must be assessed as a whole before the impacts specific improvements or changes can be assessed. The watershed-level approach acknowledges that watercourses evolve in concert with and in response to their surrounding watershed and its integral ecological systems. Therefore, any change to one part of a watershed may have significant negative impacts to the other parts. These impacts must be known and accounted for before any proposed improvements can be properly assessed.

Huron also believes that natural stream systems have valuable ecological and aesthetic benefits to the community. Drastic alteration of a stream system can eliminate these benefits, and any flood control benefits that may be realized may be overshadowed by ecological and aesthetic losses.

Huron focuses on increasing storm water storage rather than increasing conveyance capacity in its designs. Our approach mimics a more natural process and achieves a state of natural maintainability or equilibrium over the long term. Natural river and stream channels generally cannot convey water produced by the largest storms. Instead, the water is stored in floodplains and wetlands and released slowly over time. With increased development, the natural storage capacity of a watercourse through its floodplains and/or wetlands no longer exists, and flooding problems are becoming more and more common. Huron's designs attempt to reconnect streams to their floodplains and wetlands, thereby reducing flooding, and allowing the stream to function more naturally. The result of Huron's approach is an effective combination of natural flood control, stormwater management and environmental sustainability. In its designs, Huron strives to provide flood control while allowing streams and rivers to function more naturally, providing property owners and residents with the safety of flood control as well as the ecological and aesthetic benefits of a natural stream system.

CIVIL ENGINEERING

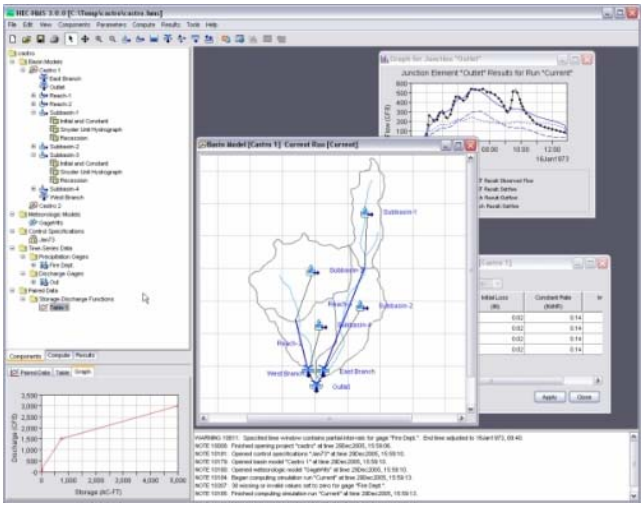
Hydrologic & Hydraulic Modeling

HYDROLOGIC MODELING

Hydrologic Modeling is most simply described as converting precipitation depths to stream flow quantities. While it sounds simple, the techniques involved for proper prediction can be quite complex.

Hydrologic modeling is often required for uses as varied as wetland design, culvert sizing, soil erosion and sedimentation control watershed planning, drainage design, detention basin design, and property development. The types of hydrologic models available are as varied as the uses, and choosing the appropriate model for a given situation may be one of the most important aspects of creating an accurate hydrologic model.

Huron has developed a sound working knowledge with many types of hydrologic models, allowing us to choose the right model for the situation and to utilize that model properly, whether it is using the Rational Method for storm drain design, the Oakland County Method for a detention basin, the Soil Conservation Service (SCS) Method for an open water course culvert, or the HEC-HMS hydrologic modeling system software for a multi-mile river system.



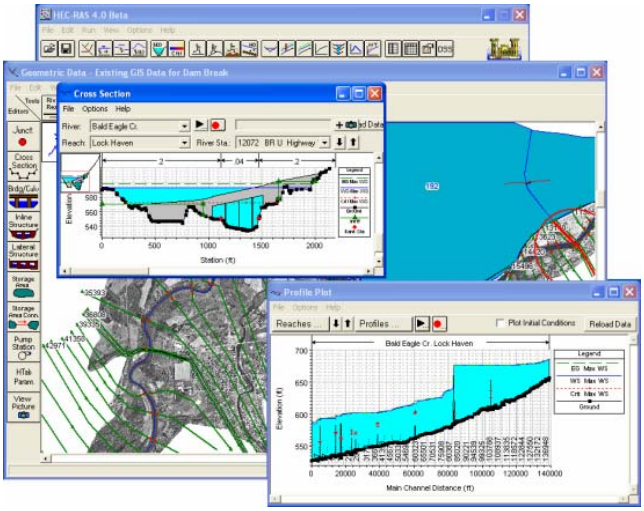
HYDRAULIC MODELING

While hydrologic modeling predicts of stream flows, hydraulic modeling predicts the effects of those flows – on stream banks and floodplains, on pipes and culverts, on homes and buildings, etc.

Hydraulic modeling is necessary when determining the effects and extents of a given flood, proper elevations for river and stream crossings, water depths and velocities, storm sewer routing, potential erosion of stream banks and other vulnerable areas, and any other subject concerning height, depth, velocity, or volume of water.

Huron is experienced in hydraulic modeling with HEC-RAS, the most commonly used, state-of-the-science hydraulic modeling software, as well as more traditional approaches such as the ubiquitous Manning's Equation.

Huron also uses the HY-8 Culvert Hydraulic Analysis Program distributed by the Federal Highway Administration (FHWA), which is required for engineering design of culverts, box culverts and storm drains by the Michigan Department of Environmental Quality (MDEQ) and other jurisdictional agencies.



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CIVIL ENGINEERING

Construction Engineering & Administration

OVERVIEW

Huron maintains a highly qualified field staff that is trained and responsible for quality control and commitment to our clients. Our field technicians are accountable for the project delivery including all related documentation, coordination with local and permitting agencies, specifications, construction / pre-construction activities, scheduling, risk and safety, quality control, and coordination with testing operations.

EXPERIENCE

Huron field personnel hold long years of practical experience and supported by the professional staff. We have worked with various governmental agencies such as:

- Michigan Department of Transportation (MDOT)
- Department of Environmental Quality (DEQ)
- Department of Natural Resources (DNRE)
- Federal Highway Administration (FHA)
- Oakland County Road Commission (OCRC)
- Macomb County Department of Roads
- Macomb County Drain Commission (MCDC)
- St. Clair County Drain Commission (SCCDC)
- Oakland County Water Resources (OCWRC)
- Local Public Works Departments
- Detroit Water & Sewerage Department (DWSD)

Our field expertise includes, but not limited to, the following:

- Water & Sewer Construction
- Concrete & Asphalt Paving
- Conduit Construction
- Landfill Construction
- Demolition Works
- Construction Layout
- Construction Testing
- Construction Administration

PROCEDURE & QA/QC

During the construction phase, the project undergoes several sequential stages of development to insure that the client's needs are met and our QA/QC procedures are satisfied as follows. Our system targets a delivery of the construction project safely, on-time, and on-budget.

1. **Construction Scope Verification (5%):** Meet with client to verify project conditions, budget, schedule…etc. A Huron project representative will be assigned.

2. **Pre-Construction Meeting (2%):** The construction team meets to discuss the project considerations, approach, schedule, and deliverables. This meeting is directed by the project field representative and attended by the contractor, engineer, and the client representative.

3. **Pre-Construction Video (3%):** Contractor to provide record of the project limits as required by the construction documents. This info will be made available to the client and will aid in claim resolution.

4. **Construction Groundbreaking (2%):** Often, Huron will coordinate these events with the project stake holders.

5. **Construction Activities (40%):** Our field personnel will monitor the construction progress, record field construction, schedule and host monthly progress meetings, prepare and distribute meeting minutes.

6. **Construction Testing (5%):** Coordinate material and density testing service with the project Geotechnical consultant and contractor.

7. **Property Damage Claims (5%):** Log and administer property claims, negotiations, and resolutions.

8. **Action Submittals (5%):** Log, process, review, approve, request corrective actions of the contractor submittals of shop drawings, product data, and other required submittals.

9. **Contract Pay Requests (9%):** Prepare all construction pay estimates using the most current approved version of the Michigan Department of Transportation's (MDOT) "Field Manager" and "FieldBook" software program.

10. **Value Engineering (8%):** Continuous review process of construction getting the best overall project value for the Owner.

11. **Construction Claims (5%):** Log and administer contractor claims, negotiations, and resolutions.

12. **Substantial Completion (4%):** Determine if the work, when completed, is in substantial compliance with the contract documents. Reject work that, based upon our knowledge, does not conform to the Contract Documents or reject work which does not meet the functional, structural, or aesthetic effect as defined in the Contract Documents.

13. **Final Completion (2%):** Conduct final punch-list reviews and advise the Owner of Final Completion date recommending acceptance of the work.

14. **Project Closeout (5%):** Prepare the Contract Documents for project close-out. Huron will receive and forward to Owner all written warranties, manuals, and related documents required by the Contract Documents.

ENVIRONMENTAL ENGINEERING

Service Profile

Overview

Huron is experienced at providing facility support and industrial hygiene services to provide a clean and safe living and working environment. Huron understands the ramifications of environmental impact and the responsibilities associated with hazardous materials, and can provide environmental management services to facilitate cost-effective method of hazard evaluation and remediation.

Huron possesses broad capabilities in the areas of environmental site assessments, due diligence/due care services, and subsurface environmental site investigations. Huron provides services to coordinate and manage a wide array of environmental investigation and contamination projects for industrial, commercial, residential and municipal clients.

Huron's strategic regulatory services are designed to assist clients with the management of potential environmental, as well as employee health and safety liability through the identification and resolution of local, state and/or federal non-compliance issues as they relate to their facilities.

Facility Support Services

- Asbestos Surveys
- Asbestos Management Services
- Abatement/Removal Services
- Construction Oversight/Inspections
- Hazardous Material Surveys
- Hazardous Waste Management
- Indoor Air Quality Testing
- Industrial Hygiene Assessments
- Lead-Based Paint Assessments (non-residential)
- Microbiological Surveys (Mold/Bacterial)
- Noise Monitoring
- Radon Exposure Assessments
- Site/Facility Demolition Oversight & Support

Environmental Investigations Services

- Baseline Environmental Assessments (BEAs)
- Brownfield Redevelopment Services
- CADD Services
- Due Care (Section 20107a Compliance Analyses)
- Environmental Risk Management
- Environmental Site Assessments (Phase I & II)
- Environmental Soil/Groundwater Sampling
- Geological/Hydrogeological Assessments
- Part 201/Part 213 Environmental Assessments
- Property Transfer & Due Diligence Services
- Qualified UST Consultant (Part 213)
- Soil and Groundwater Remediation
- Solid/ Liquid Waste Disposal Management
- Underground Storage Tank Management/ Compliance

Strategic Regulatory Services

- Emergency Response Planning
- Environmental Health Auditing
- Safety Compliance Auditing
- Environmental Permitting
- Expert Witness Testimony
- Grant Writing
- Health & Safety Compliance Services & Training
- ISO 14001 Pre-Registration
- Regulatory Compliance Assistance

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ENVIRONMENTAL ENGINEERING

Property Transfer & Due Diligence Services

PHILOSOPHY

Huron recognizes the risks and benefits often associated with acquiring contaminated properties and understand the importance of assessing these risks and benefits early in the transaction process. It is important to fully understand the environmental conditions prior to real estate transfer. It is especially beneficial in the State of Michigan where a prospective purchaser can qualify for liability protection afforded under the Baseline Environmental Assessment (BEA) process. Michigan is unique in offering such liability protection, and Huron understands the risks of not carrying out the appropriate level of due diligence at the time of the property transfer.

Huron's approach to the property transfer and BEA processes can help optimize our clients' gains in acquiring marketable properties without inheriting the liability associated with the cleanup. Huron also strongly believes in evaluating property conditions while considering future development plans to help determine if other liabilities are present. The result is a product that is tailored to our clients' specific project needs by minimizing environmental risks and maximizing the benefits of acquiring such properties. Adherence to this philosophy provides our clients with the intended liability protection in property acquisition for the minimal expenditure and ultimately the maximum return on their investment.

SERVICES

Huron is experienced at conducting a wide array of due diligence and property transfer assessments to minimize future environmental liability.

- Phase I Environmental Site Assessments (ASTM Standard E1527-05 and 40 C.F.R. Part 312, All Appropriate Inquiry)
- Phase II Environmental Site Assessments
- Baseline Environmental Assessments (BEAs)
- Section 20107a Compliance Analyses (Due Care Plans)
- Part 201 Environmental Investigation and Remediation
- Part 213 Environmental Investigation and Remediation
- Underground Storage Tank Management (Qualified UST Consultant, Certified UST Professional)
- Brownfield Redevelopment Services
- Hydrogeological Assessments

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ENVIRONMENTAL ENGINEERING

Phase I Environmental Site Assessments (ESA)

OVERVIEW

The following services are among Huron's areas of expertise that assist clients involved in property transactions and redevelopment:

- Performing Phase I Environmental Site Assessments (ESAs) in accordance with ASTM Standard E 1527.
- Tailoring Phase I ESAs to accommodate the client's proposed use of the property. This may include adding non-scope considerations such as wetlands assessments, asbestos building surveys, lead-based paint evaluations, regulatory compliance, etc.
- Conducting Phase II Site Investigations to address recognized environmental conditions (RECs) identified in the Phase I ESA.

PHASE I ENVIRONMENTAL SITE ASSESSMENT

The scope of work for a Phase I ESA is based on American Society for Testing and Materials' (ASTM's) "Standard Practice for Environmental Site Assessments: ESA E-1527," which defines good commercial and customary practice for conducting an ESA and establishing "due diligence." Further, a Phase I ESA is intended to satisfy the due-diligence requirements to qualify for the innocent landowner defense element of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

The purpose of a Phase I ESA is to provide an independent, professional opinion of any recognized environmental condition associated with the subject property. According to ASTM's standard E 1527, Section 1.1.1, the term recognized environmental condition means the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate (1) an existing release, (2) a past release, or (3) a material threat of a release of any hazardous substances or petroleum products into structures on the subject property or into the ground, groundwater, or surface water of the property.

Huron's Phase I ESAs generally contain the following information:

Site Description

- Buildings, Outbuildings, Parking Lots, Driveways, Fences, Utilities and Municipal Services
- Current use of Subject Property
- Current use of Adjoining Properties
- Heating Source, Sewage Disposal, Water Supply, Refuse Disposal
- Location of Site and Vicinity Characteristics
- Structures/Other Improvements

Records Review

- Physical Setting Records (USGS Topographic, Soil Survey, Geological Maps, Federal and State Databases—EDR Radius Map Report
- NPL, CERCLIS, RCRA TSD, RCRA Generators, CORRACTS, ERNS, SHWS, LUST Sites, Registered USTs, BEAs, Landfills)
- Historical Use Information
- Aerial Photographs, Tax Assessment Records, Building Department Records, City Directories, Fire Inspection Maps, Historical Plat Maps

Site Inspection

- Hazardous Substance and Petroleum Products
- Waste Materials
- Unidentified Substances
- Storage Tank Systems
- Suspect PCB Sources
- Other Potential Concerns such as Stained Pavement, Stressed Vegetation, Floor Drains and Sumps, Septic Systems, Fill Materials, Debris, Hydraulic Hoists

Evaluation and Report Preparation

Upon evaluation of the site and review of current and historical documentation obtained, a Phase I ESA report is generated. The report would include a summary of findings, opinions, RECs and recommendations.

ENVIRONMENTAL ENGINEERING

Phase II Environmental Site Assessments (ESA)

PHASE II ENVIRONMENTAL SITE ASSESSMENT

A Phase II Environmental Site Assessment (ESA) is performed to determine if hazardous substances or petroleum products have been disposed or released at a property that has resulted in subsurface impact. Huron Consultants will evaluate potential migration pathways and may include an evaluation of contamination fate and transport. A Phase II Environmental Site Assessment will comply with industry standard established in ASTM E 1903.

A Phase II ESA is typically performed to evaluate the Recognized Environmental Conditions identified in a Phase I Environmental Site Assessment. Huron Consultants' Phase II ESAs typically follow this process:

Develop Scope of Work

- Appropriate to evaluate a Recognized Environmental Condition (REC) identified in Phase I ESA.
- Sample media and location considers potential contaminant migration pathways.
- Chemical analyses appropriate for REC.
- Appropriate to evaluate health and safety precautions for owner, occupant, and user.

Conduct Assessment Activities

- Range from non-intrusive field screening to intrusive sample collection.
- Geophysical surveys.
- Hydraulic-push equipment to collect soil samples.
- Drill rigs to install monitoring wells to collect groundwater samples and measure groundwater flow direction.
- Waste Characterization Analyses.
- Samples are collected according to federal and state requirements.

Evaluate Data

- Verify assumptions (appropriate media, location and depth of samples; appropriate chemical analyses; geophysical anomalies corresponding to suspect UST locations; adequate characterization of fill material).
- Verify data (origin of detected contaminants onsite, offsite, or laboratory contaminants; detected contaminants representative of background concentrations).
- Interpret results (evaluate if other sources or more highly contaminated media may exist).
- Evaluate to confirm or eliminate REC ("Hot Spot" determination or background concentration; comparison to appropriate cleanup criteria).
- Prepare Report (scope of activities; methodologies; quality control measures; laboratory analytical results; findings, conclusions and recommendations; limitations of the investigation).

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ENVIRONMENTAL ENGINEERING

Baseline Environmental Assessments

BASELINE ENVIRONMENTAL ASSESSMENTS

In 1995, the State of Michigan altered its liability scheme for contaminated sites, providing a mechanism for new property owners to obtain an exemption from existing environmental liability. Under Part 201 of Public Act 451, as amended, the Baseline Environmental Assessment (BEA) was implemented as a means for exemption from liability for cleanup or contamination. In December 2010, amendments to Part 201 affecting the BEA process were implemented.

Under Section 20126(1) of Part 201 of P.A. 451, as amended, you are not liable for the cost of cleanup actions if:

- You are not responsible for causing the release of hazardous substances; and,
- You became an owner/operator after June 5, 1995 (March 6, 1996 for Part 213 sites); and,
- You conduct an adequate BEA within the required timeframes.
- You submit an adequate BEA to the MDEQ and subsequent purchaser or transferee within the required timeframes.

Huron is experienced in performing BEAs. With recent amendments to the BEA process in December 2010, the BEA no longer requires a means to distinguish between existing contamination and a new release. Huron has assisted multiple clients through the BEA process.

Key components and features of the BEA process include the following:

- All Appropriate Inquiry (AAI) was conducted at the property, compliant with 40 CFR 312 or ASTM E1527-05.
- Demonstration that the property is a “facility” as defined by Section 20101 (Phase II ESA).
- The BEA, including AAI and “facility” sampling, was conducted prior to or within 45 days of the date of purchase, occupancy or foreclosure.
- The BEA is submitted to the department within 6 months of purchase, occupancy or foreclosure.
- The BEA provides sufficient rationale to demonstrate the data is reliable and relevant to define conditions at the property at the time of purchase, occupancy or foreclosure.

It is important to note that although a properly conducted BEA can provide liability protection, due care responsibilities of property owners/operators are still applicable.

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ENVIRONMENTAL ENGINEERING

Section 20107a Compliance Analyses

SECTION 20107A COMPLIANCE ANALYSES (DUE CARE PLANS)

Regardless of the liability associated with cleanup of subsurface contamination at a property, an owner or operator of a property that is a "facility" has due care obligations. If subsurface contamination is present at a property at levels that exceed the Michigan Department of Environmental Quality (MDEQ) Generic Residential Cleanup Criteria, the property is a "facility" according to the definition stated in Part 201, Environmental Remediation, of Michigan Public Act 451 of 1994, as amended, the Natural Resources and Environmental Protection Act (NREPA).

Due care obligations are specified in Section 20107a of the NREPA (Section 7a), and the Part 10 Rules facilitate the implementation of Section 7a. Section 7a generally requires a person who owns or operates property that is a facility (regardless of liability) to take Due Care provisions. Due Care obligations include:

- Prevent exacerbation of existing contamination.
- Prevent or mitigate unacceptable exposure to hazardous substances
- Take reasonable precautions against the reasonably foreseeable acts or omissions of a third party and the consequences that could result from those acts or omissions
- Provide reasonable cooperation, assistance, and access to a person authorized to conduct response activities
- Comply with any land use or resource use restrictions
- Do not impede the effectiveness or integrity of any land use or resource use restriction

Due Care measures may include:

- Soil and/or Groundwater remediation
- Protective barriers to prevent direct contact
- Vapor barriers to prevent volatilization
- Provide alternative water supply
- Paved surfaces and sealed floors
- Inspection & documentation of engineering controls
- Notification to potentially impacted parties
- Notify contractors for excavation, grading, or construction
- Take precautions with abandoned containers
- Land-use restriction allowing only commercial (non-residential) use of the property

ENVIRONMENTAL ENGINEERING

Underground Storage Tank Management

UNDERGROUND STORAGE TANK (UST) MANAGEMENT

Huron can handle nearly all aspects of underground storage tank management issues, from registration through site remediation and leaking underground storage tank (LUST) site closure. We look closely at the site conditions, contamination present from the UST release, and the current and future use scenarios for the site. Too often the approach used for handling releases from UST systems does not match the contaminant conditions with the usage of the property and the associated risks. At Huron we believe that solutions to underground storage tank issues are best resolved in the context of the particular site conditions, both current and projected usage. Therefore, the level of cleanup effort should be commensurate with the identified site specifics.

Huron possesses broad capabilities in the area of underground storage tank management projects. As a Michigan Qualified Underground Storage Tank Consultant (QC) we are qualified to provide all aspects of UST service under the risk-based corrective action (RBCA) program. Huron offers the following services to help you meet your site or project specific challenges:

Underground Storage Tank Removal & Assessments

- Notifications to state and local authorities regarding intent to remove USTs
- Geophysical surveys to identify undocumented USTs
- Removal and decommissioning of UST systems and ancillary components
- Soil and groundwater sampling as required under Part 211 of NREPA
- Preparation and submittal of Site Assessment Reports or release reporting
- Amendment of UST registration forms following removal activities

Part 213 Initial & Final Assessments & Reporting

- Characterization of subsurface soil and groundwater conditions
- Assessment of vertical and horizontal extent of soil and groundwater contamination
- Risk-Based Corrective Action (RBCA) Tier 1, 2 and 3 evaluations
- Preparation of Initial Assessment Reports (IAR) and Final Assessment Reports (FARs)

Feasibility Analyses, Corrective Action Plans, Site Remediation & Site Closure

- Review of feasibility of treatment / closure options
- Monitored natural attenuation evaluations
- Preparation of Corrective Action Plans
- Implementation of pilot tests
- Aquifer testing and characterization
- Groundwater monitoring system design and installation
- Design and installation of soil and groundwater treatment systems

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ENVIRONMENTAL ENGINEERING

Brownfield Redevelopment & Management Services

BROWNFIELD REDEVELOPMENT & MANAGEMENT SERVICES

Brownfield redevelopment, "returning abandoned, under-utilized or contaminated properties to productive use", is not a new concept to Huron employees. Our staff understands the social and economic benefits of Brownfield Redevelopment. Huron provides services to assist both municipalities and developers in identifying and obtaining funding sources, working with local Brownfield Redevelopment Authorities (BRA) and agencies, implementing cost - effective environmental due-diligence, preparing baseline environmental assessments (BEAs), and where appropriate, remedial investigations and remedial action plans. Additionally, Huron professionals are also instrumental in preparing Brownfield plans and Act 381 Brownfield Work Plans.

Huron understands that a flexible, creative, and innovative approach for Brownfield redevelopment is critical for project success. We have successfully worked with U.S. EPA, MDEQ, and local governments to complete Brownfield projects. Based on this approach, Huron personnel helped make many private and public redevelopment projects successful.

At Huron, our Brownfield redevelopment and management services consider strategies and tools for evaluating critical issues such as market trends, demographics, land use options, existing infrastructure, construction requirements, investment requirements, government incentives, available financing, and expected returns. Working with experienced real estate professionals, Huron Consultants' Brownfield redevelopment and management team can successfully complete all aspects of Brownfield redevelopment.

There are but a handful of companies in the state of Michigan that can provide the diversity of services required to plan, develop and ultimately complete a potentially complex Brownfield redevelopment project. Huron professionals can provide all required services to complete your redevelopment project through its entire cycle. Huron's scientists, engineers and experts in Brownfield redevelopment can assist with the environmental due diligence, development of required agency plans, reports and related documents, site engineering and planning, demolition and/or building renovation services, underground storage tank services, surveying and all required construction management and engineering services. Huron professionals can assist from the early planning stages of a project to ultimately handing over as-built drawings at the conclusion of a successful project.

The benefits of Brownfield redevelopment are numerous and tangible. They include retention and recovery of the local tax base, job creation, re-use of existing infrastructure, preservation of a community's open space and improvements to the local environment.

Redeveloping Brownfield sites benefit the community and the individual participants. Many states have incentives to encourage Brownfield redevelopment. For example, recent amendments to Michigan law have removed or minimized the fear of environmental liability. Acceptance of risk-based closures has reduced site remediation costs. Further, Michigan has created several financial incentives to support Brownfield redevelopment projects.

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ENVIRONMENTAL ENGINEERING

Soil & Groundwater Remediation

SOIL & GROUNDWATER REMEDIATION

At a site with contamination at levels exceeding the applicable cleanup criteria, soil and/or groundwater remediation may be necessary to achieve site closure. Once the extent of contamination has been delineated and site conditions properly evaluated, a feasibility analysis of potential remedial alternatives can be conducted in order to develop a corrective action plan for soil and/or groundwater remediation.

A Feasibility Analysis (FA) can be conducted to evaluate potential technologies for remediation of contamination in soil and groundwater at a site. The FA evaluates the system design and equipment requirements, the applicability of the treatment method to the site-specific conditions, the treatment time, the efficiency of the treatment, and the initial and operational costs of implementation. The FA is typically based on conclusions from previous environmental investigations.

REMEDIAL TECHNIQUES

The appropriate remedial technique is based on various site-specific conditions. Huron Consultants will evaluate all available site information to determine the optimal remedial solution. Design criteria may include the following:

- Contaminant type
- Contaminant distribution
- Economic considerations
- Geologic and hydrogeologic features
- Regulatory requirements
- Risks to human health and the environment

DESIGN TECHNIQUES

Huron Consultants personnel have vast experience with design and implementation of remedial objectives. Huron Consultants is dedicated to serving our clients by combining proven techniques with the latest technology to develop the most cost-effective remediation plan possible. Huron Consultants has experience with many design techniques including:

- Activated carbon filtration
- Air-sparging
- Air-stripping
- Bioremediation
- Catalytic Oxidation
- Excavation and disposal (at a licensed landfill)
- Groundwater extraction (pumping)
- Passive Venting
- Soil vapor extraction

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ENVIRONMENTAL ENGINEERING

Hydrogeological Assessments

HYDROGEOLOGICAL ASSESSMENTS

Phase I and II Hydrogeologic Investigations can be conducted to define the groundwater flow direction, horizontal and vertical hydraulic gradients, and to determine the extent of the dissolved or free phase contaminant plumes. Huron Consultants is experienced with extracting necessary information from previous investigations and conducting additional investigations, as necessary, to develop a conceptual model of hydrogeologic conditions.

The following activities are typical of a hydrogeological assessment:

- Drilling soil borings and determining soil characteristics for use in site-specific modeling and cleanup calculations
- Installing permanent monitoring wells
- Collecting soil and groundwater samples for chemical characterization
- Surveying monitoring well elevations and locations, and obtaining static water levels
- Estimating groundwater flow direction based on survey and gauging data
- Evaluating contaminant concentration distribution and migration potential
- Geophysical surveys, including soil conductivity and resistivity surveys, total-field proton-precession magnetometer surveys
- Conducting Aquifer pump tests
- Conducting Aquifer slug or bail-down tests
- Groundwater and other hydraulic computer modeling

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ENVIRONMENTAL ENGINEERING

Facility Support Services

OVERVIEW

Huron is experienced at providing a wide array of facility support and industrial hygiene services to provide a clean and safe living and working environment.

Environmental hazards such as asbestos, lead-based paint (LBP), and microbiological contamination in building materials, can present a problem that can plague a building owner/operator. Indoor pollutants, radon exposure and even excessive noise can present a variety of health risks if not properly evaluated and remedied.

Demolition or renovation projects and should be evaluated early in the project development stages. By understanding the ramifications of environmental impact and the responsibilities associated with asbestos and LBP containing building materials early on in a project can help eliminate unexpected project costs in midstream. A proactive strategy of environmental management can facilitate a cost-effective method of environmental remediation during renovations.

FACILITY SUPPORT SERVICES

Huron has licensed and qualified staff capable of providing facility support and industrial hygiene services:

- Asbestos Surveys
- Asbestos Management Services
- Abatement/Removal Services
- Construction Oversight/Inspections
- Hazardous Material Surveys
- Hazardous Waste Management
- Indoor Air Quality Testing
- Industrial Hygiene Assessments
- Lead-Based Paint Assessments (non-residential)
- Microbiological Surveys (Mold/Bacterial)
- Noise Monitoring
- Radon Exposure Assessments
- Site/Facility Demolition Oversight & Support

Huron can develop and perform a facility specific environmental hazard evaluation for any property. Our Facility Support Services have been used to facilitate property transaction assessments, to facilitate renovation or demolition projects with potential environmental hazards, and also to satisfy periodic regulatory requirements.

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ENVIRONMENTAL ENGINEERING

Asbestos Management Services

ASBESTOS MANAGEMENT SERVICES

Huron can perform asbestos building inspection surveys for a variety of public, commercial and industrial settings. An asbestos survey includes inspection of all accessible building materials which are suspected of containing asbestos, with collection and analysis of samples, evaluation of material condition, and quantification of asbestos-containing materials (ACMs). In commercial and industrial settings, asbestos building inspections typically are conducted in preparation for major building renovation projects or building demolition. We maintain a team of Accredited Asbestos Building Inspectors who perform asbestos identification surveys and sample collection in accordance with Asbestos Hazard Emergency Response Act (AHERA) 40 CFR 763 requirements.

We also have a licensed Management Planner that will prepare bid specifications for asbestos abatement activities, execute bid administration for removal activities, oversee abatement, perform third-party air monitoring for OSHA and environmental compliance, conduct final clearance sampling, and certify project completion prior to reuse or demolition.

Our inspections are conducted in accordance with 40 CFR 61 Subpart M, National Emission Standards for Hazardous Air Pollutants (NESHAP) and 29 CFR 1926.1101, Occupational Safety and Health Administration (OSHA). Huron uses only National Voluntary Laboratory Accreditation Program (NVLAP) certified laboratories for asbestos sample analyses that specialize in rapid turnaround of the analytical results.

Huron's asbestos management capabilities include:

- Visual inspection of all buildings.
- Reviewing existing documentation on building construction, renovation, or previous asbestos inspections.
- Sampling bulk material for asbestos identification.
- Prepare management plans for buildings with asbestos containing materials.
- Prepare specifications for removal, or encapsulation of ACMs, and replacement of insulation.
- Prepare bid documents and scope of work for potential abatement contractors. Photographs and drawings can be provided to help identify asbestos locations.
- Solicit bids and conduct pre-bid meetings with asbestos removal contractors.
- Assist with pre-bid meetings and bid evaluation.
- Notify the appropriate agencies.
- Conduct regular inspection and maintenance programs when asbestos is left in place.

New OSHA regulations regarding worker exposure to asbestos have implications for most public and commercial building owners and operators. Huron maintains AHERA-accredited asbestos building inspectors on staff, which are accredited by the State of Michigan.

ENVIRONMENTAL ENGINEERING

Indoor Air Quality Testing

INDOOR AIR QUALITY TESTING

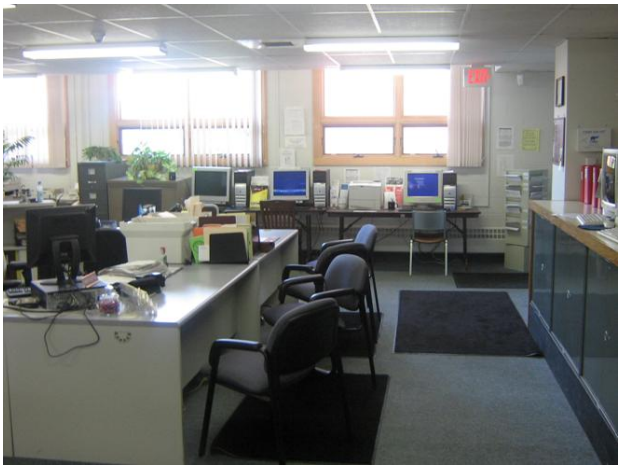
Research indicates that people spend about 90% of their time indoors. Evidence reveals that individuals can be exposed to more health hazardous pollutants indoors than outdoors, especially when living in a large industrialized city. These health hazards can be present in homes, commercial office buildings, schools, hospitals, or industrial workplaces.

Commercial office buildings, schools, and hospitals present their own unique health risks such as Legionnaires' disease, asthma, hypersensitivity pneumonitis, and humidifier fever that have all been traced to specific building problems. Most of these are treatable and all are known as building-related illnesses. Sometimes workers experience symptoms that are difficult to trace to any illness or specific source. These may include problems in the nose, eyes, and throat; fatigue or lethargy; headache; dizziness; nausea; irritability and forgetfulness. Poor lighting, noise, room temperature, and psychological stress may also contribute to this phenomenon known as sick building syndrome. Sometimes workers have these symptoms only while they are in the building or the symptoms persist until the illness is treated.

Three major causes for poor indoor air quality are air pollutants, poor ventilation, and poor use of adjacent spaces where pollutants are used or generated. There are no state or federal regulations pertaining to the above illnesses but the remediation of the problem is driven by the liability of the employer. The first step is to have monitoring by professionals, such as Huron Consultants, for chemical and biological pollutant exposure.

Industrial workplaces are regulated by Michigan General Industry Occupational Health Standards administered by the Michigan Department of Consumer and Industry Services, Bureau of Safety and Regulation, Occupational Health Division. Air contamination rules set exposure limits for approximately 600 substances. This must be accomplished through air monitoring and can be preformed by area monitoring or personal monitoring.

Huron has the ability, experience, and personnel to monitor, test, analyze the findings and recommend solutions in order to give clearance to the project.



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ENVIRONMENTAL ENGINEERING

Noise Monitoring

NOISE MONITORING

Excessive noise is an occupational health problem. It is particularly prevalent in manufacturing and construction activities, but exposure can also be common in such professions or activities as law enforcement (shooting instructors), live entertainment nightclub workers, and airport workers. Any employee that is exposed to an average noise level of 85 dB or greater during an 8-hour workday must be placed in a hearing conservation program, according to the U.S. Department of Labor, Occupational Safety & Health Administration (OSHA). If it is suspected that noise levels exceed the limit, it is important that noise monitoring be conducted. Some signs that permissible levels are being exceeded might include complaints from employees, indications of employee hearing loss, or the inability to hear normal conversation.

Huron is staffed with experienced certified industrial hygienists with extensive experience in noise monitoring, data interpretation, program development and implementation, and novel engineering solutions. Huron can help develop programs and technical solutions to protect workers by using personal hearing protection equipment or engineering and administrative controls to reduce noise exposure below the allowable limits.

At Huron, we often combine noise monitoring with other services, such as employee chemical exposure monitoring, to provide a cost-effective approach to safe employee exposure and compliance management.

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ENVIRONMENTAL ENGINEERING

Lead-Based Paint Assessments

LEAD-BASED PAINT ASSESSMENTS

Lead is a naturally occurring element found in small amounts in the earth's crust. Over time, it has become widely used for many purposes. The oldest known lead object ever found is a statute in present day Turkey that dated back to 6500 B.C. Doctors used to prescribe lead therapy as the cure for a number of illnesses such as diabetes, epilepsy, and skin lesions. Lead hazards were not reported until 1713, but its use continued. During the past century, lead was included in paints, varnishes, dyes, ceramic glazes, batteries, food cans, plumbing fixtures, gasoline additives, and cosmetics. Extensive use has resulted in widespread contamination and a ban on lead additives to many substances. Today, there are three major sources of lead contamination: lead-based paint, urban soil and dust, and drinking water.

Lead exposure is one of the leading causes of workplace illnesses. Lead is now used in batteries, chemicals, paints, metal products, and ammunition, and a number of commercial and industrial manufacturing processes. Lead-based paint, while banned for residential homes, is used on commercial structures because of its corrosion resistance and durability. Lead exposure is common in construction and industry. The source is often from cutting, welding, grinding, and/or abrasive blasting on steel surfaces such as bridges and tanks that have been painted with lead-based paints. Lead enters the body through inhalation or ingestion. When absorbed in certain quantities, lead is a toxic substance. Effects can range from fatigue, abdominal pain, and nausea, to central nervous system, cardiovascular or kidney damage. High levels, which may accumulate in the body, can lead to mental retardation, coma, and even death. Inhalation of lead fumes/dust is thought to be the major cause of lead exposure.

Huron Consultants has extensive experience conducting lead-based paint assessments, including onsite materials assessment, sample collection, and compliance air monitoring during remediation.

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ENVIRONMENTAL ENGINEERING

Microbiological Surveys

MICROBIOLOGICAL SURVEYS

Molds and bacteria grow naturally in the environment and are beneficial in the breakdown of dead organic material. Molds reproduce through the dispersion of microscopic spores that float through the air. Molds growing indoors should be avoided and eliminated when found. There are many species of molds with the potential to cause varying degrees of health problems. Molds can produce allergens, irritants, and potentially toxigenic substances (mycotoxins). Routes of exposure to mold and bacteria include inhalation, ingestion, and dermal exposure. Excess moisture and/or molds can also produce structural problems in buildings. Regardless of the types, excessive moisture and/or mold growth should be addressed and eliminated.

Currently, there are no Federal or State regulations; only guidance documents to determine acceptable levels of mold. However, according to the U.S. Environmental Protection Agency (U.S. EPA) publication entitled Moisture and Mold Prevention and Control Tips, "Sampling for mold should be conducted by professionals who have specific experience in designing mold sampling protocols, sampling methods, and interpreting results." Huron Consultants follows the guidelines and analytical methods recommended by the U.S. EPA and American Conference of Governmental Industrial Hygienists (ACGIH) that suggest that indoor samples should be compared to outdoor samples for comparison of microbial levels and types, rank order assessment, complaint and non-compliant area of comparison, and toxigenic properties of the various types.

Huron is staffed by Professional Industrial Hygienists with extensive experience in testing, analyzing, interpreting data, and recommending the proper remediation to eliminate the problem and prevent reoccurrence. Since exposure to mold and bacteria can occur through inhalation of microscopic spores, ingestion, or dermal exposure, Huron collects air and tape samples. After the samples are analyzed, a Mold Analysis Report is prepared. This contains conclusions and recommendations. Once remediation has been accomplished, we conduct further sampling and provide clearance documentation.

ENVIRONMENTAL ENGINEERING

Radon Exposure Assessments

RADON EXPOSURE ASSESSMENTS

Radon is an invisible, tasteless, and odorless gas that is created as a result of natural deposits of thorium and uranium in the soil. As these elements decay, radon gas is released. Radon decays into radioactive elements that emit alpha particles, and are damaging to lung tissue.

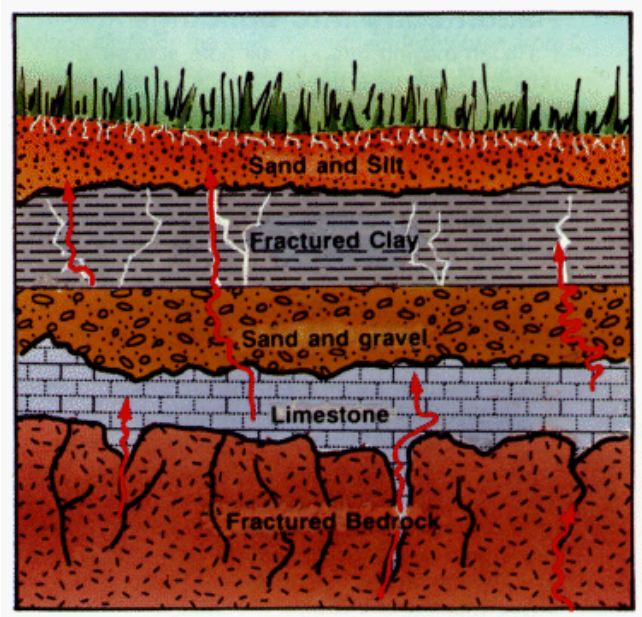
There are no immediate symptoms associated with exposure to radon, but it is the second leading cause of lung cancer in the United States. According to the Environmental Protection Agency (EPA) Office of Air and Radiation, in consultation with the American Medical Association, an estimated 21,000 deaths per year are attributed to this known carcinogen.

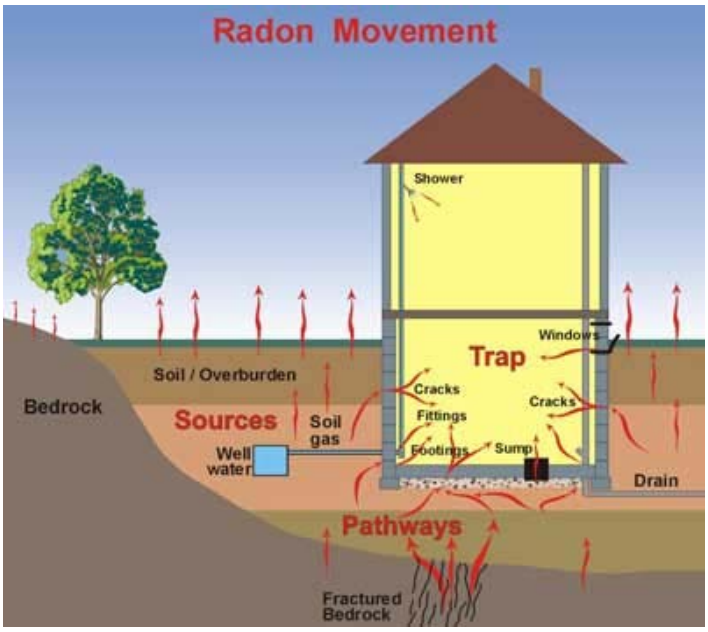
Outdoors, radon is diluted to low concentrations in the air, and does not pose a significant risk. In the indoor air environment, radon can accumulate to significant levels and cause health risks. It can infiltrate into buildings through cracks in floors and walls, floor drains, sump pumps and construction joints. The extent of radon concentration indoors is dependent on a buildings construction, and the amount of radon in the underlying soil.

Elevated radon levels can occur in any indoor environment, and exposure in the school or workplace can increase one's risk of developing lung cancer. However, because many people spend much of their time at home, the home is likely to be the most significant source of radon exposure, and all homes should be tested. Since school may be the second largest contributor to a child's radon exposure (or to teachers or staff), the U.S. EPA recommends that all schools be tested and that action be taken to reduce elevated radon levels.

The Michigan Department of Environmental Quality studies indicate that approximately 12% of homes in Michigan are in excess of the U.S. EPA safe guidelines. Some counties have as many as 40 to 45% of homes exceeding the guidelines. Although there are no state or federal regulations pertaining to radon, it is advisable to test for radon levels. It is especially advisable if entering a residential or commercial real estate transaction. The only way to tell if a business or home has elevated levels of radon is to have the building interior tested.

Short-term and long-term radon testing methods are available to determine the severity of a radon problem. Huron has certified industrial hygienists that have experience in testing and analyzing radon. If radon reduction methods appear necessary, reliable reduction techniques have been developed to effectively control radon in buildings. Installing a radon mitigation system can be affordable, reduce radon exposure, and enhance future resale value of the property.





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ENVIRONMENTAL ENGINEERING

Strategic Regulatory Services

STRATEGIC REGULATORY SERVICES

Huron personnel have extensive experience in all aspects of regulatory compliance. Our specialty is to develop cost effective solutions to the compliance challenges that plague today's environmental, safety and health professionals. Our focus is to take the time to understand the unique challenge facing each facility and develop compliance strategies that focus on continual improvement and methods to achieve enhanced performance concerning your regulatory burden. Huron personnel have implemented innovative, proven techniques and systems for such topics as emergency response and spill control planning, storm water permitting and management, air permitting and reporting, regulatory compliance auditing, environmental and safety training, health and safety compliance services, ISO 14001 pre-registration assistance, and environmental reporting.

SERVICES

Huron provides an array of services to assist our clients with compliance with federal, state and local regulatory requirements:

- Compliance Auditing
- Emergency Response Planning & Training
- Environmental Permitting
- Environmental, Safety & Health Training
- Expert Witness Testimony
- Grant Writing
- Hazardous Waste Management
- ISO 14001 Pre-Registration Services
- Regulatory Compliance Services
- Safety Compliance Auditing
- Spill Control & Prevention

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ENVIRONMENTAL ENGINEERING

Regulatory Compliance Services

ENVIRONMENTAL REGULATORY COMPLIANCE SERVICES

Huron's Environmental Regulatory Compliance Services are designed to assist clients with the management of potential environmental, as well as employee health and safety liability through the identification and resolution of local, state and/or federal non-compliance issues as they relate to their facilities. Experienced in the performance of comprehensive environmental safety and health audits, our professional staff consultants are extremely knowledgeable of Michigan Department of Environmental Quality (MDEQ) and Environmental Protection Agency (EPA) permitting, plan development, and program implementation requirements. Huron personnel have assisted hundreds of clients with the following:

- Air Permits and Reporting (MAERS/PTIs)/Rule 208a/Title V
- DOT Security Plans
- EPCRA Reporting [Section 311/312 (Tier II) and Section 313 (Form R)]
- Emergency Response Plans (ERP)
- Facility or Process Hazard Assessments
- National Pollutant Discharge Elimination System (NPDES) Permits
- Pollution Incident Prevention Plans (PIPP)
- RCRA Contingency Plans
- Risk Management Plans (RMP)
- Spill Prevention Control and Countermeasure (SPCC) Plans
- Storm Water Pollution Prevention Plans (SWP3)
- Written Compliance Programs and Systems

HEALTH & SAFETY REGULATORY COMPLIANCE SERVICES

Huron's Health & Safety Regulatory Compliance Services follow a simple formula… define, evaluate and document the risks associated with facility systems or processes. We develop controls to deal with risks, provide efficient training systems and create self-audit processes to maintain satisfactory compliance resulting in reduced worker's compensation costs and in turn, significant savings to our clients. We provide all aspects of health and safety support services to include:

- Comprehensive workplace process and/or system hazard assessment and certification
- Development of health and safety policies, procedures which are proven to keep workers safe and minimize upkeep and maintenance time
- Development of multi-lingual, flow-chart, pictorial-based work instructions
- Facility-wide or process compliance audits which focus on allowing the user to define corrective action and track completion
- Facility-wide legal reviews to establish the minimum applicable requirements for compliance with federal, state and local requirements.
- Forensic litigation support
- Incident investigation and cause factor analysis.
- Machine guarding/machine safety assessments and consultation
- Modular health and safety training using materials which focus on student interaction and comprehension
- Personal exposure evaluations to assess chemical, noise, thermal and radiation exposure

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ENVIRONMENTAL ENGINEERING

ISO 14001 Pre-Registration Services

ISO 14001 Pre-Registration Services

An Environmental Management System (EMS) provides an orderly and consistent means for companies to identify and address their environmental issues on a continual basis. Huron's Environmental Management System services are designed to actively assist clients in the development and implementation of an effective EMS in conformance with ISO 14001 standard requirements. Stronger customer relations, a superior corporate image, and significant cost savings through increased efficiency and reduced waste are only a few of the benefits afforded an environmentally responsible business.

Huron personnel offer superior credentials essential to effective system development and oversight. Several Huron employees are certified as ISO 14001 Lead Auditors and Environmental and Health and Safety Compliance Auditors respectively.

We offer an impressive range of proactive environmental management consulting services aimed at helping managers factor in technical issues and information into business decisions, thereby helping to reduce and systematically manage environmental costs, risks and liabilities. Such services include strategic environmental planning and program development, environmental and EMS auditing, gap analysis, environmental benchmarking, compliance systems development, internal auditor training and system development, EMS awareness and leadership training, and "turnkey" EMS development services.

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ENVIRONMENTAL ENGINEERING

Environmental Permitting Services

ENVIRONMENTAL PERMITTING SERVICES

In some cases, a project may require a variety of permits. Huron provides an array of environmental permitting expertise, including wetland, storm water, wastewater discharge and air quality. Huron professionals have many years of representative expertise in evaluating those critical or unique activities involving design, manufacture and/or construction that require environmental permits. Huron stresses the importance of getting involved in the early stages of the planning process to identify permitting requirements, effectively evaluate potential options, plan for setbacks and assure that required permits are identified and obtained to minimize or even eliminate any potential impact to a project's schedule. Permitting support activities include the following:

- National Pollutant Discharge Elimination System (NPDES) Permits/Storm Water Permits
- Groundwater Discharge Permits
- Part 55 Rule 201, Air Permits [Permits to Install]
- Part 55 Rules 210 - 218, Renewable Operating Permits (Title V)
- Part 303, Wetland Protection Permits
- Part 301, Inland Lakes and Streams Permits
- Part 31, Floodplain Permits
- Part 91, Soil & Sedimentation Control Permits

At times, the local, state and federal permitting processes can be very complicated and difficult to understand and conform to. The key to this process is to have an extensive understanding of the regulatory documents driving the permit requirements and also what the permit reviewer is looking for. Huron personnel have worked closely with many local, state and federal regulatory agencies to assure we understand exactly what the permit reviewer is looking for prior to us submitting a completed permit document. This approach minimizes the risk of the document not being administratively complete which could hold up a "time-sensitive" project costing you time and money.

Michigan DNRE Department of NATURAL RESOURCES and ENVIRONMENT

DEQ Department of Environmental Quality

NPDES Stormwater Quality Program
National Pollutant Discharge Elimination System

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ENVIRONMENTAL ENGINEERING

Emergency Response Planning and Training

EMERGENCY RESPONSE PLANNING AND TRAINING

Huron's Emergency Response Planning and Training Services are designed to assist in planning for and fully implementing emergency and spill response actions unique to your processes and facility systems. Our approach assures full compliance with federal, state and local applicable requirements. Additionally, Huron's experienced professionals take emergency response planning to a new level. Our focus is to develop useable and easily understandable first responder documentation that emergency response personnel can use in an actual emergency. Our proven approach presents an easy-to-follow set of steps that allow emergency response personnel, or any individual regardless of position or level of training, to respond effectively in an actual emergency. Huron personnel have assisted and trained hundreds of industrial organizations and governmental agencies to plan for such incidents as:

- Hazardous material release (air, land and water)
- National catastrophe/Emergency
- Bomb threats / Terrorist event
- Fire and explosion/False alarm
- Medical emergencies/Fatality
- Neighboring facility situations
- Transportation incident
- Weather emergencies / Utility loss or emergency
- Workplace violence

Huron's trade-marked approach to emergency response planning utilizes a technique, which integrates all elements into a "one plan" document saving you time and money with regard to administration and maintenance while still maintaining the unique integrity of each response element. If an agency wishes to review your Storm Water Pollution Prevention Plan, it is available as a stand-alone, intact document. Our plans have allowed dozens of companies to meet all the requirements associated with ANSI/ISO 14001: 2004 Element 4.4.7 Emergency Preparedness and Response. Huron personnel have successfully integrated several combinations of the following emergency response and control plans:

- Emergency Action Plans [29 CFR 1910.38 Employee Emergency Plans]
- Homeland Security Plans
- Emergency Response Plans [29 CFR 1910.120(p)(8) Emergency Response Program]
- Hazardous Waste Contingency Plans [40 CFR 264 Subpart D]
- Pollution Incident Prevention Plans (MI only) [Part 31 (Water Resource Protection) of Act 451 Part 5 rules]
- Spill Prevention Control & Countermeasures Plans [40 CFR 112(7) and (8)]
- Storm Water Pollution Prevention Plans [40 CFR 122 and Part 31 or the NREPA of PA 451]

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ENVIRONMENTAL ENGINEERING

Environmental, Safety and Health Training

ENVIRONMENTAL, SAFETY AND HEALTH TRAINING

Huron offers a wide range of professional Environmental Health & Safety training classes. Classes are conducted by professional trainers (OSHA 500 - Construction/OSHA 501 – General Industry authorized) and are customized to provide examples of actual work situations that employees may expect to encounter. Our professional trainers have over 40 years of combined classroom training, public speaking, and consulting experience. Our focus is to develop a system or facility-specific training structure that meets your unique needs and to keep the courses interesting, keeping the students directly involved in the coursework.

Huron's training staff are seasoned professionals with industrial hygiene, toxicology, regulatory compliance, construction, and engineering background and experience, in addition to extensive professional certifications. All training class participants receive a certificate upon successful course completion. The following is a standard list of courses currently offered:

- Asbestos and Lead Awareness
- Blood-borne Pathogens
- Confined Space Entry
- Construction Flagger
- DOT Hazardous Materials Shipping (HM 126f)
- EMS/ISO 14001 Awareness & Auditing
- Emergency Response / 1st Responder / NIMS
- Hazard Communication/Lab Safety
- HAZWOPER (40-hour & 24-hour/Refresher)
- Hazardous Waste Management
- Hearing Conservation
- Indoor Air Quality Awareness
- Lockout Tag-out / Machine Guarding
- Manual Load Handling / Lower Lumbar Mgmt.
- OH Cranes / Material Handling
- OSHA 10/30 Hour (Industrial/Construction)
- OSHAS 18001 Awareness and Auditing
- Personal Protective Equipment (PPE)
- Powered Industrial Vehicle / Lift Trucks
- Respiratory Protection / PPE/Fit Testing
- Welding / Cutting / Compressed Gases

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ENVIRONMENTAL ENGINEERING

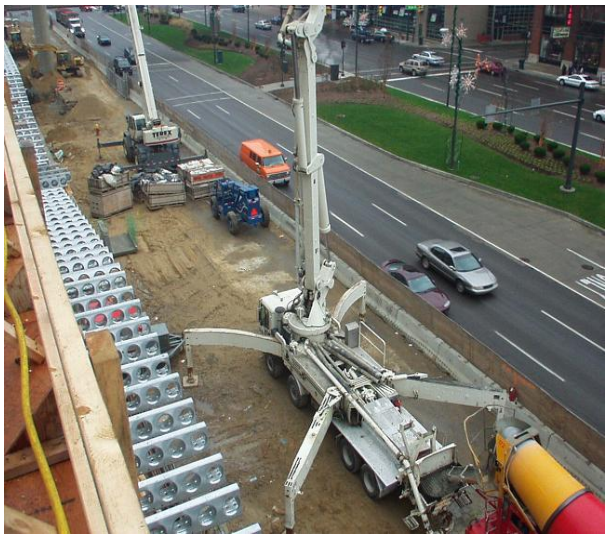
Compliance Auditing

ENVIRONMENTAL, SAFETY & HEALTH COMPLIANCE AUDITING

Huron understands that it is important to the success of any company or government entity to take self-initiated actions to assess or audit their compliance with applicable environmental, employee safety and public health rules and regulations and correct any violations found. For example, it is estimated that thousands of small businesses in Michigan have never applied for or obtained necessary environmental permits fearing the disclosure of information to state agencies would lead to enforcement and penalties. The Environmental Audit Privilege and Immunity Law provides incentives for businesses to perform environmental audits and promptly report and correct violations. Huron personnel can assist our clients in utilizing the benefits of the Environmental Audit Privilege and Immunity Law.

Huron can provide a full range of auditing services ranging from specific audits of systems or processes to full-scale facility compliance audits. Our auditing services are also very effective in meeting internal auditing requirements regarding compliance as required by ANSI / ISO14001:2004. Additionally, our auditing approach defines existing applicable regulations, which allows our clients to understand exactly what their regulatory obligations are. Additionally, if non-conformances are noted, we have created a simple summary guide providing an efficient method to develop corrective actions, define priorities to best manage limited resources, and track completion and performance of corrective actions.

Huron personnel have performed hundreds of environmental, safety and health audits for clients across Michigan and the United States. Our approach emphasizes assisting the client from start to finish and effectively working with the client to “close-out” corrective actions in a timely and efficient manner, while identifying value-added solutions to meet compliance requirements.



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ENVIRONMENTAL ENGINEERING

Hazardous Waste Management

HAZARDOUS WASTE MANAGEMENT

The improper management and disposal of waste can adversely impact the environment when the waste is mishandled and disposed of in an illegal manner, (i.e. wetlands, wrong type of landfill, lakes and streams, or improper burning). Generators of waste have "cradle to grave" responsibility for proper disposal.

Many state and federal agencies share responsibility for overseeing various aspects of waste disposal. State agencies include the Waste Management (WMD), Surface Water Quality (SWQD), Air Quality (AQD), and Storage Tank (STD) Divisions of the Michigan Department of Environmental Quality (DEQ); the Department of Consumer and Industry Services (CIS); and the Michigan State Police. Federal agencies include the U.S. Department of Transportation (USDOT). Many other local agencies (i.e. fire, wastewater treatment, county health departments) also have various forms of jurisdiction.

Huron can conduct a survey of all your waste streams to determine and identify (often through chemical analysis by a qualified laboratory) the types that may be regulated as a hazardous waste. All businesses that generate waste must keep records of their waste evaluations on file for three years. Waste is deemed hazardous if it is included on state or federal lists or exhibit hazardous characteristics. Some commonly overlooked hazardous wastes are spent fluorescent tubes, disposable rags containing free liquids with a flashpoint under 140 degrees Fahrenheit, spent activated carbon media, solvents, sump of drain sludge, aerosol cans that have not been emptied, lead acid and dry cell batteries, medical kits containing mercury thermometers, etc. If, after the survey, you are determined to be a small or large hazardous waste generator, Huron will assist in the management of your hazardous waste according to all state and federal regulations.

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ENVIRONMENTAL ENGINEERING

Spill Control and Prevention

SPILL CONTROL AND PREVENTION

Huron employs professionals experienced and certified in all aspects of spill prevention and regulatory compliance. Huron Consultants utilizes our extensive knowledge in providing our clients with the best, most cost-effective solutions used in the industry. Huron continuously looks for ways to implement new designs or technologies to design projects to last longer with little or no maintenance. The practical advantages of this approach to our clients are numerous, as described below:

- Designing projects for a longer term rarely results in higher installed costs, but nearly always results in better, more cost effective solutions.
- Failure to include discounted future costs like maintenance and repairs in evaluation of a project's economic viability results in a distorted evaluation of the project.
- Implementing techniques and controls that are adaptable to changing regulations provide long-term benefits.

Adherence to this philosophy generally results in a design solution that not only performs the intended function at the end of the project, but also continues to perform for many years with minimal maintenance while providing aesthetic practical value.

Huron personnel assist clients with preparation of Spill Prevention, Control, and Countermeasures (SPCC) plans to identify potential releases and protect against such costly accidents. Huron develops sound housekeeping techniques along with appropriate hazardous materials handling controls to assist our clients.

Huron offers the following services to help you meet your specific hazardous materials management objectives:

- Assistance with permitting and other local, state, and federal regulatory compliance issues.
- Compliance audits and assessments of hazardous material storage areas.
- Design and implement engineering control improvements (structural control methods), best-management practices (BMPs), and non-structural / administrative control methods to minimize the threat of unplanned releases of petroleum products of other hazardous materials.
- Develop hazardous material management strategies and plans for future expansion.
- Identify methods to combine SPCC plans with other "like" plans to improve efficiency, reduce cost and save time.
- Identify potential opportunities for waste minimization and beneficial reuse of waste by-products.
- Perform environmental, ecologic, and geologic assessments.
- Preparation of SPCC Plans and remedial designs for individual facilities.
- Provide design engineering and construction management services associated with all of the above.

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GEOTECHNICAL

Service Profile

Overview

With the ever-increasing cost of materials and resources, it is essential that a construction project is completed properly the first time. The cost of rework can bring a project to a screeching halt and potentially result in project delays, massive cost overruns and lawsuits.

Huron offers our clients on-site and laboratory construction materials testing and inspection services to assure our clients that the materials being used and the service provided complies with the project specifications.

Huron field and laboratory personnel are experienced and certified professionals, using the latest equipment and techniques to effectively test, record and document "real-time" construction activities, procedures and test results.

Huron works closely with contractors, architects, state and local agency engineers or field representatives and construction material suppliers all over the state of Michigan to assure adherence to project specifications or controls.

Huron personnel have extensive experience and background developing cost-effective solutions to solve construction problems as they may arise. We have saved our clients millions of dollars in downtime or potential rework because of timely response and sound, technical advice.

Geotechnical Services

- Bracing / Retaining Walls
- Environmental Investigations
- Environmental Soil Sampling
- False Work/Coffer Dams
- Geotechnical Investigations
- Monitoring Well Installation
- Pavement Coring
- Percolation Testing
- Piezometer Installation
- Piles and Caisson Inspection
- Subgrade Evaluation
- Water Level Measurements

Concrete Testing Services

- Air Content
- Beam & Cylinder Specimen Molding
- Concrete Slab Moisture Testing
- Floor Flatness Testing
- Masonry Inspection
- Mix Design
- Non Destructive Testing
- Petrographics Analysis
- QA/QC - MDOT
- QC - Local Agency/Private Contractor/ Owned
- Reinforcing Steel Inspection
- Site/Facility Demolition Oversight & Support
- Slump Test & Mix Temperature
- Unit Weight & Yield

Soil & Aggregate Testing Services

- Aggregate Quality Control
- Bearing Capacity Verification
- Construction Oversight/Inspections
- Gradations
- HMA QC
- In-Place Field Density/Moisture Testing

Other Services

- Abatement / Removal Services
- Asbestos, Mold, Lead-Based Paint Surveys
- CADD Support
- Compliance / Construction Safety Training
- Ground Penetrating Radar
- Hazardous Material Surveys
- HTB Inspection
- Illumination Levels
- Roof Inspection

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ORGANIZATION CHART

HURON CONSULTANTS

ORGANIZATION CHART

Principal

Director of Regulatory Affairs
Daren S. McLaughlin, CHMM, CPEA

Sales & Marketing

Account Manager
William A. Angerbrandt

QA/QC

Eric J. Ostling, PE, CFM

Engineering

Group Manager
Eric J. Ostling, PE, CFM

Project Manager
Sermed K. Saif, PE, CSI, CDT

Project Funding Assistance
Fred L. Fuller

Project Engineer
Jay W. Johnson, PE

Engineering Technicians
Thomas D. Paton

Survey
Timothy L. Edie, PS

Structural Engineer
Juan M. Snead, PE, NCEES

Architect
Brian J. Smedley, AIA, NCARB

Environmental

Group Manager
Julie A. Pratt

Senior Project Manger
Nicholas Maloof, RPG

Project Manager
Jeffrey T. Good
Brian V. Miller, CHMM
Rick Hingst, CHMM, LEED AP

Field Technicians
Matthew R. Sherrard
Ken W. Kelley

Geotechnical

Group Manager
Tim M. Byrnes

Operations Manager
Fred L. Gingell

Senior Project Engineer
Jack F. Geerlings, PE

Field Technicians
Jeremy P. Romel
Mathew R. Bellmore
Kyle Mischley
Sean J. McCarley
Dean R. Ford

KEY TECHNICAL STAFF EXPERIENCE

HURON CONSULTANTS

Professional	Experience Since	Highest Degree	Certifications	Geographic Information Systems (GIS)	Ecological Assessments	Erosion Protection Engineering/Design	Hydrologic/Hydraulic Modeling	Solids/Sedimentation Control	Storm Water Management	Streambank Stabilization/Bio-Engineering	Wetland/Floodplain Engineering/Design	Watershed Planning	Wetlands Assessments/Restoration/Mgmt	Solid Waste Management	Landfill Design	Structural Storm Water Control	CADD Support	Construction Engineering/Management	Parks/Recreation Facilities Design/Engr/Grants	Property/Topo Surveying/Staking/GPS	Street/Road/Sidewalk Construction	Site Plan Review/Compliance/Inspection	Water/Sanitary Sewer Capacity Studies	Structural Engineering	Water/Sanitary Sewer System Design/Engineering	Water/Sanitary Trunk Line Master Planning	Facility Engineering	Municipal Engineering	Waste Water Treatment	Air Quality/Permitting	Emergency Preparedness and Spill Prevention	Hazardous Materials/Waste Management	Health and Safety/Training	Indoor Air Quality	ISO 14001 Pre-Registration	Regulatory Compliance Assistance and Auditing	Noise Monitoring	LBP/Asbestos/Mold Awareness Training	Brownfield Site Management/Development	LBP/Asbestos/Mold/Radon Assessments	Geology/Soils	Property Transfer Assessments/Due Diligence	UST Management/Environmental Assessments	Part 201 Environmental Assessments	Alternative Infrastructure Funding Assistance & Mgmt	Ordinance Development and Support Services
Fuller, Frederic	1990	BA			●	●		●	●	●	●	●	●			●		●	●																											●	●
Good, Jeffrey	1998	AS	ACM																																		●	●		●		●		●	●	●	●		
Hingst, Rick	2003	MS	CHMM / LEED AP																													●					●	●			●						●		
Johnson, Jay	1985	BS	PE	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●										●						●	
Kelley, Kenneth	1987		ACM																						●													●		●				●	●				
Maloof, Nicholas	1998	MS, JD	RPG														●	●																			●	●			●	●		●	●	●	●	●	●
Miller, Brian	1979	BS								●																											●	●	●	●	●	●	●					●		●			
McLaughlin, Daren	1991	BS	CHMM/CPEA						●	●		●		●												●											●	●	●	●	●	●	●	●					●			●	●
Ostling, Eric	1995	BS	PE, CFM, AST	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●								●	●		●			●	●
Paton, Thomas	1990	BS	ACI, MCA						●	●											●				●																										
Pratt, Julie	1994	BS																●			●																●	●						●		●	●	●		
Saif, Sermed	1997	BS	PE, CSI, CDT	●		●	●	●	●	●	●	●	●	●			●	●	●	●	●	●	●	●	●	●	●	●		●																		●	●
Sherrard, Matthew	2004		ACM																		●				●															●		●				●	●	●	●		

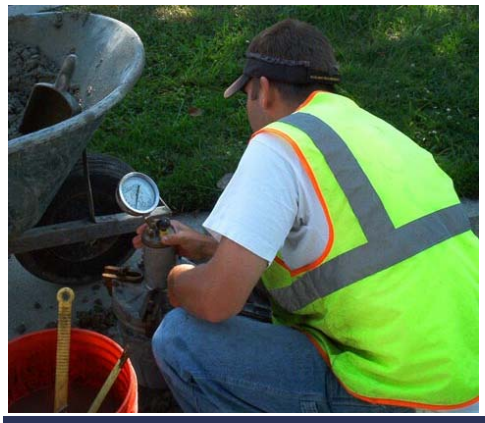
CIVIL ENGINEERING

ENVIRONMENTAL ENGINEERING

FIRM INFORMATION

Staff Certifications

DESIGNATION	CERTIFICATION	CERTIFIED STAFF
PE	Professional Engineer	3
CSI / CDT	Construction Specifications Institute / Construction Document Technologist	1
ASFPM / CFM	American Society of Flood Plain Managers / Certified Floodplain Manager	1
LEED AP	Leadership in Energy & Environmental Design Accredited Professional	1
PS	Professional Surveyor	1
AIA	American Institute of Architects	1
NCARB	National Council of Architectural Registration Boards	1
QC	UST Qualified Consultant	1
CP	UST Certified Professional	1
AST	UST Certified Inspector	1
ACM	Building Inspector	3
CHMM	Certified Hazardous Materials Manager	2
OSHA		
	Asbestos Inspector	1
NIOSH 582	Air-Monitoring Trained Professional	3
	Risk Assessor	0
SWM-C	Storm Water Management – Construction Site	3
SWM-I	Storm Water Management – Industrial Site	3
SESCA	Soil Erosion & Sedimentation Control Administrator	2
	ISO 14001/TS16949 Lead Auditor	1
CPEA-H&S	Environmental, Health & Safety Auditor	1
MCH/ACI	Level I / II Concrete Technician	1
MAPS	Materials Acceptance Process	1
	MDOT Field Manager	2
PADI	SCUBA Instructor	1
RCRA	Hazardous Waste Generator / Trainer	1
Class B, C, D	Michigan Municipal Waste Water Treatment	1



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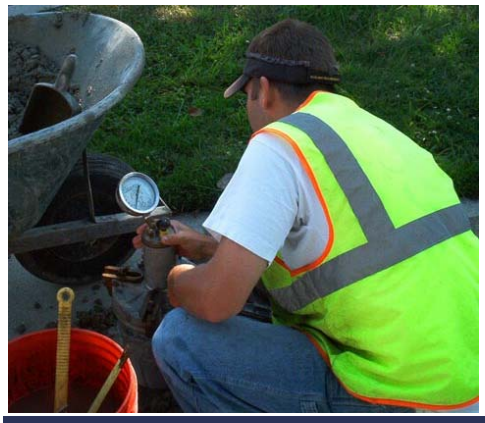


FIRM INFORMATION

Professional & Trade Affiliations

DESIGNATION	PROFESSIONAL ASSOCIATIONS
ACEC	American Council of Engineering Companies
AIA	American Institue of Architecture
ASCE	American Society of Civil Engineers
ASFPM	Association of State Flood Plain Managers
ICC	International Code Council
IHMM	Institute of Hazardous Materials Management
MBPA	Michigan Business and Professional Association
MSFA	Michigan Stormwater Floodplain Association
MSPE	Michigan Society of Professional Engineers
NCARB	National Council of Architectural Registration Board
NCEES	National Council of Examiners for Engineering & Surveying
SIPA	Structural Insulated Panel Association
USGBC	US Green Building Council - Detroit Regional Chapter

DESIGNATION	TRADE ASSOCIATIONS
BEAC	Board of Environmental, Health & Safety Audit Certifications
EDA	Economic Development Alliance
GBCC	Grand Blanc Chamber of Commerce
MACDC	Michigan Association of County Drain Commissioners
MCA	Michigan Concrete Association
MCC	Michigan Chamber of Commerce
OTE	Order of The Engineer
SOCME	South Oakland County Municipal Engineers

PROJECT PROFILES

PROJECT PROFILE

Civil Engineering

City of Clawson Water Distribution System Evaluation
City of Clawson, Oakland County, Michigan

BACKGROUND
The water distribution system of the City of Clawson is approximately 40-70 years old. It consists of approximately 257,702 lineal feet of cast iron pipe ranging in size from 6" -16" inches in diameter. The City began experiencing low pressure, rusty water, watermain breaks, and reduced ability of fire fighting in various parts of the system.

LOCATION
The water system is located within the City limits between 13½ Mile Road to 15 Mile Road and from Crooks Road to Rochester Road.

SCOPE
Studied and evaluated the Water Distribution System and recommended a cost-effective long-range Sustainable Action Plan (SAP). The study was completed in four phases:
1. Physical Evaluation
2. Hydraulic Modeling Investigation
3. Development of the SAP
4. Cost Analysis of Improvement

The Water Supply System was evaluated for peak-hour, average, peak-instantaneous, and multiple fire flows. On the basis of the results of the physical and modeling evaluation, a long-range plan for repair, replacement, rehabilitation, and maintenance was developed for the City. Conclusions, recommendations, and determination of probable improvement costs were prepared in the context of a 10-year program as stipulated by the City.

The Physical Evaluation was conducted by performing hydrant flow tests for co-efficiency and fire flow tests. The test data was used to develop Hazen-William co-efficients, which were used in performing the hydraulic analysis of the water distribution system for the baseline conditions and recommended improvements. The Recommended Rehabilitation and Replacement Program included pipe cleaning, hydrant flushing, valve exercising, pipe and hydrant replacement, and a facility maintenance program. The system improvement program benefited the City's fire fighting ability, improved the overall quality of water supplied to the City's customers, and helped to sustain the life of the facilities.

SPECIAL FEATURES
A Geographical Information System (GIS) based hydraulic model of the City's entire existing water supply system was developed using CYBERNET software based upon the principles of EPANET software that models water distribution piping systems, and generates results consistent with EPANET.

The above engineering services provided by Mr. Sermed K. Saif, PE at Spalding DeDecker Associates, Inc.

OWNER / CLIENT
City of Clawson
(248) 435-4500

PROJECT START - END
July 1999- Jan 2000

PROJECT COST
N/A

KEY PERSONNEL
Sermed K. Saif, PE

PROJECT NO.
CN99-001

PROJECT PROFILE

Civil Engineering

Fort Gratiot Township NPDES Phase 2 Permitting Assistance
Fort Gratiot Township, St. Clair County, Michigan

BACKGROUND
Municipal Separate Storm Sewer Systems (MS4s) are required to maintain National Pollutant Discharge Elimination System (NPDES) permit compliance for the Michigan Department of Environmental Quality (MDEQ) Phase II Stormwater General Permit and Certificate of Coverage (COC).

LOCATION
Fort Gratiot Township is located in St. Clair County, within the North East Watershed. A Charter Township, with 15 full sections, and several fractional sections due to the proximity to Lake Huron and the corporate limits of the City of Port Huron. There are several Township facilities and parks which have drainage systems included in the MS4. Fort Gratiot lies within the Lake Huron direct discharge and Black River Watersheds.

SCOPE
Huron began in 2004, initially assisting Fort Gratiot with NPDES regulatory requirements, obtaining a jurisdictional permit, and developing an Illicit Discharge Elimination Plan (IDEP). Over the years, Huron has represented Fort Gratiot at the North East Watershed - Watershed Advisory Group (NEW-WAG), assisted in implementing the Watershed Management Plan (WMP), developing the Storm Water Pollution Prevention Initiative (SWPPI), preparing the annual reports, and providing Fort Gratiot with other support services. In 2007, Huron assisted Fort Gratiot in preparing their 2008 Watershed-based NPDES Phase II permit application. Huron continues to represent Fort Gratiot, and work closely with all of the members of the NEW-WAG, implementing the WMP.

OTHER CLIENTS
Huron has assisted the following Municipal Separate Storm Sewer Systems (MS4s) obtain NPDES Phase II permits, and/or implement their programs:

Project No.	Client	Contact	Telephone
04-7261,05-7629	Burtchville Township	Carolann Tremble, Clerk	810-385-5577
04-7262,05-7611	Clay Township	Connie Turner, Treasurer	810-794-9303
05-7453,05-7518,06-1872	Clyde Township	Michael Marks, Supervisor	810-987-3455
06-1708	Columbus Township	Pat Iseler, Clerk	586-727-2055
04-7392,05-7624,07-1964	Cottrellville Township	Tom Raymond, Supervisor	810-765-4730
04-7264,05-7666,07-1940	Ira Township	Crystal Sovey, Clerk	586-725-0263
04-7263	Kimball Township	Joyce Shaffer, Clerk	810-987-9797
04-7365	St. Clair Township	Joyce Skonieczny, Clerk	810-329-9042
04-7386	City of Marysville	Jason Hami, City Manager	810-364-6613
04-7231,06-1812,07-11146	Port Huron Area School District	Doug Knowlton, Director of Facilities	810-984-6565
04-7334,05-7607,06-1867	St. Clair County Community College	Kirk Kramer, VP for Administrative Services	810-989-5503

OWNER / CLIENT
Fort Gratiot Township
Robert Crawford, Clerk
(810) 385-4489

PROJECT START - END
2004-2011

PROJECT COST
Varies

KEY PERSONNEL
Daren S. McLaughlin, CPEA
Eric J. Ostling, PE

PROJECT NO.
04-7260
05-1487
06-1870
07-11011
09-11465

PROJECT PROFILE

Civil Engineering

Capac Road Water Main Improvements
City of Imlay City, Lapeer County, Michigan

BACKGROUND
The City of Imlay City experienced low water pressures and flows along Capac Road in a commercial and residential district. Old 4 and 6-inch diameter water mains were replaced with 12-inch diameter water main, connecting to the laterals on the side streets, and connecting to dead ends elsewhere, to create a "loop" in the water system. Closing loops in the system improves reliability; if some part of the water system has a break or must be isolated for repair, there is service from elsewhere in the system.

LOCATION
The project area was Capac Road (a.k.a. Imlay City Road) from M-53/Van Dyke Avenue (a.k.a. Cedar Street), west to Townsend Drive, and included ancillary work on the lateral streets of Almont Avenue, Bancroft Street and Main Street.

SCOPE
Huron was involved in all aspects of the project from inception to project closeout: Huron provided the topographic survey and compiled the City's records and franchise utilities' records to produce the base map; designed the construction plans; assisted the City in obtaining permits; produced and distributed the contract documents and technical specifications to bidders; administered the bidding process; interviewed the bidders and recommended contract award; managed the construction contract; provided construction survey for the layout of the improvements; inspected the Contractors' work to assure compliance with the contract; prepared and distributed change orders, pay estimates and punch lists, culminating in the final walk-through and project closeout.

Construction improvements included removal or abandoning of over 2000 feet of existing water main, installation of 3,690 feet of 12-inch ductile iron water main, 150 feet of boring and jacking in steel casings, 9 gate valves, 10 fire hydrant assemblies, water services, and other appurtenances. There were some drainage pipes that were removed and replaced or shored up during construction operations. Many driveways and portions of private and public roads required open cutting and restoration.

SPECIAL FEATURES
The installation of the water main required boring and jacking under M-53/Cedar Street, and under the North Branch of the Bell River. Huron assisted the City, submitting applications and obtaining the permits from the Michigan Department of Transportation (MDOT) and the Michigan Department of Environmental Quality (MDEQ) for those crossings.

OWNER / CLIENT
Wayne O'Neal,
City Manager
(810) 724-2135

PROJECT START - END
Feb 2009 – Dec 2009

PROJECT COST
$584,660.00

KEY PERSONNEL
Eric J. Ostling, PE
Jay Johnson, PE
Tom Paton, ET

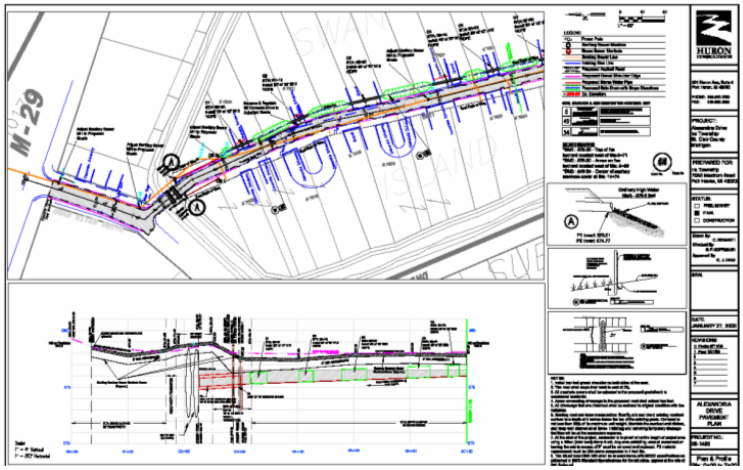
PROJECT NO.
09-11441
09-11442

PROJECT PROFILE

Civil Engineering

Alexandria Drive and Swan River Drive Paving Project
Ira Township, St. Clair County, Michigan

BACKGROUND
Ira Township paved these gravel roads to improve the quality of pavement, reduce the maintenance problems and erosion hazards. The St. Clair County Road Commission only improves public roads. Alexandria Drive and Swan River Driver were private, so the residents needed assistance from Ira Township.



LOCATION
Swan River Drive and Alexandria Drive are located south of Dixie Highway/M-29, east of Vernier Road.

SCOPE
Huron Consultants designed this 1600-foot long road reconstruction. The project included adjusting 6 sanitary manhole rims up to grade for continued accessibility, re-grading the roadway, 500 tons of aggregate base, 2700 syd of hot mix asphalt paving, 1180 sft of driveway pavement repairs, improving over 1000 feet of the drainage ditch, installing 435 ft of culverts and 3 catch basins. One drainage outlet was a tap in the existing steel seawall to the canal leading to Anchor Bay and the other outlet was a blind tap to an existing 72" steel culvert in another canal leading to Anchor Bay. In addition to the design, Huron managed the permit application process with the Michigan Department of Transportation (MDOT), Michigan Department of Environmental Quality (MDEQ), and the United States Army Corps of Engineers (USACE). Huron directed the bidding process, managed the construction contract, and performed the materials testing required for the project.

SPECIAL FEATURES
The narrowness of the road easement in this area, and the proximity to Anchor Bay, required creative solutions for the design of both the pavement and the drainage for this project. The roadway was re-graded to slope one way toward the east side road ditch, which was improved to handle the runoff and hold some water in detention. The ditch was directed two ways; south to the tap in the existing steel seawall and north toward the blind tap in the existing steel culvert. The USACE approved and issued the permit for the direct discharge to the canals.

OWNER / CLIENT
Ira Township
Crystal Sovey, Clerk
(586) 725-0263

PROJECT
START - END
April 2005 – August 2006

PROJECT COST
$125,000

KEY PERSONNEL
Daren S. McLaughlin, CHMM, CPEA
Tom Paton, ET

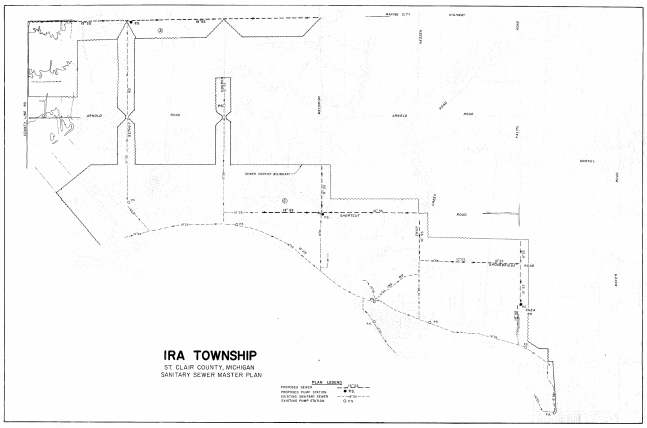
PROJECT NO.
05-1493

PROJECT PROFILE

Civil Engineering

Ira Township Sanitary System Master Plan
Ira Township, St. Clair County, Michigan

BACKGROUND
Ira Township had been Master Planning the 26 Mile Road (Marine City Highway) corridor for commercial and industrial development. It was imperative to know the sanitary sewer system capacity, in order to plan the zoning for the potential land uses. Ira contracted Huron Consultants to perform the sanitary sewer capacity study and update the Sanitary Sewer Master Plan.



OWNER / CLIENT
Ira Township
Crystal Sovey, Clerk
(586) 725-0263

PROJECT START - END
Dec 2007 – March 2010

PROJECT COST
N/A

KEY PERSONNEL
Eric J. Ostling, PE

PROJECT NO.
07-11176

LOCATION
The sanitary service district is Master Planned from the west limits of the Township at County Line Road, east to Palms Road, and from the north limits at 26 Mile Road, south to Gilbert Road.

SCOPE
All record construction drawings were compiled. The customer lists for water usage were used to predict average customer daily flows. The number of customers per run provided the contributing flows. The geometrical data of each pipe run dictated capacities. The pump station flow metering records provided snapshots of average and peak usages. All data was entered into the computer program, and the resulting calculations were checked against the records for quality assurance.

From this computer program, different parameters for user rates, future development, and other factors may be manipulated, in order to predict effects on the system. This has been an invaluable aid in re-zoning, future development forecasting, and identifying critical points in the system that may require improvements.

Huron then updated the Ira Township Sanitary Sewer Master Plan in 2008 and 2010.

SPECIAL FEATURES
At the time of the study, Ira was allotted 0.945 MGD at the Algonac Waste Water Treatment Plant (WWTP). The total users at that time contributed an average of 0.500 MGD. There were several lift stations along the route, each nearing their design capacity. Any future connections to the system, especially large developments bringing more customers on-line, would require substantial improvements to the system.

It was determined that there may not be future capacity in the gravity trunk sewer at certain points in the system. Huron had recommended that lift stations along the route would require upgrades, or a new pump station and five (5) miles of force main may be installed, in order to by-pass all gravity sewer, to the terminus of the Ira sanitary system.

PROJECT PROFILE

Civil Engineering

Drinking Water Revolving Fund Water Main Improvements
Ira Township, St. Clair County, Michigan

BACKGROUND
Ira Township received funding from the State of Michigan Drinking Water Revolving Fund (DWRF). As the engineering consultant, Huron Consultants (Huron) provided review of the design by a third-party consultant, and managed the construction on the Township's behalf.

LOCATION
M-29/Dixie Highway, from Bethuy Road to Stier Road.

SCOPE
As the Township engineering consultant, Huron reviewed engineering submittals from the design engineer and assessed the validity of design change orders. During construction of the project, Huron acted as an on-site representative for the Township, reviewed all pay requests and change orders, and provided inspection of the work.

Construction improvements included five (5) miles of water main along Dixie Highway, with some open cutting, and some boring and jacking under side roads and drives, 43 valves, 46 fire hydrant assemblies, water services, and all other appurtenances.

SPECIAL FEATURES
Huron provided environmental services when contaminated soils were found, including Phase I and Phase II Environmental Site Assessment (ESA), oversight of soil removal, and coordination of disposal procedures.

OWNER / CLIENT
Crystal Sovey, Clerk
(586) 725-4553

PROJECT START - END
2004 - 2007

PROJECT COST
$5,000,000.00

KEY PERSONNEL
Daren McLaughlin, CHMM, CPEA
Tom Paton, ET

PROJECT NO.
04-1431-24
05-1639R

PROJECT PROFILE

Civil Engineering

26 Mile Road Sanitary Pump Station Improvements
Lenox Township, Macomb County, Michigan

BACKGROUND
Due to the proposed commercial development demand upstream of the pump station (Bay River Development), it was required to double the pump station's pumping capacity.

LOCATION
The Pump Station is located on the north side of 26 Mile Road east of New Haven Road.

SCOPE
Provided design and construction engineering services for the pump station upgrades. The primary goal of the design phase was to provide a cost-efficient and a safe station that would increase sanitary sewer pumping capabilities from 380 gpm to 800 gpm. The upgrades were designed to maintain uninterrupted sewage service for the area upstream of the pump station during construction. An additional design goal was to minimize future maintenance requirements.

Two Flygt submersible pumps were selected. These pumps will alternate in pumping the flows and operating as the stand-by pump. The existing wet well and valve chamber structures as well as the existing building were utilized with minor structural modifications. A new meter chamber was been added with a submersible billing meter. The existing 6-inch forcemain was replaced with a new 8-inch forcemain and a new connection to the downstream gravity sewer was constructed.

SPECIAL FEATURES
A new backup generator, along with all related electrical and Supervisory Control and Data Acquisition (SCADA) upgrades, have been designed to provide a back-up system capable of operating the new pumps.

The above engineering services provided by Mr. Sermed K. Saif, PE at Spalding DeDecker Associates, Inc.

OWNER / CLIENT
Lenox Township
Ronald J. Trombly, Jr., Supervisor
(586) 727-2085

Macomb County Public Works Office
Keith D. Graboske, PE
Chief Engineer
(586) 307-8241

PROJECT START - END
Sept 2006 - March 2007

PROJECT COST
$250,000

KEY PERSONNEL
Sermed K. Saif, PE

PROJECT NO.
LE06-007

PROJECT PROFILE

Civil Engineering

26 Mile Road Sanitary Sewer Extension
Lenox Township, Macomb County, Michigan

BACKGROUND
The new 15-inch gravity sewer was needed to provide sanitary service to the proposed Bay River Development located in the southeast section of Lenox Township, bordered by Interstate I-94, County Line Road, and 26 Mile Road.

LOCATION
The sanitary sewer was located on the north side of 26 Mile Road extending from Interstate I-94 to Frost Road.

SCOPE
The plans and specifications were designed in accordance with the Office of the Macomb County Public Works Commissioner (OMCWPC), Michigan Department of Transportation (MDOT), Road Commission of Macomb County (RCMC), and the Michigan Department of Environmental Quality (MDEQ) requirements.

Also responsible for obtaining all public agency approvals for the necessary permits including: MDEQ Act 451, Part 31 (Floodplain), MDEQ Act 451, Part 41 (Sanitary Sewer), MDOT, Soil Erosion, Drain Crossing, and RCMC permits.

Specific services consisted of updating the Township's Sanitary Sewer Master Plan, design, contract administration, construction layout, and record plans.

SPECIAL FEATURES
The design constraints included construction underneath eastbound and westbound Interstate I-94, as well as I-94 exit and entrance ramps. Coordination efforts were needed with RCMC due to the widening and resurfacing of 26 Mile Road in the project vicinity. The project featured open cut excavation (approximately 4,700 LF) and tunneling construction (approximately 600 LF) at depths of 20-30 FT below the existing surface, through various soil types.

The above engineering services provided by Mr. Sermed K. Saif, PE at Spalding DeDecker Associates, Inc.

OWNER / CLIENT
Lenox Township
Ronald J. Trombly, Jr., Supervisor
(586) 727-2085

Macomb County Public Works Office
Keith D. Graboske, PE
Chief Engineer
(586) 307-8241

PROJECT START - END
Sept 2005 - March 2008

PROJECT COST
$1,800,000

KEY PERSONNEL
Sermed K. Saif, PE

PROJECT NO.
LE05-008

PROJECT PROFILE

Civil Engineering

Lenox Fire Station No. 2
Lenox Township, Macomb County, Michigan

BACKGROUND
Lenox Township has an all-volunteer and busy fire department. A new Fire Station No. 2 was required for the northern portion of the Township to improve response time and coverage.

LOCATION
The new station is located on the south side of 32 Mile Road, East of Lowe Plank Road.

SCOPE
provided the site engineering design, served as contract administrators, conducted site reviews, and coordinated progress meetings. The station is situated on the front four acres of an 11-acre site, with the remaining seven acres earmarked for future utility use.

SPECIAL FEATURES
The new fire station features an on-site sanitary holding tank, with a 1,500-gallon capacity. Parking and paved drive lanes were designed to make parking easier with the unmanned nature of the station in mind.

The above engineering services were provided by Mr. Sermed K. Saif, PE at Spalding DeDecker Associates, Inc.

OWNER / CLIENT
Lenox Township
Ronald J. Trombly, Jr., Supervisor
(586) 727-2085

PROJECT START - END
August 99 - Nov 99

PROJECT COST
$455,000.00

KEY PERSONNEL
Sermed K. Saif, PE

PROJECT NO.
LE97-005

PROJECT PROFILE

Civil Engineering

Lenox Township Water Master Meter & PRV Station
Lenox Township, Macomb County, Michigan

BACKGROUND
Due to Lenox Township's water supply expansion and reliability, a second point of connection to the Detroit Water and Sewerage Department (DWSD) system was required.

LOCATION
The station is located on 26 Mile Road and east of I-94 in a public easement.

SCOPE
Provided topographical survey, design drafting, and construction consultation and administration of the project. The project involved the design and construction of 12' X 20' X 13' vaults for the proposed Meter and Pressure Reducing Valve (PRV), site grading, electrical and control system according to DWSD standards. The vaults were pre-fabricated steel structures that were placed near the existing gate valve stub from the DWSD 36" water transmission main.

Performed a water modeling system to determine the design parameters of the proposed stations. Assisted in preparing the necessary easement documents and exhibits for the stations.

The PRV station contained dual PRV sets in series consisting of 3", 6" and 16" water lines. The station also contained an internal 16" by-pass line and a 16" ABB Mag Meter. External access to the internal gate valves was provided to allow for above surface operation of valves.

The Meter Station was designed according to the DWSD Contract 805 criteria and specifications. External access to the internal gate valves was provided to allow for above surface operation of valves. An external by-pass line was provided for the meter station. All watermain from the transmission main to the PRV Station was encased in concrete per the DWSD requirements.

SPECIAL FEATURES
Coordination with DWSD was a key element throughout the review, approval, and construction of the project. Also played an integral role in updating the Water Service Agreement between Lenox Township and DWSD and provided detailed information regarding the language of the agreement.

The above engineering services provided by Mr. Sermed K. Saif, PE at Spalding DeDecker Associates, Inc.

OWNER / CLIENT
Lenox Township
Ronald J. Trombly, Jr., Supervisor
(586) 727-2085

Lenox Department of Public Works
Cameron M. Trombly
Superintendent
(586) 749-0230

PROJECT START - END
May 1999 – Oct 2003

PROJECT COST
$1,100,000

KEY PERSONNEL
Sermed K. Saif, PE

PROJECT NO.
LE99-003

PROJECT PROFILE

Civil Engineering

Lenox Township GASB 34 Fixed Asset Management Services
Lenox Township, Macomb County, Michigan

BACKGROUND
During 2003, Lenox Township was required to implement Governmental Accounting Standard No. 34 (GASB 34), which required the capitalization and depreciation of fixed assets for governmental entities.

LOCATION
The Township's Fire Station Numbers 1 & 2, DPW Building, Township Offices, Township Senior Center, and Township Park.

SCOPE
Huron was responsible for the physical inventory and tagging of the Township's fixed assets. In addition, Huron assisted in determining the current book value and replacement costs of inventoried assets. Huron worked closely with the Township's CPA on this project providing all information needed to produce the "GASB 34 Compliant" financial statements for the Township. The report is updated on an annual basis.

SPECIAL FEATURES
Huron developed an inventory tracking spreadsheet for the Township. The spreadsheet automatically calculated depreciation and current book value for assets based on the asset classification (i.e., buildings, computers, equipment, etc.) and date-in-service. This electronic list included asset numbers, acquisition dates, historical costs, market value (replacement cost), useful life, and annual depreciation. The spreadsheet was designed for a perpetual inventory, which allowed for simple updates to the inventory listing.

Coordination of appraisals was also provided for determining the value of the Township's real estate assets.

The above engineering services provided by Mr. Sermed K. Saif, PE at Spalding DeDecker Associates, Inc.

OWNER / CLIENT
Lenox Township
Ronald J. Trombly, Jr., Supervisor
(586) 727-2085

PROJECT START - END
April 2003 - Present

PROJECT COST
N/A

KEY PERSONNEL
Sermed K. Saif, PE

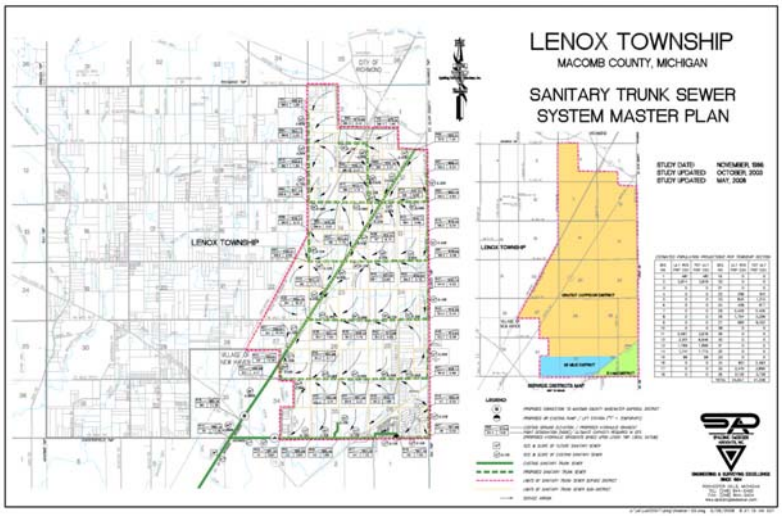
PROJECT NO.
10-11946

PROJECT PROFILE

Civil Engineering

Lenox Township Sanitary System Master Plan
Lenox Township, Macomb County, Michigan

BACKGROUND
In the summer of 2003, a sanitary sewer service agreement was reached between Macomb County, Lenox Township, and the neighboring communities that allocated the final capacity for each community. Lenox Township contracted capacity was increased from 2.5 CFS to 11.64 CFS for its sewer area.



OWNER / CLIENT
Lenox Township
Ronald J. Trombly, Jr., Supervisor
(586) 727-2085

PROJECT START - END
Jan 2008 - June 2008

PROJECT COST
N/A

KEY PERSONNEL
Sermed K. Saif, PE

PROJECT NO.
LE02-007

LOCATION
The sanitary service district is master planned from 26 Mile Road to the north limits of the Township and from the Grand Trunk Western Rail Road / Lowe Plank Road to County Line Road.

SCOPE
Our analysis involved gathering population projection information, setting topographical limitations, and determining the required specific sewer capacities. Based on the gathered information, a sanitary flow model was created which facilitated determination of the required capacity for the sewer system, examination of various criteria, and alternatives. Pipe sizes and slopes were selected based on the required capacity, ground topography, feasibility and future system reserve capacity.

SPECIAL FEATURES
Due to the limited capacity allocated, this master plan will aid the Township with; Proposed development flow contribution regulation and monitoring; MDEQ Permit Tracking requirements; State Revolving Fund (SRF) and Grant money applications; Potential development sewer sizing and construction permits; Long-term perspective of the sewer system.

The Master Plan and updates gives the sanitary sewer flow an outlook based on current population projections and zoning data and will also benefits in future sewer analysis.

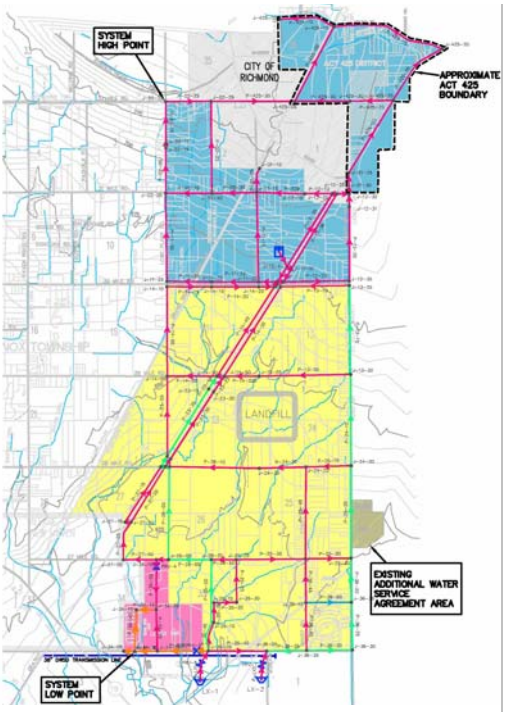
The above engineering services provided by Mr. Sermed K. Saif, PE at Spalding DeDecker Associates, Inc.

PROJECT PROFILE

Civil Engineering

Lenox Township Water System Master Plan
Lenox Township, Macomb County, Michigan

BACKGROUND
Lenox Township is in the early stages of growth and development. With the extension of the sanitary sewer interceptor to the eastern third of the Township and business developments along the Gratiot Avenue corridor, the Township has prompted the development of a Water System Master Plan to analyze the current and future water system demands. The master plan included revisions of the Lenox Township water service district boundaries, analysis of the additional outside service district areas, study of the existing water system, revision to the system demand based on current zoning, updates to the Detroit Water and Sewerage Department (DWSD) supply pressures, and recommendations for the water system upgrades.



LOCATION
The sanitary service district is master planned from 26 Mile Road to the north limits of the Township and from the Grand Trunk Western Rail Road / Lowe Plank Road to County Line Road.

SCOPE
The current and ultimate system demands were calculated for each section in the Township and the additional service districts. Population projections were based on current zoning for Lenox Township and surrounding communities. Flow demands were based on "Merritt, Standard Handbook for Civil Engineers, McGraw-Hill, 1983." These demands were used to determine whether the system met the current "10 States Standards (GLUMRB 1992)".

SPECIAL FEATURES
The system demands were evaluated using the hydraulic software WaterCAD® version 7 and the Hazen-Williams methodology for determining flow resistance. Steady state system performance was analyzed for average day, maximum day, and maximum hour flow. Additionally, a fire flow analysis was performed under maximum day flow conditions. Analysis of the ultimate system's performance was also completed over time by utilizing a diurnal curve, which analyzed the fluctuation of the demand over a 24-hour period. A time-based analysis assisted in the evaluation of the filling and emptying of an elevated storage tank and related booster station. The system was designed with three pressure districts to overcome the geographic challenges.

The above engineering services provided by Mr. Sermed K. Saif, PE at Spalding DeDecker Associates, Inc.

OWNER / CLIENT
Lenox Township
Ronald J. Trombly, Jr., Supervisor
(586) 727-2085

PROJECT START - END
Jan 2008 - Oct 2008

PROJECT COST
N/A

KEY PERSONNEL
Sermed K. Saif, PE

PROJECT NO.
LE02-006

PROJECT PROFILE

Civil Engineering

Lenox Township Hall Pathway
Lenox Township, Macomb County, Michigan

BACKGROUND
The pathway was part of the new 20,000 square feet Lenox Township Hall building.

LOCATION
The pathway covered the entire new Township Hall frontage located on the west side of Gratiot Avenue north of 29 Mile Road.

SCOPE
The site work included engineering design services for 8,645 SF of 6" concrete pathway, grading, stormwater management, and record drawings services. Contract administration, construction observation, coordination of project progress meetings, resolving site issues, and conflict resolution were also provided.

SPECIAL FEATURES
Coordination and management with architect, MDOT, utility agencies, Township officials and Federal agencies. Assistance with Community Development Block Grant (CDBG) administration.

The above engineering services provided by Mr. Sermed K. Saif, PE at Spalding DeDecker Associates, Inc.

OWNER / CLIENT
Lenox Township
Ronald J. Trombly, Jr., Supervisor
(586) 727-2085

PROJECT START - END
June 2005 - Aug 2008

PROJECT COST
$50,000

KEY PERSONNEL
Sermed K. Saif, PE

PROJECT NO.
LE06-101

PROJECT PROFILE

Civil Engineering

North Gratiot Interceptor Drain – Phase 5 & Lenox Local
Lenox Township, Macomb County, Michigan

BACKGROUND
The North Gratiot Interceptor Drain (NGI) – Phase 5 & Lenox Local Drain project is a new sewer that provides sanitary service to Lenox Township and the Village of New Haven.

LOCATION
The sewer is designed along the east side of Gratiot Avenue from 26 Mile Road to 31 Mile Road and consists of approximately 31,600 lineal feet of 15" - 36" diameter sewer pipes. The service area for this sewer extends from 26 Mile Road to the north limits of the Township and between Grand Truck Western Rail Road / Lowe Plank Road and County Line Road.

SCOPE
The sewer design and specifications were developed in accordance with the Office of the Macomb County Public Works Commissioner (OMCPWC), Michigan Department of Transportation (MDOT), Road Commission of Macomb County (RCMC), and Michigan Department of Environmental Quality (MDEQ) requirements.

SPECIAL FEATURES
The project featured open-cut excavation (approximately 25,300 lineal feet) and tunneling construction (approximately 6,300 lineal feet) at depths of 30' or more below existing grade, through various soil types, consisting from loose to very dense hard pan. The design constraints included existing trunkline overhead / underground utilities, numerous river crossings, high traffic area, and very limited construction work areas between the edge of the pavement and the existing road right-of-way where a unique traffic treatment plan was designed.

A Parshall Flume Meter Pit was also designed to calculate the sanitary flows from Lenox Township and will be maintained and operated by OMCPWC. Specific services consisted of the Sanitary Sewer design, permitting, contract administration, construction layout and staking, and record drawings.

The above engineering services provided by Mr. Sermed K. Saif, PE at Spalding DeDecker Associates, Inc.

OWNER / CLIENT
Lenox Township
Ronald J. Trombly, Jr., Supervisor
(586) 727-2085

Macomb County Public Works Office
Keith D. Graboske, PE
Chief Engineer
(586) 307-8241

PROJECT START - END
Jan 2004 - Mar 2009

PROJECT COST
$16,000,000

KEY PERSONNEL
Sermed K. Saif, PE

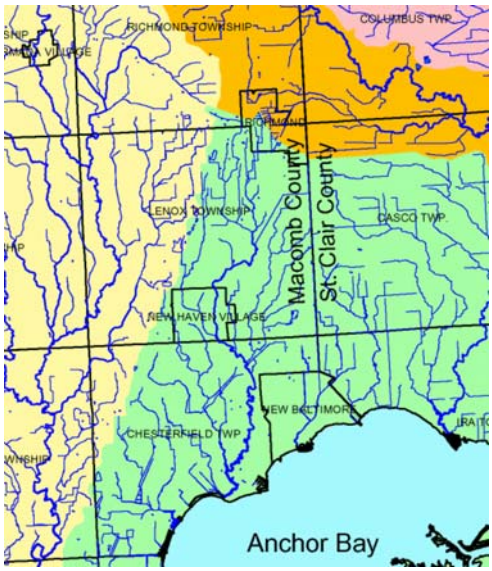
PROJECT NO.
LE01-008

PROJECT PROFILE

Civil Engineering

Lenox Township NPDES Phase 2 Permitting Assistance
Lenox Township, Macomb County, Michigan

BACKGROUND
Provided assistance to the Township with permit compliance for the Township's Michigan Department of Environmental Quality's (MDEQ) Phase II Stormwater General Permit and Certificate of Coverage (COC) through various sub-watersheds.



LOCATION
The Township is located within the Anchor Bay Watershed and the North Branch Clinton River Watershed.

SCOPE
TASK 1: PUBLIC EDUCATION PLAN
Assisted in the development of a Public Education Plan (PEP). The purpose of the plan was to facilitate the involvement of watershed groups (general public, organizations etc.) in the development of the Watershed Management Plan (Anchor Bay Watershed and North Branch Clinton River Watershed). The objectives for the PEP were to increase general awareness about stormwater for the staff, residents, visitors, businesses, operations, and construction activities within the Township. Also assisted the Township, with ongoing PEP activities with other sub-watershed members, in the development and implementation of various education programs and activities, to further build awareness and foster stewardship of the Township and various watersheds. Various PEP efforts were used: website, cable access TV, newsletters, municipal joint activities, and current environmental stormwater education activities, etc.

TASK 2: ILLICIT DISCHARGE ELIMINATION PLAN
Assisted in the development and submittal of an Illicit Discharge Elimination Plan (IDEP) as part of the Township COC requirements. This included activities to increase general awareness about stormwater for staff, residents, visitors, businesses, operations, and construction activities within the Township. Further, stormwater policies/procedure reviews/ recommendations and education programs and activities to build awareness and foster stewardship of the Township watersheds were developed. Short-term programs developed to find, prioritize, and eliminate illicit connections and included staff training, inventory/ investigation, complaint tracking, coordination and implementation scheduling were addressed as part of the IDEP program.

TASK 3: WATERSHED GOALS/ STORM WATER POLLUTION PREVENTION INITIATIVE
Assisted in identifying goals, activities, schedules and cost estimates related to the Township for use towards the Storm Water Pollution Prevention Initiative (SWPPI) in order to plan for future permit requirements.

OWNER / CLIENT
Lenox Township
Ronald J. Trombly, Jr., Supervisor
(586) 727-2085

Lenox Township
Department of Public Works
Cameron M. Trombly
Superintendent
(586) 749-0230

PROJECT START - END
Sept 2002 - June 2007

PROJECT COST
N/A

KEY PERSONNEL
Sermed K. Saif, PE

PROJECT NO.
LE02-009

Lenox Township NPDES Phase 2 Permitting Assistance (continued)
Lenox Township, Macomb County, Michigan

TASK 4: ANNUAL REPORT
Documentation on the status of the development and implementation activities of various plans for the PEP and the IDEP. Completion of Progress Report documenting activities implemented for the PEP, Watershed Management Plan (WMP), IDEP, and SWPPI within the Township.

TASK 5: REPRESENTATION AT SUB-WATERSHED MEETINGS/PUBLIC MEETINGS/ PROGRAM STATUS UPDATE
Attended the sub-watershed meetings (a total of two sub-watersheds existed) and programs as part of the Certificate of Coverage permit, on behalf of the Township.

SPECIAL FEATURES
Provided similar assistance to other public and private clients, through permit completion, program assistance, and annual compliance requirements. Familiar with and actively represented by participation in various sub-watershed programs, the staff is knowledgeable in the development, implementation, and compliance with the required Phase II requirements and deadlines through the Michigan Department of Environmental Quality (MDEQ).

What made the approach unique was through assistance to various clients, they were encouraged to complete several of the permit/certificate of coverage items in-house. This approach allowed several items to take place:

- Reduction of costs incurred through consultants' fees. This was accomplished with use of the many tools available to clients via website, newsletter, HazMat Days, etc., and thus, the overall fees were reduced.
- By providing direct involvement, clients gained a greater understanding of the programs and their questions and answers were streamlined.
- Clients were able to pick and choose program areas of assistance necessary.
- Reduction of the overall program costs by allowing Township staff to gain direct involvement in the programs through ongoing permit activities and the development of various Phase II segments.

The above engineering services provided by Mr. Sermed K. Saif, PE at Spalding DeDecker Associates, Inc.

PROJECT PROFILE

Civil Engineering

Lenox Township Recreation Park & Irrigation System
Lenox Township, Macomb County, Michigan

BACKGROUND
Converted from a farm field, the Lenox Township Recreation Park offers a wide variety of sports and recreation opportunities that were unavailable in that area. Residents and area sports teams and leagues are now able to play tennis, softball, baseball, soccer, field/ice hockey, and basketball. All fields are college size designed for year-round usage.

LOCATION
The Lenox Township Recreation Park is located in the northeast quadrant of Lenox Township. It is at the same property of the Township Hall between 29 & 30 Mile Roads on west side of Gratiot Avenue.

SCOPE
Provided topographical survey, site engineering, construction staking, construction plans and administration. The park covers nearly 24 acres of a Township-owned property. It is the only municipal park space in the area. The park provides a nature trail that encompasses the recreational area perimeter. The trail is an 8 FT wide asphalt path approximately one mile long. The ADA designed path is suitable for walking, jogging, bike riding, and roller blading. New children's play areas were created with modern, accessible and safe playscapes. There is a pavilion/shelter area located next to the playgrounds providing a picnic area with barbecue grills and storm shelters. Portable bathrooms are also available for public use around the perimeter. Expansion of the existing townhall parking lot and a modern irrigation system were constructed to accommodate the additional usage of the site. The park provides a picnic/activity area that serves families of all ages.

SPECIAL FEATURES
Coordination and management with utility agencies, Township officials and Federal agencies. Assistance with funding administration as Lenox Township received partial funding from the State of Michigan through the Community Development Block Grant (CDBG) program.

The above engineering services provided by Mr. Sermed K. Saif, PE at Spalding DeDecker Associates, Inc

OWNER / CLIENT
Lenox Township
Ronald J. Trombley, Jr.
Supervisor
(586) 727-2085

PROJECT START – END
May 2000 – Sept. 2000

PROJECT COST
$850,000

KEY PERSONNEL
Sermed K. Saif, PE

PROJECT NO.
LE98-007

PROJECT PROFILE

Civil Engineering

Richmond / Lenox EMS - Station No. 3
Lenox Township, Macomb County, Michigan

BACKGROUND
Due to residential and commercial growth along Gratiot Avenue, a new EMS Station No. 3 was proposed in Lenox Township in order to improve Emergency Medical Services (EMS) response time. With two stations located in Richmond Township, and a new EMS station in Lenox, overall coverage has vastly improved.

LOCATION
The EMS Station No. 3 is located east of Gratiot Avenue, approximately a half mile north of 27 Mile Road in Lenox Township. The new building is approximately 4,100 square feet. The building has approximately 2,500 square feet of vehicle area (wall bearing masonry building) and approximately 1,700 square feet of operational area.

SCOPE
The project included excavation, concrete, masonry, wood trusses and framing, carpentry, asphalt shingles, steel doors and frames, overhead doors, wood windows, gypsum board, ceramic tile, miscellaneous equipment, plumbing, HVAC, electrical power and lighting, and all related appurtenances.

Site work consisted of a new storm pump station, a detention pond, approximately 3,500 square yards of 8" reinforced concrete pavement, 800 linear feet of concrete curb and gutter, 700 square feet of concrete sidewalk, 700 linear feet of storm sewer, service utilities, tree removal and clearing, a dry hydrant system, a dumpster enclosure, lighting and power system improvements, landscaping, and all related appurtenances.

We were responsible for the design and project management of the EMS building and site improvements. We provided construction staking and contract administration including inspection and observation, as well as coordination of project progress meetings, resolving site issues, and conflict resolution.

SPECIAL FEATURES
Coordination and management with architect, utility agencies, Township officials and Federal agencies. Assistance with Community Development Block Grant (CDBG) administration.

The above engineering services provided by Mr. Sermed K. Saif, PE at Spalding DeDecker Associates, Inc.

OWNER / CLIENT
Lenox Township
Ronald J. Trombly, Jr., Supervisor
(586) 727-2085

Richmond Lenox EMS Ambulance Authority
Executive Director
Jeffery R. White
(586) 727-2184

PROJECT START - END
February 2003 - July 2004

PROJECT COST
$885,000.00

KEY PERSONNEL
Sermed K. Saif, PE

PROJECT NO.
LE02-003

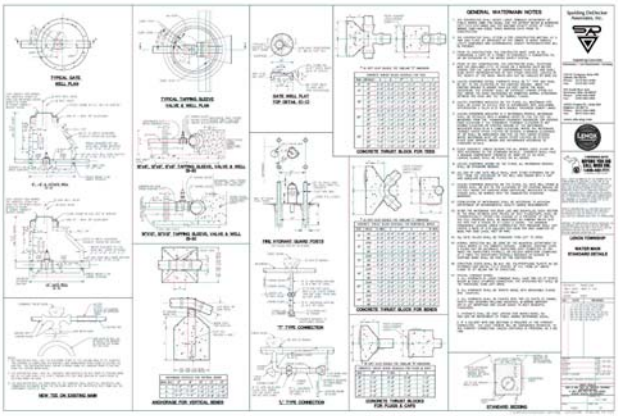
PROJECT PROFILE

Civil Engineering

Lenox Township Standard Detail Sheets Update
Lenox Township, Macomb County, Michigan

BACKGROUND

During review of the standard detail sheets, it was determined that many items and verbiage were outdated and required updating. Standard details set specifications for construction items to be built according to the standards and requirements of the Township. Once detail sheet standards are approved by the Township, they are required on all public and private plan submittals to the Township.



LOCATION

Lenox Township, Macomb County, Michigan

SCOPE

The Standard Detail Sheet updates and modifications consisted of the following:

- Storm Sewer Standard Detail Sheet
- Sanitary Sewer Standard Detail Sheet
- Water Main Standard Detail Sheet
- Dry Hydrant Detail Sheet
- Pavement / Parking Standard Detail Sheet
- Soil Erosion and Sedimentation Control Detail Sheet
- Standard Notes and Special Details for Developer Funded Projects

SPECIAL FEATURES

Worked closely with Lenox Township, Lenox Department of Public Works, Lenox Fire Department, Lenox Planners, Macomb County Office of Public Works (MCOPW), and the Macomb County Road Commission (MCRC) to ensure that the standard details incorporated the appropriate information to meet the needs of all agencies having jurisdiction.

The above engineering services provided by Mr. Sermed K. Saif, PE at Spalding DeDecker Associates, Inc.

OWNER / CLIENT
Lenox Township
Ronald J. Trombly, Jr.,
Supervisor
(586) 727-2085

Lenox Department of
Public Works
Cameron M. Trombly
Superintendent
(586) 749-0230

Lenox Fire Department
Dennis Fouchia
Fire Chief
(586) 749-6677

PROJECT START - END
Oct 2003 - July 2008

PROJECT COST
N/A

KEY PERSONNEL
Sermed K. Saif, PE

PROJECT NO.
LE03-008

PROJECT PROFILE

Civil Engineering

New Lenox Township Hall
Lenox Township, Macomb County, Michigan

BACKGROUND

In 2005, Lenox Township retained French Associates, Inc. as the design architect providing services for a new 20,000 square feet Lenox Township Hall building.

LOCATION

The new Township Hall is located within existing Township property on the west side of Gratiot Avenue north of 29 Mile Road.

SCOPE

The site work included engineering design services for paving, grading, stormwater management, sanitary sewer, watermain, easement documents and record drawings services. Contract administration, construction observation, coordination of project progress meetings, resolving site issues, and conflict resolution were also provided.

SPECIAL FEATURES

The design services also incorporated various storm water management measures, including rain gardens and bio-retention zones into the site. The project received LEED Certification.

Coordination and management with architect, utility agencies, Township officials and Federal agencies. Assistance with Community Development Block Grant (CDBG) administration.

The above engineering services provided by Mr. Sermed K. Saif, PE at Spalding DeDecker Associates, Inc.

OWNER / CLIENT
Lenox Township
Ronald J. Trombly, Jr., Supervisor
(586) 727-2085

PROJECT START - END
June 2005 - Aug 2008

PROJECT COST
$11,000,000

KEY PERSONNEL
Sermed K. Saif, PE

PROJECT NO.
DV05-020

PROJECT PROFILE

Civil Engineering

Lenox Township Vulnerability Assessment
Lenox Township, Macomb County, Michigan

BACKGROUND
The Township of Lenox was required by the U.S. Environmental Protection Agency (US EPA) to provide a Vulnerability Assessment based upon the Bioterrorism Preparedness and Response Act of 2002.

The water and sewage system of Lenox Township includes two water PRV stations, the Detroit Water and Sewerage Department (DWSD) meter stations, and the Macomb County Sewer Lift Station.

LOCATION
The Township's water and sewer system is located from 26 Mile Road to the north limits of the Township and from Gratiot Avenue to County Line Road.

SCOPE
A Vulnerability Assessment (VA) was conducted for the Township using the Risk Assessment Methodology for Water Utilities (RAM-W) developed by Sandia National Laboratories. The Township's entire water distribution and sanitary sewer collection systems were surveyed.

The following tasks were completed on this project:

- Reviewed site drawings and documented operating procedures.
- Conducted field investigations of each site and inspected the perimeter, facility doors, windows and access hatches, as well as existing physical electronic Security and Supervisory Control and Data Acquisition (SCADA) systems.
- Interviewed key employees to identify current practices, known problems and documented both positive and negative features with photographs.

Data collected was issued as an Assessment Report and clearly identified potential security issues, risk assessment, strengths and weaknesses with the existing physical and electronic security systems, and recommended solutions. The report also included cost estimates to implement the recommended solutions.

SPECIAL FEATURES
The Township's Emergency Response Plan (ERP) was updated to reflect the findings from the Vulnerability Assessment (VA) Report. Assisted the Township in preparing and submitting the required documentation to the US EPA for both the VA and the ERP.

The above engineering services provided by Mr. Sermed K. Saif, PE at Spalding DeDecker Associates, Inc.

OWNER / CLIENT
Lenox Township
Ronald J. Trombly, Jr., Supervisor
(586) 727-2085

Lenox Township
Department of Public Works
Cameron M. Trombly
Superintendent
(586) 749-0230

PROJECT START - END
June 2003 - July 2004

PROJECT COST
N/A

KEY PERSONNEL
Sermed K. Saif, PE

PROJECT NO.
LE03-007

PROJECT PROFILE

Civil Engineering

Macomb Township Civic Center
Macomb Township, Macomb County, Michigan

BACKGROUND
Macomb Township has experienced a great deal of development in the past few years that required a new Civic Center to service its residents.

LOCATION
The New Town Hall is located west of Broughton Road, south of 25 Mile Road.

SCOPE
Performed topographic/boundary survey, prepared the design work for improvements, prepared the construction documents for bidding, and obtained all necessary permits from government agencies having jurisdiction (MDEQ, Road Commission of Macomb County (RCMC), OMCPWC, etc.) Also provided construction engineering services including contract administration, construction layout, observation, construction testing coordination, record plans, and easement preparation.

The design consisted of 2,600 lineal feet of 10" – 15" sanitary sewers, 4,100 lineal feet of 8" – 16" watermains, 4,900 lineal feet of 12" – 48" storm sewers, a 5-acre retention basin, a 1,200 lineal feet relocation of the McBride Drain, and a ½ mile extension of Broughton Road with two side streets south of 25 Mile Road.

SPECIAL FEATURES
Coordination with Macomb Township, architect, soils consultants, RCMC, OMCPWC, MDEQ, and FEMA, as well as all private utilities. Also, a hydraulic study of the McBride Drain was conducted to establish: Special Wetland Plants along Open Drain; Five Acre Detention Basin for Storm Water Management; 100' Long 10' X 20' Box Culvert for Broughton Road Crossing; Open Drain Relocation and Improvements to Low and High Flow Channels; Special Wetland Plantings along Open Drain.

OWNER / CLIENT
Township of Macomb
Mark Grabow
Supervisor
(586) 992-0710

PROJECT START - END
May 2000 – Feb 2006

PROJECT COST
$6,100,000

KEY PERSONNEL
Sermed K. Saif, PE

PROJECT NO.
MA99-013

The above engineering services provided by Mr. Sermed K. Saif, PE at Spalding DeDecker Associates, Inc.

PROJECT PROFILE

Civil Engineering

Macomb County Administration Building Parking Lot Construction
City of Mt. Clemens, Macomb County, Michigan

BACKGROUND

What began as an abandoned industrial facility has become a new parking area for the Macomb County Administration Building, complete with state-of-the-art storm water treatment. Huron Consultants provided engineering services for every step of this process, beginning with building demolition planning and oversight along with environmental sampling, followed by design of the parking lot and its innovative drainage system. The chosen design was a system of rain gardens surrounding the parking lot that allows complete infiltration into the area's sandy soils and/or plant uptake of storm water flows from most storm events. Standpipes connected to storm sewers were included as a safeguard to convey storm water from extreme storm events without overflowing the rain gardens. Huron Consultants performed direct field oversight of construction of this unique project, providing all surveying, staking, and materials testing services, as well as working with the contractor to ensure successful construction.

LOCATION

The project is located in Mt. Clemens, at Cass Avenue, on the west side of North Gratiot Avenue, opposite from the Clinton River.

SCOPE

Huron was integral to the planning and design of the civil site improvements, assisted the County with bidding the project, provided construction materials testing and construction inspection for the civil site improvements such as earthwork, underground utilities, storm drainage, pavements and sidewalks. The project included demolition of all existing structures, excavation and site preparation, 25 light poles with electrical services, 5200 syd of hot mix asphalt pavement, 694 syd of concrete pavements, 2334 ft of concrete curb and gutter, 1000 ft of storm drainage pipe and appurtenances, 0.50 acres of bio-retention swale, rain garden and other landscape areas.

SPECIAL FEATURES

Funded with grants for demolition of existing structures and brown field cleanup. Rain gardens and Bio-retention swales integrated into the design for storm water quality.

OWNER / CLIENT
Macomb County
Lynn Arnott-Bryks
Macomb County Facilities & Operations Department
(586) 469-5244

PROJECT START - END
April 2003-March 2007

PROJECT COST
$488,290
(toward the parking lot improvements, only)

KEY PERSONNEL
Daren S. McLaughlin, CHMM, CPEA
Tom Paton, ET

PROJECT NO.
05-1537

PROJECT PROFILE

Civil Engineering

New Haven High School Pathway Improvements
Village of New Haven, Macomb County, Michigan

BACKGROUND
The proposed pathway was necessary to provide a safer route to students along Gratiot Avenue, a 55 MPH speed limit, and to connect to existing pathways north and south of the school property.

LOCATION
The pathway was located along the east side of Gratiot Avenue north of New Haven Road covering the entire High School frontage.

SCOPE
Provided project management, design and construction engineering services for the proposed 7,500 SF of concrete pathway, 430 SF of ADA ramps, 106 SF of ADA detectable warning tiles, 1,200 LF of 6" PVC underdrains, and restoration.

SPECIAL FEATURES
The pathway was proposed as part of a Value Engineering application to the sewer construction project in the area resulting in considerable savings to the project. In addition, provided project design and construction coordination in the vicinity of an existing International Transmission Company (ITC) tower and high pressure gas main.

The above engineering services provided by Mr. Sermed K. Saif, PE at Spalding DeDecker Associates, Inc.

OWNER / CLIENT
New Haven Schools
Kenneth Thompson,
President
(586) 749-3027

Macomb County Public Works Office
Keith D. Graboske, PE
Chief Engineer
(586) 307-8241

PROJECT START - END
Sept 2009 - Sept 2010

PROJECT COST
$20,000

KEY PERSONNEL
Sermed K. Saif, PE

PROJECT NO.
LE01-008

PROJECT PROFILE

Civil Engineering

St. Clair County Community College (SC4) Campus Improvements
City of Port Huron, St. Clair County, Michigan

BACKGROUND

Huron Consultants became involved in the project when the College requested their Architect to find an engineer that would incorporate progressive green technologies into the replacement of a large portion of the on-campus parking lots. Rather than a standard pavement removal and replacement project that would leave the existing sterile concrete islands and vast expanses of asphalt, the College embraced the idea of increasing the green areas. The parking lots previously had drained to catch basins, and storm water runoff was piped directly to the Black River, adjacent to the campus. Huron designed the project to eliminate the concrete islands, replacing them with bio-retention swales. The parking drainage was redirected to the bio-retention swales in the islands, and to bio-retention swales and rain gardens around the perimeter of the parking lot areas, for storm water treatment through vegetative filtration and percolation into the ground. Recharging the ground water was important for the transfer of heat for a geothermal system, which the College installed beneath the parking lots. The configurations of the parking lots were reorganized to preserve the overall existing traffic patterns, but traffic calming techniques were incorporated, such as concrete strips across the asphalt drives to provide textural and audible differences in the surfaces, designed to focus drivers on the task at hand and reduce distractions. Bump-out islands were added at the ends of all parking lanes, to highlight the required stops. Foot traffic was also addressed, with sidewalks connecting campus buildings and open spaces with safe walking areas away from vehicular traffic.

LOCATION

The project is located on the SC4 campus in the City of Port Huron, along the north shore of the Black River. The parking lot was completely reconstructed directly adjacent to the river, at the Main Building, located at 323 Erie Street. The west half of the largest on-campus parking lot was reconstructed at the intersection of Glenwood Avenue and Stone Street.

SCOPE

Huron was integral to the planning and design of the civil site improvements, assisted the College with bidding the project, provided construction materials testing and construction inspection for the civil site improvements such as earthwork, underground utilities, storm drainage, pavements and sidewalks. The project included 3.6 acres of hot mix asphalt pavement reconstruction, 4635 syd of concrete pavements, 6175 ft of concrete curb and gutter, 4000 ft of storm drainage pipe and appurtenances, 2.30 acres of bio-retention swale, rain garden and other landscape areas.

SPECIAL FEATURES

Coordination of planning, engineering design and construction management with architect, other design consultants, St. Clair County, the City of Port Huron, other utility companies, and State and Federal agencies. Assisted the prime construction manager with construction inspection and material testing for the civil site improvements.

OWNER / CLIENT
St. Clair County Community College (SC4)
Kirk Kramer
Vice President for Administrative Services
(810) 989-5503

PROJECT START - END
February 2009 – November 2010

PROJECT COST
$965,500.00
(toward the parking lot improvements, only)

KEY PERSONNEL
Eric J. Ostling, PE
Tom Paton, ET

PROJECT NO.
09-11464

PROJECT PROFILE

Civil Engineering

St. Clair County Drain Commissioner, Bunce Creek & Huffman Drain Project
City of Marysville, Kimball Township and Port Huron Township, St. Clair County, Michigan

BACKGROUND

The Bunce Creek and Huffman Drain project is widely regarded as the largest, most complex drain project in St. Clair County history. The City of Marysville first filed a petition with the St. Clair County Drain Commissioner (SCCDC) in 1996, to address severe flooding problems in several areas. The Bunce Creek and Huffman Drain and branches culminate in the Main Branch of the Bunce Creek running through Marysville, on its way to the outlet beneath the Detroit Edison facility to the St. Clair River.

LOCATION

The drainage district is nearly twelve (12) square miles in size and includes portions of the Townships of Kimball and Port Huron, the City of Marysville, and the City of Port Huron.

SCOPE

There are nine (9) different tributaries of the creek, a total of nearly seventeen (17) miles of drain. Three (3) new drain branches were established, which involved obtaining new drain easements (Right of Ways) from dozens of landowners. Three (3) regional storm water detention areas were built, which included considerable land acquisition. Huron facilitated one of the regional detention areas in becoming a nature park and hiking trail for the City of Marysville. Huron was involved in all aspects of this project, including the design, permitting, land and easement acquisition, cost apportionment, construction bidding, construction surveying and inspection, and contract management.

SPECIAL FEATURES

In order to avoid industry standard channelizing of the water courses, innovative methods developed by Dr. David Rosgen were used for stream morphology; meaning the natural features of the drains were restored and/or enhanced. Three regional detention basins were constructed. Each had a contributing area of about (1) square mile. In effect, nearly three (3) square miles of land were provided with detention and restricted discharge, roughly 25% of the total drainage district. According to the computer models, this should reduce the peak flow of the Main Branch at the outlet by about 25%.

OWNER / CLIENT
St. Clair County Drain Commissioner
Robert Wiley

Charles Wood,
Project Manager

St. Clair County Drain Commissioner's Office
(810) 364-5369

PROJECT START - END
2002-2011

PROJECT COST
$6,900,000 total
computation of cost
$1,300,000 construction

KEY PERSONNEL
Eric J. Ostling, PE
Jay Johnson, PE
Thomas Paton, ET

PROJECT NO.
SCC-007

PROJECT PROFILE

Civil Engineering

Pontiac Lake Low Pressure Sanitary Sewer System (LPSS)
White Lake Township, Oakland County, Michigan

BACKGROUND
The public awareness of improving water quality of the natural water resources and enforcement by regulatory agencies has provided an initiative to utilize new methods of underground trenchless technology to construct wastewater collection, retention, and treatment systems. Historically, Pontiac Lake was used as a recreational facility in the summer. However, currently, most of the dwelling units around the lake are being used as year-round residences. The project included abandonment of 431 septic fields responsible for deteriorating the water quality of Pontiac Lake. These septic fields were abandoned in accordance with the current guidelines of the Oakland County Health Department (OCHD) and replaced by a Low Pressure Sewer System (LPSS).

LOCATION
The project was located within English Villa Subdivision on Pontiac Lake between Gale Road and Pontiac Lake Road.

SCOPE
Design and drafting of 14,654 feet of a 2-6 inch diameter High Density Polyethylene (HDPE), grinder pumps, and all associated approved appurtenances. Prepared construction plans, project manual, easement documents, and layout exhibits. Assisted in project administration and phasing with contractor and home owners minimizing construction impacts and value protection of residential areas. Coordination with Oakland County Drain Office, White Lake Township, local residents, and regulatory agencies. The LPSS included the installation of a Grinder Pump unit with a pre-wired control panel and an associated 1.25" diameter forcemain on each of the 431 lots having septic fields and a future connection for 51 undeveloped lots. Twenty nine additional pump core units were provided for emergency maintenance.

SPECIAL FEATURES
Developed a Sustainable Action Plan (SAP), which utilized the Directional Drilling and Micro Tunneling technology (DDMT) and met the three requisites of sustainability: Social equity, Economics, and Environmental objectives. The utilization of DDMT technology minimized the construction-induced inconveniences of accessibility and traffic to the residents, was economical as compared to other methods of construction, and helped improve the water quality of Pontiac Lake.

State Revolving Loan Funds (SRF) No. 5157-01
2001 Quality of Life Award, from the American Society of Civil Engineers (ASCE)

The above engineering services provided by Mr. Sermed K. Saif, PE at Spalding DeDecker Associates, Inc.

OWNER / CLIENT
Township of White Lake
(248) 435-4500

PROJECT START - END
March 2001 - Sep 2004

PROJECT COST
$4,000,000

KEY PERSONNEL
Sermed K. Saif, PE

PROJECT NO.
WH01-003

Clean Water
State Revolving Fund

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

PROJECT PROFILE

Civil Engineering

Park Avenue Reconstruction Project
City of Yale, St. Clair County, Michigan

BACKGROUND
This project was funded through the Michigan Department of Transportation (MDOT) Local Agency Program, with 80% state and 20% local funds.

Huron assisted the City of Yale with the paperwork required to get funding from MDOT, designed the project improvements, administered the MDOT bidding process, managed the contractors during construction operations and performed construction administration using the Field Manager software. The work was performed through the Local Agency Division of MDOT in accord with their design and construction standards for the FHWA Funding.

LOCATION
One-quarter mile of Park Avenue (aka, Yale Road) was reconstructed from the west City Limits to School Drive, City of Yale, St. Clair County, Michigan.

SCOPE
Concrete sidewalk was partially replaced on the north side, and new concrete sidewalk was installed on the south side. All driveway approaches along the construction route were replaced to match the revised grades of the road. Catch basins and storm sewer were installed to correct drainage problems. The project consists of the removal of the existing asphalt pavement, re-grading and lowering of the sub-base and the installation of drainage, concrete curb and gutter, followed by the placement of an asphalt roadway surface. The design for this road was to Class A all-weather standards.

SPECIAL FEATURES
The lowering of the road grade involved the need to lower the gas services and some of the water services in this roadway segment. The gas service work was accomplished through the cooperation of SEMCO in planning and completion of their work.

OWNER / CLIENT
John Osborn,
City Manager
City of Yale, Michigan
(810) 387-3311

PROJECT START - END
June 2008 – Aug 2009

PROJECT COST
$400,200

KEY PERSONNEL
Eric Ostling, PE
Jay Johnson, PE
Thomas Paton, ET

PROJECT NO.
08-11280

PROJECT PROFILE

Civil Engineering

Parking Areas and Alleys Restoration and Enhancement Program
City of Yale, St. Clair County, Michigan

BACKGROUND
Huron assisted the City of Yale Downtown Development Authority (DDA) in applying for, obtaining, and administering the Community Development Block Grant (CDBG), 80% grant with 20% matching local funds. Some of the major factors in attracting the grants were the environmental and aesthetic aspects of the project.

LOCATION

The project consisted of 2 locations. The first location is situated in the heart Yale in front of the City offices. This portion consisted of the paving of 3 municipal parking lots, block retaining walls and poured veneered concrete wall extensions. The second portion is located a few blocks away at the southwest corner at the intersection of Mechanic and South Kennefic Street. This portion of the project included construction of parking lot, rain garden and the replacement of a sanitary sewer.

SCOPE
The project included 2 acres of paving, 300 SF of concrete sidewalk, 400 FT of pour concrete veneered wall, 200 FT of block landscape wall, 300 FT of sanitary sewer, 325FT of storm sewer improvements, landscaping and a 1300 SF of rain garden.

Huron was responsible for the design and construction management of the project. We provided construction staking and contract administration including inspection and observation, as well as coordination of project progress meetings, resolving site issues, and conflict resolution.

SPECIAL FEATURES
Rain Garden Design, Coordination between local business owners and the contractor, coordination and management with architect, utility agencies, Township officials and Federal agencies. Assistance with Community Development Block Grant (CDBG) administration.

OWNER / CLIENT
The City of Yale
John Osborn
City Manager
(810) 387-3311

PROJECT START - END
September 2009 – November 2010

PROJECT COST
$375,000.00

KEY PERSONNEL
Eric J. Ostling, PE
Jay W. Johnson, PE

PROJECT NO.
09-11641

PROJECT PROFILE

Environmental Engineering

Macomb County Phase I, Phase II, BEA, Demolition and Abatement Oversight
City of Mount Clemens, Macomb County, Michigan

BACKGROUND
Huron was retained by Macomb County to conduct due diligence activities at properties having "recognized environmental conditions" (RECs). Huron completed a Phase I ESA, Phase II ESA and Baseline Environmental Assessment (BEA) at two separate properties. Subsequent building abatement and demolition activities, and the generation of a due care plan were also completed. The properties were then transformed into a parking lot for use by County employees and visitors.

LOCATION
The former Bell Forklift and former Muffler Man properties were located adjacent to the Macomb County Administration Building in downtown Mount Clemens, Michigan.

SCOPE
Huron Consultants was retained to conduct a Phase I ESA for the former Bell Forklift property. The Phase I ESA identified several RECs related to former use of the property, as well as indoor air quality issues. A Phase II ESA was performed, and the property was found to be a "facility" as defined in Part 201 of MI PA 451 of 1994, as amended. A BEA was performed to provide environmental liability protection for Macomb County. The BEA was submitted to the MDEQ with a request for determination; the MDEQ responded to the request in a letter indicated that the BEA was affirmed. Due diligence activities were also conducted for the former Muffler Man property, located adjacent to the Bell Forklift property. The results of the Phase I ESA, Phase II ESA, and BEA were similar, with a Category N BEA submitted to the MDEQ by determination, resulting in an affirmation of the BEA.

SPECIAL FEATURES
Subsequent to affirmation of the BEA's, a Due Care Plan was prepared for Macomb County. Huron also prepared specifications for the demolition of the buildings and abatement of asbestos containing materials and other hazardous materials identified in the buildings. Huron managed the abatement and demolition activities on behalf of Macomb County, and also provided construction quality control services during restoration of the site after the buildings were demolished.

OWNER / CLIENT
Macomb County
Harold Fuller / Lynn Bryks
(586) 469-5244

PROJECT START - END
March 2003 –March 2007

PROJECT COST
$192,400.00

KEY PERSONNEL
Daren McLaughlin, CHMM, CPEA
Jeff Good
Matt Sherrard

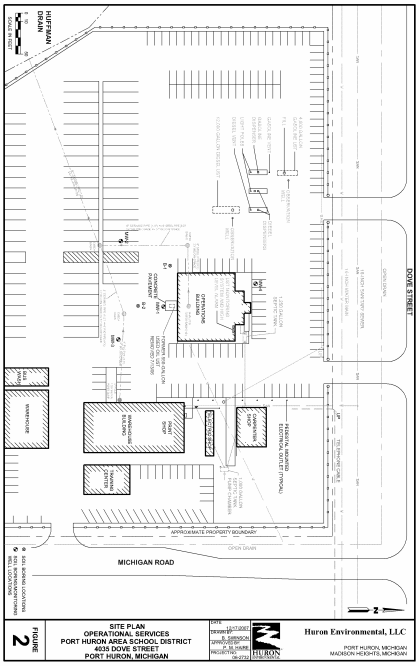
PROJECT NO.
03-3050

PROJECT PROFILE

Environmental Engineering

Port Huron Area School District Operational Services Facility, UST Removal
City of Port Huron, St. Clair County, Michigan

BACKGROUND
Huron Consultants was retained to coordinate and manage the excavation and removal of one waste oil UST at the site. Huron Consultants was responsible for coordinating the on-site activities with the contractor, as well as inspections of the contracting work to verify conformance with the project plans and specifications. Based on the discovery of a confirmed release of petroleum product from the regulated UST system, site assessment activities were performed in accordance with Part 213 guidelines.


DOVE STREET
MICHIGAN ROAD
HUFFMAN DRAIN
OPEN DRAIN
APPROXIMATE PROPERTY BOUNDARY
OPERATIONAL SERVICES BUILDING
PORTABLE BUILDING
PORTABLE BUILDING
PORTABLE BUILDING
PORTABLE BUILDING
PERIMETER FENCE
PERIMETER FENCE
PERIMETER FENCE

PROJECT PROFILE

Environmental Engineering

City of Port Huron Bancroft Warehouse
City of Port Huron, St. Clair County, Michigan

BACKGROUND
The City of Port Huron had a fueling station at their Bancroft Warehouse that included two 10,000-gallon regulated underground storage tanks (USTs). The City was having operational problems with the UST system and decided to have the entire system removed and replaced with a new system.

LOCATION
The Bancroft Warehouse is located in the City of Port Huron.

SCOPE
Huron Consultants was retained to design a new system and prepare plans and specifications for removal of the former system and replacement with the new system. The new system included one 20,000-gallon UST with two compartments for fuel storage, fuel dispenser, new dispensing island, new fuel management and leak detection systems, and all new system components. Upon completion of the design and bidding documents, the project was publicly advertised to obtain competitive bids for the project construction.

SPECIAL FEATURES
Huron provided oversight and coordination services during the construction. Huron also provided environmental assessment and sampling services following removal of the former USTs. Based on the assessment performed, approximately 2,000 cubic yards of petroleum impacted soil were removed for disposal at a licensed waste disposal facility to remediate the Bancroft Warehouse site. Huron provided supplemental environmental services in accordance with Part 213 guidelines to obtain a LUST closure for the site.

OWNER / CLIENT
City of Port Huron
Dave Smith,
Engineering
Department
(810) 984-9732

PROJECT START - END
May 2006 - December 2008

PROJECT COST
$290,000.00

KEY PERSONNEL
Julie Pratt

PROJECT NO.
06-2912

PROJECT PROFILE

Environmental Engineering

Macomb County, Martha T. Berry Medical Care Facility Asbestos and Hazardous Material Abatement Oversight
Mount Clemens, Michigan

BACKGROUND
Huron was retained by Macomb County to conduct industrial hygiene sampling and contractor oversight during phased demolition / renovation activities. The removal of asbestos/ hazardous materials from the facility began in 2003 and was completed in 2006. The project took place over a three-year period, with up to six months between each of the major activities of the three phases.

OWNER / CLIENT
Macomb County
Lynn Brykes
(586) 469-5244

PROJECT START - END
December 2003 – January 2006

KEY PERSONNEL
Jeff Good, Matt Sherrard, and Kenneth Kelley

PROJECT NO.
03-5058

LOCATION
Martha T. Berry Medical Care Facility is located at 43533 Elizabeth Road, in Mount Clemens, Michigan 48043.

SCOPE
Huron Consultants was retained by Macomb County to conduct project oversight prior to and during renovation and demolition activities at the Martha T. Berry facility. The project included abatement of asbestos-containing pipe insulation and floor tile/mastic. The project also included the removal and disposal of Polychlorinated Biphenyl (PCB) containing ballasts and mercury containing bulbs, as well as, lead based paint, lead sheeting in walls, pigeon droppings, mold and mold contaminated materials. Huron also provided environmental consulting activities including dust suppression plan development, and awareness training for sub-contractors.

SPECIAL FEATURES
Several challenges faced the Huron inspection team. Building documentation was not complete: there were limited sources of accurate information regarding the original construction of and subsequent renovations of the structure. The building was occupied and operational, which limited access and made destructive sampling techniques impractical. Finally, the building was a Health Care Facility making the investigation of hazardous materials difficult and making destructive sampling virtually impossible. Under these circumstances, a hazardous material survey was completed. Prior to and during renovation and demolition, Huron provided air sample collection and oversight during hazardous materials removal.

PROJECT PROFILE

Environmental Engineering

Municipal Fire Department, Indoor Air Quality Study
Metropolitan Detroit Area, Michigan

BACKGROUND
Huron was retained by a local municipal Purchasing Department to conduct an indoor air quality study to monitor the effectiveness of a new air scrubber system at a firehouse. Industrial hygienists performed air quality monitoring and sampling and coordinated laboratory subcontractors during routine firehouse operations. The project was completed over a 30-day period in early 2011 with follow-up activities performed and scheduled as air scrubber system modifications are completed. Project work is currently ongoing.

LOCATION
Municipality, Metropolitan Detroit Area, Michigan.

SCOPE
Huron Consultants was retained to conduct an indoor air quality monitoring project in support of installation of a new air scrubber system at a local firehouse. The project included the use of carbon monoxide data loggers, and gas detector tubes/badges for analysis of diesel exhaust. Sample air quality data was collected at 4 locations and one control point over an 8-hour shift. Huron Consultants worked with the Fire Department's air scrubber manufacturer to suggest modifications to maximize system efficiency. Subsequent to significant system modifications, Huron would repeat the indoor air quality monitoring and sampling program to test the effectiveness of the system modifications. Huron also met with the Fire Department and provided additional recommendations regarding operational procedures and training.

SPECIAL FEATURES
Huron Consultants maintained a flexible schedule to accommodate the Fire Department's ever changing needs based on call/run activity at the Firehouse, including that of the Emergency Response team. The testing and results needed to be handled in a sensitive manner to accommodate the needs of a diverse set of users including Fire Department Officers, Union Officials, City Purchasing, and the air scrubber equipment manufacturer and sales representative. The building was occupied and operational during Huron's testing.

OWNER / CLIENT
Municipality

PROJECT START - END
December 2010 – Ongoing

PROJECT COST
$17,500

KEY PERSONNEL
Jeff Good, Matt Sherrard, and Kenneth Kelley

PROJECT NO.
10-31747

PROJECT PROFILE

Environmental Engineering

City of Lapeer Phase I ESA, Phase II ESA, BEA and Due Care
City of Lapeer, Lapeer County, Michigan

BACKGROUND
Huron was retained by the City of Lapeer to conduct due diligence activities at an abandoned industrial property having "recognized environmental conditions" (RECs). Huron completed a Phase I Environmental Site Assessment (ESA), Phase II ESA and Baseline Environmental Assessment (BEA) at the facility. The generation of a Section 20107a Compliance Analysis (Due Care Plan) was also completed.

LOCATION
The former Lapeer Metal Stamping industrial property was located near the intersection of South Saginaw Street and Demille Road in the City of Lapeer, Lapeer County, Michigan

SCOPE
The City of Lapeer retained Huron Consultants to provide due diligence consulting and manage environmental liability protection for the City of Lapeer associated with the acquisition of property with pre-existing subsurface contamination. Huron was retained to conduct a Phase I ESA for the former Lapeer Metal Stamping property. The Phase I ESA was conducted in accordance with All Appropriate Inquiry Rule 40 CFR 312 and ASTM E1527-05. The Phase I ESA identified several RECs related to former use, storage and handling of petroleum products and hazardous materials at the property. A Phase II ESA was performed, including the installation of soil borings and monitoring wells to facilitate soil and groundwater sample collection and laboratory analysis. The property was confirmed to be a "facility" as defined in Part 201 of MI PA 451 of 1994, as amended. A BEA was completed and submitted to the MDEQ within required timeframes to provide environmental liability protection for the City of Lapeer.

SPECIAL FEATURES
Due to timeframes associated with the property transfer, the project was completed in less than two months. The Phase I and Phase II ESA were fast-tracked in order to facilitate completion of the BEA in accordance with timeframes established in Part 201 (45 days of purchase, occupancy or foreclosure). The property was transformed into a multi-tenant commercial warehouse building with the goal of rental income pending a future sale.

OWNER / CLIENT
City of Lapeer
Dale Kerbyson
(8106) 664-2902

PROJECT START - END
June 2011 –August 2011

PROJECT COST
$13,100.00

KEY PERSONNEL
Daren McLaughlin, CHMM, CPEA
Julie Pratt
Matthew Sherrard

PROJECT NO.
11-22052

PROJECT PROFILE

Environmental Engineering

Dunn Paper Company, Manufacturing Facility Asbestos and Hazardous Material Sampling and Abatement Contractor Oversight
Port Huron, Michigan

BACKGROUND
Huron was retained by Dunn Paper Company to conduct hazardous materials sampling for asbestos and lead-based paint in support of planned plant renovations. Huron Consultants provided an industrial hygienist to perform hazardous materials sampling and coordinate a subcontractor site-walk to provide budgetary estimates for hazardous materials abatement.

OWNER / CLIENT
Dunn Paper Company
Mark Jarvis
(810) 985-3132

PROJECT START - END
October 2011– Ongoing

PROJECT COST
$1000

KEY PERSONNEL
Matt Sherrard and Michael Jordan

PROJECT NO.
11-32119

LOCATION
Dunn Paper Company, Manufacturing Facility, 218 Riverview Street, Port Huron, Michigan 48060.

SCOPE
Huron Consultants was retained by Dunn Paper Company to conduct asbestos and hazardous material sampling prior to planned plant renovations at the Dunn Paper Company manufacturing facility. The project included sampling of suspect asbestos-containing materials, including thermal insulation and pipe wrap. The project also included the sampling of suspect lead-based paint of plant building trusses. A licensed industrial hygienist conducted selected sampling and samples were submitted to an accredited laboratory for analysis.

SPECIAL FEATURES
The project was completed on an expedited basis to accommodate internal Dunn Paper scheduling issues. Huron Consultants collected additional samples of potentially hazardous materials at the direction of Dunn Paper during field activities. The building was occupied and operational at the time of sampling, so Huron Consultants had to be sensitive to the concerns and safety of plant employees. Lastly, Dunn Paper company requested that Huron coordinate a site-walk with an abatement subcontractor familiar with point welding and other techniques to minimize lead exposure to provide Dunn Paper with budgetary estimates for plant renovations.

PROJECT PROFILE

Environmental Engineering

Federal Emergency Management Agency (FEMA), Disaster Relief
New Orleans, Louisianna

BACKGROUND

Following the disaster declaration for hurricanes Katrina and Rita the federal government responded, through the Federal Emergency Management Agency (FEMA), to establish disaster recovery operations for the State of Louisiana. One portion of the recovery program administered by FEMA is the Public Assistance (PA) Program. The objective of the Public Assistance Grant Program is to provide assistance to States, local governments, and certain Non-Profit organizations to alleviate suffering and hardship resulting from major disasters or emergencies declared by the President

SPECIAL FEATURES

Through the PA Program, FEMA provides supplemental federal disaster grant assistance for the repair, replacement, or restoration of disaster-damaged, publicly owned facilities and the facilities of certain Private Non-Profit (PNP) organizations. The PA Program is administered through the coordinated effort between FEMA, the State (grantee), and the applicants (subgrantees). While all three entities must work together to meet the overall objective of quick, effective program delivery, each has a different role.

FEMA's primary responsibilities are to determine the amount of funding, participate in educating the applicant on the specific program issues and procedures, assist the applicant with the development of projects, and review the projects for compliance. Huron Consultants (Huron) was contracted by the federal government to provided specialized manpower to temporarily assist and support the very important objectives of the PA Program's initial disaster recovery operations.

Huron provided a designated FEMA Technical Specialist with expertise in the field of indoor air quality standards and specific issues relating to microbial (fungal and bacterial) contamination in disaster damaged structures. Additional support was provided in the evaluation of building damage assessment reports including testing procedures and sampling results; review of scopes of work; analyzing post remediation verification results; and the determination of disaster related damage eligible for grant funding as outlined in federal law and policies incorporated under FEMA's PA Program.

In addition to operational responsibilities, Huron was instrumental in the creation and development of the FEMA Mold Remediation Training Program presented to all FEMA Project Officers throughout the State of Louisiana. This training program provided critical information outlined in FEMA's Mold Remediation Policy and highlighted building assessment criteria, determining building envelope damages, understanding basic microbial properties and determining eligibility issues based on evaluations and guidelines.

Huron developed specific unit prices for mold remediation activities, including the unit costs involved in post remediation verification sampling, for the Katrina/Rita disaster areas. As a result of the disaster many industry-pricing norms (labor, materials, equipment) for remediation activities were temporarily skewed, which required a reasonable and prudent means of valuation. These prices were established as a guide to be used in FEMA's Cost Estimating Format (CEF) and to be applied universally in computing applicant project worksheets.

OWNER / CLIENT
Macomb County
Harold Fuller / Lynn Brykes
(586) 469-5244

PROJECT START - END
March 2003 –March 2007

PROJECT COST
$192,400.00

KEY PERSONNEL
Greg Hoffman, Jeff Good, Jeff King, Matt Sherrard

PROJECT NO.
03-3050

PROJECT PROFILE

Environmental Engineering

Former Mueller Brass, Phase I and Phase II
Port Huron, Michigan

BACKGROUND

LOCATION

SCOPE

SPECIAL FEATURES

This site is a portion of the Mueller Brass property that was split and sold to Blue Water Area Transportation Commission (BWATC) for construction of a new bus storage and maintenance facility. The property was historically used for commercial and industrial purposes, including a vehicle repair facility and gasoline station. The vehicle repair and gasoline station facility was used for fueling and maintenance of Mueller Brass vehicles only. Other operations conducted on the property by Mueller Brass included formed tube manufacturing and related engineering services.

Prior to the property purchase, Huron Consultants performed a Phase I ESA and, due to RECs identified on the property, a Phase II ESA. Before this work was done, all buildings on the property being purchased by BWATC had been demolished and the property was vacant. The findings of the Phase II ESA identified the property as a "facility." Huron Consultants then prepared a BEA to provide environmental liability protection for BWATC. Due to the activities proposed to be performed on the property by BWATC, a Category "S" BEA was prepared and submitted to the MDEQ with a request for determination. The MDEQ responded to the request in a letter indicating that the BEA was affirmed. Huron Consultants then performed a geotechnical investigation for the proposed BWATC maintenance building construction to assist the architect with the design.

OWNER / CLIENT
Macomb County
Harold Fuller / Lynn Brykes
(586) 469-5244

PROJECT START - END
March 2003 –March 2007

PROJECT COST
$192,400.00

KEY PERSONNEL
Greg Hoffman, Jeff Good, Jeff King, Matt Sherrard

PROJECT NO.
03-3050

PROJECT PROFILE

Environmental Engineering

Porrett's Service, Leaking Underground Storage Tank Removal
Port Huron, Michigan

BACKGROUND

This site had been an open leaking underground storage tank (LUST) site since 1994. Huron Consultants was retained to close this LUST site. Huron Consultants obtained prior environmental reports and other data to gain an understanding of site environmental conditions. Based on the data reviewed, Huron Consultants developed a site investigation program to obtain current environmental data, as well as to determine the extent of the petroleum contamination at the site.

LOCATION

SCOPE

SPECIAL FEATURES

Huron Consultants then performed the site investigation, which involved collection and analysis of soil and groundwater samples.

Based on the findings of Huron's site investigation, as well as previous environmental data, Huron performed a risk-based corrective action (RBCA) evaluation. The RBCA evaluation included determining site-specific target levels (SSTLs) for use in evaluation of the site based on site-specific geologic and hydrogeologic conditions. The RBCA evaluation allowed for closure of the LUST site in 2006.

OWNER / CLIENT
Macomb County
Harold Fuller / Lynn Brykes
(586) 469-5244

PROJECT START - END
March 2003 –March 2007

PROJECT COST
$192,400.00

KEY PERSONNEL
Greg Hoffman, Jeff Good, Jeff King, Matt Sherrard

PROJECT NO.
03-3050

PROJECT PROFILE

Environmental Engineering

Thompson-Phelan Group/E&A Credit Union Phase I ESA, Phase II ESA, BEA and Due Care
City of New Baltimore, Macomb County, Michigan

BACKGROUND
Huron was retained by the Thompson-Phelan Group, on behalf of E&A Credit Union, to conduct due diligence activities at a former funeral home property prior to development of the property as a future E&A Credit Union banking location. Huron completed a Phase I Environmental Site Assessment (ESA), Phase II ESA and Baseline Environmental Assessment (BEA) at the facility. The generation of a Section 20107a Compliance Analysis (Due Care Plan) was also completed, in addition to providing due care oversight during construction activities on the property.

LOCATION
The proposed E&A Credit Union was located near the intersection of Main Street and M-29 (23 Mile Road) in New Baltimore, Michigan. The property was a vacant parcel of land, historically operated as a funeral home.

SCOPE
The Thompson-Phelan Group and E&A Credit Union retained Huron Consultants to provide due diligence consulting and manage environmental liability protection associated with the acquisition and development of commercial property. A Phase I ESA was conducted in accordance with All Appropriate Inquiry Rule 40 CFR 312 and ASTM E1527-05. The Phase I ESA identified several Recognized Environmental Conditions (RECs) related to former use, storage and handling of hazardous materials at the property. In addition, the adjoining property was a former leaking underground storage tank (LUST) site with documented release of petroleum and the potential for offsite migration. A Phase II ESA was performed, including the installation of soil borings and monitoring wells to facilitate soil and groundwater sample collection and laboratory analysis. The property was confirmed to be a "facility" as defined in Part 201 of MI PA 451 of 1994, as amended, based on the presence of contamination at levels greater than Generic Residential Cleanup Criteria. A BEA was completed and submitted to the MDEQ within required timeframes to provide environmental liability protection for the E&A Credit Union.

SPECIAL FEATURES
Huron Consultants worked closely with the both the prospective purchaser and the developer to ensure construction timelines were met and to ensure environmental liability issues were properly managed. Due to the subsurface contamination identified, a Due Care Plan was completed, providing recommendations related to subsurface activities associated with the proposed construction at the site. Huron provided onsite field screening, sample collection and laboratory analysis during subsurface construction activities to manage due care responsibilities during site construction.

OWNER / CLIENT
E&A Credit Union/
Thompson-Phelan Group
Brian Van Peteghem
(586) 725-8402
Donna Siejutt
(810) 966-4600

PROJECT START - END
May 2011 –September 2011

PROJECT COST
$12,500

KEY PERSONNEL
Michael Jordan
Julie Pratt
Matthew Sherrard

PROJECT NO.
11-22023

KEY STAFF RESUMES

CURRICULUM VITAE

DAREN MCLAUGHLIN, CHMM, CPEA

Director of Regulatory Affairs

HURON CONSULTANTS

EXPERTISE:

Project Management	Storm Water Management
Municipal Planning	ISO 14001 Pre-Registration
Training	Health & Safety
Auditing	Permitting & Reporting

EXPERIENCE SUMMARY:

Mr. McLaughlin has over fifteen years of experience in the environmental, health and safety sciences, engineering and research in the public, private and federal government sectors. As Senior Project Manager/Principal for Huron Consultants, Inc. he oversees environmental, health and safety project development and provides management expertise for company staff. Mr. McLaughlin has also served on several municipal boards, commissions and committees within Lapeer and St. Clair Counties for nearly 8 years.

CREDENTIALS:

B.S., Industrial Engineering (Alpha Pi Mu – Industrial Engineering Honor Society), New Mexico State University, 1994

A.S., Fire Science & Technology, Presidents Honors, City Colleges of Chicago, 1998

Certified Hazardous Materials Manager, CHMM, Master Level

Certified Professional Environmental Auditor, CPEA

Certified Professional Health & Safety Auditor, CPEA – H&S

40-hour HAZWOPER Training and Annual 8-Hour Refresher Training

KEY PROJECTS:

Served as the project manager for storm water related services for several Townships located in St. Clair County, including: Ira Township, Fort Gratiot Township, Burtchville Township, Casco Township, Clay Township and Kimball Township. The services involve the development and implementation of storm water management, water quality ordinances, and development and management of each Township's Phase II Storm Water Discharge Program.

Project Engineer for the development of the drainage district boundaries for a county drain located in St. Clair County by coordinating all aspects of roadway and topographic drainage pattern assessments of an existing Drainage District located in St. Clair County.

The assessment involved a review of drainage district maps, County Road Commission maps, as well as field activities to determine how roadway and topographic drainage affected overall drainage patterns within district boundary locations.

Assisted the SCC Drain Commissioner's Office in developing the drain assessment roll for Stocks Creek, one of the largest drainage districts in the County.

Performed a field study to assess historical flooding concerning residents adjacent to the Galbraith Drain.

Project manager of the development of the first ordinance regulating the siting and construction of Privately-Owned Sanitary Treatment (Package) plants. The ordinance was added as an amendment to Ira Township's Engineering Standards and Development Ordinance and is an important component of the Township's approach to regulate storm water quality.

Coordinated a sampling effort concerning the Galbraith Drain to assess water quality as part of an overall effort to determine potential water quality impact caused by a proposed expansion of the Detroit Water and Sewerage Department's (DWSD's) water treatment facility.

Has assisted industry in attaining storm water permits or applied for exemptions on their behalf. Has developed dozens of storm water pollution prevention plans for such clients as Tower Automotive, Monitor Sugar Company, General Chemical, Chem-Trend, SSAB HardTech, General Motors, PCC Olofsson, and EG&G (Perkin Elmer) emphasizing process change and good housekeeping practices.

Developed and implemented all aspects of storm water spill control plans and procedures for Department of Defense (DOD) facilities located on White Sands Missile Range and Holloman AFB, New Mexico.

Developed a "one plan" emergency response document, which integrated a number of required emergency action elements such as spill response (SPCC), storm water management and response (SWPPP), and emergency action (fire/tornado) into one plan for TRW Automotive (Lucas Varity) for over 30 facilities located in North America.

CURRICULUM VITAE

ERIC J OSTLING, PE, CFM

Engineering Group Manager

EXPERTISE:

CADD Design/Computer Applications
Civil Engineering
Construction Phase Services/Inspection
Hydrologic & Hydraulic Modeling
Municipal Engineering
Site Planning & Development
Survey/Land Division/Easements
Transportation & Paving Systems
Water Resources & Conservation

CAREER SUMMARY:

Mr. Ostling has fourteen years experience in both the private and public sectors of Civil Engineering. Having acquired a very diverse background in the fields of Land Surveying, Construction Contracting, Civil Site Design, Municipal Consulting, Structures, and related fields, Mr. Ostling is versatile for the varied needs of clients, and well rounded to provide unique perspective on projects from different aspects.

Mr. Ostling is a member of the American Society of Civil Engineers (ASCE), the Association of State Floodplain Managers (ASFPM), the Michigan Stormwater Floodplain Association (MSFA), and has been involved in the Michigan Water Environment Association (MWEA), and other industry organizations supporting his focus on Water Resources and Public Utilities. Mr. Ostling has been actively involved in the National Pollutant Discharge Elimination System Phase 2 since implementation in 2003.

Having managed and designed numerous private sector developments and public municipal projects, Mr. Ostling has extensive experience collaborating with local, county, state and federal agencies in obtaining permits for varied transportation, sanitary sewer and water system projects, and drainage-related issues including detention/retention facilities, drain improvements, wetland impact, great lakes and inland lakes and streams impact, floodplain analysis and alteration.

Mr. Ostling has collaborated with municipalities and various other authorities on various grants and permits, such as Michigan Department of Environmental Quality (MDEQ), Michigan Department of Natural Resources (MDNR), Michigan Department of Transportation (MDOT), United States Department of Agriculture (USDA), Environmental Protection Agency (EPA), Federal Emergency Management Agency (FEMA) and the National Flood Insurance Program (NFIP).

Mr. Ostling has been a consultant to municipalities, having written ordinances and developed standards and specifications. On the enforcement side, Mr. Ostling has performed site plan and engineering reviews, and construction inspection on behalf of municipalities and other agencies for projects in their jurisdictions.

Credentials:

B.S., Civil Engineering, Transportation Curriculum, Michigan Technological University, Houghton, Michigan
Professional Engineer, State of Michigan, 62010 47470
Professional Engineer, State of Ohio, 73000
ASFPM Certified Floodplain Manager Certificate No. 09-04123
MDEQ Certified Construction Storm Water Operator, C-14463
MDEQ Certified Industrial Storm Water Operator, I-09884
MDEQ Certified Soil Erosion Control Inspector, 08-0538
Certified MDOT Materials Acceptance Process (MAPS) Training & Certified FieldManager Training, ACEC accredited

GENERAL EXPERIENCE SUMMARY:

Public Sector Consulting
Application & acquisition of construction permitting
Conducting Public Meetings/Public Hearings
Construction Phase Services
County Drain Improvements
Developing engineering review requirements, ordinances
Executing & administering proposals & contracts
Municipal Regional Drainage Improvements
Municipal Sewer and Water Improvements
Performing feasibility studies, preparing reports
Preparing construction documents & bid specifications
Preparing grant & loan applications
Quality Assurance & Quality Control (QA/QC)
State, County and Local Transportation Improvements

Private Sector Consulting
Application & acquisition of construction permitting
County & local road and infrastructure design
Executing & administering proposals & contracts
Performing due diligence, scope-of-work & cost analysis
Performing feasibility studies, market analysis
Planning & engineering of land development projects
Preparation & presenting site plans & construction plans

Structures
Concrete Forming
Concrete Foundations Design
Retaining Walls/Sea Walls/Sheet Piling
Shoring/Scaffolding Systems

Surveying
Construction Phase Services
Easements & Right-of-ways
Grading Certificates
Mapping & GIS
Topographic Survey for site development & improvements

Construction Contracting
Accounting for asphalt division production & distribution
Executing & administering contracts
Managing site civil projects, scope-of-work analysis
Preparing & presenting bids for private and public projects
Project Manager, Oakland University parking lots

CURRICULUM VITAE

SERMED K SAIF, PE, CSI, CDT

Project Manager

EXPERTISE:

Municipal Engineering Services
Public Utilities Master Planning
Water & Wastewater Design & CCA
Construction Contract Administration
Contract Specifications
CADD Design/Computer Applications

CAREER SUMMARY:

Mr. Saif has 14 years of experience in the industry. He provides innovative approaches to complex projects. Mr. Saif has knowledge of commonly-used concepts, practices, and procedures within the engineering field.

As the Project Manager and Engineering Consultant, Mr. Saif supports the local municipalities by coordinating the work with the design team, public agencies, developers, contractors, residents, and all related parties. His engineering experience includes the design and master planning of sanitary sewers, water mains, storm sewers, as well as review of the development plans for compliance with Local Ordinances / Master Plans and sound engineering practices.

Mr. Saif also certified and has experience in writing contract specifications and construction contract administration (CCA). Through technical knowledge and excellent communication skills, he will ensure his workmanship is in conformance with the projects' scope of work and Huron Consultants established policies and objectives.

CREDENTIALS:

EDUCATION
BS, Civil and Environmental Engineering, New York University Polytechnic – Brooklyn, New York, 1997

REGISTRATION
Professional Engineer, State of Michigan, 51411, 2004
CSI / CDT – Construction Specifications Institute / Construction Documents Technologist, Michigan, 2010

PROFESSIONAL AFFILIATIONS
ASCE - Member since 1996
SOCME – Treasurer since 2005, Member since 1998
AAEA – Board Member since 2005

SPECIALIZED TRAINING
PSMJ Resources, Inc. - Project Management Bootcamp
ASCE – Project Communications
Computer Data, Inc – Advanced Microsoft Excel & PowerPoint
Lorman Business Center – Phase II Storm Water Regulation & Compliance
AutoDesk – Land Development Desktop
MSTT – Trenchless Technology
PSI – Groundwater Problems

KEY PROJECT EXPERIENCE SUMMARY:

Engineering Consultant, Lenox Township
Manager in charge of Township Engineering Services. Working on Capital Improvements Projects such as water mains, sanitary sewers, street paving, sidewalks, conducting studies, and designing facilities. Coordination of all engineering aspects of projects including client and public relations as well as working with the project team to meet the project and client requirements. Performing detailed site development engineering plan review for conformance with current Engineering Standards. Design, management and permitting of water and sanitary sewer trunk-line master planning. Participating in planning matters and maintaining design and construction standards related to site development and master planning. Performing detailed review of residential plot plans. Assistance in Dispute Resolution, Agreement / Rate negotiations, Grant applications and GASB 34 Fixed Asset Management. Developing special assessment projects for water, sewer, and paving projects. Providing office hours and attending public meetings to provide recommendations for general and project specific requirements.

Water Main & Sanitary Sewer Master Plans, Lenox, Macomb, and White Lake Townships
Conducted master plan studies & updates for the Townships. Analyzed the population equivalent projection growth with respect to demand and use. Created flow models, flow analysis and effects. Recommended trunk line, force main size and capacity. Prepared studies, cost estimate, and report. Master plans ultimate population ranged between 60,000 to 120,000.

Water Distribution Evaluation Study, City of Clawson
Assisted in hydraulic modeling investigation of the existing system to identify system deficiencies and recommend a remedial action plan and hydraulic modeling investigation of the proposed system.

Engineering Ordinance Update, Lenox Township
Reviewed Water & Sewer and Land Development Ordinances as well as the Engineering & Construction Standards and drafted updates to meet current engineering practices and Township procedures.

Water, Sewer & Paving Standards, Lenox Township
Developed and updated standard details for water mains, sanitary sewers, structures, paving sections, parking lots and pedestrian pathways.

Plan Reviews, Lenox Township, Macomb Township, White Lake Township, and City of Orchard Lake Village
Conducted various plan reviews in compliance with the local ordinances and recommended solutions. Also performed inspection for underground construction.

SERMED K SAIF, PE, CSI, CDT

Project Manager

Municipal Recreation Park, Lenox Township
Design, drafting, construction consultation and administration of 24 acres of land balancing, construction of a basketball court, hockey rinks, two soccer fields, baseball/softball field, a 1 mile/ 8-foot wide asphalt hiking path, landscaping, irrigation system, and a 104-space parking lot replacement.

Section 36 Water Main Rehabilitation, Macomb Twp
Design and drafting for 9,472 feet of 8-inch ductile iron water main. Prepared construction cost estimate. The proposed water main was a replacement of a 30-year-old water main system in a residential area. Prepared construction specification documents.

NG Interceptor Sanitary Sewer, Lenox Township
Project management, design and drafting of 32,600 feet of 18-36 inch sanitary sewer. Prepared construction cost estimate and construction specification documents. Involved in project bidding, construction consultation / administration, claim negotiation and value engineering review. Project Cost $16,000,000.

26 Mile Road Sanitary Sewer Extension, Lenox Township
Design and construction engineering of 5,100 feet of 15-inch gravity sewer. Prepared construction cost estimate and construction specification documents. Involved in project bidding, construction consultation / administration, claim negotiation and value engineering review. Project Cost $1,800,000.

Township New Civic Center, Macomb Township
Designed, prepared construction plans, specification documents and construction consultation and administration for 4,190 feet of 6-inch to 16-inch of water main, 2,610 feet of 10-inch to 15-inch sanitary sewer, 4,940 feet of 12-inch to 48-inch storm sewer, 1/2 mile of new pavement/roads, 6 acres of Retention Basin, 10' x 20' X 100' Box Culvert, Relocation of 1,200 feet of existing drain channel

Lenox / Richmond EMS #3, Lenox Township
Design and project management of EMS building and site improvements. The 4-acre project site involved parking lot expansion, detention pond, EMS building, grading and landscaping. Coordinated and managed work with Architect, Township Officials and Federal Funding Agencies. Project construction consultation and administration.

23 Mile Sanitary Sewer, Macomb Township
Assisted in the design and drafting of 2,415 feet of 36-inch sanitary sewer. Prepared construction cost estimate and easement documents. Assisted in the project's construction consultation and administration. Prepared construction specification documents.

Pontiac Lake Low Pressure Sanitary Sewer System, White Lake Township - State Revolving Loan Funds (SRF) No. 5157-01. Recipient of the 2001 Quality of Life Award, from the American Society of Civil Engineers (ASCE), South East Michigan Branch
Design and drafting of 14,654 feet of a 2-6 inch low-pressure HDPE and grinder pumps sewer system. Prepared construction plans, project manual, easement documents, and layout exhibits. Assisted in project administration and phasing with contractor and home owners minimizing construction impacts and value protection of residential areas. Coordination with Oakland County Drain Office, White Lake Township, local residents, and regulatory agencies.

GWK Drain Contract 4 Improvements, Madison Heights
Assisted in the design and drafting. The scope of work includes the designs of two separated storm sewer extensions, a combined sewer reroute to a new 100 cfs pump station, and also the design of a pump station and discharge to the 12 Mile Interceptor. Also included are grading plans for the expanded Retention Treatment Facility inlet structure and proposed piping, paving and traffic control for the new facility entrance and 12 Mile Road entrance, as well as soil erosion and sediment control plans.

DWSD / Lenox Township & Macomb Township Water Master Meter and Pressure Reducing Valve (PRV) Stations, Lenox & Macomb Townships
Design, drafting, construction consultation and administration of the third point of Macomb Township water supply to DWSD system. The project involves the design and construction of two 12'x20'x11' steel vaults for the proposed meter & PRV, site grading, electrical and control systems according to DWSD standards. Phase 1 of this project involved the design and construction of a temporary 10'x14'x9' Pre Cast Reinforced PRV pit and a 5' diameter Pre Cast metering well, site grading, electrical and control systems according to DWSD standards. Project construction consultation and administration.

Broughton Sanitary Sewer, Macomb Township
Design and drafting for 2 miles of 24-inch trunk line sewer. Prepared easement documents according to Township guidelines. Prepared construction cost estimate.

23 Mile Road Force Main & Pump Station, Macomb Township
Design and drafting for 2,600 feet of 12-inch trunk line force main sewer. Prepared easement documents according to Township guidelines. Prepared construction cost estimate.

CURRICULUM VITAE

FRED FULLER

Senior Project Professional

EXPERTISE:

Watershed Planning
Michigan Drain Code
Grant Writing
Governmental Affairs
Storm Water Project Management
River Restoration Techniques
Wetland Mitigation

EXPERIENCE SUMMARY:

Mr. Fuller was elected to three terms as St. Clair County Drain Commissioner, serving for 12 years, from 1997-2008. He also served as Mayor of the City of Yale in 1990, 1991 and 1996. This public service has given him considerable experience in governmental affairs, and insight, from the inside, into the needs and operations of municipalities. He is very experienced in conducting public hearings, preparing public documents and news releases, working with news media, and applying for grants.

Prior to being elected Drain Commissioner, Mr. Fuller served as the Field Director for the Michigan Nature Association, an independent land conservancy headquartered at the time in St. Clair County. He also was a co-founder of several citizens groups, including the Mill Creek Coalition, the Black River Watershed Group, the Friends of Beard's Hills and the Thumb Bioregional Alliance.

As Drain Commissioner, Mr. Fuller became very active in water quality issues. He helped create the Blue Water Task Force on Water Quality and the Macomb-St. Clair Intercounty Watershed Advisory Group. Many grant opportunities arose out of these organizations. Mr. Fuller applied for and administered over $2.4 million in grant funding as Drain Commissioner.

He helped initiate watershed planning in St. Clair and Macomb Counties by envisioning an Anchor Bay Watershed Plan on which the two counties could work together to improve water quality in Lake St. Clair. In 2001, his office was awarded a $91,000 Section 319 federal grant for that plan. This project launched many continuing watershed planning efforts in these counties. In 2008, Mr. Fuller was asked to co-chair the Audit Committee for Macomb County's Blue Ribbon Commission on Lake St. Clair.

As Drain Commissioner, Mr. Fuller also administered many conventional storm water drainage and flood control projects. In order to solve a 10-year long controversy over the South Branch of Mill Creek Intercounty Drain Project, he brought in national experts in "River Restoration Techniques" and pioneered their use in this region to avoid the channelization of the creek, which many landowners and environmental organizations had opposed.

ACADEMIC CREDENTIALS:

Bachelor of Arts, English Literature, Albion College
Albion, Michigan, 1974

KEY PROJECTS:

Village of Emmett Wastewater Collection & Treatment Project As Drain Commissioner, Mr. Fuller obtained a Clean Michigan Initiative grant to identify failing septic system problems in the Village of Emmett. He then initiated an innovative plan to build a sewage collection and treatment system for the village using provisions of the Michigan Drain Code to administer the project. He obtained a low-interest State Revolving Fund Loan to construct the project, which was completed in 2008.

Village of Avoca Innovative Wetlands Wastewater Treatment Project Mr. Fuller obtained a $411,000 Clean Michigan Initiative Grant to design and build a wastewater collection and treatment system for the small, unincorporated community of Avoca, using engineered wetlands for sewage treatment. He then obtained a $650,000 grant and a $1.6 million low-interest loan from USDA Rural Development to complete funding for the project, using the Michigan Drain Code to assess landowners for repayment of the loan.

Wetland Mitigation by Preservation
Faced with many wetland issues in low-lying St. Clair County, Mr. Fuller started a program, in cooperation with the Michigan Department of Environmental Quality, of using "Wetland Mitigation by Preservation" to protect high-quality wetlands in the county as mitigation for permits to impact low-quality wetlands during drainage projects.

Illicit Connection Elimination Projects
Mr. Fuller obtained $638,000 in Clean Michigan Initiative grants to inspect all 800 miles of county drains in St. Clair County for illicit septic connections and other pollution problems. This helped the County and its municipalities comply with Clean Water Act Phase II storm water permitting requirements.

City of Croswell Electric Improvements Grant
In 2010, Mr. Fuller helped the City of Croswell apply for and obtain a $542,500 Community Development Block Grant (CDBG) for installing a new electrical transformer and making related improvements to the city-owned electricity distribution system.

Howe-Brandymore Stream Restoration Grant
In 2010, Mr. Fuller helped the current St. Clair County Drain Commissioner apply for and receive an $85,000 grant from the U.S. Fish & Wildlife Service for restoring fish and wildlife habitat along the Howe-Brandymore Drain in Fort Gratiot Township, St. Clair County.

HURON CONSULTANTS

CURRICULUM VITAE

JAY JOHNSON, PE

Project Engineer

EXPERTISE:

Municipal Engineering
Civil Engineering
Utilities (Water & Sanitary)
Transportation& Traffic Engineering
Water Resources & Conservation
Site Planning & Development
Construction Engineering & Site Layout
Storm Water
Surveying, Staking and Topographical
Inspection, Municipal and Private

EXPERIENCE SUMMARY:

Mr. Johnson is a 1996 Civil Engineering graduate of Wayne State University, Detroit, MI.

Mr. Johnson has a diverse background in civil engineering with over 20 years experience in both the private and public sectors, including military service. His experience includes inspection, surveying crew chief, civil site design, plan review, municipal consulting and MDOT design and Inspection. Mr. Johnson's versatility and work experience make him a valuable asset to any municipal or private design project.

CREDENTIALS:

B.S. Civil Engineering,
Wayne State University, Detroit, MI
P.E., State of Michigan, License #6201054724

KEY PROJECTS:

E & A Credit Union Headquarters, Port Huron, MI. This project was a new construction development 2-story bank. Duties as lead engineer included Auto CAD design, construction layout, utility design, pavement grading, permitting and storm water design.

Sanitary Sewer Treatment Pond at the Girl Scout Camp, City of Marysville, MI. Improvements to the existing sanitary sewer system and the construction of a PVC lined settlement pond. Duties as lead engineer included AUTO CAD design, construction management and permitting with MDEQ.

The City of Croswell, sanitary sewer and water main improvements project. Duties as lead engineer included modeling the sanitary sewer system, Auto CAD design, construction management of inspectors, permitting with MDEQ, pump station design, retention pond design, sanitary sewer and water main design. This project also included the preparation of the RDA contract documents for finance and construction.

RS Contractor Headquarters Marine City, MI. This project is a 10-Acre commercial site design. Duties as design engineer included utilities, water treatment, paving design, septic design and permitting.

Sanitary sewer separation for the City of Port Huron. Role as a design engineer included Auto CAD design of storm and sanitary sewers.

MDOT local project Cottrellville Bike Path. Duties as design engineer included Auto CAD design and use of the MERL software. Other duties included construction inspection.

The Woodward Senior Living Bloomfield Hills, MI. This project is an 8-acre senior living complex. Role as design engineer included coordination of the traffic study to approve entrance for MDOT permit, pavement grading, storm sewer design, and calculations for underground detention.

American House senior living complex located in Rochester Hills, MI. Duties as lead design engineer included ADA grading, utility design, permitting and hydraulic calculations for detention.

Fox Creek Redevelopment, Detroit, MI. 640 acre redevelopment. As design engineer, duties included Auto CAD design, water main, storm and sanitary sewer design.

The Westin Book Cadillac infrastructure design was part of a 200 million dollar renovation project located in the City of Detroit, MI. As project engineer, duties included traffic control design, pavement, water main, sanitary and storm sewer design.

Cornerstone Estates (Jeffries East) project consisted of demolition and rebuilding of the existing 10 acre Detroit Housing Commission project located at Temple Street and the Lodge across from the Motor City Casino. There are approximately a 100 units. As project engineer, role was to redesign the roadways, water main, sanitary and storm sewer design.

Reconstruction of the downtown of the City of Auburn Hills, MI. The project included paving, utilities, lighting, landscaping, borings, electrical, bridges and storm water treatment. Duties as field engineer included inspection and construction staking.

Park Avenue Reconstruction Project in Yale, MI. This MDOT local project was managed using the Field Manager Program. As field engineer, he was responsible for the inspection, surveying and design. Inspection duties included execution of MDOT inspector daily reports, pay estimates and generating reports using Field Manager.

Capac Road Water Main Project located in Imlay City, MI. As project engineer, duties included AutoCAD design, construction staking, construction inspection and as-built plan preparation.

HURON CONSULTANTS

CURRICULUM VITAE

THOMAS D PATON

Engineering Technician

EXPERTISE:

Surveying
CADD Design
ROW Development
Construction Inspection
Construction Testing

Experience Summary:

Mr. Paton is a student at St. Clair County Community College, pursuing an Associate's degree in Engineering.

At Huron Consultants, Mr. Paton has been involved with various aspects of many engineering projects:

Surveying
Mr. Paton has performed surveys for many projects, using GPS, total station, and traditional equipment.

CADD Design
Under the direction of project engineers, Mr. Paton has developed site plans for drain projects, parking lots, and other engineering projects.

ROW Development
Mr. Paton has become proficient at writing Right of Way language, locating and interpreting property description information, and creating accurate property sketches to aid in the development of Right of Way and easement documents.

Construction Inspection
Mr. Paton has been involved with construction inspection on many projects, performing construction staking, monitoring construction progress, and submitting inspection reports.

Green Technology
Mr. Paton has used his background in biology and research to develop rain garden layouts in concert with several Huron Consultants projects. This includes design of the overall structure as well as selection of species and planting guidelines.

CREDENTIALS:

B.S., 1990, History, Biology, Education Eastern Michigan University
Certified Construction Storm Water Operator C-14472
Certified Industrial Storm Water Operator I-09878
Certified Soil Erosion Control Inspector 07-0494
Certified Field Manager Training
MCA Concrete Field Testing Technician Level I
ACI Concrete Field Testing Technician Grade I
Certified SCUBA Instructor PADI #54959
(HAZWOPER) Training
Certified RCRA Hazardous Waste Generator/Trainer
Certified DOT Hazardous Materials Operator
ISO 14001 Auditor

KEY PROJECTS:

Bunce Creek and Huffman Drain
Mr. Paton was responsible for development of all right of way documents for Bunce Creek and Huffman Drain in St. Clair County. This project involved the addition of four branches and the extension of several others in this large drainage district. His duties also included surveying, construction staking and inspection observation of construction activities, as well as soil erosion and storm water management inspection.

Macomb County Administration Parking Lot
Mr. Paton designed the landscaping for rain gardens surrounding a parking lot built for Macomb County in Mt. Clemens, Michigan. In addition, his duties included construction staking and inspection observation on the project.

Brown City Arsenic Treatment Facility
Mr. Paton was responsible for the construction observation and documentation for the construction of Brown City's new arsenic treatment facility. In addition, he was responsible for plan revisions and progress reports during the construction process, and development of the As-Built plans.

Park Avenue Repaving Project
Mr. Paton was responsible for the surveying, construction observation and documentation of the Park Avenue Reconstruction Project in Yale, MI. This project was managed using the Field Manager Program as specified by MDOT. Mr. Paton also assisted the Project Manager with the IDR reporting, pay estimates, and report generation using the Field Manager program.

Capac Road Water Main Project
Mr. Paton was involved with surveying and construction staking for Imlay City's Capac Road Water Main Extension Project. Mr. Paton also had construction inspection duties during this project.

Shanahan Drain Relocation and Improvements
Mr. Paton assisted in the design of the drain and culverts on the Shanahan Drain project for the St. Clair County Drain Commission. He was also involved with the survey, construction staking, construction inspection, and soil erosion inspection during construction.

Dana Drain
Mr. Paton was involved with construction staking and construction inspection for the Dana Drain improvement project in St. Clair County, Michigan.

CURRICULUM VITAE

JULIE A PRATT

Senior Project Professional

EXPERTISE:

Environmental Project Management
Phase I and II ESAs, BEAs, Due Care
UST Management and Compliance
Remedial Investigations
(Soil and Groundwater Studies)
Remediation Feasibility Analyses
Regulatory Compliance

EXPERIENCE SUMMARY:

Ms. Pratt has over 17 years of professional experience in the environmental consulting industry. As project manager, Ms. Pratt is responsible for coordinating and managing environmental contamination projects for industrial, commercial, residential, and municipal clients.

Ms. Pratt has particular expertise in environmental site assessments, environmental site investigations, due diligence, liability determination, baseline environmental assessments, and Risk-Based Corrective Action (RBCA) analyses. Ms. Pratt also has experience in a variety of regulatory compliance areas, including pollution prevention, landfill compliance, and liquid industrial waste.

CREDENTIALS:

B.S., 1993, Biochemistry – Michigan State University, East Lansing, Michigan
Occupational Safety and Health Administration (OSHA) 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) Training/Annual 8-hr Updates.
ASTM Certification in RBCA Applied at Petroleum Release Sites

KEY PROJECTS:

Ms. Pratt has performed or managed more than 100 Phase I Environmental Site Assessments (ESA) for sites ranging from vacant lots and agricultural property to major industrial and commercial facilities. Phase I ESA's were conducted in accordance with the All Appropriate Inquiry (AII) standard compliant with 40 CFR 312 and ASTM standard E 1527-05. On projects with recognized environmental conditions, Phase II ESA's were completed expeditiously, consisting of a scope of work that would be considered reasonable and sufficient to identify the presence, nature and extent of a release as it impacts the Property.

Provided key assistance in property transactions, saving time, money, and unnecessary actions by demonstrating a thorough knowledge and understanding of due diligence requirements and applicable regulations. She has been involved with the completion of numerous Baseline Environmental Assessments (BEA's) at qualifying sites to provide liability protection from pre-existing contamination. Landowners, potential purchasers and financial institutions have relied on Ms. Pratt's guidance to ensure timely and trouble-free property transactions.

Managed more than 100 leaking underground storage tank (LUST) projects involving the release of regulated and non-regulated petroleum products. Provided project management, regulatory reporting and remedial management of the release in accordance with Part 213 and/or Part 201 guidelines. Involved site characterization, soil and groundwater sample collection and analysis for vertical and horizontal delineation, RBCA analyses, feasibility analyses, corrective action plans, and periodic reporting to the Michigan Department of Environmental Quality (MDEQ). Has conducted aggressive free product recovery, groundwater pump-and-treat, and bioremediation at several LUST sites. Also performed detailed subsurface utility potential receptor/migration pathway evaluations in accordance with the MDEQ RBCA process.

Conducted second-opinion reviews on behalf of attorneys and insurance companies for numerous Part 201 and Part 213 facilities.

Conducted evaluations of several bulk oil facilities to determine compliance with state and federal regulations associated with oil pollution prevention and spillage of oil and polluting materials. The pollution prevention activities included identification of non-compliance with state and federal regulations associated with oil pollution prevention and spillage of oil and polluting materials. Compliance was accomplished by developing and implementing alternative containment and diversionary structures to prevent the threat of a spill or release outside of the containment areas.

Provided general environmental landfill compliance services, including a review of landfill operations, permits and agreements, meeting with key Landfill personnel, and performing site reconnaissance to evaluate environmental compliance, operations and daily activities. Included oversight of hydrogeologic monitoring, leachate control/management, methane management, storm water/surface water management and community nuisance elements.

Assisted large-scale construction company with innovative waste hauling permitting and compliance. Generation of liquid industrial waste permits, applications, laboratory analysis, and disposal associated with concrete slurry during road construction. Also assisted with Storm Water Pollution Prevention Plan for portable concrete batch plant during airport runway construction.

CURRICULUM VITAE

NICHOLAS G. MALOOF, RPG, Esq.

Director

EXPERTISE:
Brownfield Redevelopment and Incentives
Environmental Project Management
Phase I and II ESAs, BEAs, Due Care
Remedial Investigations (Soil and Groundwater Studies)
Remediation Feasibility Analyses
Regulatory Agency Negotiations

CREDENTIALS:
JD, 1998, Michigan State University College of Law
MS, 1997, Western Michigan University
BS, 1987, Aquinas College

EXPERIENCE SUMMARY:

Mr. Maloof is an active member of the State Bar of Michigan and has over thirteen years experience as a transactional attorney and twenty-two+ years of experience in the field of environmental and real estate consulting. A majority of his work is conducted with or on behalf of attorneys, financial institutions, developers, investors, property owners and real estate brokers.

Mr. Maloof received his Juris Doctor from Michigan State University College of Law, his Master of Science Degree (MS) in Earth Science from Western Michigan University and his Bachelor's Degree in Business Administration from Aquinas College. He is also a Registered Professional Geologist in the State of Tennessee and a licensed Associate Real Estate Broker and Title Insurance Resident Producer in the State of Michigan.

Over the past 20 plus years, Mr. Maloof has been involved in thousands of real estate transactions and land development projects from site selection, due diligence, financing and development entitlement standpoint, as well as numerous Workout, Foreclosure and Bankruptcy related matters. Mr. Maloof has advocated and been involved in what would become known as Brownfield Redevelopment since 1989 when Site Reclamation Fund Grants first became available and has obtained millions of dollars of Tax Increment Financing (TIF), Michigan Business Tax (MBT) Credits, Grants and Loans, and other economic incentives throughout Michigan for Brownfield Redevelopment projects. His tenure includes: being a Past President (2007) of the Commercial Board of Realtors (CBOR) in Michigan, the statewide commercial board which owns the Commercial Property Information Exchange (CPIX); a Member of the International Council of Shopping Centers (ICSC) Alliance Program Steering Committee; has previously sat on the Board of Directors for the National Association of Industrial and Office Properties (NAIOP) – Detroit Chapter; and being a Member of the University of Michigan/Urban Land Institute (UM/ULI) Real Estate Forum Steering Committee.

As an active member and frequent speaker for the State Bar of Michigan Real Property Law Section, Mr. Maloof is also an approved Continuing Education Instructor with the State of Michigan and has presented numerous accredited educational programs for the State Bar of Michigan, ICSC, ICLE, Lorman Education and CBOR.

KEY PROJECTS:

AUBURN HILLS, MICHIGAN – PROPOSED LANDFILL REDEVELOPMENT

Mr. Maloof was Project Manager for a high visibility Brownfield Redevelopment site. Initial site investigation activities included: review of an existing Phase I Environmental Site Assessment (ESA) report; performance of a comprehensive Phase II Subsurface and Geotechnical Investigation, meetings with Auburn Hills officials; Brownfield Redevelopment Grant (formerly known as Site Reclamation Fund) application preparation; site planning and rezoning assistance; and remedial action plan preparation and cost estimating.

BIRMINGHAM, MICHIGAN – FORMER SUNOCO GAS STATION AND HUNTER HOUSE RESTAURANT

Mr. Maloof worked with the Client, a real estate developer, to provide Brownfield Consultation and Site Assessment services for the proposed re-development of the former Sunoco Gas Station and Hunter House Restaurant site into a mixed-use development, which includes a five-story 117,000 square foot building and three floors of underground parking. Maloof provided pre-development site investigation services, including a review of existing environmental data, performing a Phase II Subsurface Investigation, preparation of a Baseline Environmental Assessment (BEA) and 7a Due Care Plan for submittal to the MDEQ, preparation of a Brownfield Plan and Tax Increment Financing (TIF) reimbursement calculations, attending public meetings with the City of Birmingham, Oakland County Brownfield Redevelopment Authority (OCBRA), MEDC and other governmental agencies in conjunction with Client and providing overall Brownfield incentive consultation.

CANTON, MICHIGAN – A.D. TRANSPORT EXPRESS, INC.

Mr. Maloof was Project Manager for a Brownfield Redevelopment site. Client intended to purchase and redevelop a listed Act 307 landfill site for industrial use. Initial site investigation activities included: (1) review of environmental and other data prepared by the MDEQ; (2) meetings with MDEQ WMD staff and Canton Township officials; (3) Site Reclamation Fund grant application preparation; and (4) remedial action plan preparation and cost estimating.

HURON CONSULTANTS

CURRICULUM VITAE

JEFFREY T GOOD

Project Manager

EXPERTISE:

State of Michigan Licensed Asbestos Building Inspector and Management Planner

NIOSH 582 sampling and evaluations

Air monitoring and reporting under 40 CFR 1926.1101 and 40 CFR 1910.134.

Mold investigations and remediation project planning, oversight, and clearance.

EXPERIENCE SUMMARY:

Mr. Good is responsible for managing and implementing regulatory compliance programs, performing air compliance monitoring, materials bulk sampling and analysis, and reporting for various clients. As a field hygienist for over ten years, he was responsible for NIOSH, AHERA, EPA, HUD, and MIOSHA compliance, DEQ reporting, permit application review, waste disposal manifestation for Large Quantity Hazardous Waste Generator. Proficient in NIOSH 7400 for asbestos. Experienced in NIOSH 7082, 7104, and 9100 sampling protocol for Lead Based Hazards

CREDENTIALS:

Michigan Technological University 1988-1991, College of Civil Engineering.
Macomb Community College, 1991-1993, College of Business/Marketing
OSHA 40 Hr HAZWOPER Trained
NIOSH 582 Certified Air Sampling for Asbestos
NIOSH 7400 Certified PCM Fiber Counting
Licensed Asbestos Inspector in Michigan

KEY PROJECTS:

As a project manager since 2003, projects have included long term multi-phased abatement projects, hazardous materials assessments, asbestos containing materials surveys, and bid specification development for various clientele.

Directing multi-phased asbestos, lead, and mold remediation activities at active medical care facilities, courthouse facilities, and other government buildings as well as for a local area/regional hospital. Participated in the bid development specifications for and award processes of multi-million dollar municipal projects for the county as well. Duties included contractor coordination & oversight, OSHA compliance, and project safety oversight activities.

Coordinated the abatement and demolition activities for a national manufacturing firm in Dearborn, MI. The overall OSHA compliance and safety aspects of the project were a part of the duties of this project.

Conducted numerous commercial, municipal, and private residence mold assessment investigations and directed subsequent remedial activities.

Since 1997, projects have included Brownfield Remediation for the Cities of Warren, MI and Dearborn, MI, done on time and under budget, contributing reports and implementing on site supervision of said remediations and safety protocol; including logging of and characterization of drums, subsurface investigation, asbestos and lead paint sampling, and waste manifesting.

Performing air compliance monitoring and industrial hygiene reporting for various abatement projects throughout Michigan, including multi-phased long term projects for a major health care provider, national testing laboratory, regional hospitals, Macomb County, and a national drug store chain.

Planning & conducting OSHA air sampling events for various forms of hazardous materials and reporting the findings. Specializing in personal air monitoring and HVAC efficiency studies.

Performing Phase I, Phase II, and Baseline Environmental Assessments for clients statewide.

Conducting water sampling for Site Closures and Remediation Monitoring. Conducting onsite soil sampling for Phase II reporting for numerous commercial clients and municipalities.

Providing Emergency Response assistance for small scale Hazardous Chemical & Material Releases.

Mold infiltration investigations, including ambient air, biosis, and viable air sampling. Mold abatement planning and project oversight for commercial and residential clients.

Conducting asbestos containing materials surveys for residential, commercial, and municipalities.

HURON CONSULTANTS

CURRICULUM VITAE

BRIAN V MILLER, CHMM

Senior Project Professional

EXPERTISE:

Waste Management
Emergency Response
DOT Compliance
EH&S Auditing
Permitting & Reporting
SPCC
UST/AST Management
Facilities Engineering Mgt.
NFPA 70E ARC Flash Training
ISO 14001 Auditing
Pollution Prevention
RCRA/DOT Training
Wastewater Operations
Regulatory Compliance
Storm Water Management
HAZWOPER Training

EXPERIENCE SUMMARY:

Mr. Miller has over 30 years of experience in Hazardous Waste Management, Wastewater Treatment, Storm Water Management, Environmental Permitting, Reporting, and Training, Facilities Engineering Management, Pollution Prevention and Emergency Response. Mr. Miler is also ISO 14001 and LEED experienced. He holds multiple Wastewater Treatment Licenses in Municipal, Industrial and Storm Water categories. He is experienced with environmental regulations and regulators at all levels (Local, State, Federal).

CREDENTIALS:

B.A., 1995, Interdisciplinary Studies, Wayne State University
Biological Oceanography, University of Michigan
Technical Studies, St. Clair County Community College

- Certified Hazardous Materials Manager
- RCRA Waste Management Certified
- DOT Hazardous Materials Certified
- Certified HAZWOPER Incident Commander
- Licensed Michigan Storm Water Operator Industrial and Construction Sites
- Class B, C, & D Michigan Municipal Waste Water Treatment Licenses
- 9 Michigan Industrial Waste Water Treatment Licenses
- ISO 14001 Auditor

AWARDS:

- 2005 & 2002 DaimlerChrysler Environmental Leadership Awards
- 1995 Wayne State University Senior Scholar Award
- 1994 Michigan Industrial Wastewater Operator of the Year

KEY PROJECTS:

Mr. Miller managed all environmental issues for a major automotive World Headquarters and Technical Center, including RCRA, CERCLA, SARA, SPCC, Air Compliance & Title V record keeping, UST/AST, DOT, storm water and training.

He led the facility team through the U.S. Green Building Counsel's LEED Certification process. He was directly responsible for projects that reduced UST monitoring costs by 80%, reduced stormwater monitoring costs by 66% and eliminated Used Oil disposal costs by establishing it as a revenue stream. He developed in-house training programs for CWA, RCRA, DOT and SPCC compliance.

As the Environmental Specialist for a major automotive truck assembly plant, Mr. Miller was responsible for all Air, Water and Waste activities (RCRA, CERCLA, SARA, SPCC, UST/AST, DOT, CWA, Refrigerant Mgt. and training). He led the facility Pollution Prevention team and was integral in numerous projects that generated significant waste reductions and saved the plant in excess of $1,000,000 annually.

Mr. Miller was part of two teams that received two DaimlerChrysler Environmental Leadership Awards. One project took the plant's dried paint sludge and used the material as a component in "sealer plugs" that are used to seal truck floor pans. The other project took the facilities "solvent wipes" which are alcohol impregnated polypropylene cloths, centrifuged the solvent out and recycled the material into vehicle wiring harnesses. Both projects took materials that were waste (one hazardous) and turned them into a product, saving cost, reducing waste and avoiding regulatory burdens.

Mr. Miller led the environmental portion of the facility ISO-9000/14001 team, creating, implementing and maintaining all work instructions. Mr. Miller created programs and performed all in-house training for hazardous waste, DOT hazardous materials transportation and storm water requirements. He has prepared, reviewed and submitted hundreds of environmental plans, permits and reports including SPCC, SARA 313 & 312, Title V, MAERS, PMRs, SMRs and the State of Michigan AWR.

Concurrently with the above duties, Mr. Miller was also a part of the plant's Facilities Management team, supervising the operation and staffs of the Waste Water Treatment Plant and Powerhouse, the Facility Engineering staff, HVAC maintenance staff and the Preventative Maintenance group.

Prior to his years as an Environmental Specialist, Mr. Miller was a Waste Water Treatment Plant operator for several different industries and municipalities. He has experience in operating established and newly constructed plants and has operating licenses for three different classes of municipal plants and nine different industrial plants. He received the State of Michigan's "Industrial Operator of the Year" award for operational excellence.

CURRICULUM VITAE

RICHARD W. HINGST, CHMM, LEED-AP

Senior Project Professional

HURON CONSULTANTS

EXPERTISE:

Waste minimization
PCB compliance issues
Storage tank compliance
Facility compliance audits
ISO 9000 and 14000 systems
Remediation staff management
Hazardous waste management
Wastewater discharge compliance
Secondary containment design (SPCC)
Integrated emergency response plans
Environmental Liability Summary (FIN47)
Emergency planning and reporting (EPCRA)
Facility engineer and environmental specialist
Environmental compliance writer and lecturer
Regulatory review and communication of required actions
Support for facility strip out, deactivation, and demolition activities

EXPERIENCE SUMMARY:

Mr. Hingst has over 26 years of experience in Environmental Regulatory Compliance and as a leader as a corporate environmental program manager. Skilled in reviewing comprehensive environmental regulations and able to determine applicability, develop cost efficient strategies and communicate needed compliance actions. Mr. Hingst has experience in addressing a wide range of regulations and issues at federal, state/provincial and local levels in the U.S., Canada and Mexico. He has proven himself an effective corporate representative for industry trade groups, regulatory agencies and public meetings.

CREDENTIALS:

MS, Environmental, Health & Safety Mgmt., University of Findlay, 2003

BS, Architecture, Lawrence Technological University, 1980,

Graduate Certificate, Hazardous Waste Control, Wayne State University, 1991

- Leadership in Energy & Environmental Design (LEED), New Construction Accredited Professional, 2009
- Certified Hazardous Materials Management (CHMM) No. 3453, 1992
- OSHA HAZWOPER Training – 40 Hr. – (29 CFR 1910.120 (e)(3)
- RCRA Waste Management Certified

KEY PROJECTS:

Developed and updated environmental compliance guidance documents in ISO 9000 and 14000 systems to reinforce corporate goals, best practices, benchmarks, and plant response toward environmental compliance in a cost efficient manner for Chrysler LLC.

Shifted, streamlined, and significantly reduced cost and delivery time of corporate environmental guidance documents and EPCRA reports to plants by moving from a paper to electronic system.

Planned, developed, and implemented improved spill containment designs, minimizing facility regulatory liability and cleanup costs associated with hazardous material spills.

Spearheaded efforts to improve consistency of compliance activities throughout the corporation by researching and summarizing foreign regulations and engaging the corporate environmental staff to address requirements for plants in Canada, Mexico, and Venezuela.

Assisted in the management of deactivation and demolition of a 90-year-old assembly plant on 119 acres in a safe and environmentally responsible manner, improving marketability of property. Sale of surplus assets and scrap metals paid for project and netted a profit for company.

Improved quality and minimized facility costs of employee hazardous waste training by effectively co-developing and implementing a computer-based training program.

Managed the Remediation Program, staff, and budget for timely response to environmental emergencies in full compliance with regulations and within budget.

First facility environmental specialist at Chrysler LLC to initiate an in depth study of facility waste costs and develop waste minimization solutions.

Prior to his years as an environmental specialist, Mr. Hingst also worked 14 years as a facility engineer for a wide variety of projects which entailed cost estimating, project planning and management, design, material requisitions, and related follow up.

HURON CONSULTANTS

CURRICULUM VITAE

MATTHEW R SHERRARD

Associate Project Manager

EXPERTISE:

State Licensed Asbestos Building Inspector in Michigan
NIOSH 582 sampling and evaluations
Air monitoring and reporting under 40 CFR 1926.1101 and 40 CFR 1910.134.
Mold investigations and remediation project planning, oversight, and clearance.

EXPERIENCE SUMMARY:

Mr. Sherrard is responsible for the oversight and monitoring of environmental remediation projects, performing air compliance monitoring, materials bulk sampling and analysis, and reporting for various clients. As a field hygienist for over four years, he has been responsible for NIOSH, AHERA, EPA, HUD, and MIOSHA compliance, DEQ reporting, permit application review, and waste disposal manifestation for Large Quantity Hazardous Waste Generator. Proficient in NIOSH 7400 for asbestos. Experienced in NIOSH 7082, 7104, and 9100 sampling protocol for Lead Based Hazards.

CREDENTIALS:

Washtenaw Community College 1996-1999,
College of Business and Marketing.
Pikes Peak Community College 2001-2003,
College of Business and Marketing
OSHA 40 Hr HAZWOPER Trained
NIOSH 582 Certified Air Sampling for Asbestos
NIOSH 7400 Certified PCM Fiber Counting
Licensed Asbestos Inspector in Michigan

KEY PROJECTS:

As an environmental technician since 2004, projects have included long term multi-phased abatement projects, hazardous materials assessments, and asbestos containing materials surveys for various clientele.

Directing multi-phased asbestos, lead, and mold remediation activities at active medical care facilities, K-12 schools, courthouse facilities, and other government buildings as well as for a local area/regional hospital. Duties included contractor coordination & oversight, OSHA compliance, and project safety oversight activities.

Coordinated the abatement and demolition activities for a national manufacturing firm in Dearborn, MI. The overall OSHA compliance and safety aspects of the project were a part of the duties of this project.

Conducted numerous commercial, municipal, and private residence mold assessment investigations and directed subsequent remedial activities.

Performing air compliance monitoring and industrial hygiene reporting for various abatement projects throughout Michigan, including multi-phased long term projects for a major health care provider, national testing laboratory, regional hospitals, Macomb County.

Planning & conducting OSHA air sampling events for various forms of hazardous materials and reporting the findings. Specializing in personal air monitoring and HVAC efficiency studies.

Conducting water sampling for Site Closures and Remediation Monitoring. Conducting onsite soil sampling for Phase II reporting for numerous commercial clients and municipalities.

Providing Emergency Response assistance for small scale Hazardous Chemical & Material Releases.

Mold infiltration investigations, including ambient air, biosis, and viable air sampling. Mold abatement planning and project oversight for commercial and residential clients.

Conducting asbestos containing materials surveys for residential, commercial, and municipalities.

KENNETH W. KELLEY

Senior Environmental Technician

EXPERTISE:

State Licensed Asbestos Building Inspector (Michigan)

NIOSH 582 sampling and evaluations

Air monitoring and reporting under 40 CFR 1926.1101 and 40 CFR 1910.134.

Mold investigations and remediation project planning, oversight, and clearance.

EXPERIENCE SUMMARY

Mr. Kelley is responsible for managing and implementing regulatory compliance programs, performing air compliance monitoring, materials bulk sampling and analysis, and reporting for various clients. As a field hygienist for over fourteen years, he has been responsible for NIOSH, AHERA, EPA, HUD, and MIOSHA compliance, DEQ reporting, permit application review and waste disposal manifestation for Large Quantity Hazardous Waste Generators. He is proficient in NIOSH 7400 for asbestos and is experienced in NIOSH 7082, 7104, and 9100 sampling protocol for Lead Based Hazards.

CREDENTIALS

South Macomb Community College, 1975-1977,
College of Business/Marketing
OSHA 40 Hr HAZWOPER Trained
NIOSH 582 Certified Air Sampling for Asbestos
NIOSH 7400 Certified PCM Fiber Counting
Licensed Asbestos Inspector in Michigan

KEY PROJECTS

As a Senior Environmental Technician since 1995, projects have included long term multi-phased abatement projects, hazardous materials assessments, asbestos containing materials surveys, and bid specification development for various clientele.

Directed a multi-phased asbestos, lead, and mold remediation activities at active medical care facilities, courthouse facilities, and other government buildings as well as a local regional hospital. Participated in the bid development specifications for and award processes of multi-million dollar municipal projects for the county. Duties included contractor coordination & oversight, OSHA compliance, and project safety oversight activities.

Coordinated abatement and demolition activities for a national manufacturing firm in Dearborn, Michigan. Responsibilities included OSHA compliance and safety for this project.

Conducted numerous commercial, municipal, and private residence mold assessment investigations and directed subsequent remedial activities.

Since 1997, projects have included Brownfield Remediation for the cities of Warren, Michigan and Dearborn, Michigan. Both of which were on time and under budget, contributing reports and implementing on-site supervision of said remediation and safety protocol; including logging of and characterization of drums, subsurface investigation, asbestos and lead paint sampling, and waste manifesting.

Have conducted and coordinated numerous investigation and remediation projects on various industrial and commercial sites with soil and groundwater impact. Experience includes a variety of drilling and sampling techniques as well as soil gas sampling, and geophysical surveys. Remediation experience includes enhanced bio-remediation, groundwater pump and treatment, soil vapor extraction, and natural attenuation. Provided turn-key environmental services including the preparation of contract documents, pre-bid meetings, contractor selection and project oversight. Prepared Baseline Environmental Assessments and Due Care Plans.

Assist with a wide variety of environmental contamination/remediation projects that involve site characterization, sample collection and analysis, RBCA analyses, feasibility analyses, corrective action plans, and periodic reporting to the MDEQ.

Perform air compliance monitoring and industrial hygiene reporting for various abatement projects throughout Michigan, including multi-phased long term projects for a major health care provider, national testing laboratory, regional hospitals, Macomb County, and a national drug store chain.

Plan & conduct OSHA air sampling events for various forms of hazardous materials and reporting the findings. Specialize in Personal Air Monitoring and HVAC efficiency studies.

Perform of Phase I, Phase II, and Baseline Environmental Assessments for state wide clientele.

Conduct water sampling for site closures and remediation monitoring. Conducted on-site soil sampling for Phase II reporting for numerous commercial clients and municipalities.

Provide Emergency Response Assistance for small-scale hazardous chemical & material releases.

Investigated mold infiltrations, including ambient air, biosis, and viable air sampling. Mold abatement planning and project oversight for commercial and residential clients.

Conduct asbestos containing materials surveys for residential, commercial, and municipalities.

HURON CONSULTANTS

CURRICULUM VITAE

Timothy M Byrnes

Director of Operations

EXPERIENCE SUMMARY:

Mr. Byrnes has over 33 years of experience in Geotechnical and Environmental Soil Drilling, as well as Soils and Materials Testing.

CREDENTIALS:

Certified MDOT In-place Density
Certified MCA/ACI Concrete Technician
Certified ACI Concrete Strength Testing
Certified Troxler Radiological Safety & Gauge Operation
Certified NDCA Monitor Well Installation
OSHA
Hazwoper
Certified MARATHON Building Superior Performance

KEY POSITIONS:

Director of Operations - Construction Testing Services
Mr. Byrnes serves as the operations manager overseeing the Engineering Department, Non Destructive Testing, Soils Laboratory, Warehouse and Field Technicians. He handles all of the scheduling, dispatch and paperwork for our projects. Client questions and concerns are also directed to Mr. Byrnes. He also serves as the Drill Crew Chief. He performs the drilling and supervises any helpers on-site.

Drilling Crew Chief - Mateco
As lead driller on crew he was in charge of equipment and personnel. Duties also included logging holes, capturing samples and setting of monitoring wells, and conventional & wire line rock coring.

Drilling Crew Chief - ETS
As lead driller on crew he was in charge of equipment and personnel. Duties also included logging holes, conventional rock coring, and capturing samples and setting of monitoring wells.

Drilling Crew Chief, Senior Field Technician, Lab Assistant – Testing Engineers & Consultants
As lead driller on crew he was in charge of equipment and personnel. Duties also included logging holes, conventional rock coring, capturing samples and setting of monitoring wells. As a Senior Field Technician he performed on-site concrete, soils, asphalt and steel inspections. Duties as a Lab Assistant included running gradations, extractions and compressive strength on concrete.

KEY PROJECTS:

The Gateway Project, Detroit, MI – (2008-2010) In- field testing and Project Management.

I-94 Sound Barrier Wall – Taylor, MI. (2009-2010) In-field Testing and Project Management.

Main Street Reconstruction, Clawson, MI (2009) In-field Testing and Project Management.

Social Security Administration Offices: Lakewood Ohio, Cleveland Ohio, Roseville, MI – (2010) Soil Borings and Project Management.

ICE Building (2009) Sault St. Marie, MI - Soil Borings and Project Management.

Worth Township Sewer Collection, Sanitary Treatment, and Outfall (2010) In-field testing and project management and drilling; including soil sampling on barge. Performed satellite topographical survey at bottom of Lake Huron.

Hurley Hospital Addition – Flint, MI (2009) - Soil Borings and Project Management.

Imlay City Water Main – Imlay City, MI (2009) - Soil Borings and Project Management.

Selfridge Air National Guard – Mt. Clemens, MI (2008) Design Build, Soil Borings and Project Management.

City of Flint Traffic Signal Restoration – Flint, MI (2009) In- field testing, Soil Boring, and Project Management.

HURON CONSULTANTS

CURRICULUM VITAE

Frederick L Gingell

Assistant Director of Operations

EXPERIENCE SUMMARY:

Mr. Gingell has 28 years of experience in the Foundational lay-out and placement of Commercial Foundations and Comprehension of Blue Prints.

CREDENTIALS:

Certified API Worksafe
Certified OSHA
Certified HAZWOPER and Emergency Response
MDOT Certified in Place Densities
Certified MARATHON Building Superior Performance
ACI Concrete Strength Test

KEY PROJECTS:

Assisted Director of Operations with the following projects:

The Gateway Project, Detroit, MI – (2009-2010) In- field Testing and Project Management.

I-94 Sound Barrier Wall – Taylor, MI. (2009-2010) In-field Testing and Project Management.

Main Street Reconstruction, Clawson, MI (2009) In-field Testing and Project Management.

Social Security Administration Offices: Lakewood Ohio, Cleveland Ohio, Roseville, MI (2010)
– Soil Borings and Project Management.

ICE Building (2009) Sault St. Marie, MI - Soil Borings and Project Management.

Worth Township Sewer Collection, Sanitary Treatment, and Outfall (2010) In-field testing and project management and drilling; including soil sampling on barge. Performed satellite topographical survey at bottom of Lake Huron.

Hurley Hospital Addition – Flint, MI (2009) - Soil Borings and Project Management.

Imlay City Water Main – Imlay City, MI (2009) - Soil Borings and Project Management.

City of Flint Traffic Signal Restoration – Flint, MI (2009) In- field testing, Soil Boring, and Project Management.

HURON CONSULTANTS

CURRICULUM VITAE

Jack F Geerlings, PE

Senior Project Engineer

EXPERTISE:

Geotechnical Engineering
Civil Engineering
Structural Engineering
Foundation Design
Slope Stability Analysis
Dam Safety
Transportation & Paving Systems
Construction Services/Inspection

EXPERIENCE SUMMARY:

Mr. Geerlings has over 28 years of experience in geotechnical engineering and has performed thousands of geotechnical investigations for projects including high-rise office buildings, industrial/manufacturing facilities, roadways and parking lots and residential developments. He also has experience with environmental assessments and hazardous waste landfill design.

CREDENTIALS:

Bachelor of Science – Civil Engineering, University of Missouri-Rolla, 1980

Masters of Science – Geotechnical Engineering, University of Missouri-Rolla, 1986

Professional Engineer – Michigan and Missouri

KEY POSITIONS:

Senior Project Engineering, Construction Testing Services
Mr. Geerlings serves as manager of the geotechnical engineering department. He directs the drilling operations and the soils testing laboratory and is responsible for engineering analysis and preparation of geotechnical reports.

Project Manager, Professional Engineering Associates
As a geotechnical and environmental engineer for a civil engineering consulting firm, Mr. Geerlings planned and supervised field investigations, directed laboratory testing, and performed engineering analyses and reports. He also performed environmental site assessments and trained junior engineers in the process, as well as supervised drilling subcontractors, laboratory technicians and junior engineers.

Senior Geotechnical Engineer, McDowell & Associates
Mr. Geerlings performed a variety of geotechnical engineering functions including developing and supervising field investigations, directing laboratory testing, performing engineering analysis and preparing engineering reports. He supervised drillers, laboratory technicians and junior engineers and was instrumental in developing environmental assessment department.

Geotechnical Engineer, Aerotek E & E
Mr. Geerlings served as a geotechnical engineer for a directional boring project under an interstate highway.

Geotechnical Branch Manager, Professional Service Industries
Mr. Geerlings managed geotechnical engineering branch including management of drillers and laboratory technicians.

Senior Geotechnical Engineer, Kansas City Testing Laboratory
He planned and supervised field and laboratory investigations, performed engineering analysis and reports. He also managed and supervised drillers.

KEY PROJECTS:

The Gateway Project, Detroit, MI – (2008-2010) In- field testing Performed the geotechnical investigation and foundation design for the first multi-story office building to be supported by a mat foundation in downtown Kansas City, Missouri.

Designed bracing systems for numerous large excavations for high rise office towers

Performed geotechnical investigations for new chair lifts on ski slopes in New Mexico

Performed geotechnical investigation and foundation design for microwave relay tower on Sandia Crest in Bernalillo County, New Mexico

Performed geotechnical investigation and foundation design for the Albuquerque International Airport Expansion.

Analyzed the stability of embankments under earthquake loadings for a hazardous waste lagoon in southern California

Supervised the installation of a 36” diameter natural gas pipeline under an interstate highway and provided field engineering during the installation process.

Performed dam safety inspections and analyzed stability of the embankments.

Performed geotechnical investigations for numerous commercial and light industrial buildings and large residential subdivisions