

David Gordon
5558 Hellner Rd., Ann Arbor, MI 48105

10/27/14

Howard Fink, FOIA Coordinator
Northfield Township Manager
8350 Main St., Whitmore Lake, MI 48189

*Provided Email Tuesday October
and studies from Tetra Tech
including Brian Rubels
Gunnery.*

Dear Mr. Fink:

Under the Michigan Freedom of Information Act § 15.231 et seq., I am requesting an opportunity to inspect or obtain copies of public records (all electronic and written communications/documents/texts/meeting notes/calendar entries) – regarding, relating to or referencing the township sewerage treatment facility; work by TetraTech and by township sewerage personnel into costs associated with its maintenance and possible expansion.

* Hopefully you will include the email referenced by yourself at the 10/28/14 Board of Trustees meeting.

I would request a waiver of all fees in that the disclosure of the requested information is in the public interest and will contribute significantly to the public's understanding of our future plans for preservation of farmland and open space as well as growth potential. This information is not being sought for commercial purposes.

The Michigan Freedom of Information Act requires a response to this request within five days. If access to the records I am requesting will take longer than this amount of time, please contact me with information about when I might expect copies or the ability to inspect the requested records.

If you deny any or all of this request, please cite each specific exemption you feel justifies the refusal to release the information and notify me of the appeal procedures available to me under the law.

If any documents are redacted, please provide an explanation.

Thank you for considering my request.
Sincerely,



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OCT 29 2014

NORTHFIELD TOWNSHIP

NORTHFIELD TOWNSHIP MICHIGAN

November 3, 2014

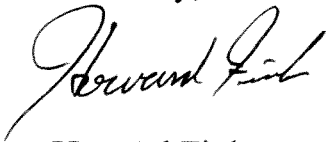
Mr. David Gordon
5558 Hellner Rd.
Ann Arbor, Michigan 48015

Re: Freedom of Information Act Request

Mr. Gordon,

We are in receipt of your Freedom of Information Act request received October 29, 2014. We are requesting an extension of 10 business days in which to respond to the requests, pursuant to MCL 15.235(2)(d).

Sincerely,

A handwritten signature in cursive script, appearing to read "Howard Fink".

Howard Fink
Northfield Township Manager

NORTHFIELD TOWNSHIP MICHIGAN

November 14, 2014

Mr. David Gordon
5558 Hellner Rd.
Ann Arbor, Michigan 48015

Re: Freedom of Information Act Request

Mr. Gordon,

Attached are your documents from your FOIA request dated 10/27/14.

Sincerely,

A handwritten signature in black ink, appearing to read 'Angela Westover', with a stylized flourish at the end.

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Sewer Capacity Assessment

Rubel, Brian

To me, finkh@twp.northfield.mi.us

Sep 9

Tim/Howard;

I am writing regarding the Sewer Capacity Assessment that may be required as part of any future development. I strongly recommend that Tetra Tech's services be contracted through Northfield Township from an escrow deposit made from the developers. There are numerous reasons this is advantageous to both Tetra Tech and Northfield Township including the clarity that Tetra Tech is working on behalf of the best interests of Northfield Township.

I am happy to meet with developers to gather technical information but do not wish to meet with them to define the scope. The scope should be agreed to between Tetra Tech and Northfield Township.

I understand that Doug Lewan has been instructed to tell a developer to work with Tetra Tech. I am happy to meet with them to review the scope that Tim and I developed (I think Tim should attend that meeting). From that point, I would like to suggest that the Township and developer work on developing an escrow amount for the necessary fee.

Brian R.

Brian M. Rubel, PE | Vice President

Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570

brian.rubel@tetratech.com

Tetra Tech | Engineering Consulting Services

710 Avis Drive | Ann Arbor, MI 48108 | www.tetratech.com

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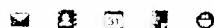
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Asset Management Workshop(2)

Rubel, Brian Tim/Howard; We've completed a few of these recently and this will set

Oct 10

Rubel, Brian
To: me

Oct 10

I did get the voice mail. Thanks.

I got called to a meeting with Biltmore Wednesday at 10 AM. I don't have much more to say to Biltmore pending direction on Township policy. I guess I'll wait to see if the Tuesday evening meeting gets cancelled first.

Brian M. Rubel, PE | Vice President

Direct: 734 213 4081 | Main: 734 665 6000 | Fax: 734 665 2570

brian.rubel@tetratech.com

Tetra Tech | Water, Environment, Infrastructure
710 Avis Drive | Ann Arbor, MI 48108 | www.tetratech.com

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From: BTI Customer Services  (mailto:ttdhardesty@att.net)

Sent: Friday, October 10, 2014 8:55 AM

To: Rubel, Brian

Subject: Re: Asset Management Workshop

Brian,

Thank you I would like to attend.

Tim

p.s. Did you get the voicemail I left for you?

On Friday, October 10, 2014 8:13 AM, "Rubel, Brian" <Brian.Rubel@tetratech.com> wrote:

Tim/Howard;

We've completed a few of these recently and this will set a good vision on where Northfield can go with asset management. This will be an interactive session as we will display some of the GIS and databases we developed. We'd welcome as many people as you'd like to bring.

Brian



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RE:

Rubel, Brian

To me

Oct 14

Thanks, Tim.

I think it would be good if the three of us understood what those were before Wednesday!

\$13.9

Brian M. Rubel, PE | Vice President

Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570

brian.rubel@tetratech.com

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From: BT! Customer Services [mailto:tdhardesty@att.net]**Sent:** Tuesday, October 14, 2014 1:43 PM**To:** Rubel, Brian**Subject:**

Brian,

Howard did not call me but had Jennifer call for him about Wed. meeting. All she said was that she thought it was to give Builtmoore some options.

Tim H.

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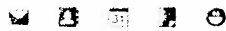
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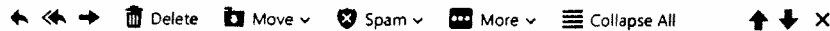
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Northfield Township WWTP Capacity Information(2)

Rubel, Brian Paul: I am sending this to you at the direction of Tim Hard  Oct 23

Rubel, Brian  Oct 23
To: burns@peblaw.net
CC: me.finkh@twtp.northfield.mi.us

Paul:

I am sending this to you at the direction of Township Manager Fink . I have included some notes in an attachment.

NORTH TERRITORIAL CAPACITY

The North Territorial Special Assessment District (SAD) paid for the collection system, pump station, and force main serving the SAD. These facilities were sized to accommodate a developed area of the SAD with no provisions for growth outside of the district limits. Thus, any significant new development that wishes to connect to the North Territorial SAD will use capacity conceived for the SAD. Given a low amount of development since the District was constructed, there is currently available capacity to accommodate new development. However, the Township may wish to consider requiring new connections to pay for the cost of future improvements that would be needed should the SAD develop as originally conceived. These improvements would consist of pump station improvements and a new, parallel force main.

WWTP CAPACITY

The Northfield Township WWTP has available capacity for new connections during dry weather. The attachment shows that approximately 1,923 new connections (residential equivalent users or REUs) could be connected within the available capacity of the WWTP. However, it needs to be further researched whether any or all of these connections have been committed to Green Oak Township or Special Assessment Districts.

During large wet weather events, Mr. Hardesty and staff need to bypass processes to deliver the water through the WWTP. Thus, adding many more connections will exacerbate the wet weather flows and could cause untreated overflows or plant violations both of which could lead to discharge permit compliance problems for the Township.

This additional water during wet weather is called infiltration/inflow and is common in older sewer systems. This handout contains a diagram demonstrating the increase in flow during wet weather flow during wet weather and some information on treatment capacity. The most discussed method to control this infiltration/inflow in Northfield Township has been a storage basin constructed at the WWTP site. This storage basin was preliminarily sized at 0.75 million gallons in the 1990s. However, MDEQ rules to capture wet weather flows changed in 2002 and a new evaluation of this sizing will be needed to account for new connections since the 1990s, projected connections, changes in rates of infiltration/inflow, changes in the WWTP capacity and the new MDEQ criteria.

A small number of new connections will have an immeasurable impact upon wet weather flow and the WWTP's ability to treat the wastewater. However, large developments (dozens or hundreds of new connections) will create a noticeable increase in flow and create additional risk during wet weather. The Township may wish to evaluate the size and cost of a storage basin and begin to have new connections pay for some or all of its cost.

This message presents my research on these topics. I will be available to answer questions that may arise.

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NORTHFIELD TOWNSHIP SEWER SYSTEM CAPACITY SUMMARY

NORTH TERRITORIAL SERVICE AREA

CAPACITY/DEMAND	NEED	REFERENCE
Any significant new development (say 100 REUs)	Equalization Basin	Operator Observation
Above 1,522 REUs and Below 3,044 REUs	New NT Pump and Force Main	2003 Sewer Study
Additional 1,923 REUs	WWTP Expansion	85% of ex. 1.3 mgd capacity
Above 3,044 REUs	New NT Pump Station	2003 Sewer Study

NOTES

Given that the North Territorial SAD is not built-out, new connections could occur as long as provisions are in place to collect connection fees needed to repay the costs of future infrastructure.

Existing North Territorial SAD design basis was 1,522 REUs

Sizing of needed WWTP facilities requires extensive analysis and new cost opinions since 2002

EQ basin sizing and WWTP expansion are interrelated. Doing both simultaneously will lower project costs.

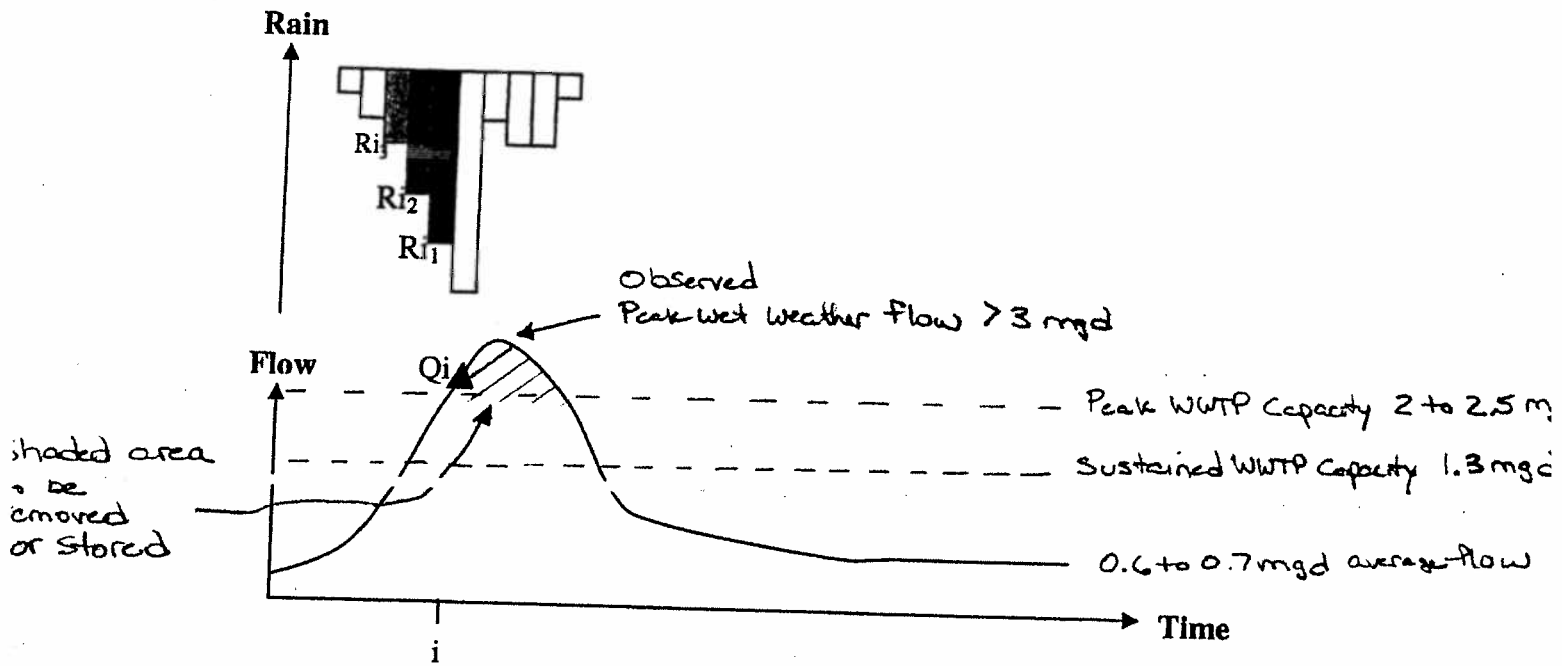
NORTHFIELD TOWNSHIP WWTP CAPACITY TIMELINE

<u>DATE</u>	<u>EVENT</u>
1961	WWTP Constructed
1975	WWTP Expanded
1983	WWTP Expanded
1988	WWTP Expanded. Equalization storage proposed but not built.
1993	WWTP Expanded
1998	WWTP Expanded
1998	North Territorial SAD conceived to serve Phase I development only
2000	North Territorial SAD Phase I constructed
2001	Very brief wet weather study. Recommendations not implemented
2002	Brief sewer capacity report funded by developer. Reiterates need for major capital improvements to support growth near North Territorial
2005	WWTP expansion and equalization storage discussed for growth. Neither project proceeds.

WWTP CAPACITY SUMMARY

Average flow	0.6 to 0.7 million gallons/day (mgd)
Rated capacity (sustained) in permit	1.3 mgd
Peak flow observed	>3 mgd
Peak flow capacity	2.0 to 2.5 mgd
MDEQ requires accommodating 3.9-inch storm without bypassing treatment	

NORTHFIELD TOWNSHIP WWTP SAMPLE HYDROGRAPH



390,000 NT SAD Allocated

Assessment pays for Pipe in front of property
Tap In Fee pays for Plant Capacity

8 to 12 week eg study from Tetra Tech

August 19, 2014

Mr. Tim Hardesty

WWTP Superintendent

Northfield Township

11500 Lemen Road

Whitmore Lake, MI 48189

RE: Biltmore Development Capacity Evaluation

Dear Mr. Hardesty:

Tetra Tech has appreciated the opportunity to serve Northfield Township since 1961 on many infrastructure projects including the Township's wastewater treatment projects. Through this association the Township's plant has consistently met state and federal requirements, protected the environment and public health, and provided a safe working environment to staff.

We understand that Biltmore Homes is proposing a 460 acre development along Whitmore Lake Road. A condition of approving the development is compensating the Township for a capacity study of the wastewater treatment system. Biltmore has not proposed a wastewater demand needed but has instead indicated flexibility in the development plan based upon the needs of the community.

In 2002, Tetra Tech previously studied expanding the Northfield Township wastewater treatment plant. Two alternatives for expansion were prepared with one alternative consisting of a small capacity expansion combined with the construction of a new equalization tank. The second alternative consisted of a larger capacity expansion without equalization. These previous analyses will be invaluable in completing the evaluation.

Tetra Tech has prepared this proposal to complete such a system for the Township. We recommend that the Township retain Tetra Tech from funds escrowed by Biltmore.

SCOPE OF WORK

The scope of work will focus on the ability of the Township's wastewater treatment plant to accept additional wastewater. The analysis will consist of the ability of the plant to accommodate an increased rate of flow (plant hydraulic capacity) as well as the ability to treat an increased rate of wastewater (treatment capacity).

GENERAL SCOPE ITEMS

1. Meet with WWTP staff and review current processes and available data.

HYDRAULIC CAPACITY

2. MDEQ rules will require the plant to accommodate the flow from the 25-year, 24-hour storm (3.9 inches in 24 hours) without backup or overflow. The WWTP staff have reported that during large wet weather events, the flow rate exceeds the ability of the flow meter and can cause high depths in various processes. These observations suggest that the existing wastewater flow may not be reliably meeting the state rule. Hydraulic scope items will start with developing a relationship between WWTP influent flow and rainfall. We will utilize past flow data from the WWTP and available rainfall data to understand what the peak flow and influent hydrograph is for rain events. This flow will be projected to the 25-year, 24-hour storm using a computer model. The resulting rate will be compared to the hydraulic capacity of the WWTP. Hydraulic calculations from previous Tetra Tech design projects will be compared to new calculations performed from WWTP operator observations.

TREATMENT CAPACITY

3. While a process may be able to accommodate the rate of flow, it is possible that the wastewater strength exceeds the ability of the process to adequately treat the water. Tetra Tech previously calculated the unit process capacity and will update those calculations to the current conditions.

ALTERNATIVES

4. From the above calculations, remaining capacity will be determined. This calculation will consider any capacity that may be committed to Green Oak Township but is not yet utilized. We will also identify improvements needed to accommodate a range of additional flow rates. We will prepare one set of alternatives given WWTP treatment improvements and a second set considering equalization storage. Looking at a range is especially important given that Biltmore has not committed to a specific wastewater need and will adjust its planned land use around factors such as available capacity and cost to provide levels of treatment.
5. Cost opinions will be developed for each increment of improvement needed.

REPORT

6. A draft report will be prepared and reviewed with Northfield WWTP staff. Upon receiving staff comments, a final report will be issued.
7. Upon completion of the final report, Tetra Tech will attend up to two meetings to present the results of the report to Northfield Township and/or Biltmore Homes.

ASSUMPTIONS

- No analysis of the collection system will be performed. We understand that Northfield Township is comfortable that the collection system can accommodate this new flow.
- The Township will provide historical records of influent flow and rainfall as well as operating records of wastewater treatment.
- Michigan's revolving fund loan program contains additional study steps that would need to be followed should Northfield Township desire to use this loan program for the project such as measuring flow in the collection system. This would add at least eight months to the completion schedule. Tetra Tech will outline these steps within our report but due to the extended time, uncertainty of how Biltmore will proceed, and uncertainty if Northfield will use this funding, we suggest deferring these steps until after this initial study is completed.

SCHEDULE

We can complete the draft report within sixteen (16) weeks of receiving the Township's authorization.

COMPENSATION

Compensation will be a lump sum of \$XXXX. *\$70,000 est.*

EXECUTION

If you concur with this proposal, please sign in the space provided and return one original copy for our records. Our standard terms and conditions are attached and considered a part of this proposal.

We appreciate this opportunity to assist Northfield Township with this important analysis

Sincerely;

Brian M. Rubel, P.E.

Unit Vice President

BILTMORE DEVELOPMENT WASTEWATER CAPACITY EVALUATION

AUGUST 2014

BILTMORE DEMAND

Newspapers articles say they are noncommittal on number of REUs. It will be very difficult to define sewer needs without this commitment.

Say 460 acres x 2 REUs/acre x 260 gal/REU/day = 0.24 mgd average (say 0.75 mgd peak)

Existing flow = 0.68 mgd average, 1.2 mgd max day (no lake inundation)

New total = $0.68 + 0.24 = 0.92$ mgd (or larger)

COLLECTION SYSTEM

Key facilities:

North Territorial Pump Station (No concerns)

Other pump stations between Biltmore and WWTP

~~Whitmore Lake Road PS~~

Eight Mile PS

Any sewer capacity concerns?

Any need for sewer or pump station monitoring?

WASTEWATER TREATMENT

Hydraulic Capacity:

- Should determine existing peak flow versus raw sewage pumping capacity
- Should determine storm hydrograph for determination of required storage size
- What influent flow records are available? Any rainfall records available?
- Should determine capacities of each pumping system and process

Treatment Capacity (value in parentheses were from proposed 2.25 mgd expansion):

- Grit removal
- Primary settling tanks (previous analyses concluded two new ones were needed)
- Primary effluent pumps (firm capacity of 2.5 mgd) ?
- Trickling filter (no changes were proposed)
- Aeration tanks (one new tank proposed)
- Final settling tanks (one new tank proposed)
- RAS Pumps (two new pumps proposed)
- Aeration (two new blowers proposed)
- Filter (new filter proposed)
- Backwash system (new well proposed and two new pumps)
- Disinfection (uv proposed)
- Cascades (no change)
- Sludge thickening (no changes)
- Sludge digestion and storage (additional 380,000 gallons proposed)

Digestions (new digester proposed)

Phosphorus removal (no change to chemical feed)

TIMELINE

When is engineering proposal due?

When is completed evaluation due?

Do we have past data to use or will we need to gather new information?

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tomorrow's meeting

Jennifer Carlisle
To: me Oct 14

Howard said he would like you to be available for the meeting tomorrow with David Stollman. The meeting will be at 10:00am. You can meet in Howard's office. I think Brian will be here as well.

Thanks,
Jennifer Carlisle
Asst. to Northfield Twp. Mgr.
734-449-2880 ext. 18
carlislej@twp.northfield.mi.us

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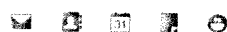
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Sewer Growth

Rubel, Brian

To me, finkh@twp.northfield.mi.us

Sep 27

\$15.9

Tim/Howard;

I worked quite late on Friday and think I have the sewer growth questions figured out. I could review that with you Monday morning or Tuesday.

Brian

Brian M. Rubel, PE | Vice President

Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570

brian.rubel@tetratech.com

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N. Territorial Pump Station(2)

Rubel, Brian Thanks, Tim. From: BT! Customer Services (mailto:tdhardesty@att.net)

Sep 26

Rubel, Brian

To: me

Sep 26

Tim;

Are there two or three pumps currently in that station?

Brian

Brian M. Rubel, PE | Vice President

Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570

brian.rubel@tetratech.com

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From: BT! Customer Services (mailto:tdhardesty@att.net)**Sent:** Friday, September 26, 2014 12:33 PM**To:** Rubel, Brian**Subject:** N. Territorial Pump Station

Brian,

Here is some of the info we have on the Flygt pumps.

Tim H

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RE:

Rubel, Brian

To me

Sep 10

Thanks, Tim.

3:44 PM
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I have read that before and hadn't found it particularly useful. But, there is a good statement in here that may helpful. That is, there is a reservation of WWTP capacity for when North Territorial SAD develops. If we have to hold that for North T, than there is very little available for Biltmore. Given they pay a connection fee when they develop (not when the sewer went in), it would be my opinion that we do not need to reserve any capacity for North Territorial.

Brian M. Rubel, PE | Vice President

Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570

brian.rubel@tetratech.com

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From: BT! Customer Services (<mailto:tdhardesty@att.net>)**Sent:** Wednesday, September 10, 2014 1:31 PM**To:** Rubel, Brian**Subject:**

Brian,

I had the gentleman from grand-sakwa send this to me. I have not had a chance to read over it yet, but I wondered if it may help us with our Biltmore development discussion.

Tim H

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Sewer Capacity Assessment

Rubel, Brian

To: finkh@twp.northfield.mi.us, me

Sep 10

Howard/Tim

As the evening progressed, I became increasingly uncomfortable with the idea of the next discussion being with the developer.

I strongly believe the Township (the three of us) need to first develop a scope and fee we want for the study and then present it to the developer. Until that time, we are wasting our time meeting with the developer.

Brian

Brian M. Rubel, PE | Vice President

Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570

brian.rubel@tetratech.com

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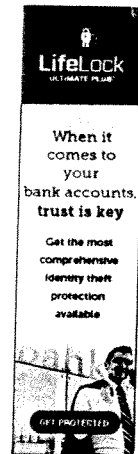
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Northfield Utilities...

William Anderson

To: finkh@twp.northfield.mi.us, me

Sep 10

Men,

Thank you both for the meeting the other day, to discuss the current township utility system, and general development opportunities. As a follow-up to the discussion, I am attaching the 2003 sewer study, we referenced in the meeting. In the report, pages 2 and 21, is the reference to the potential for \$1+ million in capacity expansion needed at the Whitmore Lake Road and North Territorial area.

That said, we would like to confirm your opinion that if we proposed a small scale (100-150 unit) housing development in the Whitmore Lake/North Territorial area, you have existing sewer line capacity and treatment capacity at the WWTP. That is a small scale project that would be interesting, but we need to confirm utility availability for a project.

Finally, if you could forward me a PDF copy of the existing utility map we were looking at during the meeting, it would be much appreciated. I look forward to hearing back from you, and please call me with any questions.

Bill

William W. Anderson, PE
Vice President
ATWELL, LLC
734.994.4000 Office
734.929.8919 Mobile
123 N. Ashley | Suite 105 | Ann Arbor, MI 48104
www.atwell-group.com
Local Solutions | National Presence

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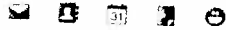
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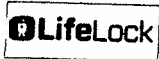
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 LifeLock protects you

Northfield Biltmore Development Capacity Scope

Rubel, Brian

To me, willisd@twp.northfield.mi.us

Aug 19

Tim/Dan;

My preliminary thoughts on the Biltmore analysis are attached. I have not costed this yet but it could be \$50,000 to \$70,000. This could probably be done for less money, but I don't want to skimp on doing a thorough job and spending time with you to make sure we have included everything we need.

I can talk by phone before I leave or in person after September 8.

Brian R.

Northfield Biltmore....docx

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Tt

B

I

A



Howard Fink

From: Rubel, Brian [Brian.Rubel@tetrattech.com]
Sent: Tuesday, September 09, 2014 11:06 AM
To: tdhardesty@att.net; finkh@twp.northfield.mi.us
Subject: Sewer Capacity Assessment

Tim/Howard;

I am writing regarding the Sewer Capacity Assessment that may be required as part of any future development. I strongly recommend that Tetra Tech's services be contracted through Northfield Township from an escrow deposit made from the developers. There are numerous reasons this is advantageous to both Tetra Tech and Northfield Township including the clarity that Tetra Tech is working on behalf of the best interests of Northfield Township.

I am happy to meet with developers to gather technical information but do not wish to meet with them to define the scope. The scope should be agreed to between Tetra Tech and Northfield Township.

I understand that Doug Lewan has been instructed to tell a developer to work with Tetra Tech. I am happy to meet with them to review the scope that Tim and I developed (I think Tim should attend that meeting). From that point, I would like to suggest that the Township and developer work on developing an escrow amount for the necessary fee.

Brian R.

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

Tetra Tech | Engineering Consulting Services
710 Avis Drive | Ann Arbor, MI 48108 | www.tetrattech.com

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Howard Fink

From: Rubel, Brian [Brian.Rubel@tetrattech.com]
Sent: Tuesday, September 09, 2014 12:11 PM
To: Howard Fink
Subject: RE: Sewer Capacity Assessment

Thanks, Howard.

I will finalize that now that Tim has confirmed the scope. It will be close to \$70,000. That includes some contingency for things that will be needed that nobody can quantify now. I would rather be high and not use it all than to stop short of what Northfield needs to answer this important question.

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

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From: Howard Fink [<mailto:finkh@twp.northfield.mi.us>]
Sent: Tuesday, September 09, 2014 12:08 PM
To: Rubel, Brian
Subject: RE: Sewer Capacity Assessment

Agreed. What is the necessary fee?
Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [<mailto:Brian.Rubel@tetrattech.com>]
Sent: Tuesday, September 09, 2014 11:06 AM
To: tdhardesty@att.net; finkh@twp.northfield.mi.us
Subject: Sewer Capacity Assessment

Tim/Howard;

I am writing regarding the Sewer Capacity Assessment that may be required as part of any future development. I strongly recommend that Tetra Tech's services be contracted through Northfield Township from an escrow deposit made from the developers. There are numerous reasons this is advantageous to both Tetra Tech and Northfield Township including the clarity that Tetra Tech is working on behalf of the best interests of Northfield Township.

I am happy to meet with developers to gather technical information but do not wish to meet with them to define the scope. The scope should be agreed to between Tetra Tech and Northfield Township.

I understand that Doug Lewan has been instructed to tell a developer to work with Tetra Tech. I am happy to meet with them to review the scope that Tim and I developed (I think Tim should attend that meeting). From that point, I would like to suggest that the Township and developer work on developing an escrow amount for the necessary fee.

Brian R.

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Howard Fink

From: Rubel, Brian [Brian.Rubel@tetrattech.com]
Sent: Wednesday, September 10, 2014 9:32 AM
To: Howard Fink
Subject: RE: Sewer Capacity Assessment

I can talk this afternoon or most times early next week. It may be best that I come to your place.

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

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From: Howard Fink [<mailto:finkh@twp.northfield.mi.us>]
Sent: Wednesday, September 10, 2014 9:17 AM
To: Rubel, Brian
Subject: RE: Sewer Capacity Assessment

Ok.

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [<mailto:Brian.Rubel@tetrattech.com>]
Sent: Wednesday, September 10, 2014 7:04 AM
To: finkh@twp.northfield.mi.us; tdhardesty@att.net
Subject: Sewer Capacity Assessment

Howard/Tim;

As the evening progressed, I became increasingly uncomfortable with the idea of the next discussion being with the developer.

I strongly believe the Township (the three of us) need to first develop a scope and fee we want for the study and then present it to the developer. Until that time, we are wasting our time meeting with the developer.

Brian

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

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Howard Fink

From: Rubel, Brian [Brian.Rubel@tetrattech.com]
Sent: Wednesday, September 10, 2014 10:03 AM
To: tdhardesty@att.net; finkh@twp.northfield.mi.us
Subject: Sewer Capacity Assessment

Tim is busy this afternoon. Could we meet Monday (9/15) at 11 at Howard's office? I could also meet in the afternoon.

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
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Howard Fink

From: BT! Customer Services© [tdhardesty@att.net]
Sent: Wednesday, September 10, 2014 11:54 AM
To: Rubel, Brian
Cc: Howard Fink
Subject: Re: Sewer Capacity Assessment

Brian,

1:00 on Monday the 15th would work fine for me.

Tim H

On Wednesday, September 10, 2014 11:07 AM, "Rubel, Brian" <Brian.Rubel@tetrattech.com> wrote:

How about 1 PM or 2 PM?

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

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From: BT! Customer Services© [<mailto:tdhardesty@att.net>]
Sent: Wednesday, September 10, 2014 11:05 AM
To: Rubel, Brian
Subject: Re: Sewer Capacity Assessment

Brian,

Howard has an 11:00 meeting with an insurance co. Is there another time that would work for you? I can cancel my morning apt if that would be best for you. It is just a salesman coming between 7 and 8.

Tim

On Wednesday, September 10, 2014 10:03 AM, "Rubel, Brian" <Brian.Rubel@tetrattech.com> wrote:

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Howard Fink

From: Rubel, Brian [Brian.Rubel@tetrattech.com]
Sent: Wednesday, September 10, 2014 11:57 AM
To: BT! Customer Services©
Cc: Howard Fink
Subject: RE: Sewer Capacity Assessment

I'll plan on 1 PM at Howard's office.

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

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To: Rubel, Brian
Subject: Re: Sewer Capacity Assessment

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Tim

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Brian M. Rubel, PE | Vice President

Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570

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Howard Fink

From: Rubel, Brian [Brian.Rubel@tetrattech.com]
Sent: Friday, September 26, 2014 3:00 PM
To: finkh@twp.northfield.mi.us
Subject: FW: Northfield As-Needed
Attachments: Northfield As-Needed.pdf

Howard;

The proposal that we discussed this morning and the developer will pick up the tab.

Brian

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

Tetra Tech | Engineering Consulting Services
710 Avis Drive | Ann Arbor, MI 48108 | www.tetrattech.com

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From: Chappell, Ann
Sent: Friday, September 26, 2014 2:50 PM
To: Rubel, Brian
Subject: Northfield As-Needed



TETRA TECH

September 26, 2014

Mr. Howard Fink
Northfield Township Manager
8350 Main Street
Whitmore Lake, MI 48189

Re: As-needed Engineering Service

Dear Mr. Fink;

Tetra Tech has appreciated the opportunity to be of service to Northfield Township since 1961. Tetra Tech and Northfield Township have together designed and overseen the construction of many important parts of the Township's infrastructure.

Tetra Tech has and continues to spend many hours each month serving the Township with small services primarily relating to answering questions on available sewer capacity and wastewater treatment operation. For the last few years, these services have been supplied without charging a fee.

In recent months, development interest has increased and meetings and discussions regarding sewer service are regularly occurring. Tetra Tech continues to support the Township's interests in these discussions. We believe the property owners requesting these services should reimburse the Township for the engineering costs. We have prepared this proposal to address Tetra Tech's services.

We propose the following scope of services.

SCOPE

Provide as-needed consultation to Northfield Township only upon the request of Township Manager Fink or WWTP Superintendent Hardesty. This work is intended to cover Tetra Tech's costs for meeting attendance, research and calculations.

COMPENSATION

We suggest a budget of \$2,000 be established. This budget will not be exceeded without your prior written communication. We will invoice for our services on a time and material basis. Tetra Tech will provide a written monthly report outlining each hour invoiced.

EXECUTION

If you agree with this scope of services, please sign in the space below indicating your acceptance.

Tetra Tech

710 Avis Drive, Ann Arbor, MI 48108

Tel 734.665.6000 Fax 734.665.2570 www.tetratech.com



TETRA TECH

We appreciate your consideration of this request and appreciate this opportunity to continue our long history of service to Northfield Township.

Sincerely;

Brian M. Rubel, P.E.
Vice President

PROPOSAL ACCEPTED BY _____

TITLE _____ **DATE** _____



Tetra Tech of Michigan, PC

Engineering Services Standard Terms & Conditions

Services Consultant will perform services for the Project as set forth in the provisions for Scope of Work/Fee/Schedule in the proposal and in accordance with these Terms & Conditions. Consultant has developed the Project scope of service, schedule, and compensation based on available information and various assumptions. The Client acknowledges that adjustments to the schedule and compensation may be necessary based on the actual circumstances encountered by Consultant in performing their services. Consultant is authorized to proceed with services upon receipt of an executed Agreement.

Compensation In consideration of the services performed by Consultant, the Client shall pay Consultant in the manner set forth above. The parties acknowledge that terms of compensation are based on an orderly and continuous progress of the Project. Compensation shall be equitably adjusted for delays or extensions of time beyond the control of Consultant. Where total project compensation has been separately identified for various tasks, Consultant may adjust the amounts allocated between tasks as the work progresses so long as the total compensation amount for the project is not exceeded.

Fee Definitions The following fee types shall apply to methods of payment:

- **Salary Cost** is defined as the individual's base salary plus customary and statutory benefits. Statutory benefits shall be as prescribed by law and customary benefits shall be as established by Consultant employment policy.
- **Cost Plus** is defined as the individual's base salary plus actual overhead plus professional fee. Overhead shall include customary and statutory benefits, administrative expense, and non-project operating costs.
- **Lump Sum** is defined as a fixed price amount for the scope of services described.
- **Standard Rates** is defined as individual time multiplied by standard billing rates for that individual.
- **Subcontracted Services** are defined as Project-related services provided by other parties to Consultant.
- **Reimbursable Expenses** are defined as actual expenses incurred in connection with the Project.

Payment Terms Consultant shall submit invoices at least once per month for services performed and Client shall pay the full invoice amount within 30 days of the invoice date. Invoices will be considered correct if not questioned in writing within 10 days of the invoice date. Client payment to Consultant is not contingent on arrangement of project financing or receipt of funds from a third party. In the event the Client disputes the invoice or any portion thereof, the undisputed portion shall be paid to Consultant based on terms of this Agreement. Invoices not in dispute and unpaid after 30 days shall accrue interest at the rate of one and one-half percent per month (or the maximum percentage allowed by law, whichever is the lesser). Invoice payment delayed beyond 60 days shall give Consultant the right to stop work until payments are current. Non-payment beyond 70 days shall be just cause for termination by Consultant.

Additional Services The Client and Consultant acknowledge that additional services may be necessary for the Project to address issues that may not be known at Project initiation or that may be required to address circumstances that were not foreseen. In that event, Consultant notify the Client of the need for additional services and the Client shall pay for such additional services in an amount and manner as the parties may subsequently agree.

Site Access The Client shall obtain all necessary approvals for Consultant to access the Project site(s).

Underground Facilities Consultant and/or its authorized subcontractor will conduct research and perform site reconnaissance in an effort to discover the location of existing underground facilities prior to developing boring plans, conducting borings, or undertaking invasive subsurface investigations. Client recognizes that accurate drawings or knowledge of the location of such facilities may not exist, or that research may reveal as-built drawings or other documents that may inaccurately show, or not show, the location of existing underground facilities. In such events, except for the sole negligence, willful misconduct, or practice not conforming to the Standard of Care cited in this Agreement, Client agrees to indemnify and hold Consultant and/or its Subcontractor harmless from any and all property damage, injury, or economic loss arising or allegedly arising from borings or other subsurface penetrations.

Regulated Wastes Client is responsible for the disposal of all regulated wastes generated as a result of services provided under this Agreement. Consultant and Client

mutually agree that Consultant assumes no responsibility for the waste or disposal thereof.

Contractor Selection Consultant may make recommendations concerning award of construction contracts and products. The Client acknowledges that the final selection of construction contractors and products is the Client's sole responsibility.

Ownership of Documents Drawings, specifications, reports, programs, manuals, or other documents, including all documents on electronic media, prepared under this Agreement are instruments of service and are, and shall remain, the property of Consultant. Record documents of service shall be based on the printed copy. Consultant will retain all common law, statutory, and other reserved rights, including the copyright thereto. Consultant will furnish documents electronically; however, the Client releases Consultant from any liability that may result from documents used in this form. Consultant shall not be held liable for reuse of documents or modifications thereof by the Client or its representatives for any purpose other than the original intent of this Agreement, without written authorization of and appropriate compensation to Consultant.

Standard of Care Services provided by Consultant under this Agreement will be performed in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances. Consultant makes no warranty or guaranty, either express or implied. Consultant will not be liable for the cost of any omission that adds value to the Project.

Period of Service Consultant shall perform the services for the Project in a timely manner consistent with sound professional practice. Consultant will strive to perform its services according to the Project schedule set forth in the provisions for Scope of Work/Fee/Schedule above. The services of each task shall be considered complete when deliverables for the task have been presented to the Client. Consultant shall be entitled to an extension of time and compensation adjustment for any delay beyond Consultant control.

Insurance and Liability Consultant shall maintain the following insurance and coverage limits during the period of service. The Client will be named as an additional insured on the Commercial General Liability and Automobile Liability insurance policies.

Worker's Compensation – as required by applicable state statute

Commercial General Liability - \$1,000,000 per occurrence for bodily injury, including death and property damage, and \$2,000,000 in the aggregate

Automobile Liability –\$1,000,000 combined single limit for bodily injury and property damage

Professional Liability (E&O) - \$1,000,000 each claim and in the aggregate

The Client shall make arrangements for Builder's Risk, Protective Liability, Pollution Prevention, and other specific insurance coverage warranted for the Project in amounts appropriate to the Project value and risks. Consultant shall be a named insured on those policies where Consultant may be at risk. The Client shall obtain the counsel of others in setting insurance limits for construction contracts.

Indemnification Consultant shall indemnify and hold harmless the Client and its employees from any liability, settlements, loss, or costs (including reasonable attorneys' fees and costs of defense) to the extent caused solely by the negligent act, error, or omission of Consultant in the performance of services under this Agreement. If such damage results in part by the negligence of another party, Consultant shall be liable only to the extent of Consultant's proportional negligence.

Dispute Resolution The Client and Consultant agree that they shall diligently pursue resolution of all disagreements within 45 days of either party's written notice using a mutually acceptable form of mediated dispute resolution prior to exercising their rights under law. Consultant shall continue to perform services for the Project and the Client shall pay for such services during the dispute resolution process unless the Client issues a written notice to suspend work.

Suspension of Work The Client may suspend services performed by Consultant with cause upon fourteen (14) days written notice. Consultant shall submit an invoice for services performed up to the effective date of the work suspension and the Client shall pay Consultant all outstanding invoices within fourteen (14) days. If the work suspension exceeds thirty (30) days from the effective work suspension date, Consultant shall be entitled to renegotiate the Project schedule and the compensation terms for the Project.

Termination The Client or Consultant may terminate services on the Project upon seven (7) days written notice without cause or in the event of substantial failure by the other party to fulfill its obligations of the terms hereunder. Consultant shall submit an invoice for services performed up to the effective date of termination and the Client shall pay Consultant all outstanding invoices within fourteen (14) days. The Client may withhold an amount for services that may be in dispute provided that the Client furnishes a written notice of the basis for their dispute and that the amount withheld represents a reasonable value.

Authorized Representative The Project Manager assigned to the Project by Consultant is authorized to make decisions or commitments related to the project on behalf of Consultant. Only authorized representatives of Consultant are authorized to execute contracts and/or work orders on behalf of Consultant. The Client shall designate a representative with similar authority.

Project Requirements The Client shall confirm the objectives, requirements, constraints, and criteria for the Project at its inception. If the Client has established design standards, they shall be furnished to Consultant at Project inception. Consultant will review the Client design standards and may recommend alternate standards considering the standard of care provision.

Independent Consultant Consultant is and shall be at all times during the term of this Agreement an independent consultant and not an employee or agent of the Client. Consultant shall retain control over the means and methods used in performing Consultant's services and may retain subconsultants to perform certain services as determined by Consultant.

Compliance with Laws Consultant shall perform its services consistent with sound professional practice and endeavor to incorporate laws, regulations, codes, and standards applicable at the time the work is performed. In the event that standards of practice change during the Project, Consultant shall be entitled to additional compensation where additional services are needed to conform to the standard of practice.

Permits and Approvals Consultant will assist the Client in preparing applications and supporting documents for the Client to secure permits and approvals from agencies having jurisdiction over the Project. The Client agrees to pay all application and review fees.

Limitation of Liability In recognition of the relative risks and benefits of the project to both the Client and Consultant, the risks have been allocated such that the Client agrees, to the fullest extent permitted by law, to limit the liability of Consultant and its subconsultants to the Client and to all construction contractors and subcontractors on the project for any and all claims, losses, costs, damages of any nature whatsoever or claims expenses from any cause or causes, so that the total aggregate liability of Consultant and its subconsultants to all those named shall not exceed \$50,000 or the amount of Consultant's total fee paid by the Client for services under this Agreement, whichever is the greater. Such claims and causes include, but are not limited to negligence, professional errors or omissions, strict liability, breach of contract or warranty.

Consequential Damages Neither the Client nor Consultant shall be liable to the other for any consequential damages regardless of the nature or fault.

Waiver of Subrogation Consultant shall endeavor to obtain a waiver of subrogation against the Client, if requested in writing by the Client, provided that Consultant will not increase its exposure to risk and Client will pay the cost associated with any premium increase or special fees.

Environmental Matters The Client warrants that they have disclosed all potential hazardous materials that may be encountered on the Project. In the event unknown hazardous materials are encountered, Consultant shall be entitled to additional compensation for appropriate actions to protect the health and safety of its personnel, and for additional services required to comply with applicable laws. The Client shall indemnify Consultant from any claim related to hazardous materials encountered on the Project except for those events caused by negligent acts of Consultant.

Cost Opinions Consultant shall prepare cost opinions for the Project based on historical information that represents the judgment of a qualified professional. The Client and Consultant acknowledge that actual costs may vary from the cost opinions prepared and that Consultant offers no guarantee related to the Project cost.

Contingency Fund The Client acknowledges the potential for changes in the work during construction and the Client agrees to include a contingency fund in the Project budget appropriate to the potential risks and uncertainties associated with the Project. Consultant may offer advice concerning the value of the contingency fund; however, Consultant shall not be liable for additional costs that the Client may incur beyond the contingency fund they select unless such additional cost results from a negligent act, error, or omission related to services performed by Consultant.

Safety Consultant shall be responsible solely for the safety precautions or programs of its employees and no other party.

Information from Other Parties The Client and Consultant acknowledge that Consultant will rely on information furnished by other parties in performing its services under the Project. Consultant shall not be liable for any damages that may be incurred by the Client in the use of third party information.

Force Majeure Consultant shall not be liable for any damages caused by any delay that is beyond Consultant's reasonable control.

Waiver of Rights The failure of either party to enforce any provision of these terms and conditions shall not constitute a waiver of such provision nor diminish the right of either party to the remedies of such provision.

Warranty Consultant warrants that it will deliver services under the Agreement within the standard of care. No other expressed or implied warranty is provided by Consultant.

Severability Any provision of these terms later held to violate any law shall be deemed void and all remaining provisions shall continue in force. In such event, the Client and Consultant will work in good faith to replace an invalid provision with one that is valid with as close to the original meaning as possible.

Survival All provisions of these terms that allocate responsibility or liability between the Client and Consultant shall survive the completion or termination of services for the Project.

Assignments Neither party shall assign its rights, interests, or obligations under the Agreement without the express written consent of the other party.

Governing Law The terms of agreement shall be governed by the laws of the state where the services are performed provided that nothing contained herein shall be interpreted in such a manner as to render it unenforceable under the laws of the state in which the Project resides.

Collection Costs In the event that legal action is necessary to enforce the payment provisions of this Agreement if Client fails to make payment within sixty (60) days of the invoice date, Consultant shall be entitled to collect from the Client any judgment or settlement sums due, reasonable attorneys' fees, court costs, and expenses incurred by Consultant in connection therewith and, in addition, the reasonable value of Consultant's time and expenses spent in connection with such collection action, computed at Consultant's prevailing fee schedule and expense policies.

Equal Employment Opportunity Consultant will comply with federal regulations pertaining to Equal Employment Opportunity. Consultant is in compliance with applicable local, state, and federal regulations concerning minority hiring. It is Consultant's policy to ensure that applicants and employees are treated equally without regard to race, creed, sex, color, religion, veteran status, ancestry, citizenship status, national origin, marital status, sexual orientation, or disability. Consultant expressly assures all employees, applicants for employment, and the community of its continuous commitment to equal opportunity and fair employment practices.

Attorney Fees Should there be any suit or action instituted to enforce any right granted in this contract, the substantially prevailing party shall be entitled to recover its costs, disbursements, and reasonable attorney fees from the other party. The party that is awarded a net recovery against the other party shall be deemed the substantially prevailing party unless such other party has previously made a bona fide offer of payment in settlement and the amount of recovery is the same or less than the amount offered in settlement. Reasonable attorney fees may be recovered regardless of the forum in which the dispute is heard, including an appeal.

Third Party Beneficiaries Nothing in this Agreement shall create a contractual relationship with or a cause of action in favor of a third party against either the Client or the Consultant. The Consultant's services under this Agreement are being performed solely for the Client's benefit, and no other entity shall have any claim against the Consultant because of this Agreement or the performance or nonperformance of services hereunder. The Client agrees to include a provision in all contracts with contractors and other entities involved in this project to carry out the intent of this paragraph.

Captions The captions herein are for convenience only and are not to be construed as part of this Agreement, nor shall the same be construed as defining or limiting in any way the scope or intent of the provisions hereof.

Howard Fink

From: Rubel, Brian [Brian.Rubel@tetrattech.com]
Sent: Saturday, September 27, 2014 10:55 AM
To: tdhardesty@att.net; finkh@twp.northfield.mi.us
Subject: Sewer Growth

Tim/Howard;

I worked quite late on Friday and think I have the sewer growth questions figured out. I could review that with you Monday morning or Tuesday.

Brian

Brian M. Rubel, PE | Vice President

Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570

brian.rubel@tetrattech.com

Tetra Tech | Engineering Consulting Services

710 Avis Drive | Ann Arbor, MI 48108 | www.tetrattech.com

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Howard Fink

From: Rubel, Brian [Brian.Rubel@tetrattech.com]
Sent: Tuesday, September 30, 2014 11:18 AM
To: finkh@twp.northfield.mi.us
Subject: NORTHFIELD TOWNSHIP SEWER SYSTEM CAPACITY SUMMARY Version 2
Attachments: NORTHFIELD TOWNSHIP SEWER SYSTEM CAPACITY SUMMARY Version 2.docx

NORTHFIELD TOWNSHIP SEWER SYSTEM CAPACITY SUMMARY

NORTH TERRITORIAL SERVICE AREA

CAPACITY/DEMAND	NEED	REFERENCE
Any significant new development (say 100 REUs)	Equalization Basin	Operator Observation
Above 1,522 REUs and Below 3,044 REUs	New NT Pump and Force Main	2003 Sewer Study
Additional 1,923 REUs	WWTP Expansion	85% of ex. 1.3 mgd capacity
Above 3,044 REUs	New NT Pump Station	2003 Sewer Study

NOTES

Given that the North Territorial SAD Is not built-out, new connections could occur as long as provisions are in place to collect connection fees needed to repay the costs of future infrastructure.

Existing North Territorial SAD design basis was 1,522 REUs

Sizing of needed WWTP facilities requires extensive analysis and new cost opinions since 2002

EQ basin sizing and WWTP expansion are interrelated. Doing both simultaneously will lower project costs.

Howard Fink

From: Rubel, Brian [Brian.Rubel@tetrattech.com]
Sent: Tuesday, September 30, 2014 2:50 PM
To: Howard Fink
Subject: RE: NORTHFIELD TOWNSHIP SEWER SYSTEM CAPACITY SUMMARY Version 2

5 minutes and I'll be free.

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

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From: Howard Fink [<mailto:finkh@twp.northfield.mi.us>]
Sent: Tuesday, September 30, 2014 2:47 PM
To: Rubel, Brian
Subject: RE: NORTHFIELD TOWNSHIP SEWER SYSTEM CAPACITY SUMMARY Version 2

Brian,
Are you available now to chat. If so I want to get Tim in here.
Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [<mailto:Brian.Rubel@tetrattech.com>]
Sent: Tuesday, September 30, 2014 11:18 AM
To: finkh@twp.northfield.mi.us
Subject: NORTHFIELD TOWNSHIP SEWER SYSTEM CAPACITY SUMMARY Version 2

Howard Fink

From: David J Stollman [dstollman@biltmoredevelopment.com]
Sent: Tuesday, September 30, 2014 6:09 PM
To: Howard Fink
Cc: Scott Betzoldt; Brian.Rubel@tetrattech.com
Subject: Re: Northfield As-Needed
Attachments: Tetra Tech Biltmore Agreement 093014.pdf

Howard/Brian,

Attached is the executed Agreement for As Needed Services from Tetrattech. I will have a check issued in the morning and dropped in the mail.

Regards,

DJS

Please note new address below

David J. Stollman
President
Biltmore Development LLC

NEW ADDRESS:
39 Lake Shore Road
Grosse Pointe Farms, MI 48236

Phone: (248) 563-5800

Fax: (248) 499-1006
Email: dstollman@me.com
dstollman@BiltmoreDevelopment.com

www.BiltmoreDevelopment.com



On Sep 30, 2014, at 4:19 PM, Howard Fink <finkh@twp.northfield.mi.us> wrote:

Hi David,

FYI – Please let me know how you want to proceed. The money should be deposited with the Township and then Tetra Tech can bill us accordingly.

Howard

Howard Fink

Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [<mailto:Brian.Rubel@tetrattech.com>]
Sent: Friday, September 26, 2014 3:00 PM
To: finkh@twp.northfield.mi.us
Subject: FW: Northfield As-Needed

Howard;

The proposal that we discussed this morning and the developer will pick up the tab.

Brian

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

Tetra Tech | Engineering Consulting Services
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From: Chappell, Ann
Sent: Friday, September 26, 2014 2:50 PM
To: Rubel, Brian
Subject: Northfield As-Needed

<Northfield As-Needed.pdf>



TETRA TECH

September 26, 2014

Mr. Howard Fink
Northfield Township Manager
8350 Main Street
Whitmore Lake, MI 48189

Re: As-needed Engineering Service

Dear Mr. Fink;

Tetra Tech has appreciated the opportunity to be of service to Northfield Township since 1961. Tetra Tech and Northfield Township have together designed and overseen the construction of many important parts of the Township's infrastructure.

Tetra Tech has and continues to spend many hours each month serving the Township with small services primarily relating to answering questions on available sewer capacity and wastewater treatment operation. For the last few years, these services have been supplied without charging a fee.

In recent months, development interest has increased and meetings and discussions regarding sewer service are regularly occurring. Tetra Tech continues to support the Township's interests in these discussions. We believe the property owners requesting these services should reimburse the Township for the engineering costs. We have prepared this proposal to address Tetra Tech's services.

We propose the following scope of services.

SCOPE

Provide as-needed consultation to Northfield Township only upon the request of Township Manager Fink or WWTP Superintendent Hardesty. This work is intended to cover Tetra Tech's costs for meeting attendance, research and calculations.

COMPENSATION

We suggest a budget of \$2,000 be established. This budget will not be exceeded without your prior written communication. We will invoice for our services on a time and material basis. Tetra Tech will provide a written monthly report outlining each hour invoiced.

EXECUTION

If you agree with this scope of services, please sign in the space below indicating your acceptance.

Tetra Tech
710 Avis Drive, Ann Arbor, MI 48108
Tel: 734.665.6000 Fax: 734.665.2570 www.tetratech.com



TETRA TECH

We appreciate your consideration of this request and appreciate this opportunity to continue our long history of service to Northfield Township.

Sincerely;

Brian M. Rubel

Brian M. Rubel, P.E.
Vice President

PROPOSAL ACCEPTED BY

TITLE President, Gilmore Land LLC DATE 9/30/14



Tetra Tech of Michigan, PC

Engineering Services Standard Terms & Conditions

Services Consultant will perform services for the Project as set forth in the provisions for Scope of Work/Fee/Schedule in the proposal and in accordance with these Terms & Conditions. Consultant has developed the Project scope of service, schedule, and compensation based on available information and various assumptions. The Client acknowledges that adjustments to the schedule and compensation may be necessary based on the actual circumstances encountered by Consultant in performing their services. Consultant is authorized to proceed with services upon receipt of an executed Agreement.

Compensation In consideration of the services performed by Consultant, the Client shall pay Consultant in the manner set forth above. The parties acknowledge that terms of compensation are based on an orderly and continuous progress of the Project. Compensation shall be equitably adjusted for delays or extensions of time beyond the control of Consultant. Where total project compensation has been separately identified for various tasks, Consultant may adjust the amounts allocated between tasks as the work progresses so long as the total compensation amount for the project is not exceeded.

Fee Definitions The following fee types shall apply to methods of payment:

- **Salary Cost** is defined as the individual's base salary plus customary and statutory benefits. Statutory benefits shall be as prescribed by law and customary benefits shall be as established by Consultant employment policy.
- **Cost Plus** is defined as the individual's base salary plus actual overhead plus professional fee. Overhead shall include customary and statutory benefits, administrative expense, and non-project operating costs.
- **Lump Sum** is defined as a fixed price amount for the scope of services described.
- **Standard Rates** is defined as individual time multiplied by standard billing rates for that individual.
- **Subcontracted Services** are defined as Project-related services provided by other parties to Consultant.
- **Reimbursable Expenses** are defined as actual expenses incurred in connection with the Project.

Payment Terms Consultant shall submit invoices at least once per month for services performed and Client shall pay the full invoice amount within 30 days of the invoice date. Invoices will be considered correct if not questioned in writing within 10 days of the invoice date. Client payment to Consultant is not contingent on arrangement of project financing or receipt of funds from a third party. In the event the Client disputes the invoice or any portion thereof, the undisputed portion shall be paid to Consultant based on terms of this Agreement. Invoices not in dispute and unpaid after 30 days shall accrue interest at the rate of one and one-half percent per month (or the maximum percentage allowed by law, whichever is the lesser). Invoice payment delayed beyond 60 days shall give Consultant the right to stop work until payments are current. Non-payment beyond 70 days shall be just cause for termination by Consultant.

Additional Services The Client and Consultant acknowledge that additional services may be necessary for the Project to address issues that may not be known at Project initiation or that may be required to address circumstances that were not foreseen. In that event, Consultant notify the Client of the need for additional services and the Client shall pay for such additional services in an amount and manner as the parties may subsequently agree.

Site Access The Client shall obtain all necessary approvals for Consultant to access the Project site(s).

Underground Facilities Consultant and/or its authorized subcontractor will conduct research and perform site reconnaissance in an effort to discover the location of existing underground facilities prior to developing boring plans, conducting borings, or undertaking invasive subsurface investigations. Client recognizes that accurate drawings or knowledge of the location of such facilities may not exist, or that research may reveal as-built drawings or other documents that may inaccurately show, or not show, the location of existing underground facilities. In such events, except for the sole negligence, willful misconduct, or practice not conforming to the Standard of Care cited in this Agreement, Client agrees to indemnify and hold Consultant and/or its Subcontractor harmless from any and all property damage, injury, or economic loss arising or allegedly arising from borings or other subsurface penetrations.

Regulated Wastes Client is responsible for the disposal of all regulated wastes generated as a result of services provided under this Agreement. Consultant and Client

mutually agree that Consultant assumes no responsibility for the waste or disposal thereof.

Contractor Selection Consultant may make recommendations concerning award of construction contracts and products. The Client acknowledges that the final selection of construction contractors and products is the Client's sole responsibility.

Ownership of Documents Drawings, specifications, reports, programs, manuals, or other documents, including all documents on electronic media, prepared under this Agreement are instruments of service and are, and shall remain, the property of Consultant. Record documents of service shall be based on the printed copy. Consultant will retain all common law, statutory, and other reserved rights, including the copyright thereto. Consultant will furnish documents electronically; however, the Client releases Consultant from any liability that may result from documents used in this form. Consultant shall not be held liable for reuse of documents or modifications thereof by the Client or its representatives for any purpose other than the original intent of this Agreement, without written authorization of and appropriate compensation to Consultant.

Standard of Care Services provided by Consultant under this Agreement will be performed in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances. Consultant makes no warranty or guaranty, either express or implied. Consultant will not be liable for the cost of any omission that adds value to the Project.

Period of Service Consultant shall perform the services for the Project in a timely manner consistent with sound professional practice. Consultant will strive to perform its services according to the Project schedule set forth in the provisions for Scope of Work/Fee/Schedule above. The services of each task shall be considered complete when deliverables for the task have been presented to the Client. Consultant shall be entitled to an extension of time and compensation adjustment for any delay beyond Consultant control.

Insurance and Liability Consultant shall maintain the following insurance and coverage limits during the period of service. The Client will be named as an additional insured on the Commercial General Liability and Automobile Liability insurance policies.

Worker's Compensation – as required by applicable state statute

Commercial General Liability - \$1,000,000 per occurrence for bodily injury, including death and property damage, and \$2,000,000 in the aggregate

Automobile Liability – \$1,000,000 combined single limit for bodily injury and property damage

Professional Liability (E&O) - \$1,000,000 each claim and in the aggregate

The Client shall make arrangements for Builder's Risk, Protective Liability, Pollution Prevention, and other specific insurance coverage warranted for the Project in amounts appropriate to the Project value and risks. Consultant shall be a named insured on those policies where Consultant may be at risk. The Client shall obtain the counsel of others in setting insurance limits for construction contracts.

Indemnification Consultant shall indemnify and hold harmless the Client and its employees from any liability, settlements, loss, or costs (including reasonable attorneys' fees and costs of defense) to the extent caused solely by the negligent act, error, or omission of Consultant in the performance of services under this Agreement. If such damage results in part by the negligence of another party, Consultant shall be liable only to the extent of Consultant's proportional negligence.

Dispute Resolution The Client and Consultant agree that they shall diligently pursue resolution of all disagreements within 45 days of either party's written notice using a mutually acceptable form of mediated dispute resolution prior to exercising their rights under law. Consultant shall continue to perform services for the Project and the Client shall pay for such services during the dispute resolution process unless the Client issues a written notice to suspend work.

Suspension of Work The Client may suspend services performed by Consultant with cause upon fourteen (14) days written notice. Consultant shall submit an invoice for services performed up to the effective date of the work suspension and the Client shall pay Consultant all outstanding invoices within fourteen (14) days. If the work suspension exceeds thirty (30) days from the effective work suspension date, Consultant shall be entitled to renegotiate the Project schedule and the compensation terms for the Project.

Termination The Client or Consultant may terminate services on the Project upon seven (7) days written notice without cause or in the event of substantial failure by the other party to fulfill its obligations of the terms hereunder. Consultant shall submit an invoice for services performed up to the effective date of termination and the Client shall pay Consultant all outstanding invoices within fourteen (14) days. The Client may withhold an amount for services that may be in dispute provided that the Client furnishes a written notice of the basis for their dispute and that the amount withheld represents a reasonable value.

Authorized Representative The Project Manager assigned to the Project by Consultant is authorized to make decisions or commitments related to the project on behalf of Consultant. Only authorized representatives of Consultant are authorized to execute contracts and/or work orders on behalf of Consultant. The Client shall designate a representative with similar authority.

Project Requirements The Client shall confirm the objectives, requirements, constraints, and criteria for the Project at its inception. If the Client has established design standards, they shall be furnished to Consultant at Project inception. Consultant will review the Client design standards and may recommend alternate standards considering the standard of care provision.

Independent Consultant Consultant is and shall be at all times during the term of this Agreement an independent consultant and not an employee or agent of the Client. Consultant shall retain control over the means and methods used in performing Consultant's services and may retain subconsultants to perform certain services as determined by Consultant.

Compliance with Laws Consultant shall perform its services consistent with sound professional practice and endeavor to incorporate laws, regulations, codes, and standards applicable at the time the work is performed. In the event that standards of practice change during the Project, Consultant shall be entitled to additional compensation where additional services are needed to conform to the standard of practice.

Permits and Approvals Consultant will assist the Client in preparing applications and supporting documents for the Client to secure permits and approvals from agencies having jurisdiction over the Project. The Client agrees to pay all application and review fees.

Limitation of Liability In recognition of the relative risks and benefits of the project to both the Client and Consultant, the risks have been allocated such that the Client agrees, to the fullest extent permitted by law, to limit the liability of Consultant and its subconsultants to the Client and to all construction contractors and subcontractors on the project for any and all claims, losses, costs, damages of any nature whatsoever or claims expenses from any cause or causes, so that the total aggregate liability of Consultant and its subconsultants to all those named shall not exceed \$50,000 or the amount of Consultant's total fee paid by the Client for services under this Agreement, whichever is the greater. Such claims and causes include, but are not limited to negligence, professional errors or omissions, strict liability, breach of contract or warranty.

Consequential Damages Neither the Client nor Consultant shall be liable to the other for any consequential damages regardless of the nature or fault.

Waiver of Subrogation Consultant shall endeavor to obtain a waiver of subrogation against the Client, if requested in writing by the Client, provided that Consultant will not increase its exposure to risk and Client will pay the cost associated with any premium increase or special fees.

Environmental Matters The Client warrants that they have disclosed all potential hazardous materials that may be encountered on the Project. In the event unknown hazardous materials are encountered, Consultant shall be entitled to additional compensation for appropriate actions to protect the health and safety of its personnel, and for additional services required to comply with applicable laws. The Client shall indemnify Consultant from any claim related to hazardous materials encountered on the Project except for those events caused by negligent acts of Consultant.

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Equal Employment Opportunity Consultant will comply with federal regulations pertaining to Equal Employment Opportunity. Consultant is in compliance with applicable local, state, and federal regulations concerning minority hiring. It is Consultant's policy to ensure that applicants and employees are treated equally without regard to race, creed, sex, color, religion, veteran status, ancestry, citizenship status, national origin, marital status, sexual orientation, or disability. Consultant expressly assures all employees, applicants for employment, and the community of its continuous commitment to equal opportunity and fair employment practices.

Attorney Fees Should there be any suit or action instituted to enforce any right granted in this contract, the substantially prevailing party shall be entitled to recover its costs, disbursements, and reasonable attorney fees from the other party. The party that is awarded a net recovery against the other party shall be deemed the substantially prevailing party unless such other party has previously made a bona fide offer of payment in settlement and the amount of recovery is the same or less than the amount offered in settlement. Reasonable attorney fees may be recovered regardless of the forum in which the dispute is heard, including an appeal.

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Captions The captions herein are for convenience only and are not to be construed as part of this Agreement, nor shall the same be construed as defining or limiting in any way the scope or intent of the provisions hereof.

Howard Fink

From: Jennifer Carlisle [Carlislej@twp.northfield.mi.us]
Sent: Thursday, October 09, 2014 3:19 PM
To: 'Rubel, Brian'; David Stollman; swb@midwesternconsulting.com; Howard Fink
Subject: meeting next week

Sounds like Wednesday at 10:00 works for everyone. See you then

Thanks,
Jennifer Carlisle
Asst. to Northfield Twp. Mgr.
734-449-2880 ext. 18
carlislej@twp.northfield.mi.us

Howard Fink

From: Rubel, Brian [Brian.Rubel@tetrattech.com]
Sent: Thursday, October 23, 2014 5:27 PM
To: burns@peblaw.net
Cc: finkh@twp.northfield.mi.us; tdhardesty@att.net
Subject: Northfield Township WWTP Capacity Information
Attachments: Scanned from a Xerox multifunction device001.pdf

Paul;

I am sending this to you at the direction of Tim Hardesty. I have paper copies prepared for the executive session.

The Northfield Township WWTP has available capacity for new connections during dry weather. One decision that is needed is whether there are prior commitments to Green Oak Township or Special Assessment Districts to reserve this capacity for connections in those jurisdictions.

During wet weather, Mr. Hardesty and staff need to bypass processes to deliver the water through the WWTP. Thus adding more connections will exacerbate the wet weather flows and could cause untreated overflows or plant violations both of which could lead to discharge permit compliance problems for the Township.

This additional water during wet weather is called infiltration/inflow and is common in older sewer systems. This handout contains a diagram demonstrating the increase in flow during wet weather flow during wet weather and some information on treatment capacity. The most discussed method to control this infiltration/inflow in Northfield Township has been a storage basin constructed at the WWTP site. This storage basin was preliminarily sized at 0.75 million gallons in the 1990s. However, MDEQ rules to capture wet weather flows changed in 2002 and a new evaluation of this sizing will be needed to account for new connections, projected connections, changes in rates of infiltration/inflow, and the new MDEQ criteria.

Brian Rubel

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570 brian.rubel@tetrattech.com

Tetra Tech | Water, Environment, Infrastructure
710 Avis Drive | Ann Arbor, MI 48108 | www.tetrattech.com

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-----Original Message-----

From: ierannp-cq9201@tetrattech.com [<mailto:ierannp-cq9201@tetrattech.com>]
Sent: Thursday, October 23, 2014 5:09 PM
To: Rubel, Brian
Subject: Scanned from a Xerox multifunction device

Please open the attached document. It was scanned and sent to you using a Xerox multifunction device.

Attachment File Type: pdf

multifunction device Location: Ann Arbor, MI

Device Name: IERANNP-CQ9201-SE

For more information on Xerox products and solutions, please visit <http://www.xerox.com>

NORTHFIELD TOWNSHIP SEWER SYSTEM CAPACITY SUMMARY

NORTH TERRITORIAL SERVICE AREA

CAPACITY/DEMAND	NEED	REFERENCE
Any significant new development (say 100 REUs)	Equalization Basin	Operator Observation
Above 1,522 REUs and Below 3,044 REUs	New NT Pump and Force Main	2003 Sewer Study
Above Additional 1,923 REUs	WWTP Expansion	85% of ex. 1.3 mgd capacity
Above 3,044 REUs	New NT Pump Station	2003 Sewer Study

NOTES

Given that the North Territorial SAD is not built-out, new connections could occur as long as provisions are in place to collect connection fees needed to repay the costs of future infrastructure.

Existing North Territorial SAD design basis was 1,522 REUs

Sizing of needed WWTP facilities requires extensive analysis and new cost opinions since 2002

EQ basin sizing and WWTP expansion are interrelated. Doing both simultaneously will lower project costs.

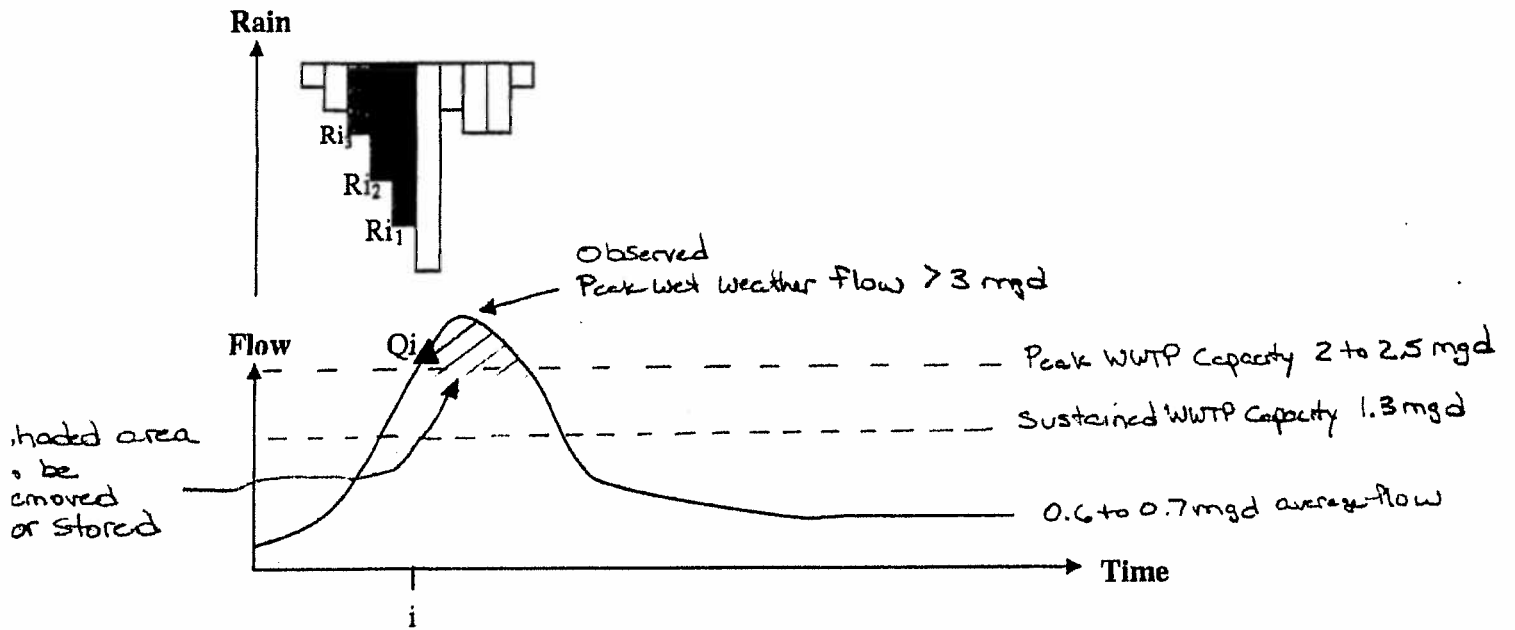
NORTHFIELD TOWNSHIP WWTP CAPACITY TIMELINE

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MDEQ requires accommodating 3.9-inch storm without bypassing treatment	

NORTHFIELD TOWNSHIP WWTP SAMPLE HYDROGRAPH



Howard Fink

From: Rubel, Brian [Brian.Rubel@tetrattech.com]
Sent: Thursday, October 23, 2014 6:15 PM
To: burns@peblaw.net
Cc: tdhardesty@att.net; finkh@twp.northfield.mi.us
Subject: Northfield Township WWTP Capacity Information
Attachments: Scanned from a Xerox multifunction device001.pdf

Paul;

I am sending this to you at the direction of Township Manager Fink . I have included some notes in an attachment.

NORTH TERRITORIAL CAPACITY

The North Territorial Special Assessment District (SAD) paid for the collection system, pump station, and force main serving the SAD. These facilities were sized to accommodate a developed area of the SAD with no provisions for growth outside of the district limits. Thus, any significant new development that wishes to connect to the North Territorial SAD will use capacity conceived for the SAD. Given a low amount of development since the District was constructed, there is currently available capacity to accommodate new development. However, the Township may wish to consider requiring new connections to pay for the cost of future improvements that would be needed should the SAD develop as originally conceived. These improvements would consist of pump station improvements and a new, parallel force main.

WWTP CAPACITY

The Northfield Township WWTP has available capacity for new connections during dry weather. The attachment shows that approximately 1,923 new connections (residential equivalent users or REUs) could be connected within the available capacity of the WWTP. However, it needs to be further researched whether any or all of these connections have been committed to Green Oak Township or Special Assessment Districts.

During large wet weather events, Mr. Hardesty and staff need to bypass processes to deliver the water through the WWTP. Thus, adding many more connections will exacerbate the wet weather flows and could cause untreated overflows or plant violations both of which could lead to discharge permit compliance problems for the Township.

This additional water during wet weather is called infiltration/inflow and is common in older sewer systems. This handout contains a diagram demonstrating the increase in flow during wet weather flow during wet weather and some information on treatment capacity. The most discussed method to control this infiltration/inflow in Northfield Township has been a storage basin constructed at the WWTP site. This storage basin was preliminarily sized at 0.75 million gallons in the 1990s. However, MDEQ rules to capture wet weather flows changed in 2002 and a new evaluation of this sizing will be needed to account for new connections since the 1990s, projected connections, changes in rates of infiltration/inflow, changes in the WWTP capacity and the new MDEQ criteria.

A small number of new connections will have an immeasurable impact upon wet weather flow and the WWTP's ability to treat the wastewater. However, large developments (dozens or hundreds of new connections) will create a noticeable increase in flow and create additional risk during wet weather. The Township may wish to evaluate the size and cost of a storage basin and begin to have new connections pay for some or all of its cost.

This message presents my research on these topics. I will be available to answer questions that may arise.

Brian Rubel

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570 brian.rubel@tetrattech.com

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710 Avis Drive | Ann Arbor, MI 48108 | www.tetrattech.com

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-----Original Message-----

From: ierannp-cq9201@tetrattech.com [mailto:ierannp-cq9201@tetrattech.com]
Sent: Thursday, October 23, 2014 5:09 PM
To: Rubel, Brian
Subject: Scanned from a Xerox multifunction device

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Attachment File Type: pdf

multifunction device Location: Ann Arbor, MI
Device Name: IERANNP-CQ9201-SE

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NORTHFIELD TOWNSHIP SEWER SYSTEM CAPACITY SUMMARY

NORTH TERRITORIAL SERVICE AREA

CAPACITY/DEMAND	NEED	REFERENCE
Any significant new development (say 100 REUs)	Equalization Basin	Operator Observation
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Above Additional 1,923 REUs	WWTP Expansion	85% of ex. 1.3 mgd capacity
Above 3,044 REUs	New NT Pump Station	2003 Sewer Study

NOTES

Given that the North Territorial SAD is not built-out, new connections could occur as long as provisions are in place to collect connection fees needed to repay the costs of future infrastructure.

Existing North Territorial SAD design basis was 1,522 REUs

Sizing of needed WWTP facilities requires extensive analysis and new cost opinions since 2002

EQ basin sizing and WWTP expansion are interrelated. Doing both simultaneously will lower project costs.



McNAMEE
PORTER
& SEELEY
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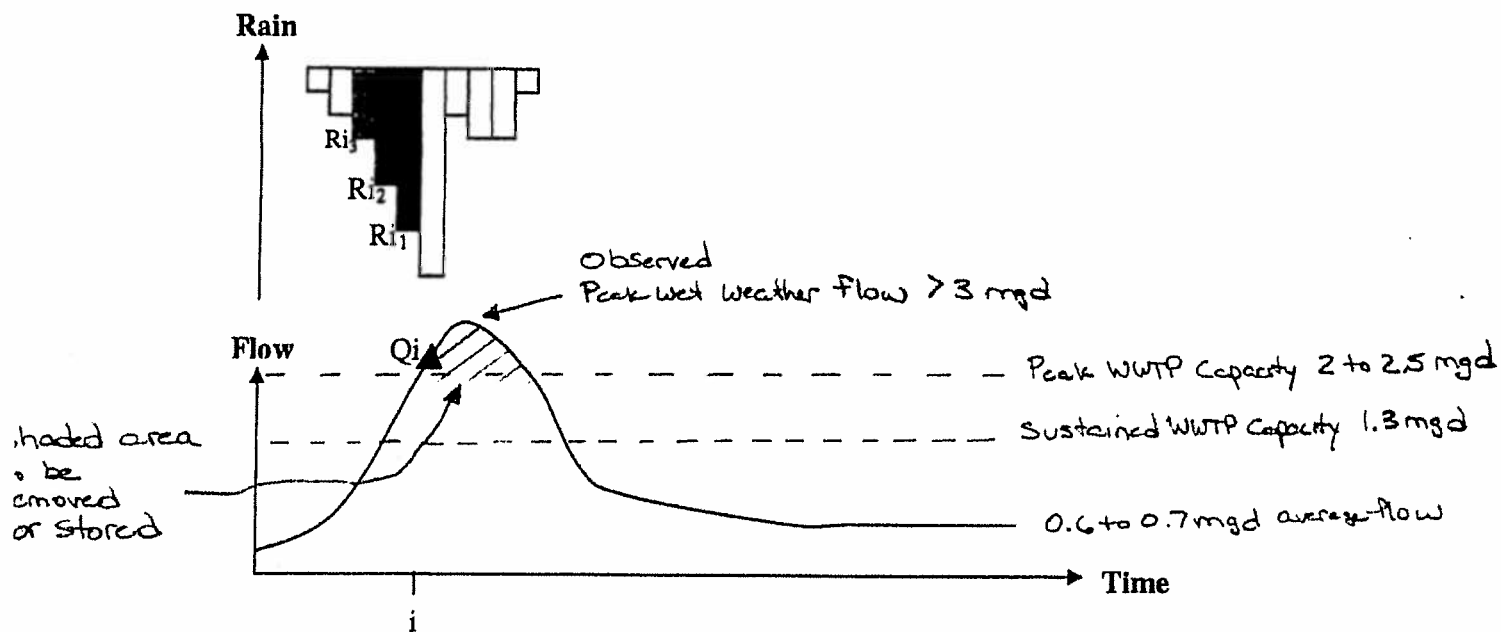
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NORTHFIELD TOWNSHIP WWTP SAMPLE HYDROGRAPH



Howard Fink

From: Paul Burns [burns@peblaw.net]
Sent: Thursday, October 23, 2014 6:39 PM
To: Howard Fink; Brad Maynes
Subject: Fwd: Northfield Township WWTP Capacity Information
Attachments: Scanned from a Xerox multifunction device001.pdf; ATT00019.htm

Dying

Paul Burns

Begin forwarded message:

From: "Rubel, Brian" <Brian.Rubel@tetrattech.com>
Date: October 23, 2014 at 5:27:07 PM EDT
To: "burns@peblaw.net" <burns@peblaw.net>
Cc: "finkh@twp.northfield.mi.us" <finkh@twp.northfield.mi.us>, "tdhardesty@att.net" <tdhardesty@att.net>
Subject: Northfield Township WWTP Capacity Information

Paul;

I am sending this to you at the direction of Tim Hardesty. I have paper copies prepared for the executive session.

The Northfield Township WWTP has available capacity for new connections during dry weather. One decision that is needed is whether there are prior commitments to Green Oak Township or Special Assessment Districts to reserve this capacity for connections in those jurisdictions.

During wet weather, Mr. Hardesty and staff need to bypass processes to deliver the water through the WWTP. Thus adding more connections will exacerbate the wet weather flows and could cause untreated overflows or plant violations both of which could lead to discharge permit compliance problems for the Township.

This additional water during wet weather is called infiltration/inflow and is common in older sewer systems. This handout contains a diagram demonstrating the increase in flow during wet weather flow during wet weather and some information on treatment capacity. The most discussed method to control this infiltration/inflow in Northfield Township has been a storage basin constructed at the WWTP site. This storage basin was preliminarily sized at 0.75 million gallons in the 1990s. However, MDEQ rules to capture wet weather flows changed in 2002 and a new evaluation of this sizing will be needed to account for new connections, projected connections, changes in rates of infiltration/inflow, and the new MDEQ criteria.

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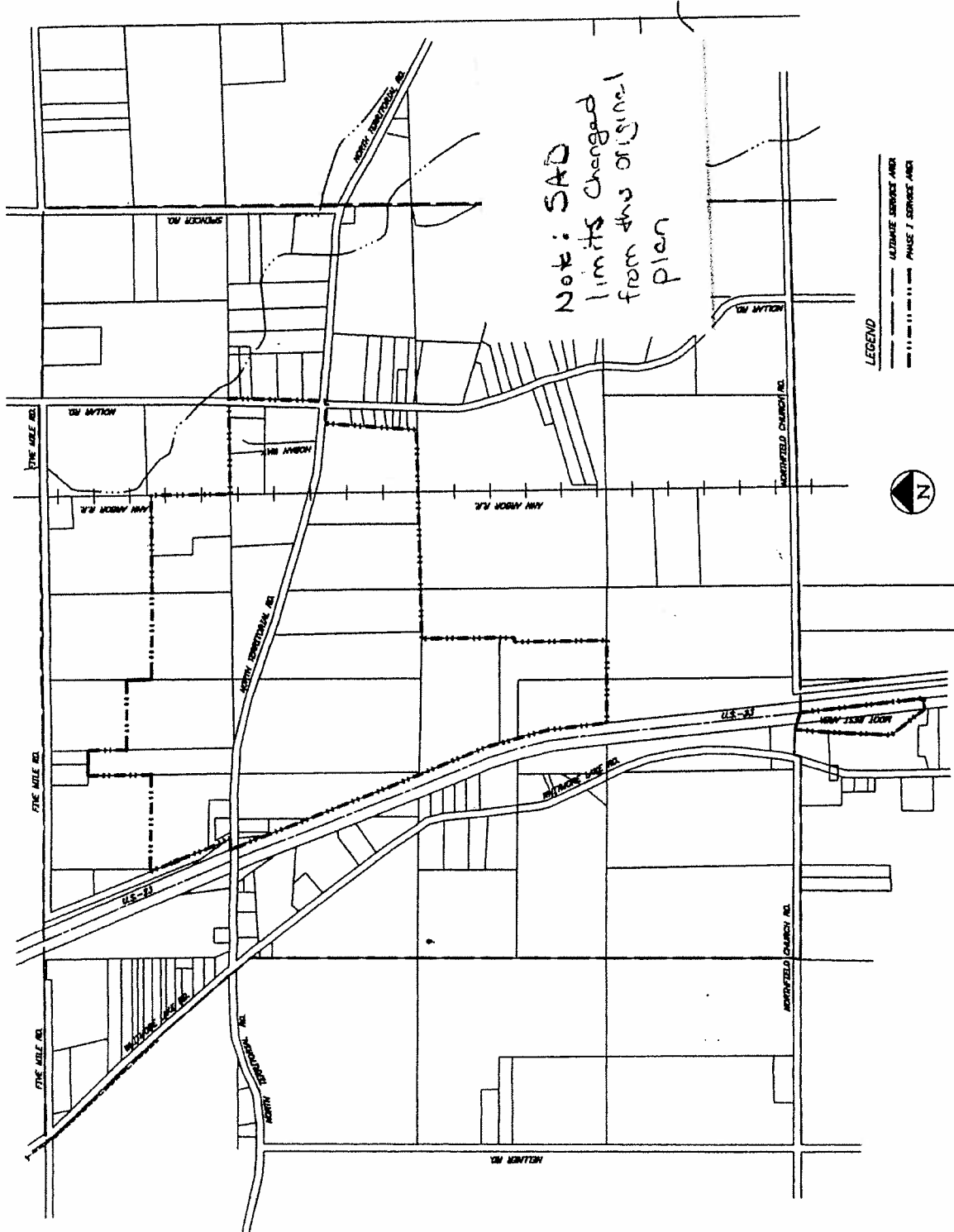


FIGURE 1
NORTHFIELD TOWNSHIP, WASHTENAW COUNTY, MICHIGAN
NORTH TERRITORY, SANITARY SEWER
BASIS OF DESIGN
SERVICE AREA



McNAMEE
PORTER
& SEELEY
INC.

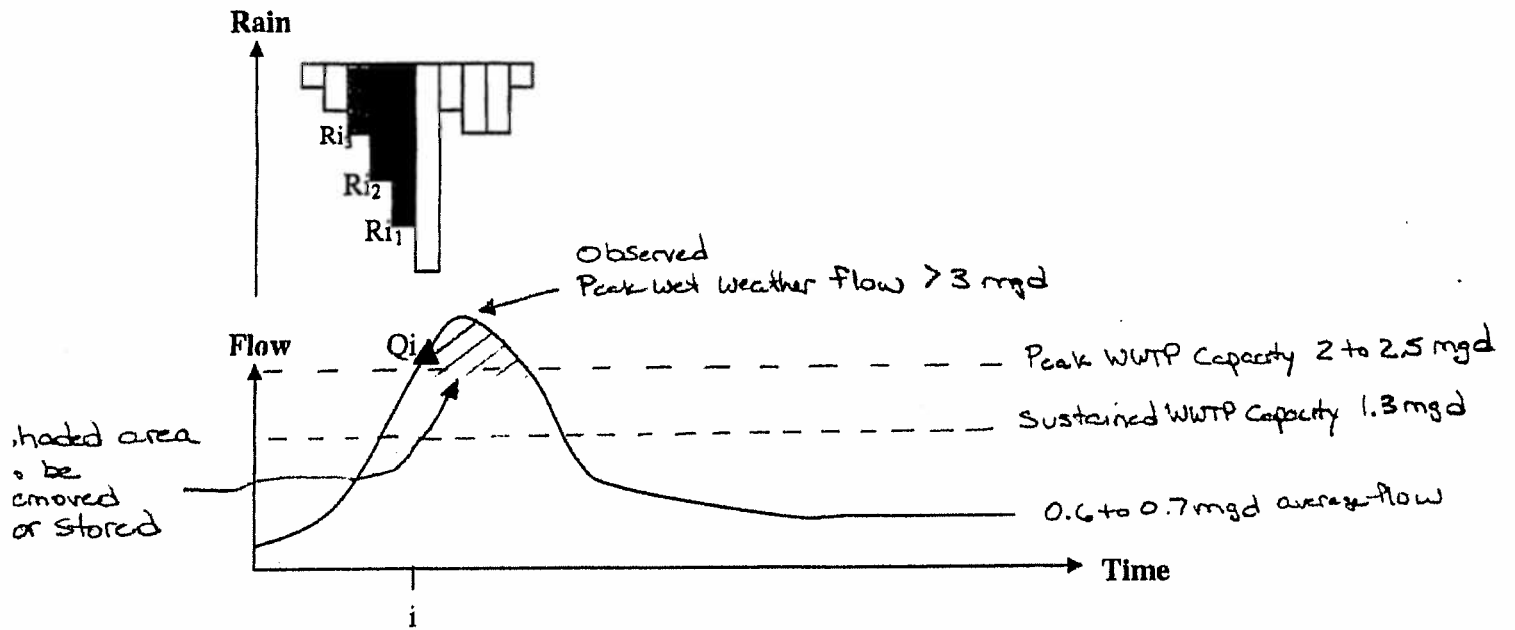
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From: Paul Burns [burns@peblaw.net]
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Subject: Fwd: Northfield Township WWTP Capacity Information
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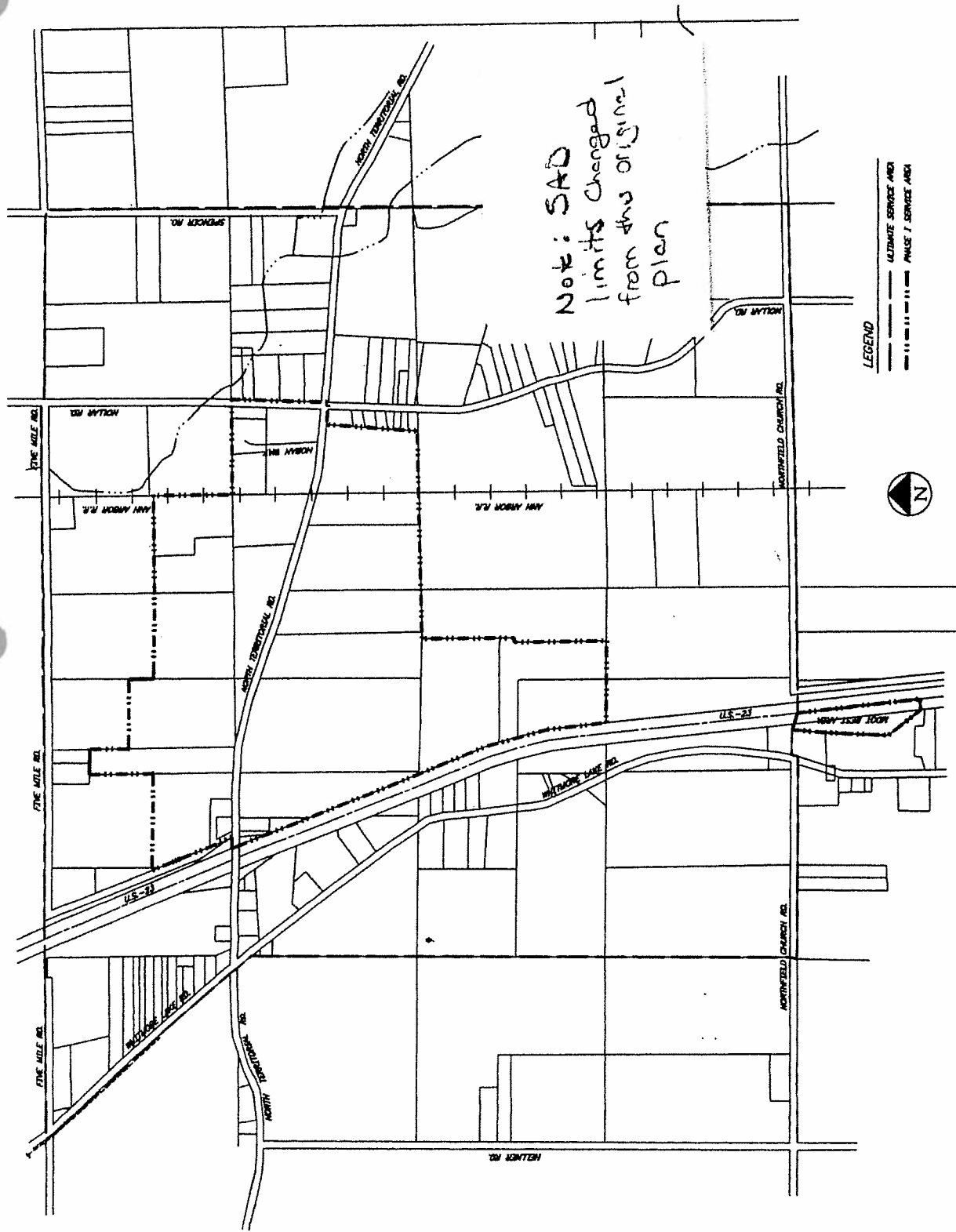
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BASIS OF DESIGN
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FIGURE 1



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PORTER
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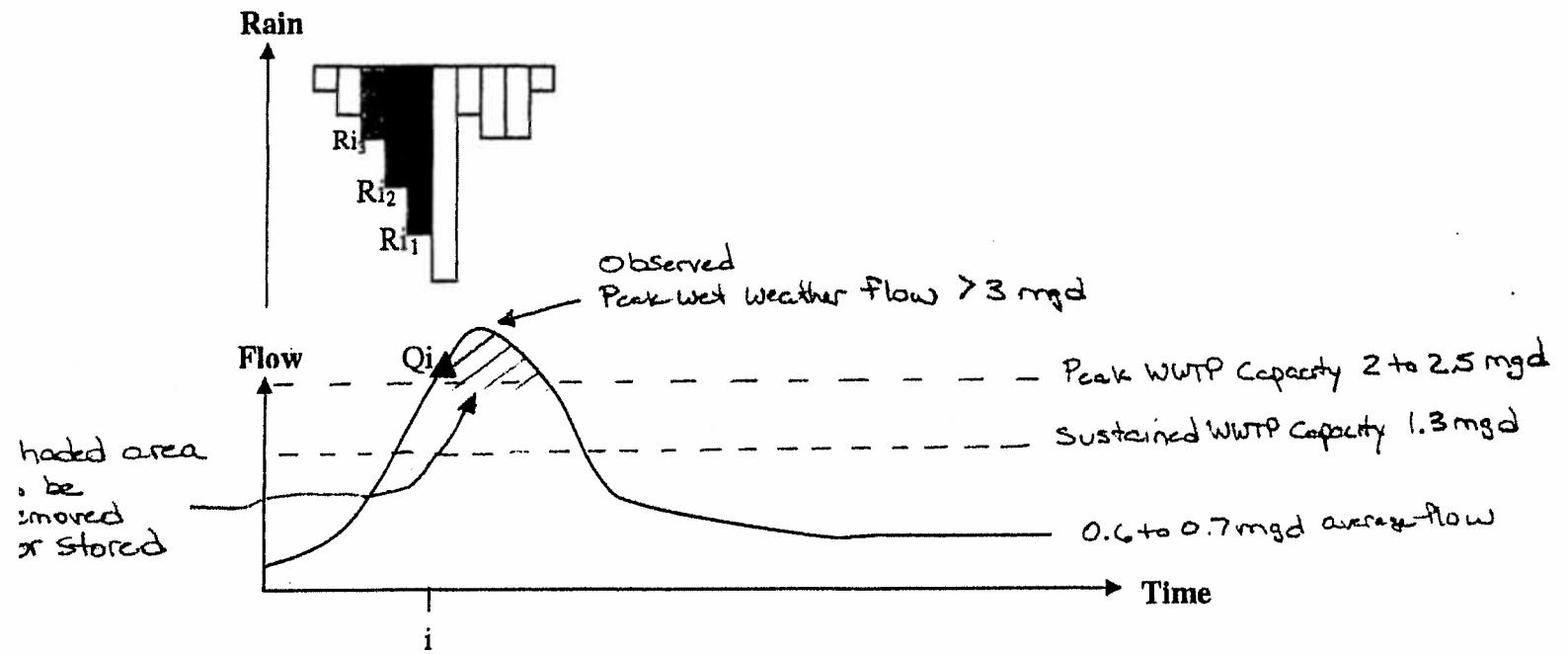
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NORTHFIELD TOWNSHIP WWTP SAMPLE HYDROGRAPH



Howard Fink

From: Johnson, Lisa [lisa@peblaw.net]
Sent: Friday, October 24, 2014 11:19 AM
To: Angela Westover; Jacki Otto; Jacki Otto; Janet Chick; Janet Chick; Kathy Braun; Kathy Braun; Marilyn Engstrom; Marilyn Engstrom; Tracy Thomas; Tracy Thomas; Wayne Dockett
Cc: Howard Fink; Rubel, Brian; Tim Hardesty; Brad Maynes; Paul Burns
Subject: Lakealand Property Owners Association, Hamburg Township and Portage and Base Lake Assoc. Inc v Township of Northfield and Township of Green Oak and Related Intergovernmental Agreements, Part 1 of 2
Attachments: Township Board - Sewer Plant Limitations Attachment 2 of 2.pdf

Please see Part 2 of 2 attachments with regard to the above-referenced matter. Thank you.

Lisa Johnson, Legal Administrative Assistant
to the Law Office of Paul E. Burns

133 West Grand River
Brighton, Michigan 48116
(810) 227-5000 FAX (810) 220-5895

CREATION OF INTERMUNICIPAL SEWER COMMITTEE (ISC)

- A. The governing bodies of NORTHFIELD, GREEN OAK and HAMBURG shall, by resolution in each respective body, establish and organize an intermunicipal committee, to be known as the Intermunicipal Sewer Committee ("ISC").
- B. The ISC shall consist of six (6) members, two (2) from each township NORTHFIELD, GREEN OAK and HAMBURG. Each township board shall appoint two (2) committee members ("appointee") within 60 days of the execution of this Consent Judgment and thereafter every two (2) years at each township's first regularly scheduled township board meeting of the year. No appointee shall be a member of any member township's board of trustees. It is mutually understood that given the technical nature of issues that will be facing the ISC in the future, it is prudent that the ISC be made up of individuals familiar with environmental issues. In the event an ISC committee member resigns, his or her appointing township board shall appoint a new representative within 45 days of said resignation. The new appointee shall fill the vacancy for the unexpired term. The board of each member township may remove any or all of its appointed representatives at any time if it is deemed by a majority of members of the township board that such removal is in the best interest of the township. Resignations and/or removal of appointments shall not inhibit the actions of the ISC and the ISC shall be empowered to perform as if the appointee were never appointed and the ISC were fully staffed. Each appointee shall qualify by taking the constitutional oath of office and filing it with the appropriate clerk of the municipality. The volunteer ISC members shall serve without compensation from ISC funds. The respective member townships, at their option, may compensate

their representatives consistent with compensation policies for other citizen boards of the respective municipality.

- C. The ISC shall meet at least quarterly and at such other times and places as shall be determined by the ISC or as compelled by member township requests for review of disagreements. The ISC shall maintain minutes of its meetings and hold them open for review.
- D. The ISC may establish By-Laws and Procedures not inconsistent with this Consent Judgment and subject to the approval of the member townships' legislative bodies.

3. **PURPOSE OF INTERMUNICIPAL SEWER COMMITTEE (ISC)**

The ISC shall study currently existing, publicly owned treatment plants located within HAMBURG, NORTHFIELD and GREEN OAK and shall study wastewater effluent to formulate written recommendations for the best available technology that is practical, economically feasible and effective for each community's treatment plant.

4. **DUTIES AND POWERS OF INTERMUNICIPAL SEWER COMMITTEE (ISC)**

- A. The ISC shall have general authority to monitor the member townships' existing sewage plants and make recommendations thereto. The existing sewage treatment plants shall mean (i) the Northfield Township Waste Water Treatment Plant on Leman Road in Green Oak Township, (ii) the Hidden Lake Waste Water Treatment Plant located on Silver Lake Road in Green Oak Township, and (iii) the Hamburg Township Waste Water Treatment Plant located on M-36 in Hamburg Township.
- B. The ISC shall monitor the member townships' existing sewage plants for compliance with effluent levels to be established by the Michigan Department of Environmental Quality and for best efforts to achieve effluent goals recommended

by the experts described in paragraph 4(F) below. In addition, the ISC shall monitor the member townships for sewage plant spills. The ISC shall compile and report these statistics to the member townships quarterly.

- C. The ISC shall review any proposed wastewater treatment plant expansions or modifications except as set forth herein.
- D. The ISC shall in the first year of this Consent Judgment commission a Wastewater Treatment Plant Technology Study and commence a Watershed Study in accordance with the criteria described in Exhibits B and C.
- E. The ISC shall review any studies performed at the direction of this ISC.
- F. Each member of the ISC shall appoint an expert to conduct the studies set forth in paragraph 4(D) and serve the ISC. The ISC may employ any other personnel deemed necessary to coordinate and conduct all types of surveys and studies relating to the watershed issues and make individual or joint written recommendations as to the best available and economically feasible technological solution to such issues. However, in the event a dispute proceeds to Arbitration pursuant to Paragraph 6 of this Agreement, the disputing parties shall each select one expert. The two selected experts shall select a third expert. Time deadlines for the selection of experts for the purposes of Arbitration shall be determined by the Arbitration panel.
- G. The ISC shall adopt, by resolution of a majority of its full membership, any expert recommendation for submission to each member township's governing body.
- H. The ISC may publicize its purposes, objectives and findings, and may distribute reports thereon.
- I. The ISC shall make an annual report of its activities to each member township's governing body.

- J. Unless otherwise specified in this agreement, the ISC shall act upon a majority vote of all of its members at any regular or special meeting.

5. **FUNDING OF INTERMUNICIPAL SEWER COMMITTEE (ISC)**

For the purpose of providing funds to meet the expenses of the ISC, the member townships' governing bodies shall, by resolution, authorize the allocation of municipal funds for such purpose. Each member township shall make a minimum contribution of fifteen thousand dollars (\$15,000.00) per annum commencing with entry of this Consent Judgment and thereafter on the anniversary thereof, ending five (5) years hence. Additional funding shall be based on the recommendation of the ISC and approved by a majority vote of each member township's board of trustees, with each member township bearing 33.34% proportion of the total additional funds approved. Funding of the ISC shall not be subject to Arbitration. Each Township shall establish a fund within their respective budgets to be monitored by the Treasurer for each Township. The ISC shall submit proportionate costs to each Township quarterly for payment.

- A. The ISC may accept gifts and grants from the federal government, state government and local governments, also from private individuals, foundations or agencies, if the grants are made for furtherance of the objectives for which the committee is established. Any funds received by the ISC shall be divided by 33.34% and deposited into each Township's ISC fund.
- B. The ISC shall maintain records relative to its operation and hold them open for review.

6. **PROCEDURE OF BINDING ARBITRATION**

In the event that a recommendation of the ISC is not unanimous, the dissenting township's governing body may demand that the dispute be submitted to binding arbitration by a three-person arbitration panel. Such dispute and any other claims or disputes regarding

wastewater treatment or watershed protection shall be subject to binding arbitration in accordance with the following procedures:

- A. The aggrieved township may give notice of its intent to arbitrate any environmental dispute within thirty (30) days of any recommendation or action giving rise to the claim or dispute.
- B. The disputing parties shall each have fifteen (15) days from the date of the notice described in paragraph 6(A) to select and name one arbitrator to the arbitration panel. The two selected arbitrators shall have fifteen (15) days to name the third arbitrator.
- C. Arbitrators cannot be appointed from the legislative bodies of the member townships' governing bodies. The arbitration panel shall determine the procedure for arbitration other than the timeline set forth herein.
- D. The arbitration panel shall report its findings on the claim or dispute to each member legislative body within sixty (60) days of being constituted or such other reasonable time period as the arbitrators deem appropriate and issue a binding decision regarding the grievance.
- E. HAMBURG, NORTHFIELD and GREEN OAK each agrees to consider itself bound and to be bound by any decision made by the arbitrators pursuant to this agreement. The parties further agree that the binding decision is in lieu of any and all statutory or common law remedies and there shall be no review or appeal, e.g. judicial, administrative, or otherwise.
- F. The Arbitrators shall have discretion to award costs and fees upon a finding that any parties' objections were improvidently made.
- G. The parties agree that a judgment of the Livingston County Circuit Court may be rendered upon the arbitration award made pursuant to this Consent Judgment.

7. **TERM**

The term of this Consent Judgment shall commence on the date hereto and terminate five (5) years hence. HAMBURG, NORTHFIELD, and GREEN OAK agree that this Consent Judgment may be extended if mutually agreeable terms are agreed upon by HAMBURG, NORTHFIELD, and GREEN OAK at the time of the expiration of this Consent Judgment.

8. **TERMINATION**

Termination of this Consent Judgment shall be by Petition for Termination to the Livingston County Circuit Court for good cause shown.

9. **BOUND BY THIS CONSENT JUDGMENT**

Each party agrees to adopt ordinances effectuating this Consent Judgment and binding them to all rules, processes and conditions of this Consent Judgment to the same extent that the other parties to this Consent Judgment are so bound.

10. **DEFAULT**

The parties pledge their full faith and credit for all duties set forth in this Consent Judgment.

11. **FAILURE OF PERFORMANCE**

No failure or delay in the performance of the executed Consent Judgment by the parties shall be deemed to be a breach thereof when such failure or delay is occasioned by or due to any Act of God, strikes or lockouts, wars, riots, epidemics, or other similar cause, whether of the kind herein enumerated or otherwise not in the control of the party claiming suspension.

12. **NON-ASSIGNABILITY**

It is hereby agreed that this Consent Judgment shall be binding upon all successor governmental units which may assume jurisdiction over all or part of the areas now governed by the parties.

13. **SEVERABILITY**

Should any provision of this Consent Judgment be found by a court of law to be unconstitutional it shall be severed from the Consent Judgment and the remaining provisions shall remain in full force and effect.

14. **CONFLICTS WITH OTHER JUDGMENTS**

NORTHFIELD, GREEN OAK and HAMBURG all acknowledge that the Hidden Lake Waste Water Treatment Plant is subject to the terms and conditions of a certain Judgment and Amended Judgment in the case of "Beck Development, et. al. vs. Green Oak Township, et. al.," Case Number 95-14297-CH in the Livingston County Circuit Court. NORTHFIELD, GREEN OAK and HAMBURG agree that, in case of conflict between this Consent Judgment and the terms and conditions of the Judgments in Case No. 95-14297-CH, the terms and conditions of the Judgments in Case No. 95-14297-CH shall control and nothing in this Consent Judgment shall be interpreted or construed to negate or modify in any way the terms and conditions of the Judgments in Case No. 95-14297-CK.


IN WITNESS WHEREOF, the parties have set their hands and seals the day and year first above written.

HON. DANIEL A. BURRESS

DANIEL A. BURRESS
CIRCUIT COURT JUDGE 5/23/02


**APPROVED AS TO FORM
AND CONTENT:**

HOOPER, HATHAWAY, PRICE,
BEUCHE & WALLACE
Attorneys for Plaintiff
Township of Hamburg

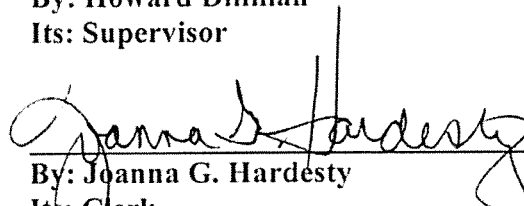


BRUCE T. WALLACE (P24148)
126 South Main Street
Ann Arbor, Michigan 48104

HAMBURG TOWNSHIP
a general law township



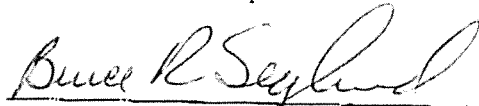
By: Howard Dillman
Its: Supervisor



By: Joanna G. Hardesty
Its: Clerk

CONNELLY, CROWLEY, GROTH
& SEGLUND

Attorneys for Intervening Defendant
Green Oak Township





BRUCE R. SEGLUND (P32446)

2410 S. Commerce Road

Walled Lake, Michigan 48390

GREEN OAK TOWNSHIP
a general law township


By: Mark St. Charles
Its: Supervisor
By: Michael Sedlak
Its: Clerk

LAW OFFICE OF PAUL E. BURNS
Attorneys for Defendant
Northfield Township

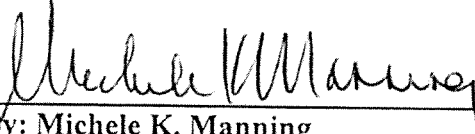


PAUL E. BURNS (P31596)
133 West Grand River
Brighton, Michigan 48116

NORTHFIELD TOWNSHIP
a general law township



By: Mike McFarland
Its: Supervisor



By: Michele K. Manning
Its: Clerk

EXHIBIT A

EQUALIZATION BASIN

These improvements would include the construction of a concrete basin to dampen the peak flow entering the WWTP. Related appurtenances would include: flow metering, aeration/mixing equipment, revisions to the grit/screening facilities, related electrical/instrumentation work, piping modifications and necessary site improvements.

WWTP EXPANSION TO 2.25 MGD

These improvements would duplicate existing treatment technology at the WWTP including the addition of: flow splitting structures, primary settling tank(s), aeration tank(s)/equipment, final settling tank(s), RAS pumping facilities, aeration blowers/piping, tertiary filter(s), sludge storage, digester improvements, standby power improvements, electrical/instrumentation and necessary site improvements.

REFERENCE TO PLANS AND SPECIFICATIONS

This Exhibit A references and incorporates by such reference the plans, documents, drawings, concepts and specifications ("the current Design and Construction Plans") provided by Northfield Township and reviewed by Hamburg Township and the same are made a part of this Exhibit A as though fully set forth herein:

List to be filed separately

The parties understand and agree that the Current Design and Construction Plans may be henceforth from time to time amended or modified and that any such amendments and modifications, insofar as the technology remains consistent with the concepts and standards contemplated in the Current Design and Construction Plans, shall be deemed approved by Hamburg Township as though fully set forth herein.

EXHIBIT B

Wastewater Treatment Plant Technology Study Criteria:

1. Review current available wastewater treatment technology suitable to the member townships' respective treatment plants.
2. Review existing plant specifications, engineering, and operations and current plans, specifications and engineering drawings and information relating to any proposed plant expansions except 2.25 MGD. HAMBURG and GREEN OAK agree that the existing NORTHFIELD wastewater treatment plant can be immediately expanded and operated, in accordance with MDEQ Permit No. M10023710, issued November 14, 1997, at 2.25 million gallons per day (mgd) by duplicating the current technology utilized at NORTHFIELD's wastewater treatment plant which would also include the construction of an equalization basin, as more particularly defined in Exhibit A. The design and construction set forth in Exhibit A are approved by the parties and are not subject to the review provisions of the Consent Judgment.
3. Propose recommendations for specific technology applicable to any proposed plant expansions.
4. Recommend specific effluent goals for each plant including but not limited to recommendations regarding nitrogen and phosphorus.

EXHIBIT C

Watershed Study Criteria

1. Define goals, methodologies, and protocols for long term study of watershed area.
2. Define sampling plan and specify activities and schedules for implementation of proposed plan.
3. Propose implementation of this study within an initial \$22,500 budget in year one and up to approximately \$30,000 in each of years two through five, subject to adjustment based upon additional funding requirements for Wastewater Treatment Plant study during the term of this Consent Judgment.

LEASE OF SEWAGE DISPOSAL SYSTEM
AND SEWAGE TREATMENT AGREEMENT

This Agreement made this 23rd day of September, 1969, between the Township of Northfield, Wastenaw County, Michigan (herein called Northfield) and the Township of Green Oak, Livingston County, Michigan, (herein called Green Oak).

WHEREAS, Green Oak is constructing a sanitary sewage collection system, herein called the Green Oak system, which system consists of those sanitary sewers constructed by the Township of Green Oak in accordance with its Whitmore Lake West Side Special Assessment Sewer Improvement and its Whitmore Lake East Side Special Assessment Sewer Improvement.

NOW THEREFORE, the parties agree as follows:

1. In consideration of the sum of One (\$1.00) Dollar in hand paid to it by Northfield, receipt of which is hereby acknowledged, and other good and valuable considerations as set forth in this Agreement, Green Oak hereby leases to Northfield and Northfield hereby leases from Green Oak, the sanitary sewers located within the Township of Green Oak and described fully in the plans and specifications filed as a part of the Green Oak Township Special Assessment Improvement known as the Whitmore Lake West Side Special Assessment Sewer Improvement and the Whitmore Lake East Side Special Assessment Sewer Improvement for an initial term commencing on the date hereof and terminating on December 31, 1979. After the initial term of this lease, it shall be extended automatically for successive terms of ten (10) years each. The Agreement may be terminated by either party, after the expiration of the initial term, upon one years written notice served upon the other party by delivering the same to the Clerk of the municipality upon which notice is to be served. The lease may be terminated at any time upon the mutual consent of both parties.

2. During the term of this lease or any extension thereof, Northfield shall maintain and operate the Green Oak system, so far as lawful and practicable, in the same manner as it maintains and operates the Northfield system, including the billing directly to, and collection of all rates, charges and fees directly from the users of the Green Oak system. All Northfield books and records pertaining to the Green Oak system shall be available to Green Oak for inspection by its authorized agents and representatives.

3. Northfield shall provide the services hereunder to the users of the Green Oak system at the rates, charges and fees established for similar users of the Northfield system by ordinances of Northfield. Northfield shall give ninety (90) days notice of any change in said rates, charges and fees to Green Oak in writing, delivered in person or by mail to the Green Oak Township Clerk.

4. Annually, and prior to September 1, Northfield shall certify to the Green Oak Township Assessing Officer all the said rates, charges and fees, together with interest and penalties, owing by users of the Green Oak system and delinquent for six (6) months or more, and such assessing officer shall enter the same on the Green Oak tax roll as a lien against the premises to which such services have been rendered, and Green Oak shall enforce the lien and shall collect said sums as provided by law. Green Oak shall promptly remit to Northfield all sums so collected. If Green Oak fails or neglects to so enter such delinquent charges on its next tax roll, Green Oak shall pay Northfield such charges not later than December 1, of the year of such certification.

5. During the term of this Agreement, Northfield shall perform such maintenance and repairs as shall be necessary to Green Oak's system to the extent possible from the normal revenue of the combined Northfield-Green Oak system. Northfield shall not be obligated to reconstruct or repair parts of the Green Oak system damaged or destroyed by natural disaster, war or

insurrection or similar unusual happenings beyond Northfield's control.

6. The execution of this lease shall be deemed to be the formal consent of the Township of Green Oak to the exercise by Northfield of its powers under Act 94 of the Public Acts of 1933, as amended, within the Township of Green Oak and Northfield is hereby granted a franchise to transact local business in Green Oak Township as may be convenient and necessary to provide the service required under this lease.

7. Northfield shall furnish Green Oak all ordinances, rules and regulations of Northfield pertaining to the Northfield system and Green Oak shall promptly adopt, enact and establish similar ordinances, rules and regulations to effect, so far as practicable, uniformity thereof throughout the Northfield and Green Oak Systems. Green Oak shall be liable to Northfield for any loss or damage of Northfield by reason of Green Oak's neglect or failure to adopt, enact, establish and enforce its said ordinances, rules and regulations.

8. It is understood and agreed by both parties hereto that the Green Oak system has been constructed for the reception and transporation of sanitary sewage only and Green Oak shall take such reasonable steps as are necessary to prevent the introduction thereto of storm or surface drainage.

9. Green Oak agrees that Northfield's standards and specifications from time to time in effect shall govern the installation and maintenance of sewers in the Green Oak system and that plans and specifications for any extensions, alterations or replacements within the Green Oak system shall be submitted to Northfield for approval prior to construction.

10. In the event proper operation of the Northfield system requires Northfield to discontinue temporarily all or a part of service to be rendered to Green Oak hereunder, no claims for damages for such discontinuance shall be made by Green Oak against Northfield, provided that any action hereunder by Northfield shall not discriminate between customers of the

Northfield system and customers of the Green Oak system.

11. To the extent necessary Green Oak hereby grants permission to Northfield to use streets, highways, alleys and/or easements in the Township for the purpose of constructing, maintaining and operating such parts of the Northfield system as are necessary to provide service to the Green Oak system.

12. The parties recognize the possibility that the revenues of the Northfield system, including revenues received from the Green Oak system, may from time to time be insufficient to meet the obligations of Northfield under a certain contract dated July 12, 1967, between Northfield and the Huron Utilities Association, or under any bonds or other contractual undertakings of Northfield for financing future improvements or extensions of the sewage treatment plant and disposal facility which are necessary to provide continued service to Green Oak. In the event of such deficiencies, and to the extent that Northfield has pledged its faith and credit under said bonds, contracts, or other contractual undertakings to advance funds, to meet deficiencies, Green Oak shall be obligated to pay to Northfield its share of such deficiency in the relative proportion of said sum as the then number of customers capacity of the Green Oak system bears to the total number of customer capacity of the combined Northfield and Green Oak systems. It is understood by both townships that such payments of Northfield and Green Oak would be in the nature of advances to the sewage disposal system and that Northfield will adjust its rates so as to provide funds and to meet future payments under said bonds, contract or other contractual undertakings as they become due and to provide a fund from which Northfield and Green Oak will be reimbursed for said advancements within a reasonable period of time.

13. In the event of the termination of this lease, Northfield shall continue to accept, treat, and dispose of

sanitary sewage emanating from the Green Oak system until December 31, 1999, unless sooner terminated by Green Oak upon five (5) year's written notice served upon Northfield by delivering the same to the Clerk of the other municipality or may be terminated at any time upon mutual consent of both parties. Such continued service shall be upon such reasonable conditions and rates as shall be agreed upon by the parties hereto.

14. This Agreement shall inure to the benefit of and be binding upon the respective parties hereto, their successors and assigns and shall take effect upon its adoption and execution by the respective parties hereto.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by respective, duly authorized officers as of the day and year first written.

In the presence of:

TOWNSHIP OF GREEN OAK

By: Kenneth J. Foran
Supervisor

By: Monica M. Whang
Clerk

TOWNSHIP OF NORTHFIELD

By: Peter J. Kelly
Supervisor

By: Andy A. Gort
Clerk

TOWNSHIP OF NORTHFIELD - TOWNSHIP OF HAMBURG

INTERGOVERNMENTAL AGREEMENT

This Agreement is made this 14th day of March, 1991 between the Township of Northfield, a general law township, with offices at 75 Barker Road, P.O. Box 576, Whitmore Lake, Michigan 48189 (hereinafter "Northfield"), and the Township of Hamburg, a general law township, with offices at 10405 Merrill Road, P.O. Box 157, Hamburg, Michigan 48189 (hereinafter "Hamburg").

RECITALS

WHEREAS, NORTHFIELD is the owner and operator of a wastewater treatment plant (hereinafter "Plant") located in the Township of Green Oak, County of Livingston, State of Michigan; and

WHEREAS, on December 5, 1989, Northfield filed a Verified Petition for Amendment of an Order of the Livingston County Circuit Court entered on May 4, 1972 and a Supplemental Order entered on September 11, 1978 in the case of Lakeland Property Owner's Association, et al. v Northfield Township, et al., Case No. 1453; and

WHEREAS, the Verified Petition filed by NORTHFIELD sought to obtain the Livingston County Circuit Court's permission to increase the Plant's capacity from 750,000 gallons per day to One Million Five Hundred Thousand (1,500,000) gallons per day; and

WHEREAS, Act 129 of Public Acts of 1943, as amended, provides that any two or more political subdivisions may contract relative to the furnishing of sewage disposal services by one political subdivision to another political subdivision; and

WHEREAS, NORTHFIELD and HAMBURG are desirous of entering into an agreement whereby sanitary sewage generated by certain residential and commercial users in HAMBURG Township would be transmitted to and treated in NORTHFIELD'S Plant;

NOW, THEREFORE, in consideration of the promises and covenants of each other, the parties agree as follows:

- I. CAPACITY
- A. NORTHFIELD shall be permitted to increase the capacity of its wastewater disposal plant to One Million Five Hundred Thousand (1,500,000) gallons per day based upon an annual average under the terms and conditions set forth in this Agreement and the Supplemental Order dated March 14th, 1991

and entered by the Livingston County Circuit Court in the case of Lakeland Property Owners Association, et al. v Northfield Township, et al., Case No. 1453; and

B. The expansion is expected to occur in phases. Phase 1 is expected to increase the capacity of the Plant to One Million One Hundred Thousand (1,100,000) gallons per day. Phase 2 is expected to increase the capacity of the Plant to One Million Three Hundred Thousand (1,300,000) gallons per day. Phase 3 is expected to increase the capacity of the Plant to One Million Five Hundred Thousand (1,500,000) gallons per day. NORTHFIELD, in its discretion, may combine the phases and determine the timing of phases. NORTHFIELD agrees to exercise due diligence in the construction of its expanded Plant so as to provide service to HAMBURG pursuant to the terms of this Agreement. This provision is not intended to modify paragraph V(B) of this Agreement.

II. SEWAGE DISPOSAL SERVICE BY NORTHFIELD

A. NORTHFIELD agrees to receive and treat sanitary sewage from HAMBURG provided that the flow does not exceed Two Hundred Fifty Thousand (250,000) gallons per day based upon an annual average, within eighteen (18) months after NORTHFIELD receives payment pursuant to paragraph IV(A) of this Agreement; and

B. The effluent from HAMBURG shall emanate only from an area of HAMBURG outlined in Attachment "A" attached hereto, dated March 14th, 1991 and signed by the Supervisor and Clerk for each Township. Said effluent shall emanate only from residential homes and commercial establishments. No industrial effluent shall be permitted. The map may be altered with the written agreement of NORTHFIELD which may not be unreasonably withheld. It is the intent of the parties that the properties abutting Strawberry Lake, excluding the properties commonly referred to as the "Bluffs", be provided with sanitary sewage disposal service. HAMBURG agrees to use its best efforts to provide service to said properties.

III. PURCHASE OF SEWAGE DISPOSAL

A. No free service shall be furnished to any person, firm or corporation, public or private, or to any public agency or instrumentality;

B. Prior to connection HAMBURG agrees to have its users submit to NORTHFIELD a "Sewer Tap-in Permit Eligibility Application" for each proposed connection to the NORTHFIELD system, a copy of which is attached as Attachment "B", dated March 14th, 1991 and signed by the Supervisor and Clerk for each Township;

C. Additional statistical information shall be supplied to NORTHFIELD by HAMBURG or its users on all nonresidential establishments to calculate sewage capacity and/or appropriate pretreatment facilities in accordance with NORTHFIELD'S ordinance prior to any connection to the NORTHFIELD system. Such statistical information may include, but not be limited to, square footage, seating capacity, number of employees, anticipated water usage, number of rooms, type of facility and proposed uses; and

D. HAMBURG consents to the use by NORTHFIELD of the public streets, alleys, lands and rights-of-way in HAMBURG for the purpose of operating, maintaining and repairing the sewage disposal service supplied by NORTHFIELD to individual users in HAMBURG. HAMBURG further consents to the furnishing of sewage disposal service to the individual users situated in HAMBURG. In consideration of the furnishing by NORTHFIELD of sewage disposal service to individual users in HAMBURG, HAMBURG agrees that such performance by NORTHFIELD shall be in lieu of all licenses, fees, rentals, taxes or charges which HAMBURG or other assessment district or governmental unit might otherwise levy and impose upon NORTHFIELD for the furnishing of sewage disposal service in HAMBURG.

IV. COMPENSATION

A. CAPACITY RESERVATION CHARGE

(1) HAMBURG agrees to share all of the design, engineering, inspection, construction, legal and other associated costs of the expansion of the Plant from Seven Hundred Fifty Thousand (750,000) gallons per day to One Million Five Hundred Thousand (1,500,000) gallons per day on a pro-rata basis. The formula to be employed for calculating HAMBURG'S payment shall be as follows:

1/3 the Total Plant Expansion Project Cost

+ One Thousand Five Hundred (\$1,500.00)
Dollars per Residential Equivalent Unit
(which represents the current connection
permit charge)

= Total amount owed by Hamburg

(2) NORTHFIELD shall supply HAMBURG with the cost of phase 1 after contracts have been let, and an estimate of the design and construction cost of all remaining construction phases;

(3) Residential equivalent unit(s), to be assigned to properties within the territory set forth in

Exhibit "A", shall be defined and determined in accordance with NORTHFIELD'S ordinances which may be modified from time to time;

(4) Both parties acknowledge that bids have not been received nor awarded for the Plant expansion. Unforeseen construction problems may cause increases in the estimated total project cost, therefore, HAMBURG agrees to pay, when billed within thirty (30) days, the difference between the projected cost estimate and actual cost incurred in accordance with the formula established above. Conversely, the cost may result in an overpayment by HAMBURG; therefore, HAMBURG shall be entitled to a proportionate reimbursement plus interest at the rate the funds from HAMBURG were previously invested by NORTHFIELD which is to be paid within thirty (30) days of completion of the project;

(5) The capacity reservation charge shall be paid by HAMBURG to NORTHFIELD prior to NORTHFIELD providing any services under this Agreement, but in no event later than twenty-four (24) months from the date of execution of this Agreement; and

(6) HAMBURG agrees to exercise due diligence in the establishment of its special assessment districts, construction of sewer lines and connection therewith.

B. CONNECTION PERMIT CHARGE - SEWAGE DISPOSAL SERVICE

(1) HAMBURG agrees to require each person having control of a structure in which sanitary sewage originates, and each owner and each occupant of such a structure to be connected to an available public sanitary sewer. Such connection shall be completed promptly, but in no case later than ninety (90) days from the date of publication of a notice by the HAMBURG Township Clerk of the availability of the public sanitary system in a newspaper of general circulation in the Township of HAMBURG. If a REU(s) was assigned the property and paid by HAMBURG and the property is connected to the system within ninety (90) days, no additional connection charges shall be due unless HAMBURG failed to assign a sufficient number of REU(s) to the property. NORTHFIELD shall provide a procedure for the extension of the ninety (90) day connection requirement set forth above for hardship cases;

(2) In the event that the property is not connected within the time parameters set forth above, HAMBURG agrees that the sewer connection charge for each residential equivalent unit shall be the current sewer connection permit charge established by NORTHFIELD by ordinance. In the event that a residential equivalent unit(s) was previously assigned to the property pursuant to this Agreement and paid for by HAMBURG, the landowner will receive credit for that payment. The sewer connection permit charge shall be paid prior to permitting the property owner to connect to the system. The sewer connection permit charge may be modified from time to time at NORTHFIELD's option, by ordinance; and

(3) If a connection permit is purchased and the permittee does not connect within one (1) year of the date of purchase of said permit, NORTHFIELD shall notify HAMBURG, and HAMBURG shall have the option to revoke said permit and notify NORTHFIELD of such revocation, upon which NORTHFIELD shall return payment to HAMBURG. HAMBURG shall revoke any permit(s) not utilized within two (2) years from the date of purchase. NORTHFIELD and HAMBURG agree that no interest shall be paid on any repayment by NORTHFIELD.

C. OPERATION, MAINTENANCE, AND EQUIPMENT REPLACEMENT CHARGE - SEWAGE DISPOSAL SYSTEM

(1) NORTHFIELD shall provide services to HAMBURG users at the rates, charges, and fees established for similar users of the NORTHFIELD system by ordinances of NORTHFIELD. NORTHFIELD shall give ninety (90) days notice of any change in said rates, charges, and fees to HAMBURG in writing, delivered in person or by mail. NORTHFIELD shall have the right to amend its ordinances, to change the rates, charges, and fees from time to time;

(2) NORTHFIELD agrees to bill and collect sewer service charges on a quarterly basis to be billed in June, September, December and March for all nonmetered customers. Metered customers may be billed upon a monthly, bi-monthly, or quarterly basis. Billings are paid in arrears;

(3) Sewer service charges shall begin on the date of connection to the public sewer system for existing or occupied residences or nonresidential establishments or upon the issuance of a temporary/permanent certificate of occupancy for

property under construction. HAMBURG shall notify NORTHFIELD of such information necessary to begin billing; and

(4) Annually, prior to September 1, NORTHFIELD shall certify to the HAMBURG Township Assessing Officer all the rates, charges, and fees, together with interest and penalties, owing by HAMBURG users delinquent as of the end of the March billing period (the end of NORTHFIELD'S sewer department fiscal year), and such Assessing Officer shall enter the same on the appropriate tax roll as a lien against the premises to which the services had been rendered, and HAMBURG shall enforce the lien and shall collect said sums as provided by law. HAMBURG shall promptly remit to NORTHFIELD all sums so collected. If HAMBURG fails or neglects to so enter such delinquent charges on its next tax roll, HAMBURG shall pay to NORTHFIELD such charges not later than December 1, of the year of such certification.

V. TERMINATION OF AGREEMENT

A. HAMBURG shall have:

(1) Fifteen (15) months from the date of the execution of this Agreement to inform NORTHFIELD, in writing, that its special assessment districts have been confirmed and a copy of the special assessment district(s) roll shall be provided to NORTHFIELD. However, it is the intent that HAMBURG confirm the special assessment district(s) roll within twelve (12) months; and

(2) Twenty-four (24) months from the date of the execution of this Agreement to pay NORTHFIELD the funds more particularly set forth in paragraph IV(A) of this Agreement.

B. If HAMBURG does not perform the obligations set forth in paragraphs 1 or 2 above within the time parameters herein described, neither HAMBURG nor NORTHFIELD shall have any rights or obligations under this Agreement, except NORTHFIELD shall be permitted to expand its Plant's capacity to discharge One Million Three Hundred Thousand (1,300,000) gallons per day based on an annual average in accordance with the Supplemental Order entered on March 14th, 1991 in the case of Lakeland Property Owners Association, et al. v Township of Northfield, et al. (Civil Action No. 1453); and

C. This Agreement is specifically conditional upon the entry of a Supplemental Order acceptable to the attorneys for NORTHFIELD and HAMBURG by the Livingston County Circuit Court permitting NORTHFIELD to expand its Plant to One Million Five Hundred Thousand (1,500,000) gallons per day based upon an annual average. In the event such a Supplemental Order is not entered by the Court, this Agreement is terminated.

VI. NORTHFIELD FINANCIAL/CONTRACTUAL OBLIGATIONS

NORTHFIELD having ownership of and cause to operate, maintain, replace, modify, or expand the NORTHFIELD Plant for the purposes of serving HAMBURG under the provisions of this Agreement, may finance by borrowing money or otherwise any or all costs of such operation, maintenance, replacement, modification, or expansion. The parties recognize that the possibility of revenues, including revenues received from the users in HAMBURG, may from time to time be insufficient to meet the obligations of NORTHFIELD under any bonds, contracts or other contractual undertakings of NORTHFIELD now outstanding or hereafter issued or entered into for financing such costs of the Plant and related facilities which are necessary to provide service to HAMBURG. It is understood that to the extent NORTHFIELD has pledged its full faith and credit under said bonds, contracts, or other contractual undertakings, NORTHFIELD may adjust its rates so as to provide funds to meet future payments under said bonds, contracts, or other contractual undertakings as they become due.

VII. DEFAULT

A. NORTHFIELD reserves the right to discontinue service to HAMBURG in the event that HAMBURG is in default of this Agreement, as well as, any other additional remedies provided by law. NORTHFIELD may charge interest for any overdue payments. The interest rate charged shall be the prime rate plus one (1) percent. Payment shall be considered overdue if not paid pursuant to the times prescribed by this Agreement or by NORTHFIELD's Ordinances, whichever may be applicable. Default includes, but is not limited to, either nonpayment or late payment. In the event of default NORTHFIELD shall give written notice of same to HAMBURG and permit HAMBURG thirty (30) days from the date of said notice to cure any default. HAMBURG shall have any remedies available to it under the law for any default by NORTHFIELD; and

B. "Prime rate" means the variable rate of interest announced from time to time by the Bank as its "prime rate". The prime rate may not be the lowest rate offered by the Bank to any of its customers. Any change in the prime rate shall take effect on the day of the change in the prime rate. "Bank" shall mean from time to time the financial institution in which NORTHFIELD has designated as its depository bank in

which NORTHFIELD maintains on deposit the largest amount of its sewer revenue money.

VIII. CONSTRUCTION OF SEWERS TO SERVE HAMBURG

A. HAMBURG shall have complete and full responsibility to pay for the cost of designing and constructing sewage lines, pump stations or any other appurtenances thereto for the purposes of HAMBURG connecting to the Plant. Conversely, NORTHFIELD shall not have any responsibility to pay for the cost of designing and constructing sewage lines, pump stations or any other appurtenances thereto for the purposes of HAMBURG connecting to the Plant;

B. All design of sewage facilities in HAMBURG shall be approved by NORTHFIELD'S Engineer. NORTHFIELD'S Engineer shall conduct a final inspection of said facilities. Design review, report review and final inspection costs incurred by NORTHFIELD of HAMBURG facilities shall be paid by HAMBURG to NORTHFIELD within thirty (30) days of billing. NORTHFIELD'S Engineer may review periodic construction progress reports, reports on compaction testing and pressure testing, and review televising of HAMBURG'S sewer lines, at HAMBURG'S expense, but not to exceed Four Thousand and No/100 (\$4,000.00) Dollars. NORTHFIELD and HAMBURG agree that they will take reasonable steps to limit the duplication of engineering services and to minimize engineering costs;

C. Detailed records including drawn plans of any construction, alteration, addition or relocation of sewage facilities located in HAMBURG shall be kept on file by HAMBURG and copies shall be delivered and retained by NORTHFIELD for review;

D. HAMBURG, by ordinance, shall provide that all users shall install and maintain service leads, and bear the cost of connecting said service leads to sewage facilities located within HAMBURG. Users other than single family residences and duplexes shall install and maintain meters and valves, and bear the cost of connecting same; and

E. HAMBURG shall own said sewer lines, pump stations and any other appurtenances constructed by them and NORTHFIELD agrees to operate and maintain said facilities during the term of this agreement as more particularly set forth in paragraph 9 below.

IX. MAINTENANCE AND REPAIR OF SEWER FACILITIES TO SERVE HAMBURG

All ordinary and necessary maintenance and repair costs associated with the sewage facilities located within HAMBURG shall be borne by NORTHFIELD. NORTHFIELD shall perform such maintenance and repairs as shall be necessary to HAMBURG'S

system to the extent possible from the revenues generated from the sewer use charges. NORTHFIELD shall not be obligated to reconstruct or repair parts of the HAMBURG system damaged or destroyed by natural disaster, war or insurrection or similar unusual happenings beyond NORTHFIELD'S control. NORTHFIELD shall maintain and operate the HAMBURG system in the same manner as it maintains and operates the NORTHFIELD system. All NORTHFIELD books and records pertaining to the sanitary sewage disposal system shall be available to HAMBURG for inspection.

X. MASTER METER

Master metering facilities, which shall measure only flow from HAMBURG, shall be purchased and installed by HAMBURG. The location of the master metering facilities shall be mutually agreed upon by HAMBURG and NORTHFIELD. HAMBURG agrees to convey ownership to NORTHFIELD of the master meter and NORTHFIELD agrees to own and maintain such meter. HAMBURG reserves the right to install a computer data link from the master metering facility to HAMBURG Township at HAMBURG'S expense.

XI. TOXIC OR UNACCEPTABLE WASTES

In cases where the character of sanitary sewage emanating from HAMBURG is such that it imposes an unreasonable or additional burden upon NORTHFIELD'S sewage disposal system above that imposed by the average domestic sewage entering NORTHFIELD'S sewage disposal system, as determined by NORTHFIELD, HAMBURG shall cause such entity to treat such sanitary sewage in a manner accepted by the United States Environmental Protection Agency (U.S.E.P.A.) and the State of Michigan Department of Natural Resources or their successors. The average domestic sewage standard shall be defined as effluent which shall not exceed the following parameters:

BOD	250 MG/L
SUSPENDED SOLIDS	250 MG/L
NITROGEN	20 MG/L
PHOSPHOROUS	6 MG/L
PH	9

It is understood that the above standards may be modified from time to time.

XII. EXCLUSIVE SERVICE

During the term of this Agreement, NORTHFIELD shall have the exclusive right to treat sanitary sewage originating in the service area as outlined in Attachment "A", providing capacity is available from NORTHFIELD.

XIII. INTERRUPTION OF SERVICE

In the event service is interrupted, either accidentally or intentionally, no claims for damages for such discontinuance shall be made by HAMBURG or its users against NORTHFIELD. NORTHFIELD shall immediately notify HAMBURG by telephone upon learning of any interruptions of service. Whenever service will be intentionally interrupted temporarily by NORTHFIELD to facilitate repair, modification or connection to NORTHFIELD'S sewage disposal system, NORTHFIELD, prior to such interruption, shall give HAMBURG reasonable notice of the time, duration and area affected by the interruption of service, including immediate telephonic notification.

XIV. FAILURE OF PERFORMANCE

No failure or delay in the performance of this Agreement shall be deemed to be a breach thereof when such failure or delay is occasioned by or due to any act of God, strikes or lockouts, wars, riots, epidemics, explosions, sabotage, breakage, or accidents to machinery or lines of pipe, the binding order of any court or governmental authority, or any other cause, whether of the kind herein enumerated or otherwise not in the control of the party claiming suspension.

XV. INSURANCE

During the term of this Agreement, all parties shall maintain insurance in the amount of not less than Two Million and No/100 (\$2,000,000.00) Dollars for a comprehensive general liability policy. Insurances shall be reviewed annually by NORTHFIELD and HAMBURG to insure proper coverage. Evidence of such insurance shall be provided by NORTHFIELD and HAMBURG to each other prior to the treatment of sewage from HAMBURG and annually thereafter. Each party shall cause the other party to be a named insured on its policy.

XVI. TAXES

HAMBURG agrees not to assess any taxes on any sewage disposal facilities situated within HAMBURG and owned by NORTHFIELD.

XVII. BOUND BY NORTHFIELD ORDINANCES

HAMBURG agrees to adopt ordinances which require all sewage disposal facility users situated within the area outlined in Attachment "A", to be bound by all rules, regulations and ordinances of NORTHFIELD to the same extent that users within the corporate limits of NORTHFIELD are so bound. HAMBURG agrees to adopt new ordinances or modify ordinances within ninety (90) days of notification of said ordinances by NORTHFIELD. NORTHFIELD agrees to give HAMBURG ninety (90) days written notice of its intent to adopt new ordinances or to modify ordinances relating to the Plant.

XVIII. JOINT UTILITY BOARD

A. The purpose of the Joint Utility Board is to serve as a recommending body to the NORTHFIELD Township Board as to the operation of the Plant. The board may investigate future operational changes, ordinance revisions or recommendations, and may review requests for unallocated capacity needs, plans for Plant expansion and financial reports;

B. The Board shall be made up of two (2) representatives from each Township board and one (1) alternate and shall be appointed by the respective legislative bodies for the term of office. The respective legislative body may remove any or all of its appointed representatives at any time if it is deemed that such a removal is in the best interest of the Township;

C. The Board shall meet quarterly at the NORTHFIELD Township offices or a place to be mutually agreed upon. Other meetings may be called by reasonable notification to a NORTHFIELD representative with indication of the purpose or agenda of such a meeting;

D. The Board members shall serve with compensation from Plant funds at the rate of Forty and No/100 (\$40.00) Dollars per meeting; and

E. Officers to be selected annually in May shall be a Chairman and a Secretary. The Chairman shall conduct the meeting. The Secretary shall take and transcribe minutes of the meeting to be distributed to all members. Recommendations shall be sent to the NORTHFIELD Clerk for Township board action.

XIX. NON-ASSIGNABILITY

This Agreement is not assignable by HAMBURG without prior written consent of NORTHFIELD.

XX. SUCCESSORS

It is hereby agreed that this Agreement shall be binding upon all successor governmental units which may assume jurisdiction over all or part of the areas now governed by the parties.

XXI. TERM OF THE AGREEMENT

The provisions of this agreement shall commence on the date hereof and shall be in effect for the next twenty (20) years and shall be automatically renewed for ten (10) year increments unless notification of termination shall be received in writing by either party within three (3) years prior to its termination.

In witness whereof, the parties hereto have made and executed this Agreement as of the day and year first above written.

W. W. Southard
R. W. SOUTHARD

Paul E. Burns
PAUL E. BURNS

TOWNSHIP OF NORTHFIELD

By: William D. Eskridge
William D. Eskridge
Its Supervisor

By: Diane M. Pomorski
Diane M. Pomorski
Its Clerk

W. W. Southard
R. W. SOUTHARD

Paul E. Burns
PAUL E. BURNS

TOWNSHIP OF HAMBURG

By: Harry Bater
Harry Bater
Its Supervisor

By: Martha A. Parrish
Martha Parrish
Its Clerk

STATE OF MICHIGAN)
COUNTY OF Livingson) SS

On this 14th day of March, 1991, before me, a Notary Public, in and for said County and State, personally appeared William D. Eskridge, Supervisor of Northfield Township, and Diane M. Pomorski, Clerk of Northfield Township, who acknowledged said instrument to be the free act and deed of Northfield Township.

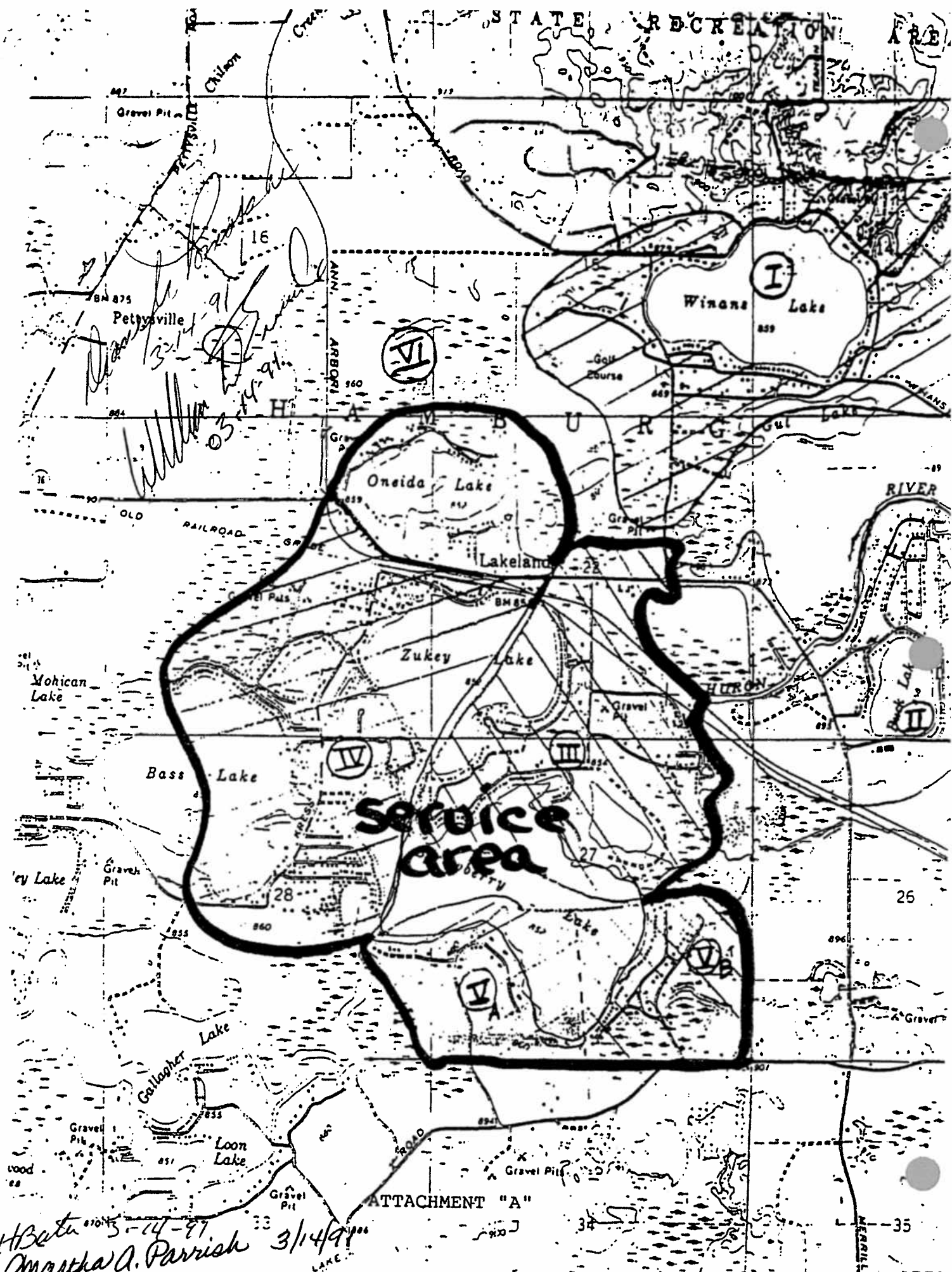
Theresa M Brennan
Theresa M Brennan Notary Public
Livingson, County, MI
My Commission Expires: 6/22/94

STATE OF MICHIGAN)
COUNTY OF Livingston) SS

On this 14th day of March, 1991, before me, a Notary Public, in and for said County and State, personally appeared Harry Bater, Supervisor of Hamburg Township, and Martha Parrish, Clerk of Hamburg Township, who acknowledged said instrument to be the free act and deed of Hamburg Township.

Theresa M Brennan
Theresa M Brennan Notary Public
Livingston, County, MI
My Commission Expires: 6/22/94

wp/n-field.19



H. Beta
Martha A. Parrish
3/14/91

ATTACHMENT "A"

SEWER TAP-IN PERMIT ELIGIBILITY APPLICATION

APPLICANT: (Please complete the following information.)

NAME _____
Mailing _____
Address: _____
Telephone: _____

Property _____
Address: _____
Legal Description: Lot _____ Subdivision _____
or Metes and Bounds, Section _____

Tax Parcel ID Number: _____

Purpose of Tap-In: Residential Home _____ Duplex _____
Commercial Establishment _____

(If Commercial: Type of Business _____
Square Footage (inside) _____ # of FTE Employees _____
Anticipated Water Usage _____ (# of gallons per day)
We may contact you for additional information.)

The property is located in the _____ Sewer District and (HAS) (HAS NOT) been assessed
for the initial Capacity Reservation Charge of \$1,500.

Treasurer

The above applicant has applied for a building permit to construct a Single Family
Residence Duplex Commercial Building (type: _____). Building Permit #
_____ is pending issuance of Sewer Tap-In Permit.

A copy of the Certificate of Compliance (Temporary/Permanent) will be supplied upon
completion of the structure.

Building Official

The above application has been reviewed by me and appears to conform to all requirements
agreed to by HAMBURG TOWNSHIP and NORTHFIELD TOWNSHIP in accordance to the
Intergovernmental Agreement and the provisions of the Circuit Court of Livingston County.
I recommend issuance of the Sewer Tap-In Permit by NORTHFIELD TOWNSHIP.

Supervisor

ACTION BY NORTHFIELD TOWNSHIP:

Permit Number _____ issued this Date _____
or
Permit Denied this Date _____ for the following reason:

Official

(CO issued: _____ Date sewer billing entered _____)-----

ATTACHMENT "B"

Handwritten notes:
George J. Pomeroy
3-14-91
William G. Smith
3-14-91
Martha A. Parrish
3-14-91
B. B. Bator
3-14-91

Howard Fink

From: Johnson, Lisa [lisa@peblaw.net]
Sent: Friday, October 24, 2014 11:27 AM
To: Angela Westover; Jacki Otto; Jacki Otto; Janet Chick; Janet Chick; Kathy Braun; Kathy Braun; Marilyn Engstrom; Marilyn Engstrom; Tracy Thomas; Tracy Thomas; Wayne Dockett
Cc: Howard Fink; Rubel, Brian; Tim Hardesty; Brad Maynes; Paul Burns
Subject: Lakealand Property Owners Association, Hamburg Township and Portage and Base Lake Assoc. Inc v Township of Northfield and Township of Green Oak and Related Intergovernmental Agreements, Part 1a of 2
Attachments: Township Board - Sewer Plant Limitations Attachment 1a of 2.pdf

Due to the size of Part 1, please see part 1a of 2 attachments with regard to the above-referenced matter. Thank you.

Lisa Johnson, Legal Administrative Assistant
to the Law Office of Paul E. Burns

133 West Grand River
Brighton, Michigan 48116
(810) 227-5000 FAX (810) 220-5895

STATE OF MICHIGAN
IN THE CIRCUIT COURT FOR THE COUNTY OF LIVINGSTON

LAKELAND PROPERTY OWNERS ASSOCIATION,
a Michigan unincorporated voluntary
association, and TOWNSHIP OF HAMBURG,
a Michigan body corporate, jointly
and severally,

Plaintiffs,

Civil Action
No. 1453

AND

PORTAGE AND BASE LAKE ASSOCIATION, INC.,
a Michigan non-profit corporation,

Intervening Plaintiffs,

-v-

TOWNSHIP OF NORTHFIELD, a Michigan
body corporate,

Intervening Defendant,

AND

TOWNSHIP OF GREEN OAK, a Michigan
body corporate,

Defendant.

FILED

FEB 29 1972

COUNTY CLERK
Howell, Mich.

OPINION OF THE COURT

This cause of action was initially instituted between Lakeland Property Owners Association, a Michigan unincorporated voluntary association, and Township of Hamburg, a Michigan body corporate, jointly and severally as plaintiffs against the Township of Northfield by the filing of the Complaint with this Court on August 27, 1970. In said Complaint plaintiffs complain of activities of defendant, Township of Northfield, in the operation of a certain waste water treatment plant located in Green Oak Township. Northfield Township is located in Washtenaw County, Hamburg and Green Oak Townships are both located in Livingston County.

The allegations, in short, in plaintiffs Complaint are to

the effect that they are suffering damages both directly and by way of pollution of the water course that they are located on due to the operations of defendants waste water treatment plant. And further, plaintiffs complain of and seek a Restraining Order against the expansion of such operations.

Interim Relief was sought by plaintiffs herein in the form of a Preliminary Injunction to restrain defendant, Northfield Township, from beginning construction on a physical expansion of such plant and from restraining defendant from increasing its daily discharge over and above the level for which this plant was constructed. Such Restraining Order was ultimately issued by this Court.

Defendant Northfield Township filed its Answer to plaintiffs Complaint in this matter and setout therein certain affirmative defenses. Defendant Northfield Township also filed a Motion for Change of Venue alleging that Venue was improperly laid. After arguments on such Motion said Motion was denied.

The above referred to Interim Preliminary Injunction was issued by this Court on October 7, 1970.

After Lakeland Property Owners Association and Hamburg Township filed their reply to the defendants Answer this Court received an application of Portage and Base Lake Association, both being Michigan non-profit corporations, for intervention as party plaintiffs and such application was filed on November 25, 1970. On November 30, 1970 this Court received a Motion to Intervene, as a party defendant, from the Township of Green Oak. On December 4, 1970 this Court signed an order allowing the intervention, as parties plaintiff, of Portage and Base Lake Association incorporated. On December 9, 1970 this Court entered its order granting intervention, as a party defendant, of the Township of Green Oak based upon a stipulation of the parties dated December 1, 1970 and filed with this Court on December 10, 1970.

Defendant Green Oak Township, on December 28, 1970, filed its Answer to the original Complaint and the Complaint of the Intervening Plaintiffs.

Green Oak Township filed a Motion for Reference to the Michigan Water Resources Commission (herein after referred to as WRC) and for Modification of the Preliminary Injunction on December 28, 1970 together with a Brief in Support of said Motion for Reference. Such Motion was ultimately denied by this Court.

This matter was ultimately tried by the Court after first having filed with it Northfield Township's Answer to the Complaint of the intervening plaintiffs, a Supplemental Answer of defendant Northfield Township, Reply to Affirmative Defenses of defendant Township of Northfield, Interrogatories to plaintiffs by defendants, a Pretrial Conference, Plaintiffs objections to Interrogatories of the third-party defendant, Answers to certain Interrogatories by plaintiffs, a Second Pretrial Conference, Supplemental Answers to Interrogatories of intervening defendants, plaintiffs Request for Admissions from Defendants and Objections to Request for Admissions from Defendant. And finally, this Court received for filing, defendant Township's Second Supplement to Answer, followed by Answer to Amendment to Complaint.

Plaintiffs allege, in their Complaint, that defendant Townships herein collect sewage from around their own lake and township and dump the effluent from such collections several miles away into the heart of Hamburg Township, where it pollutes the lakes and water courses upon which plaintiffs herein reside. Plaintiffs seek a mandatory injunction closing down or rerouting defendants out fall, or, in the alternative, Injunctive Relief against defendants expanding said operation together with an Order compelling defendants to better treat the effluent discharge from their plant. It should be noted that defendant Northfield.

Township owns and operates the said Sewage Disposal Plant which is located in defendant Green Oak Township and such plant serves homes and business operations located around Whitmore Lake. Whitmore Lake is physically situated in both Livingston and Washtenaw County. The out fall from the sewage disposal plant in question is located in Hamburg Township and is reached by a pipe from said plant which is approximately 7,200 feet in length. The out fall pipe discharges into a small water course which flows into the Huron River just up stream from Strawberry Lake and other lakes located in Plaintiff Hamburg Township upon which other plaintiffs reside.

Defendants current discharge per day is approximately one quarter million gallons. Plaintiffs allege that the contents of such discharge are polluting the lakes and other water courses upon which they reside. It is further alleged, without dispute from defendants herein, that plaintiffs are located approximately four miles distant from Whitmore Lake which is serviced by defendants plant.

was

The waste water disposal plant now in dispute/originally constructed by the State of Michigan in 1963 and 1964 to serve and service the W.J. Maxey Boys Training School, located in Green Oak Township.

In 1966 the State sold the above mentioned sewage plant to Northfield Township, for consideration, together with all of its right, title and interest in the above mentioned plant and pipeline. It is further alleged, without dispute, that Northfield Township intends to expand the operations of such plant and increase the discharge of said plant's effluent to 750,000 gallons per day and further intends on using the existing form of disposal of the product of said plant.

Plaintiffs have raised the following legal issues during the litigation of this matter;

A. Northfield Township is constitutionally prohibited in the operating or maintaining of said plant and its outfall outside of its corporate limits;

B. Northfield Township failed to obtain the consent of Hamburg Township to the location of such outfall and is required to do so;

C. Plaintiffs have a constitutional right to clean water;

D. The presence of said sewer pipeline and outfall is a trespass upon Hamburg Township;

E. Defendants discharges of effluent into the waters located in Hamburg Township constitute a public and private enjoynable nuisance;

F. The discharges of defendants effluents into plaintiffs waters are discharges by a non-riparian and non-littoral party and is an unreasonable use of those waters which is violative of plaintiffs riparian rights;

G. Northfield Township is bound by all the obligations of the State of Michigan via promises made by the state to Hamburg Township;

H. Plaintiffs property is being taken without compensation and without due process of law under both the United States and Michigan Constitutions;

I. Plaintiffs are entitled to declaratory and equitable relief under the Environmental Protection Act of 1970, PA 127.

J. Defendants have no meritorious affirmative defenses to plaintiffs complaints.

To the above defendants herein respond as follows:

1. That the defendant townships have statutory authority for ownership and operation outside of township limits;

2. Hamburg's consent to the operation of the said pipeline is not required;

3. That the wording of Hamburg Township Nuisance Ordinance No. 10 does not set forth provisions that prescribe a nuisance;

4. That a certain Water Resources Commission Order authorizes defendants activities. In addition to the above defendants allege that there is no feasible and prudent alternative to defendants continuing to maintain and operate their treatment facility or the expansion of same, and further, that plaintiffs are estopped from making some or all of its complaints at this time.

Defendants further allege that plaintiffs herein are not entitled to equitable relief inasmuch as they come to Court with unclean hands in that defendants allege much of the pollution plaintiffs complain of is caused by activities of plaintiffs themselves or the citizenry living within the confines of plaintiff Township of Hamburg.

Testimony was taken in this matter in open Court on July 20, 21, 22, and 23, 1971 and this Court was afforded the benefit of the testimony of several witnesses and the offering and receiving of numerous exhibits both in support of plaintiffs case and defendants case and rebuttal thereto. This Court feels it necessary at this time to review, herein, material portions of such testimony.

A past and present Hamburg Township officer testified that many complaints were received by them from Hamburg residents regarding the condition of the water in the various lakes, odors emitting from such waters, fish kills and other complaints and such complaints reached their peak some four to five years ago and have continued up to the present at that level.

Francis Shehan, a Hamburg Township Official, testified that during his tenure in office, which covers the past twelve years, he, officially, resisted defendants out fall pipe being located

in Hamburg Township but further testified that his resistance came somewhat late inasmuch as the State of Michigan had already made that decision. During meetings with officials from the Boys Training School and the State of Michigan this witness learned of the intended expansion of defendants waste water treatment facility but had not been contacted in his official capacity regarding such proposed expansion until a few months prior to trial.

Mr. Francis B. McLaughlin, Director of Laboratories, Analytic and Biological Laboratories, Inc., testified as to his professional personal contact with the areas in question. Mr. McLaughlin holds a Bachelor of Science Degree in Microbiology from the Detroit Institute of Technology and has twenty years of experience in such work in addition to having run the above mentioned laboratory since 1956. Mr. McLaughlin's credentials include extensive biochemical work for private and public concerns mostly in the area of evaluation of test results to the problem at hand. Mr. McLaughlin was quite familiar with the defendants plant, its outfall, and the total area downstream therefrom. Mr. McLaughlin was the author of a certain study of the Northfield Township effluent, Huron River and Strawberry Lake phosphate levels made in 1970. Mr. McLaughlin was also the author of a study of the effluents from the Northfield Township Waste Water Treatment Plant and their effect on the Huron River Ecology made in 1970. The above two mentioned studies were received as exhibits No. 14 and No. 12 respectively.

It was the testimony of Mr. McLaughlin, via the witness stand and the above mentioned studies, that defendants discharge onto and into the receiving waters contains an excess biochemical oxygen demand (hereinafter referred to BOD). Such excess BOD load was determined to be, in the opinion of Mr. McLaughlin, 40 parts per million. Further testimony from said witness indicated that

the BOD load on the Huron River Chain at Kensington Lake and Park is 2 to 4 parts per million. Exhibit No. 14 above reflects that the BOD load at the time such report and study was made were at 24 parts per million with high concentrations of phosphates. In the opinion of said expert witness a clean lake, or water course, is defined as one with a BOD load below 5 parts per million. In addition to the above said expert testified that the discharge from defendants outfall pipe had a lower level of dissolved oxygen (hereinafter referred to as DO) than the receiving waters. Nitrate loads were determined to be, by said witness's studies and testimony, to be 33 parts per million at the outfall and .8 parts per million upstream of said outfall. Further testimony from said witness indicated that anything over .1 parts per million nitrate cannot be tolerated for any stream or river in the state.

It was the expert opinion of said witness that defendants herein contribute considerable pollution to the water chain under consideration. And further, that Strawberry Lake cannot stand today's input by defendants let alone the possibility of tripling said input.

Mr. McLaughlin testified in detail regarding his objections to the Department of Natural Resources amended final order of determination recommendations with regard to defendants waste water plant operation. Mr. McLaughlin agreed with only one provision of said technical recommendations the same being 1.c.

Said DNR recommendations may be found in detail at defendants exhibit No.3. Two strenuous objections were made by Mr. McLaughlin to recommendations contained in the YRC Order of Determination. The recommendations heretofore referred to strongly objected to by Mr. McLaughlin are found at 1.d and 1.e. 1.d reads as follows:

"Contain not more than One Thousand (1,000) total coliform per One Hundred (100) milliliters."

The witness testified that this item should be a recommendation of no active coliforms. His strenuous objections in his

opinion and testimony was to the effect that the recommended level is not adequate to protect the environment in that the receiving waters have a count upstream from the outfall pipe unknown but opines it is far below One Thousand (1,000) coliform per Hundred (100) milliliters.

With regard to item 1.e, which reads as follows:

"Contain not more than Twenty percent (20%) of the phosphorus contained in the influent to the waste water treatment facility."

Said witness testified that this means 80% removal of phosphate but all other factors are unknown. The witness did concede that 80% removal is about as good as present technology allows. It was the further testimony of Mr. McLaughlin that the defendant is currently not removing phosphates, and last year, as per the witness's calculations, defendants discharged 14,000 pounds of phosphates into the water course in question. It was the concluding expert testimony of Mr. McLaughlin that if the WRC determinations were complied with nutrients would be increased in an unknown degree primarily because of the levels set in 1.d therein.

At this point plaintiffs rested their case and relied on their Briefs and other legal arguments contained therein. Thereupon defendants moved to dismiss based on the argument that the WRC Order was conclusive and not appealed from. Such Motion was denied by this Court on the basis that plaintiffs herein had made a Prima Facie case and that the burden of over coming such Prima Facie case had shifted to defendants.

Mr. John Beebe, Superintendent of defendants plant, testified that he is a licensed plant operator by the Department of Health, State of Michigan and that such plant is a secondary treatment plant of the trickling filter type. Monthly reports are made on all extractions and performances of the plant and such reports are filed with the State Department of Health which supervises the operations, reviews such reports and makes recommendations.

It was the further testimony of Mr. Beebe that the plant in question operates within the expectations of the Department of Health at a present volume of Two Hundred Twenty Thousand (220,000) gallons per day which has increased steadily since 1964. The current treatment efficiency of the plant in question has remained constant since its inception. Said plant services 1,400 (units) users. It was the further testimony of said witness that at present efficiency levels this plant could handle 240 additional units or users and still be within its planned capacity of Two Hundred Fifty Thousand (250,000) gallons per day.

It was the concluding testimony of this witness that there have been normal mechanical problems, within levels of expectation, and that said plant employs daily membrane filtering for coliform counts and in addition chlorination is used.

Mr. John Holland, the holder of a University of Michigan degree in engineering testified that he has much experience in waste water treatment plants in both their construction and evaluation of operations. This witness's company designed defendants plant and recommended the location of said plant at Hamburg Township as a regional facility. It was this witness's further testimony that a plant, such as defendants, is designed to do a reasonable job based on the financial ability of the community, and further, that this plant does not remove phosphates and was not originally designed to remove phosphates as the WRC did not require such removal at the time of the construction of this plant. It was the further opinion and testimony of this witness that compliance with the amended final order of determination (defendants exhibit No. 3) would cost approximately One Million Five-Hundred Thousand Dollars (\$1,500,000.00) and that the same is a strong order to the extent that compliance would require state and federal aid which defendants herein have applied for but such aid has been withdrawn by the Water Resources

Commission (WRC) who administer such funds.

Mr. Holland further testified that all users of defendants waste water treatment plant are located in the horseshoe drainage area and that such users are almost completely domestic. Such witness further testified that if the size of this plant is increased that defendants would continue to discharge into Horse-shoe Creek. Alternatives to such discharging were studied and a determination was made that the present method is the most reasonable and feasible, in his opinion. It was such witness's further testimony that the above mentioned 7,000 foot outfall pipe originally cost approximately One-hundred Thousand Dollars (\$100,000.00).

On cross examination Mr. Holland did admit that phosphates do pollute but did not admit that defendants plant herein does in fact pollute the waters in question with the further statement that in his opinion local units and population are doing the polluting. His further testimony was that while building this plant his engineering firm did not take into consideration the level of population along the water course to be used as a disposal nor were water samples taken from any of these lakes or water courses before the plant was built. Said witness did concede that this plant must remove 80% phosphates even if not extended as per the terms of defendants exhibit No. 3 set out above.

Mr. Paul Blakeslee, a Regional Professional Engineer with a specialty in sanitary engineering and a holder of a BS and MS Degree testified regarding municipal waste water systems and the fact that the WRC reviews plans and designs with the Michigan Department of Public Health issuing construction permits. Further, the Michigan Department of Public Health, as per the testimony of Mr. Blakeslee, through plant operation personnel, receives reports regarding operating data such as flow, volume, weather information, influent and effluent qualities, and attempts to control facility

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Mr. Paul Blakeslee, a Regional Professional Engineer with a specialty in sanitary engineering and a holder of a BS and MS Degree testified regarding municipal waste water systems and the fact that the WRC reviews plans and designs with the Michigan Department of Public Health issuing construction permits. Further, the Michigan Department of Public Health, as per the testimony of Mr. Blakeslee, transmits plant operation personnel, receives reports regarding operating data such as flow, volume, weather information, influent and effluent qualities, and attempts to control facility

operations at the highest degree such facility is capable of operating at overall. It was further testified to that the Michigan Department of Public Health inspects such plants every six months and scans their reports. Mr. Blakeslee testified that defendants plant is operated extremely good and is at an efficiency level in the 85% range and is operating within its designed limits and further that such plant was not designed to consider phosphates but more importantly that defendants plant is not capable of meeting the standards set out in the final amended order of the Water Resources Commission and further that in order to comply with such final order the plant in question would necessitate the addition of an additional treatment stage.

Further testimony was to the effect that the load of the defendants plant has increased since its construction and that such plant is still within the expectations of performance when constructed.

Paragraph two of plaintiffs exhibit No. 2, the same being a letter from Donald M. Pierce, Chief Waste Water Section Division of Engineering, Michigan Department of Health, dated January 9, 1964 to Mr. W.J. Maxey, Jr., Assistant Superintendant, Boys Training School, Whitmore Lake, Michigan reads as follows:

"It is imperative that you and others to whom copies of this letter are directed recognize that the point of discharge of the treated effluent would have to be altered if nuisance conditions, public health hazards, damage to fish life or other unlawfull conditions should be created. Surveillance will be maintained of the stream below the point of effluent discharge and we will advise you and others if conditions exist or land uses change requiring an alteration in the point of discharge."

Paragraph three of plaintiffs exhibit No. 9, the same being a letter dated February 27, 1964 from the above referred to Donald M. Pierce to Mr. Francis Shehan, 7209 Stone Street, Hamburg Michigan reads as follows:

"We wish to assure you and the others to whom copies of this letter are being sent that irrespective of

who owns or operates the present treatment plant its expansion will not be permitted until a thorough and complete evaluation and study is made and the matter is discussed with your Township Board and the County of Livingston with specific consideration being given to the point of discharge of the treated effluent from the expanded plant."

Paragraph 2.c of plaintiffs exhibit No. 10, the same being a letter from Mr. Donald M. Pierce dated April 6, 1964 to Mr. Donald A. Moon, 326 W. Main, Brighton, Michigan reads as follows:

"We will require that the point of discharge be relocated if it creates a nuisance, becomes a health hazard or damages fish life in Hamburg Creek, Huron River or any of the chain of lakes located in Hamburg Township."

It was the testimony of Mr. Blakeslee, a Regional Project Engineer of the Michigan Department of Public Health, after reviewing the above passages cited herein from plaintiffs exhibits that plant expansion of defendants plant was never discussed with Hamburg Township.

Mr. John M. Bohunsky, a Water Resources Commission Regional Engineer and holder of a BS and MS Degree with 11 years experience with said commission testified that in 1968 the WRC moved against 11 communities to remove phosphates and that two such communities did not comply, defendant Northfield Township herein being one of those two communities. Mr. Bohunsky testified that the water course in question is highly polluted, with nutrients, both above and below the outfall pipe and testified further that he judged the quality of the receiving waters by a visual observation made some months prior to his testimony. This witness's testimony was further that he did not know if stopping all phosphates from defendants plant would make any appreciable difference with regard to Strawberry Lake. Such witness further testified that he is in total agreement with all the standards set out in defendants exhibit No. 3 above and further opines that the receiving waters would be enhanced if the final order is complied

with. Mr. Bohunsky further testified that defendants herein have two options, 1. Remove phosphates, 2. expand plant and remove phosphates. To this witness defendant has, apparently, elected to follow No. 2 and this witness does not know whether or not Hamburg Township was ever consulted with regard to these two options being offered defendant (see excerpts from plaintiffs exhibits 2,9 and 10 set out above).

It was the further testimony of this witness that if the defendants herein comply with the amended final order of determination and damage is still being done to the receiving waters because of nutrients the levels in the order could be ordered "adjusted" or the complaint ignored even though the "standards" are being abused. See exhibit No. 15 "Water Quality Standards For Michigan Waters".

Francis B. Frost, holder of a BS in Civil Engineering, Sanitary Engineer with the Water Resources Commission for 35 years, Chief Engineer and Chief of Water Research Division and Enforcement of Water Resources Laws was the next witness of defendants herein who testified that the latest WRC order makes the effluent self sustaining if such order is complied with and further that fish could exist in such effluent and further testified that said order is extremely restrictive and has some items, such as l.c., that he feels engineers might well not be able to consistently comply with. It was the further testimony of this witness that the water course in question is so over loaded with nutrients now that the complete removal of defendants plant or the increase of its output to 750,000 gallons per day would make no difference.

It was the further testimony of this witness that there was no feasible alternate outfall site. Mr. Frost further testified that the current order of the WRC calls for a stable effluent which means that the influent does not decompose after leaving

the outfall and further that an increase to 250,000 gallons per day from 225,000 gallons per day of such stable effluent would be a non measurable impact on the receiving waters. It was Mr. Frost's further testimony that he does not recommend stable effluents being discharged into any empounded lake.

Joseph W. Price, Sanitary Public Health Engineer, Washtenaw County, BS, MS, 20 years experience, testified that there are about 2,000 dwellings in the area in question employing the use of spetic tanks and that such septic tank purpose is a settlement process and not a treatment process with the idea that such waste is to be absorbed in a tile field. Mr. Price further testified that many of the cottages in the area in question are from one to three feet above ground water and that many are seasonably within the ground water.

Mr. Price accepts the latest WRC standards as proper for expansion of defendants plant to meet population growth.

Dr. Jack A. Borchardt, Professor of Sanitary and Water Resources Engineering University of Michigan testified that in 1956 he studied the Huron River for the City of Ypsilanti by the taking of 30,000 samples at 16 points over 30 miles of the river to study algae. Such studies were not compared to, in the testimony of Mr. Borchardt, present levels in the waters in question. Later grab sampling to show nutrients above and below defendants plant on the Huron River were done within the last year at Horseshoe Creek and up to Ore Lake through Strawberry Lake. High concentrations were detected at Ore Lake and such concentrations rose and fell to Horseshoe Creek. This witness further testified that the entire watershed in question has a super abundance of phosphates and that there is no reason to believe nor ^{defendants} feels/contribution of phosphates has a marked effect on the algae already present with the recommendation that these lakes must be sewered inasmuch as septic tank use is a serious

source of contamination in the area in question.

Professor Borchardt was of the opinion that the latest Water Resource Commission recommendations were the most strict of any one would find in the country and would be productive of a high quality discharge and that such discharge would support fish. Professor Borchardt further testified that the expansion of defendants plant as planned would have little if any impact with regard to flow alone and that the important consideration is the poundage of nutrients and further that the quality of the recommended effluent is far superior to the present effluent from such plant and finally that if such plant were closed down completely it would make no difference in nutrients already in existence in the area.

In support of defendants above referred to testimony regarding the extensive use of septic tanks in the area in question and their contribution to the contamination complained of, defendants introduced into evidence exhibits No. 18 through and including No. 27 which were photographic slides of the area in question. Slide No. 22 purports to be a picture of a cottage at Ore Lake pumping water directly onto the surface of the ground. Slide No. 23 purports to be a picture of another cottage with a drainfield under construction at ground water level. Slide No. 25 depicts the East shore of Strawberry Lake showing a high concentration of cottages, the lake level line, and a retaining wall through which there appears to be a drain pipe running directly into the lake. Slides No. 26 and 27 appear to be cumulative of the content of No. 25.

Rebuttal testimony indicated that dye tests have been made at Strawberry Lake resulting in only two traces being apparent, one immediately and the other within a 24 hour surveillance. A 47 year resident on Bob White Beach testified, in rebuttal, that

in his opinion, based on his observations, the water course in question has never been as bad in the past as defendants would indicate but that such water course is currently in poor physical shape and has become so over the past several years. Further rebuttal testimony was received from a party who has lived for the past 27 years on Mill Creek which runs through her property. Such testimony indicated that before 1963 Mill Creek was used for general recreational purposes which included fishing and swimming approximately 1800 feet from the outfall pipe. Said witness further testified that said creek is now useless for swimming and fishing purposes and that she receives a highly offensive odor from said waters.

This Court finds, as a matter of law, that the State of Michigan via its paramount powers, had a right to establish the waste water disposal plant herein in question in Green Oak Township with the discharge pipe located in Hamburg Township and also had the right to, as it did, dispose of such plant as a State facility and sell the same to a lesser municipality but subject to promises and conditions made to or held out to other parties or municipalities affected by the operation of said waste water treatment plant or the location of said plant's discharge pipe.

This Court of equity holds that as a matter of law plaintiffs herein are entitled to rely on those portions of their exhibits No. 2, 9 and 10 herein set out at pages 12 and 13. Such promises, to be enforced, are hereby held to be subject to a showing that the detrimental conditions set out therein do in fact exist, which this Court so finds as a fact.

This Court finds, as a matter of fact, based on the testimony received from both plaintiff and defense witnesses under oath in open Court that the State of Michigan has not lived up to the promises contained in the exhibits above referred to.

This Court further finds, as a matter of fact, based on

the evidence and exhibits presented to it, that defendants herein have in the past and are currently discharging an effluent that pollutes the receiving waters.

This Court further finds that the quality and quantity of defendants effluent can be and will be ordered adjusted. And further, this Court finds, as a matter of fact, based upon the evidence and testimony presented to it, that not only is the existing quality of defendants effluent objectionable but that the proposed standards of quality and quantity set out in defendants exhibit No. 3 above are unreasonable and deficient when taking into account the designated use of the receiving waters.

Before adopting and specifying any particular standards in this case the Court will now address itself to the question of jurisdiction in this case of Lakeland, et al v. Township of Northfield, et al.

Defendants herein seriously contest the jurisdiction not only of this Court in this case but of the Circuit Court in general in any particular litigation wherein there has been activity of the Department of Natural Resources and/or the Water Resources Commission and such activity of such agency has been productive of an order wherein a standard has been fixed.

Public Act 127, 1970, also known as the "Thomas J. Anderson, Gordon Rockwell Environmental Protection Act of 1970", provides in section 2 thereof that any person, natural or otherwise, "may maintain an action in the Circuit Court having jurisdiction where the alleged violation occurred or is likely to occur for declaratory and equitable relief...for the protection of the air, water and other natural resources and the public trust therein from pollution, impairment or destruction."

MSA 14.528 (202) sec. 2.(2) reads as follows:

(2) In granting relief provided by subsection (1) where there is involved a standard for pollution or for an anti-pollution device or procedure, fixed by rule or otherwise, by an

instrumentality or agency of the state or a political subdivision thereof, the Court may: (a) determine the validity, applicability and reasonableness of the standard. (b) When a Court finds the standard to be deficient, direct the adoption of a standard approved and specified by the Court."

This Court finds that the above language is not mandatory. Also in this regard see section 4(2) of the Act which reads as follows:

"If administrative, licensing or other proceedings are required or available to determine the legality of the defendants conduct, the Court may remit the parties to such proceedings..."

Section 6 of the Act recites:

"This Act shall be supplementary to existing administrative and regulatory procedures provided by law."

This Court finds, as a matter of law, that it does have original jurisdiction in litigation such as is presently before the Court. This Court further finds, as a matter of law, that the litigation now before this Court is original litigation authorized by Public Act 127, 1970 and not judicial review of administrative proceedings or orders as set out in section 4 of said Act. One could legitimately confuse litigation now before this Court as one being in the nature of judicial review of an order of an administrative body in that defendants herein attempt to justify their present and future activities on a heretofore entered amended final order of determination from the Water Resources Commission. Plaintiffs herein are not appealing from such order but are merely, in the process of their original litigation, attacking the proposed future conduct of defendants herein based on such WRC Order of Determination.

Defendant, in its Brief, relies heavily on the opinion of Judge Warren, Ingham County Circuit Judge, in the matter of Roberts v. State of Michigan, et al, Ingham County Circuit Court, File No. 12428-C. This Court is of the opinion that it is not controlled by the opinion set out in Roberts by the learned Ingham County Circuit Court Judge and further finds that any

Howard Fink

From: Johnson, Lisa [lisa@peblaw.net]
Sent: Friday, October 24, 2014 11:28 AM
To: Angela Westover; Jacki Otto; Jacki Otto; Janet Chick; Janet Chick; Kathy Braun; Kathy Braun; Marilyn Engstrom; Marilyn Engstrom; Tracy Thomas; Tracy Thomas; Wayne Dockett
Cc: Howard Fink; Rubel, Brian; Tim Hardesty; Brad Maynes; Paul Burns
Subject: Lakealand Property Owners Association, Hamburg Township and Portage and Base Lake Assoc. Inc v Township of Northfield and Township of Green Oak and Related Intergovernmental Agreements, Part 1a of 2
Attachments: Township Board - Sewer Plant Limitations Attachment 1b of 2.pdf

Due to the size of Part 1, please see part 1b of 2 attachments with regard to the above-referenced matter. Thank you.

Lisa Johnson, Legal Administrative Assistant
to the Law Office of Paul E. Burns

133 West Grand River
Brighton, Michigan 48116
(810) 227-5000 FAX (810) 220-5895

dispute between circuits must be resolved by a higher tribunal.

This Court does not believe Act 127, 1970, is unconstitutional by virtue of it having contained therein a prohibited delegation of powers. Said Act simply states that when a Court finds a standard to be unreasonable or deficient the Court may set an acceptable standard which the Court may enforce directly or order the agency involved to enforce such standard.

This Court is further of the opinion that it can direct the Water Resources Commission to adopt a different pollution standard without a judicial review of Commission proceedings wherein standards were adopted and by virtue of said Act 127 can direct the Commission to adopt different standards via judicial review of the Commission's proceedings. Such power of this Court is not inconsistent with the authority set out in said Act 127 in this regard see also Act 245, 1929 as amended by Public Acts 1970, No. 200, and Public Acts of 1969, No. 306.

In addition to the above, this Court is not unmindful of the law set out in White Lake Association v. Whitehall, 22 Mich App 262. This Court is of the opinion that White Lake, and the rules set out therein, is no longer controlling in that Act 127 of 1970, specifically section 2 thereof, denies the Water Resources Commission primary jurisdiction in matters such as are now before the Court. The primary jurisdiction doctrine was the controlling factor employed by the Court of Appeals in its disposition of White Lake but such doctrine was coupled with considerations of the lack of advance judicial proceedings when such doctrine was asserted and the fairness or unfairness of remitting plaintiff therein to another proceeding, and further, such doctrine was employed in the absence of the language now found in Act 127 of 1970. It should be understood herein that this Court does not disagree with the rationale for nor the necessity of the primary jurisdiction doctrine but merely points out that the same is not absolutely controlling herein.

This Court further finds, based on the evidence and testimony presented to it, that defendants present effluent discharge as a matter of fact and law is a pollutant and that the same does constitute a nuisance which is abatable via equitable and or declaratory relief. And further, this Court finds as a matter of fact and as a matter of law that such discharge by defendants of a polluted effluent is an unreasonable use of these waters and is Violative of plaintiffs riparian rights. This Court further finds that the offensive quality of defendant's effluent can be corrected by the adjustment of standards, heretofore set out, to improve the quality of such effluent to a State acceptable by this Court.

Section 3(1) of the Act sets forth the standards of evidentiary showings in such matters now before the Court. Without taking issue as to the legislature's power to set rules of evidence in court this court will accept, arguendo, the standards set out in said section 3(1) which reads as follows:

"When the plaintiff in the action has made a prima facie showing that the conduct of the defendant has, or is likely to pollute, impair or destroy the air, water or other natural resources or the public trust therein, the defendant may rebut the prima facie showing by the submission of evidence to the contrary. The defendant may also show, by way of an affirmative defense, that there is no feasible and prudent alternative to defendant's conduct and that such conduct is consistent with the promotion of the public health, safety and welfare in light of the state's paramount concern for the protection of its natural resources from pollution, impairment or destruction."

This Court finds as a matter of fact and as a matter of law that the plaintiff herein has established a Prima Facie showing that the conduct of the defendants herein has polluted and is likely to continue to pollute the natural resources in question. It is the further finding of this Court as a matter of fact and as a matter of law that although the defendant has submitted its case and evidence that such Prima Facie case of

plaintiffs herein has not been overcome. It is the further finding of this Court that the affirmative defense raised by the defendants herein of there being no feasible and prudent alternative to their conduct has not been borne out by defendants proofs. Defendants merely recited, through their witnesses, that there was no reasonable and feasible alternatives to their actions and did not support such recitations with facts other than alluding to economic considerations. Defendants also admitted, by way of their proofs, that present and future population below the outfall pipe had not been taken into consideration at the original construction of their waste water treatment plant and apparently is being ignored currently upon their request to continue operation and expand the volume of their discharge.

Plaintiffs herein, in their Complaint, seek relief from this Court which this Court feels presently may be overly harsh in view of the fact that it is the opinion of this Court that the polluting effect of defendants effluent into plaintiffs receiving waters can be negated and that the receipt of a clean non polluting effluent into plaintiffs receiving waters from defendants waste water treatment plant will not injure plaintiffs herein.

If defendants herein elect not to abide by the hereinafter judicially redetermined effluent standards they are at complete liberty to forthwith cease discharging their effluent in such a manner and at such a place as the same finds its way into, either directly or indirectly, the receiving waters of plaintiffs herein. This may well be accomplished by defendants herein either relocating or constructing anew its outfall pipe to a point of discharge not offensive to plaintiffs herein or their receiving waters.

By authority of MSA 14.528 (202) sec. 2 (2) (a) (b) this Court finds the standards setforth in paragraph 1.a to f of an

- 3 -
nded final order of determination No. 1316, dated October 15, 1969 of the State of Michigan Water Resources Commission to be deficient and directs said Water Resources Commission to adopt the following standards setforth herein as substitutes for and in lieu of the standards setforth in said Water Resources Commission's amended final order of determination No. 1316.

Said judicially directed redetermined standards, and additional standards, shall read as follows:

1. "Treat or control the sewage and wastes collected by its system of sewers and drains to the extent that when discharged from its waste water treatment plant to the Horseshoe Drain or any other water course they shall:
 - a. Contain not more than four (4.0) milligrams per liter of oxygen consuming substances as measured by the five-day biochemical oxygen demand (BOD) test.
 - b. Contain not more than ten (10.0) milligrams per liter of suspended solids.
 - c. Contain not more than five tenths (0.5) milligram per liter of ammonia nitrogen as $\text{NH}_3\text{-N}$.
 - d. Contain not more than one thousand (1,000) total coliform per one hundred (100) milliliters and the average of any series of ten consecutive samples shall not exceed 1,000 coliform per one hundred (100) milliliters. The average fecal coliform density for the same ten consecutive samples shall not exceed 100.
 - e. Contain not more than twenty percent (20%) of the phosphorus contained in the influent to the waste water treatment facility. Township of Northfield, Washtenaw County is ordered to begin complying with this standard forthwith.
 - f. Contain not less than ten (10.0) milligrams per liter of dissolved oxygen (DO).
 - g. Concentrations of substances of unnatural origin shall be less than those which are or may become injurious to the receiving waters designated use of recreational, total body contact.
 - h. The temperature of such effluent discharge shall not exceed ninety degrees fahrenheit.

It is the further order of this Court that said water Resources Commission shall adjust, where necessary, the time

schedule set forth in item 2 a through 2 d of said amended order No. 1316, dated October 15, 1969.

It is the further order of this Court that in the event that defendants herein elect not to cease discharging their effluent into plaintiffs receiving waters that the herein judicially redetermined water effluent standards shall be put into effect under a time table to be set by the Water Resources Commission with the exception of the phosphate removal requirement (see e above) which shall be complied with forthwith.

It is the further order of this Court that defendant Northfield Township shall forthwith meet with officials of Hamburg Township and officials of Livingston County, Michigan for a complete disclosure to said officials of their intentions which shall include but not be limited to plant expansion plans and a time table of increased discharge volume up to but not to exceed 750,000 gallons per day of effluent in conformity with the herein judicially redetermined effluent standards.

It is the further order of this Court that defendant herein is no longer restrained from physically increasing the size of its waste water disposal plant but that said defendant cannot and is hereby ordered not to increase the volume of its daily discharges beyond 250,000 gallons per day until further order of the Court and the Court being satisfied, at that time, that the above judicially set standards have been met and will be regularly met and will continue to be met as the discharge volume increases and further that the Court is satisfied that plaintiffs receiving waters will not be polluted by such increase in volume of effluent discharge.


It is the further order of this Court that this Court shall retain jurisdiction of this matter pending completion of the redesignated time schedules mentioned above by the Water Resources Commission.

It is the further order of this Court that pending further

action of the Water Resources Commission temporary restraining orders may issue, as needed, to maintain the present status quo.

It is the further order of this Court that defendants herein are restrained from issuing any new tap-in permits or increasing the number of units or users of their waste water treatment plant if such increase in units or users will provide a discharge in excess of 250,000 gallons per day, notwithstanding the language of the preceeding paragraph.

It is the further order of this Court that plaintiffs herein are directed to prepare an order in conformity with this opinion of the Court, circulate the same amongst all parties hereto for consent as to form and content and present the same for entry no later than 20 days from the date of receipt of this opinion. In the event that plaintiff cannot secure such signatures or that defendants refuse to affix their signatures the same may be brought on for entry, after notice, on a regular motion day.


PAUL R. MAHONEY, Circuit Judge

STATE OF MICHIGAN
IN THE CIRCUIT COURT FOR THE COUNTY OF LIVINGSTON

LAKELAND PROPERTY OWNERS ASSOCIATION,
a Michigan unincorporated voluntary
association, and TOWNSHIP OF HAMBURG,
a Michigan body corporate, jointly
and severally,

Plaintiffs,

AND

PORTAGE AND BASE LAKE ASSOCIATION,
INC., a Michigan non-profit corporation,

Civil Action

No. 1453

Intervening Plaintiff,

vs.

TOWNSHIP OF NORTHFIELD, a Michigan
body corporate,

Defendant,

AND

TOWNSHIP OF GREEN OAK, a Michigan
body corporate,

Intervening Defendant.

FILED

MAY 4 1972

COUNTY CLERK
Howell, Mich

ORDER

At a session of said Court held
in the Courthouse in Howell, Michi-
gan, this 4 day of MAY,
1972.

PRESENT: THE HONORABLE PAUL R. MAHINSKE
Circuit Judge

This non-jury cause having been tried, argued, briefed and
submitted in July of 1971, the Court being fully advised in the
premises, and pursuant to the Opinion filed herein on February
29, 1972, containing certain findings of fact and conclusions
of law; now, therefore,

IT IS HEREBY ORDERED, ADJUDGED and DECREED as follows.

I. That the standards contained in paragraph 1 of the Amended Final Order of Determination, No. 1478, dated March 18, 1971, of the State of Michigan Water Resources Commission are deficient and said Water Resources Commission is hereby directed to substitute therefor the following redetermined and additional standards:

1. Treat or control the sewage and wastes collected by its system of sewers and drains to the extent that when discharged from its waste water treatment plant to the Horseshoe Drain or any other water course they shall:
 - a. Contain not more than four (4.0) milligrams per liter of oxygen consuming substances as measured by the five-day biochemical oxygen demand (BOD) test.
 - b. Contain not more than ten (10.0) milligrams per liter of suspended solids.
 - c. Contain not more than five tenths (0.5) milligram per liter of ammonia nitrogen as $\text{NH}_3\text{-N}$.
 - d. Contain not more than one thousand (1,000) total coliform per one hundred (100) milliliters and the average of any series of ten consecutive samples shall not exceed one thousand (1,000) coliform per one hundred (100) milliliters. The average fecal coliform density for the same ten consecutive samples shall not exceed one hundred (100).
 - e. Contain not more than twenty percent (20%) of the phosphorus contained in the influent to the waste water treatment facility. Township of Northfield, Washtenaw County is ordered to begin complying with this standard forthwith.
 - f. Contain not less than five (5.0) milligrams per liter of dissolved oxygen (DO), and at no time less than seventy-five percent (75%) of the saturated dissolved oxygen at the actual temperature of the effluent discharge.
 - g. Concentrations of substances of unnatural origin shall be less than those which are or may become injurious to the receiving waters designated use of recreational, total body contact.
 - h. The temperature of such effluent discharge shall not exceed ninety (90) degrees Fahrenheit.

II. That, in the event defendants elect to continue discharging effluent into plaintiffs' receiving waters, the time

schedules contained in paragraph 2 of said Amended Final Order of Determination, No. 1478, shall be adjusted where necessary by said Water Resources Commission, except that the new phosphate removal standard contained in subparagraph e of paragraph 1 shall be complied with forthwith.

III. That defendant NORTHFIELD TOWNSHIP shall forthwith meet with officials of HAMBURG TOWNSHIP and officials of Livingston County and shall make a complete disclosure to said officials of the intentions of NORTHFIELD TOWNSHIP respecting its sewage treatment plant, including but not limited to plant expansion plans and a timetable of increased discharge volume up to but not to exceed 750,000 gallons per day of effluent in conformity with the judicially redetermined effluent standards set forth in part I of this Order.

IV. That NORTHFIELD TOWNSHIP is no longer restrained from increasing the size of its waste water disposal plant but that said defendant shall not increase the volume of its effluent discharges beyond 250,000 gallons per day until further order of this Court, and the Court being satisfied, at that time, that the above judicially set standards have been met and will be regularly met and will continue to be met as the discharge volume increases and further that the Court is satisfied that plaintiffs receiving waters will not be polluted by such increase in volume of effluent discharge.

V. That this Court shall retain jurisdiction of this matter pending completion of all matters set forth in the redesignated time schedules referred to in paragraph II above.

VI. That pending further action of the Water Resources Commission, temporary restraining orders may issue as needed to maintain the present status quo.

VII. That defendants NORTHFIELD TOWNSHIP and GREEN OAK TOWNSHIP are restrained from issuing any new tap-in permits or increasing the number of units or users of their waste water treatment plant if such increase in units or users will result in a discharge in excess of 250,000 gallons per day, notwithstanding any contrary language in this Order.


Circuit Judge

PREPARED AND PRESENTED BY:



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STATE OF MICHIGAN

IN THE CIRCUIT COURT FOR THE COUNTY OF LANSING

LANDLAND PROPERTY OWNERS ASSOCIATION, a Michigan
unincorporated voluntary association, and
TOWNSHIP OF HAMBURG, a Michigan Municipal
Corporation, jointly and severally,

Plaintiffs,

PORTAGE AND BASS LAKES ASSOCIATION, INC.,
a Michigan non-profit Corporation,

Intervening Plaintiff,

TOWNSHIP OF NORTHFIELD, a Michigan Municipal
Corporation,

Defendants,

TOWNSHIP OF GREEN OAK, a Michigan Municipal
Corporation,

Intervening Defendants.

ARTHUR E. CARPENTER
Attorney for Plaintiffs

(P 11210)

JOHN C. LAIRD
Attorney for Intervening Plaintiff

(P 11240)

WILLIAM E. COOPER
Attorney for Intervening Defendant

(P 11280)

WILLIAM E. BEAUMONT
Attorney for Defendant

(P 11372)

SUPPLEMENTAL ORDER

It is ordered that this Court shall be
represented by counsel, and that the
11 MAY 1973

PRESENT: THE HONORABLE PAUL H. BARNETT
Circuit Judge

By order made and entered MAY 14, 1973 before said Court.

Witness my hand and seal in the above entitled cause pending case No. 11-11210.

make the redesignated time schedules referred to in paragraph 1 of said order, and

4. Upon motion of Defendant Township of Northfield and Defendant Township of Green Oak for a supplemental order herein it appearing that the improvement of the Northfield Township wastewater treatment facility is substantially completed in conformance to the design thereof, and that the performance of that facility is meeting and exceeding all effluent requirements imposed by the May 14, 1971 order herein, and the Court being fully advised in the premises, now, therefore,

IT IS ORDERED AND ADJUDGED AS FOLLOWS:

1. That the said motion be and hereby is granted, the Court hereby determining that the effluent requirements heretofore imposed by said order have been met, complied with and satisfied.

2. That the Defendant Township of Northfield be and hereby is authorized to increase the volume of effluent to be discharged from the said wastewater treatment facility to a total volume not exceeding 100,000 gallons per day.

3. That the restraining provision of prior orders in this matter be and hereby are vacated excepting that this Court shall retain jurisdiction and the standards for effluent purity set by this Court on May 14, 1971 shall be continued in effect and the monthly operating expenses shall be filed with the Clerk at each of the three quarterly meetings of the Court, until further order of the Court.

[Signature]
Circuit Judge

[Signature]
Attorney for Defendant Township

[Signature]
Attorney for Plaintiff Township

[Signature]
Attorney for Plaintiff Township
[Signature]
Attorney for Plaintiff Township
[Signature]
Attorney for Plaintiff Township

STATE OF MICHIGAN

IN THE CIRCUIT COURT FOR THE COUNTY OF LIVINGSTON

LAKELAND PROPERTY OWNERS ASSOCIATION,
a Michigan unincorporated voluntary
association, and TOWNSHIP OF HAMBURG,
a Michigan body corporate, jointly
and severally,

Plaintiffs,

AND

Civil Action No. 1453
Hon. Stanley J. Latreille

PORTAGE, BASE, AND WHITEWOOD OWNERS
ASSOCIATION, INC., a Michigan
non-profit corporation, formerly
known as PORTAGE AND BASE LAKE
ASSOCIATION, INC., a Michigan
non-profit corporation,

Intervening Plaintiff,

v

TOWNSHIP OF NORTHFIELD, a Michigan
body corporate,

Defendant,

AND

TOWNSHIP OF GREEN OAK, a Michigan
body corporate,

Intervening Defendant.

TRUE COPY
STANLEY J. LATREILLE
44th Circuit Court

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SUPPLEMENTAL ORDER

At a session of said Court, held in the
City of Howell, County of Livingston,
State of Michigan, on March 19, 1991.

PRESENT: THE HONORABLE STANLEY J. LATREILLE
Circuit Judge

This action was originally filed on August 27, 1970. The Court entered an Order pursuant to its Opinion dated May 4, 1972. The Court entered a Supplemental Order on September 11, 1978. On December 5, 1989, Northfield Township filed a Verified Petition for Amendment of the above-referenced Order. Northfield's Petition requested that an Order to Show Cause be entered. On December 10, 1989, the Court entered an Order to Show Cause.

A hearing was originally scheduled for February 26, 1991. The hearing was adjourned to February 28, 1991. On February 28, 1991, the attorneys for all of the parties appeared before this Court. This Court commenced the trial. All parties being represented and having had full opportunity to present evidence and witnesses, and Hamburg Township, Northfield Township and Green Oak Township having agreed to the substance of this Order on March 14, 1991 and Lakeland Property Owners Association expressing opposition, but choosing to present no evidence,

IT IS HEREBY ORDERED AS FOLLOWS:

1. NORTHFIELD shall be permitted to increase the capacity of its Wastewater Treatment Plant to One Million Five Hundred Thousand (1,500,000) gallons per day based upon an annual

average. The Wastewater Treatment Plant with said increased capacity is hereinafter referred to as the "EXPANDED PLANT", and is subject to the following provisions of this Supplemental Order.

2. NORTHFIELD may discharge treated municipal wastewaters from the EXPANDED PLANT through outfall 001 to the Horseshoe Lake drain. Such discharges shall be limited and monitored by NORTHFIELD as follows:

(See page 4 of this Supplemental Order.)

Effluent Characteristic	Dates In Effect	Discharge Limitations			
		Daily Minimum	Daily Maximum	30-Day Average	7-Day Average
Flow (in MGD)	All Year	--	Monitoring Only		--
Carbonaceous Biochemical Oxygen Demand (CBOD ₅)	All Year	--	10 mg/l	4 mg/l 50 lb/d	-- 125 lb/d
Total Suspended Solids	All Year	--	--	10 mg/l 125 lb/d	15 mg/l 188 lb/d
Ammonia Nitrogen (as N)	4/1-4/30	--	12 mg/l	6.4 mg/l 80 lb/d	-- 150 lb/d
	5/1-10/31	--	2 mg/l	0.5 mg/l 6 lb/d	-- 25 lb/d
	11/1-11/30	--	12 mg/l	6 mg/l 75 lb/d	-- 150 lb/d
	12/1-3/31	--	--	7.4 mg/l 93 lb/d	--
Total Phosphorus (as P)	All Year	--	--	0.4 mg/l	--
Dissolved Oxygen	5/1-10/31	6 mg/l	--	--	--
	11/1-4/30	5 mg/l	--	--	--
Fecal Coliform Bacteria	All Year	--	--	--	100/100ml
Total Residual Chlorine	All Year	--	Monitoring Only		--
	All Year beginning 1/1/92	--	0.036 mg/l	--	--
pH (standard units)	All Year	6.5	9.0	--	--

3. NORTHFIELD and HAMBURG acknowledge that the NORTHFIELD wastewater treatment plant currently discharges less phosphorus than the limitation for phosphorus set forth on page 4. NORTHFIELD pledges its best efforts to seek comparable performance in the operations of its EXPANDED PLANT. NORTHFIELD acknowledges that the current level of performance approximates 0.3 mg/l and pledges its best efforts to seek comparable performance in the operations of the EXPANDED PLANT but does not warrant that the discharge of phosphorus from the EXPANDED PLANT will be limited to 0.3 mg/l. IT IS SO ORDERED.

4. For purposes of monitoring the performance of the EXPANDED PLANT pursuant to Paragraphs 2 and 3 above, NORTHFIELD shall submit to HAMBURG copies of the final effluent reports submitted monthly to the Michigan Department of Natural Resources.

5. If HAMBURG TOWNSHIP does not purchase 250,000 gallons per day of the capacity of the EXPANDED PLANT from NORTHFIELD, then, the capacity of the EXPANDED PLANT may only be increased to One Million Three Hundred Thousand (1,300,000) gallons per day on an annual average. In such event, all other provisions of this Supplemental Order shall remain in full force and effect.

6. The jurisdiction of this Court in this matter is retained and continued.

STANLEY J. LATREILLE

HON. STANLEY LATREILLE
Circuit Judge

wp/n-field.20

STATE OF MICHIGAN

IN THE CIRCUIT COURT FOR THE COUNTY OF LIVINGSTON

LAKELAND PROPERTY OWNERS ASSOCIATION,
a Michigan unincorporated voluntary association,
and TOWNSHIP OF HAMBURG, a Michigan
body corporate, jointly and severally,

Civil Action No. 70-1453-CE
HON. DANIEL A. BURRESS

Plaintiffs,

AND

PORTAGE, BASE, AND WHITEWOOD OWNERS
ASSOCIATION, INC., a Michigan non-profit
corporation, formerly known as PORTAGE AND
BASE LAKE ASSOCIATION, INC., a Michigan
non-profit corporation,

Intervening Plaintiff,

v

TOWNSHIP OF NORTHFIELD, a Michigan
body corporate,

Defendant,

AND

TOWNSHIP OF GREEN OAK, a Michigan
body corporate,

Intervening Defendant.

TRUE COPY
MARGARET M. DUNLEAVY
LIVINGSTON COUNTY, CLERK

Lakeland Property Owners Assoc.
A Michigan Unincorporated
Voluntary Association
In Pro Per

HOOPER, HATHAWAY, PRICE,
BEUCHE & WALLACE
Attorneys for Plaintiff
Township of Hamburg
BY: BRUCE T. WALLACE (P24148)
BY: WILLIAM J. STAPLETON (P38339)
126 South Main Street
Ann Arbor, Michigan 48104
(734) 662-4426

Portage, Base and Whitewood
Owners Association, Inc.
In Pro Per

PAUL E. BURNS (P31596)
Attorney for Defendant
Township of Northfield
133 W. Grand River
Brighton, MI 48116-1600
(810) 229-6761

CONNELLY, CROWLEY, GROTH
& SEGLUND
BY: BRUCE R. SEGLUND (P32446)
Attorneys for Intervening Defendant
Green Oak Township
2410 S. Commerce Road
Walled Lake, Michigan 48390
(248) 624-4505

AMENDED CONSENT JUDGMENT

THIS CONSENT JUDGMENT made this ____ day of April 2002, by and between TOWNSHIP OF HAMBURG, a general law township, whose address is 10405 Merrill Road, Post Office Box 157, Hamburg, Michigan, 48139 ("HAMBURG"), TOWNSHIP OF NORTHFIELD, a general law township, whose address is 75 Barker Road, Post Office Box 576, Whitmore Lake, Michigan 48189 ("NORTHFIELD"), and TOWNSHIP OF GREEN OAK, a general law township, whose address is 10001 Silver Lake Road, Brighton, Michigan 48116 ("GREEN OAK").

WITNESSETH:

WHEREAS, NORTHFIELD, GREEN OAK and HAMBURG own and operate wastewater treatment works (hereinafter "plants"), the NORTHFIELD and GREEN OAK plants being located in Green Oak Township in the County of Livingston, and the HAMBURG plant being located in Hamburg Township, County of Livingston, State of Michigan; and

WHEREAS, NORTHFIELD, GREEN OAK and HAMBURG are desirous of settling pending litigation between them in the case of "Lakeland Property Owners, et. al. and Hamburg Township vs. Northfield Township and Green Oak Township," Case No. 70-1453-CE in the Livingston County Circuit Court, and creating a mechanism to ensure monitoring of the plants, cooperation among the respective Townships and speedy resolution of disputes which arise as a result of the operation of the plants, their effects upon the respective townships, and overall environmental protection; and

WHEREAS, Act Number 200 of Public Acts of 1957, as amended, (MCLA 123.631 to 123.637) provides for the creation by 2 or more municipalities of an intermunicipal committee for the purpose of studying area problems; and

WHEREAS, NORTHFIELD, GREEN OAK and HAMBURG are desirous of creating such a intermunicipal committee to avoid further litigation regarding wastewater disposal services in each township, and

WHEREAS, NORTHFIELD, GREEN OAK and HAMBURG agree that the resolution of wastewater disposal service and environmental issues in a swift, effective, and conclusive manner is of paramount concern in each township; and

WHEREAS, NORTHFIELD, GREEN OAK and HAMBURG are desirous of entering into an agreement whereby future disputes regarding sewage disposal services and watershed protection in each township that may arise would be transmitted to and reviewed by the intermunicipal committee for orderly resolution of the matter; and

WHEREAS, NORTHFIELD, GREEN OAK and HAMBURG agree that because of the proximity of the respective plants to each township and the environmentally sensitive nature of the service area, it is in the best interests of NORTHFIELD, GREEN OAK and HAMBURG to create such an intermunicipal committee to review issues and make recommendations regarding sewage disposal services and related environmental issues in each township; and

NOW, THEREFORE, IT IS AGREED AS FOLLOWS:

1. **GRANT OF EXPANSION OF NORTHFIELD'S WASTEWATER TREATMENT PLANT**

In further consideration of the mutual promises herein, HAMBURG and GREEN OAK agree that the existing NORTHFIELD wastewater treatment plant can be immediately expanded and operated, in accordance with MDEQ Permit No. M10023710, issued November 14, 1997, at 2.25 million gallons per day (mgd) by duplicating the current technology utilized at NORTHFIELD's wastewater treatment plant which would also include the construction of an equalization basin, as more particularly defined in Exhibit A. The design and construction as set forth in Exhibit A are approved by the parties and are not subject to the review provisions of the Consent Judgment.

Howard Fink

From: Marilyn [hmarilyn@yahoo.com]
Sent: Friday, October 24, 2014 3:52 PM
To: Howard Fink
Subject: Fwd: Lakealand Property Owners Association, Hamburg Township and Portage and Base Lake Assoc. Inc v Township of Northfield and Township of Green Oak and Related Intergovernmental Agreements, Part 1a of 2

I have no idea what this is about....can you fill me in.

Marilyn Handloser
Remax Classic
248-231-4216

Spelling and grammar mistakes are compliments of my iPad.

Begin forwarded message:

From: "Johnson, Lisa" <lisa@peblaw.net>
Date: October 24, 2014, 11:28:10 AM EDT
To: Angela Westover <westovera@twp.northfield.mi.us>, Jacki Otto <jackiotto@yahoo.com>, Jacki Otto <ottoj@twp.northfield.mi.us>, Janet Chick <chickj@twp.northfield.mi.us>, Janet Chick <jchick711@aol.com>, Kathy Braun <braunk@twp.northfield.mi.us>, Kathy Braun <kathysuebraun@gmail.com>, Marilyn Engstrom <engstromm@twp.northfield.mi.us>, Marilyn Engstrom <hmarilyn@yahoo.com>, Tracy Thomas <Thomast@twp.northfield.mi.us>, Tracy Thomas <tstplc12@gmail.com>, Wayne Dockett <DockettW@twp.northfield.mi.us>
Cc: Howard Fink <Finkh@twp.northfield.mi.us>, "Rubel, Brian" <Brian.Rubel@tetrattech.com>, Tim Hardesty <tdhardesty@att.net>, Brad Maynes <maynes@peblaw.net>, Paul Burns <burns@peblaw.net>
Subject: Lakealand Property Owners Association, Hamburg Township and Portage and Base Lake Assoc. Inc v Township of Northfield and Township of Green Oak and Related Intergovernmental Agreements, Part 1a of 2

Due to the size of Part 1, please see part 1b of 2 attachments with regard to the above-referenced matter. Thank you.

Lisa Johnson, Legal Administrative Assistant
to the Law Office of Paul E. Burns

133 West Grand River
Brighton, Michigan 48116
(810) 227-5000 FAX (810) 220-5895

<Township Board - Sewer Plant Limitations Attachment 1b of 2.pdf>

Howard Fink

From: Rubel, Brian [Brian.Rubel@tetrattech.com]
Sent: Friday, October 24, 2014 4:54 PM
To: finkh@twp.northfield.mi.us
Subject: FW: Sewer scans
Attachments: NT Sewer Capacity Summary.PDF; NT Sewer Improvements 1998.pdf; NT Sewer Study 2003.pdf; NT Sewer letter from Tetrattech.PDF; Sewer Capacity Summary.pdf

Howard;

Some past reports involving the North Territorial District and a general memo on sewer/wastewater capacity are attached.

Brian R.

Brian M. Rubel, PE | Vice President

Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570

brian.rubel@tetrattech.com

Tetra Tech | Water, Environment, Infrastructure

710 Avis Drive | Ann Arbor, MI 48108 | www.tetrattech.com

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NORTHFIELD TOWNSHIP SEWER SYSTEM CAPACITY SUMMARY

NORTH TERRITORIAL SERVICE AREA

CAPACITY/DEMAND	NEED	REFERENCE
Any significant new development (say 100 REUs)	Equalization Basin	Operator Observation
Above 1,522 REUs and Below 3,044 REUs	New NT Pump and Force Main	2003 Sewer Study
Additional 1,923 REUs	WWTP Expansion	85% of ex. 1.3 mgd capacity
Above 3,044 REUs	New NT Pump Station	2003 Sewer Study

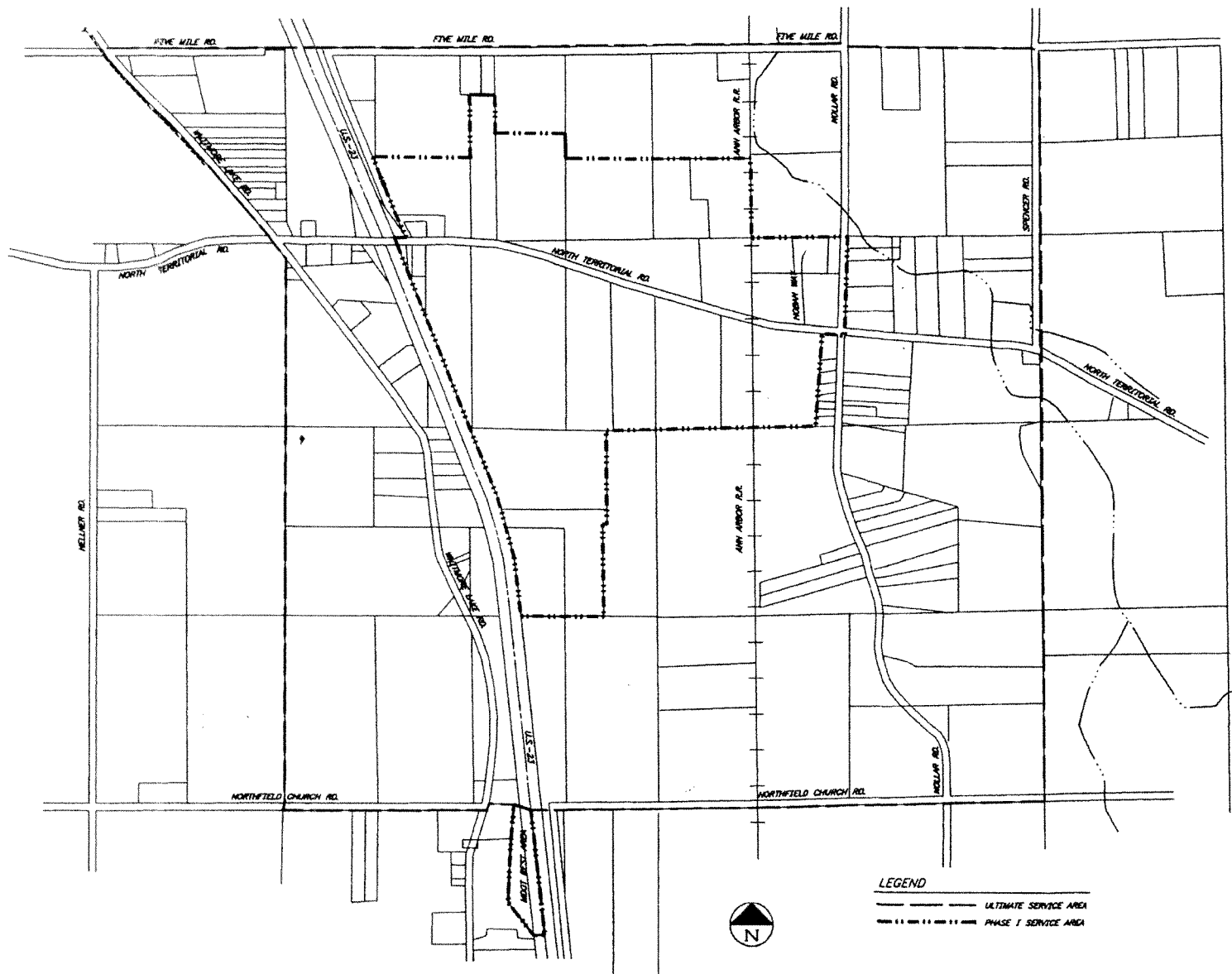
NOTES

Given that the North Territorial SAD is not built-out, new connections could occur as long as provisions are in place to collect connection fees needed to repay the costs of future infrastructure.

Existing North Territorial SAD design basis was 1,522 REUs

Sizing of needed WWTP facilities requires extensive analysis and new cost opinions since 2002

EQ basin sizing and WWTP expansion are interrelated. Doing both simultaneously will lower project costs.



LEGEND

- ULTIMATE SERVICE AREA
- - - - - PHASE I SERVICE AREA

McNAMEE
PORTER
& SEELEY
INC.



FIGURE 1 NORTHFIELD TOWNSHIP, WASHTENAW COUNTY
NORTH TERRITORIAL SANITARY SEWER
BASIS OF DESIGN
SERVICE AREA

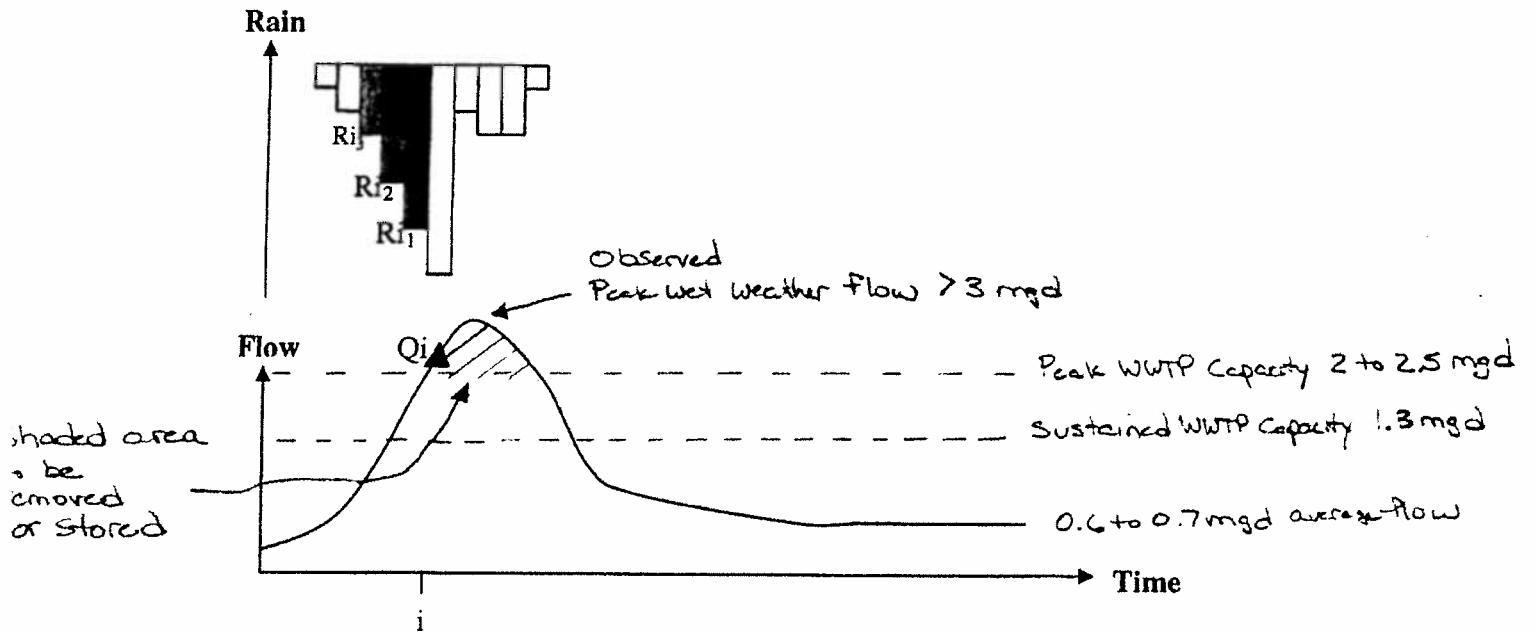
NORTHFIELD TOWNSHIP WWTP CAPACITY TIMELINE

<u>DATE</u>	<u>EVENT</u>
1961	WWTP Constructed
1975	WWTP Expanded
1983	WWTP Expanded
1988	WWTP Expanded. Equalization storage proposed but not built.
1993	WWTP Expanded
1998	WWTP Expanded
1998	North Territorial SAD conceived to serve Phase I development only
2000	North Territorial SAD Phase I constructed
2001	Very brief wet weather study. Recommendations not implemented
2002	Brief sewer capacity report funded by developer. Reiterates need for major capital improvements to support growth near North Territorial
2005	WWTP expansion and equalization storage discussed for growth. Neither project proceeds.

WWTP CAPACITY SUMMARY

Average flow	0.6 to 0.7 million gallons/day (mgd)
Rated capacity (sustained) in permit	1.3 mgd
Peak flow observed	>3 mgd
Peak flow capacity	2.0 to 2.5 mgd
MDEQ requires accommodating 3.9-inch storm without bypassing treatment	

NORTHFIELD TOWNSHIP WWTP SAMPLE HYDROGRAPH





TETRA TECH, INC.

November 15, 2005

Mr. Michael Cicchella, Supervisor
& Northfield Township Board
Northfield Township
75 Barker Road
P.O. Box 576
Whitmore Lake, MI 48189-0576

**Re: Northfield Township, MI
WWTP Improvements
Opinion of Probable Project Cost**

Dear Board Members:

Please find attached our opinion of probable project cost for the proposed WWTP improvements that will expand the current 1.3 mgd capacity to 2.25 mgd. These proposed improvements will provide the 780,000 gpd of additional capacity requested by Green Oak Township as well as provide for the continued growth within the currently established sewer districts in Northfield Township.

Our cost opinion for the plant expansion is \$12,617,000 which includes \$866,750 for miscellaneous work identified during our site visit and discussions with WWTP staff. A separate description and cost breakdown of those improvements are provided for your information

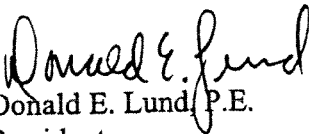
Our cost opinion is based upon an ENR index of 7875 which corresponds to a project construction mid-point of January 2007 which would require design to be initiated in the next 2-3 months which may not be realistic. We understand this schedule is dependent upon both Northfield and Green Oak Township reaching agreement on capacity and cost allocations which will take time.

These costs are being used in preparing the wastewater cost of service study which will be presented with you for review soon. This information should permit your discussions to proceed with Green Oak Township to reach agreement on capital costs for sanitary sewer service. We are available to review this information with you and to assist in your discussions with Green Oak Township about cost and schedule issues.

Mr. Michael Cicchella, Supervisor
& Northfield Township Board
Northfield Township, MI
November 15, 2005
Page 2

Please advise when you are available to discuss this information.

Very truly yours,


Donald E. Lund, P.E.
President

:be

Attachment

CC: Cindy Wilson
Michelle Manning
Jim Cox

K:\Letters\Northfield Twp WWTP Cost Opinion.doc

OPINION OF PROBABLE CONSTRUCTION COST TETRA TECH MPS

710 Avis Drive, Ann Arbor, MI 48108

Telephone: (734) 665-6000 FAX: (734) 665-2570

PROJECT: WASTEWATER TREATMENT PLANT IMPROVEMENTS
 LOCATION: NORTHFIELD TOWNSHIP, MICHIGAN
 BASIS FOR ESTIMATE: ☒ CONCEPTUAL ☐ PRELIMINARY ☐ FINAL
 WORK: Entire Plant Expansion

DATE: 11/2/2005
 PROJECT NO. 0196136T.01
 ESTIMATOR: WJN
 CHECKED BY: TLE
 CURRENT ENR: 7700

ITEM NO.	DESCRIPTION	QUANT.	UNIT	UNIT AMOUNT	TOTAL AMOUNT
1	Equalization Basin with Grit and Screen Bldg.	1	LS	\$1,848,000.00	\$1,848,000.00
2	Primary Clarifiers	2	EA	\$175,000.00	\$350,000.00
3	Aeration Basin and Equipment	1	LS	\$630,000.00	\$630,000.00
4	Final Clarifier	1	EA	\$400,000.00	\$400,000.00
5	Filter Building	2,925	SF	\$122.00	\$356,850.00
6	Sand Filters	360	SF	\$350.00	\$126,000.00
7	Sludge Storage	380,000	GAL	\$1.22	\$463,600.00
8	Digester	225,000	GAL	\$1.95	\$438,750.00
9	Flow Splitting	2	EA	\$30,000.00	\$60,000.00
10	Repair Existing Digester Piping	1	LS	\$50,000.00	\$50,000.00
11	Ultraviolet Disinfection	1	LS	\$250,000.00	\$250,000.00
12	Roadway Repairs	1	LS	\$60,000.00	\$60,000.00
13	Natural Gas Generator	1	LS	\$220,000.00	\$220,000.00
14	Programming and Controls	1	LS	\$200,000.00	\$200,000.00
15	Yard Piping	1	LS	\$185,000.00	\$185,000.00
16	Mechanical	1	LS	\$1,127,640.00	\$1,127,640.00
17	Electrical	1	LS	\$845,730.00	\$845,730.00
18	Miscellaneous Work	1	LS	\$886,750.00	\$886,750.00
19					
20	General Requirements				\$849,800.00
21					
22	10% cont.				\$934,800.00
23					
24	Subtotal				\$10,282,920.00
25					
26	15% Engineering				\$1,542,400.00
27	5% Legal				\$514,100.00
28					
29	Total at ENR 7700 (Projected July 06)				\$12,339,400.00
30					
31	Update to ENR 7875 (Projected Jan 07) - ADD				\$277,600.00
TOTAL CONSTRUCTION COST					\$12,617,000.00

OPINION OF PROBABLE CONSTRUCTION COST TETRA TECH MPS

710 Avis Drive, Ann Arbor, MI 48108

Telephone: (734) 665-6000 FAX: (734) 665-2570

PROJECT: WASTEWATER TREATMENT PLANT IMPROVEMENTS
 LOCATION: NORTHFIELD TOWNSHIP, MICHIGAN
 BASIS FOR ESTIMATE: ☒ CONCEPTUAL ☐ PRELIMINARY ☐ FINAL
 WORK: Miscellaneous Work at Existing Facilities

DATE: 10/11/2005
 PROJECT NO. 0196155T.01
 ESTIMATOR: WJN
 CHECKED BY: _____
 CURRENT ENR: 7563

ITEM NO.	DESCRIPTION	QUANT.	UNIT	UNIT AMOUNT	TOTAL AMOUNT
1					
2	Remove and Replace Handrails at Various Tanks	600	LF	\$45.00	\$27,000.00
3	Remove and Replace Sidewalks	600	SF	\$8.00	\$4,800.00
4	Remove and Replace Roofs on Existing Buildings	11,500	SF	\$7.00	\$80,500.00
5	Remove and Replace Primary Settling Tank Equipt.	1	LS	\$50,000.00	\$50,000.00
6	Remove and Replace Guardrail	2,500	LF	\$15.00	\$37,500.00
7	Dome Cover on Trickling Filter	1	LS	\$200,000.00	\$200,000.00
8	Laboratory Expansion	450	SF	\$233.00	\$104,850.00
9	Concrete Repair	1	LS	\$20,000.00	\$20,000.00
10	Sludge Heating Piping Repair / Rework	1	LS	\$20,000.00	\$20,000.00
11	Sludge Bed Removal	1	LS	\$50,000.00	\$50,000.00
12	Digester Insulation (3" => R21)	1,200	SF	\$8.00	\$9,600.00
13	Security Enhancements				
14	Security System w/Fob entrance and door contacts	1	LS	\$35,000.00	\$35,000.00
15	Video Monitoring System (includes 4 cameras)	1	LS	\$30,000.00	\$30,000.00
16	10' Chain link (1") fence w/ 3 strand barb wire	1,700	LF	\$75.00	\$127,500.00
17	Motorized Gate	1	LS	\$10,000.00	\$10,000.00
18	Trailer Mounted Vector	1	LS	\$40,000.00	\$40,000.00
19	Equipment Storage	1	LS	\$40,000.00	\$40,000.00
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
TOTAL CONSTRUCTION COST					\$886,750.00



TETRA TECH, INC.

123 Brighton Lake Road, Suite 203, Brighton, MI 48116
Telephone: 810.220.2112
Fax: 810.220.0094

FAX

Date: November 16, 2005

Number of pages (including this page): 5

(If you do not receive all pages, call (810) 220-2112)

To: Mr. Michael Cicchella, Supervisor & Northfield Township Board

Company: Northfield Township

Fax Number: 734.449.0123

From: Donald E. Lund, P.E., President

Phone Number: (810) 220-2112 Fax Number: (810) 220-0094

Subject: Northfield Township, MI, WWTP Improvements, Opinion of Probable Project Cost

Project Number:

REMARKS:

☐

Urgent

☐

For your review

☐

Reply ASAP

☐

Please comment

Please find attached the above referenced information. Hard copies will follow in the mail. Thank you.



TETRA TECH, INC.

INTEROFFICE MEMORANDUM

TO: Howard Fink, Northfield Township Manager
FROM: Brian Rubel
DATE: October 24, 2014
SUBJECT: Wastewater Capacity Summary

BACKGROUND

Northfield Township provides wastewater treatment services for portions of Northfield and Green Oak Township. This memo is prepared to summarize some key items related to wastewater treatment, in general, and sewer capacity in the southern part of the sewer system. The information within this memo comes from both past studies and more recent calculations of system capacity.

WASTEWATER TREATMENT CAPACITY

The Township owns and operates a tertiary (3-stage) wastewater treatment plant (abbreviated WWTP). The Township possesses a permit from the Michigan Department of Environmental Quality (MDEQ) to discharge wastewater to the Horseshoe Lake Drain. That permit allows the present plant to discharge 1.3 million gallons of wastewater per day (abbreviated mgd). The permit also provides provisions for Northfield to expand the WWTP up to 3.0 mgd should an expansion be desired.

Present flows average between 0.6 to 0.7 mgd. However, flows during the morning and evening arrive at a higher rate and during nighttime at a lower rate. During wet weather, the flows into the plant increase due to the infiltration of groundwater and the inflow of stormwater (abbreviated as I/I).

The difference between 0.7 mgd and the plant capacity of 1.3 mgd indicates the WWTP has capacity remaining during dry weather to serve new connections. Tetra Tech believes Northfield Township could add up to 1,900 residential equivalent user (abbreviated REUs with one REU being equivalent to one single family home) connections before the MDEQ would request the WWTP to be expanded. However, further research is needed to determine how many of these 1,900 REUs may have been previously allocated to either Green Oak Township or Special Assessment Districts (SADs).

During large storms, WWTP Superintendent Hardesty reports that the incoming flows can exceed 3 mgd. Above a peak rate of 2 mgd, the WWTP staff must bypass some treatment processes due to capacity limitations. Bypass of treatment processes are not desired and create a risk that the permit limits may not be met. Thus, any significant new development will increase the flows during wet weather and make effective treatment more challenging.

It is subjective as to what a significant development may be. Wastewater from a few new homes would be immeasurable at the WWTP. It is my opinion that after about 100 new homes, an increase in flow would be noticeable and measurable at the WWTP and create additional operational challenges.

Northfield Township has long considered constructing a storage basin at the WWTP. The purpose of the storage basin would be to capture wet weather flows and return the water to the WWTP after the storm. Tetra Tech has records that show as early as 1988 a storage basin was discussed. However, a storage basin has never been constructed.

During development interest in 2005, the Township requested Tetra Tech to prepare a cost opinion for a plant expansion (to a capacity of 2.25 mgd) and construction of a storage basin. The opinion of cost for that improvement was \$12.7 million. Given the age of this opinion and changes to state law regarding the sizing of storage basins, the cost would be significantly larger today.

Due to the observed wet weather restrictions at the WWTP, Tetra Tech suggests that the Township again consider construction of a storage basin concurrent with significant development. A plant expansion would not be immediately needed to serve new development soon unless the research shows the available dry weather capacity has been reserved.

NORTH TERRITORIAL SPECIAL ASSESSMENT DISTRICT

The existing North Territorial Special Assessment District (SAD) was constructed in year 2000 and consists of a collection sewer, pump station, and 12-inch diameter force main to Eight Mile Road. These facilities were sized to accommodate the approximately 1,500 REUs that were projected to be constructed within the SAD limits. Current connections are far below this number as little development within the SAD has occurred.

The pump station and force main were not sized for additional connections beyond the limits of the SAD. It was assumed that future growth would construct pump station improvements including parallel force main(s). An opinion of cost was prepared in 2003 that places a value of \$2.28 million on the next improvement. The cost will be larger in today's dollars.

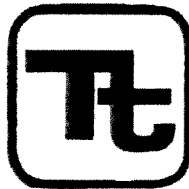
Given the sparse density of development within the existing SAD, new connections can occur to the North Territorial sewer system until the number of REUs reaches 1,500. However, Tetra Tech suggests that significant new developments contribute funds toward constructing the pump station and force main improvements that will eventually be needed.

**** Preliminary Submittal ****

Northfield Township, Michigan

**NORTHFIELD TOWNSHIP
SANITARY SEWER STUDY**

Prepared by



Tetra Tech MPS

November 2003

**** Preliminary Submittal ****

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APPENDIX A

Whitmore Lake Vicinity Conceptual Opinions of Probable Cost

Service District 1

Service District 2

Service District 3 – Option A

Service District 3 – Option B

Service District 3 – Option C

Service District 4

Eight Mile Pump Station Upgrade

APPENDIX B

North Territorial Vicinity Conceptual Opinions of Probable Cost

Service District 5

Service District 6

Service District 7

North Territorial Pump Station Parallel Force Main Installation

North Territorial Pump Station Force Main Extension to WWTP

APPENDIX C

Study Figures

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EXECUTIVE SUMMARY

This report has been prepared on behalf of Northfield Township to identify and develop sanitary sewer infrastructure alternatives to serve future developments in the Whitmore Lake, North Territorial Road, and Northfield Church Road vicinities.

The study area consists of approximately 2,760-acres of land that have the potential to be developed for commercial, industrial, and residential uses. The land within the proposed study area is primarily vacant in the North Territorial and Northfield Church Road vicinities, with existing commercial and residential developments located predominantly in the Whitmore Lake vicinity. The estimated average day sewage flow from the Whitmore Lake and North Territorial vicinities is approximately 680,000 gallons per day, while the sewage flow from the Northfield Church Road vicinity is approximately 1,160,000 gallons per day. For projected growth rates in Northfield Township, sewage flow from the Northfield Church Road vicinity is not anticipated in the next twenty years.

Service districts have been identified to provide transport of sanitary sewage from the Whitmore Lake and North Territorial vicinities. The specific service districts and conceptual opinions of probable project cost are presented below.

Service District	
Opinions of Probable Project Cost	
Service District	Conceptual Opinion of Probable Project Cost
1	\$860,000
2	\$780,000
3 – Option C	\$2,320,000
4	\$350,000
5	\$1,180,000
6	\$530,000
7	\$840,000
8 Mile PS Upgrade	\$600,000
N. Territorial PS Upgrade	\$2,950,000
Totals	\$10,410,000

Detailed opinions of probable project cost for the Whitmore Lake vicinity Service Districts 1 through 4 and Eight Mile Pump Station Upgrade are located in Appendix A. Detailed opinions of probable project cost for the North Territorial vicinity Service Districts Zones 5 through 7 and North Territorial Pump Station Upgrade are located in Appendix B.

It is recommended that Northfield Township pursue improvements to the sanitary sewer system that encompass both expansion of new infrastructure and increasing capacity of existing infrastructure as new development is identified in the Whitmore Lake and North Territorial vicinities. Due to the uncertainty regarding location and timing of new development in the Whitmore Lake and North Territorial vicinities, it is also recommended infrastructure improvements be over-sized to minimize the potential of future sewage flow exceeding the capacity of these infrastructure improvements.

**** Preliminary Submittal ****

The sanitary sewage from the study area will be directed to the existing Northfield Township Wastewater Treatment Plant (WWTP). Inclusion of the study area into the existing sanitary sewer system will require expansion of the existing WWTP.

INTRODUCTION

This sanitary sewer study has been prepared on behalf of Northfield Township to evaluate alternatives to provide sanitary sewer service to areas in the vicinity of Whitmore Lake and North Territorial Road. The land within the proposed expanded service areas is primarily zoned Agriculture, but there is indication that development of these areas for residential, commercial, and limited industrial development is likely. This sanitary sewer study evaluates alternatives for providing sanitary sewer service for the anticipated development, including improvements to existing sanitary infrastructure for transport to the Northfield Wastewater Treatment Plant (WWTP).

EXISTING SERVICE AREAS

Whitmore Lake Vicinity

The existing sanitary sewer infrastructure in this vicinity extends around the entire perimeter of Whitmore Lake, accepting sanitary flow from predominantly residential neighborhoods in both Northfield and Green Oak Townships. Sanitary flow is collected and transported by gravity sewer and periodically by pump stations, with the primary transmission sewers located along Main Street and East Shore Drive. Additionally, sanitary sewer extends south along Whitmore Lake Road from East Shore Drive to Six Mile Road, servicing a mixture of commercial and residential properties. Flows from around Whitmore Lake and Whitmore Lake Road are combined and transported west underneath US-23. These combined flows, as well as additional residential sanitary sewer flow from Barker Road, are directed to the 8 Mile Pump Station. Sewage flow from the Eight Mile Pump Station is transported via a force main and discharges at the Northfield WWTP. A map of the Whitmore Lake Vicinity sanitary sewer system is shown in *Figure 1*.

The original transmission sewer mains along East Shore Drive, Main Street, and Whitmore Lake Road to the Eight Mile Pump Station were constructed in the late 1960's

and consist of 12, 15, and 18-inch pipe installed at minimum grades. With the resulting development in the past several decades since their installation, the peak flows in sections of these sewer pipes have been measured and have been found to be near the maximum pipe capacities during large rain events due to inflow and infiltration. It is expected that the gravity sewer capacity between the East Shore Drive and Main Street intersection and the Eight Mile Pump Station will be exceeded during the 25-year or greater rain event with the onset of additional development. Anticipated peak sewage flows during the 25-year rain event and corresponding pipe capacities are shown in *Figure 2*.

The East Shore Pump Station 1, located on East Shore Drive between Main Street and Seven Mile Road, accepts flow from the north and eastern extents of Whitmore Lake. This pump station is designed with a firm pumping capacity of 450-gpm and is nearing the limits of its design capacity. The Washtenaw County Road Commission (WCRC) has indicated that they will require the relocation of this pump station away from its current location should the pump station be upgraded or otherwise modified. There is the potential that the WCRC may require the pump station to be moved even if no improvements are performed if they undertake roadway improvements.

The Eight Mile Pump Station was reconditioned and upgraded in 2000 to a firm pumping capacity of 3,300-gpm. Currently, this pump station accepts flow from the Whitmore Lake vicinity as well as flow from the North Territorial vicinity via the North Territorial Pump Station. During peak flow conditions, the Eight Mile Pump Station is at approximately two-thirds its firm pumping capacity. Flow from the Eight Mile Pump Station enters a 12-inch force main and travels approximately 3,000 linear feet to the Northfield WWTP. There is also a parallel existing 8-inch force main from the pump station to the WWTP that was taken out of service approximately twelve years ago. There is the potential that this 8-inch force main has deteriorated from disuse to a point where it is no longer suitable for sanitary sewer service in the future.

North Territorial Vicinity

The existing sewage flow in this vicinity extends along North Territorial Road from Whitmore Lake Road to the Ann Arbor Rail Road, just west of Nollar Road. This infrastructure was installed in 2000 and consists of 8, 12, 15, and 21-inch gravity sewer as well as the North Territorial Pump Station. Flow from the North Territorial Pump Station is directed along approximately 21,000 linear feet of 12-inch force main to the Eight Mile Pump Station. A map of the North Territorial Vicinity sanitary sewer system and the current service districts is shown in *Figure 3*.

The gravity sewer along North Territorial Road and the pump station were designed to accommodate the anticipated commercial and light industrial development within the special assessment district. Currently, this system experiences little demand, as major development in this area has not commenced as anticipated.

The North Territorial Pump Station was originally designed with an ultimate firm pumping capacity of 1,400-gpm through a pair of parallel 12-inch force mains. Currently, the firm pumping capacity of the station is set at 700-gpm through a single force main. When further capacity is required, the pump station is ready to be installed with an additional pump, which will upgrade the firm pumping capacity to the ultimate 1,400-gpm. As originally planned, the increase in firm pumping capacity to 1,400-gpm will require the installation of a second 12-inch force main to the Eight Mile Pump Station. Attempting to transport 1,400-gpm through the single 12-inch force main will generate total dynamic head in excess of the pumps' ability to generate flow.

Northfield Wastewater Treatment Plant

The existing sanitary sewer flow from the Eight Mile Pump Station discharges directly to the Northfield WWTP via a 12-inch force main. The Northfield WWTP currently processes an average daily flow of approximately 800,000 gallons per day, with the capacity to process an average daily flow of 1,300,000 gallons per day. The Phase I special assessment district (SAD) for the North Territorial sanitary sewer improvements

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constructed in 2000 encompasses land expected to generate an average daily flow of approximately 390,000 gallons (1500 REU) per day. Combining the existing WWTP flow with the expected flow from the North Territorial Phase I (SAD), as well as an average daily flow of approximately 39,000 gallons (120 REU) per day currently allocated to Green Oak for Whitmore Lake vicinity development, there is approximately 71,000 gallons (270 REU) of average day flow capacity remaining. The construction of the Whitmore Lake High School, expected to require 120 REU, will further reduce the available capacity at the WWTP to approximately 150 REU. Any development beyond this limited capacity will require expansion of the WWTP.

PROJECTED DEVELOPMENT AREAS

The study area includes approximately 2,760-acres of land that have the potential to require public sanitary sewer service. These areas are currently zoned *Agriculture*, and in the future they are likely to experience residential, commercial, and light industrial development growth.

Whitmore Lake Vicinity

Four new development areas have been identified by Northfield Township that would connect to the existing sanitary sewer infrastructure around Whitmore Lake. The areas and Northfield Township's expectations for future zoning are shown in *Figure 4* and are described as follows.

- **Wildwood Lake Area** – Approximately 258-acres of land between Kearney and Jennings Roads, south of Wildwood Lake. This area has the potential to be rezoned *Single Family Residential 1*, with a maximum density of 4 residences per acre.
- **Seven Mile Area** – Approximately 234-acres of land along 7 Mile Road between East Shore Drive and Donna Lane. This area has the potential to be rezoned *Single Family Residential 1*, with a maximum density of 4 residences per acre.
- **Kelly Area** – Approximately 282-acres of land south of the Eagle Gardens development, east of Whitmore Lake Road. This area has the potential to be rezoned *Single Family Residential 1*, with a maximum density of 4 residences per acre. This land is not expected to develop within the next twenty years.
- **Whitmore Lake High School Area** – Approximately 82-acres of land on Whitmore Lake Road, between Five Mile and Six Mile Roads. This area is being developed for the proposed Whitmore Lake High School, which is expected to accommodate 1,200 students.

North Territorial Vicinity

Seven new development areas have been identified by Northfield Township that will connect to the existing sanitary sewer infrastructure along North Territorial Road. The areas and Northfield Township's expectations for future zoning are shown in *Figure 5* and are described as follows.

- **Six Mile Commercial Area** – Approximately 13-acres of land on Six Mile Road, east of Whitmore Lake Road on either side of US-23. This area has the potential to be rezoned *Highway Commercial*.
- **US-23 Service Road Commercial Area** – Approximately 26-acres of land north of an existing service road east of US-23, between North Territorial and Five Mile Roads. This area has the potential to be rezoned *General Commercial*.
- **US-23 Service Road Residential Area** – Approximately 17-acres of land north of an existing service road east of US-23, between North Territorial and Five Mile Roads. This area has the potential to be rezoned *Multiple Family Residential*, with a maximum density of five residences per acre.
- **Grand Sakwa Phase I Area** – Approximately 212-acres of land west of Whitmore Lake Road between Five Mile and North Territorial Roads. This area has the potential to be rezoned *Single Family Residential 1*, with approximately 470 residences expected within the development.
- **Whitmore Lake Road Commercial Area** – Approximately 225-acres of land east of Whitmore Lake Road, between Five Mile and North Territorial Roads. This area is currently zoned *General Commercial*.

- **Nollar Road Commercial Area** – Approximately 58-acres of land west of the Nollar and North Territorial Road intersection. This area is currently zoned *General Industrial*.
- **Nollar Road Residential Area** – Approximately 9-acres of land on Nollar Road, south of the intersection with North Territorial Road. This area is currently zoned and expected to remain *Low Density Residential*, with a maximum density of one residence per acre.

Northfield Church Road Vicinity

Five new development areas have been identified by Northfield Township that will connect to the existing sanitary sewer infrastructure along North Territorial Road. Assuming an average growth rate of two percent (2%) for the Township, it is not likely that these areas will experience development levels in the next twenty years sufficient to support the construction costs of extending sanitary sewer service. The areas and Northfield Township's expectations for future zoning are shown in *Figure 5* and are described as follows.

- **Whitmore Lake Road Industrial Area** – Approximately 26-acres of land on the east side of Whitmore Lake Road, between North Territorial and Joy Roads. This area has the potential to be rezoned *Limited Industrial*.
- **Whitmore Lake Road Residential Area** – Approximately 3,530-acres of land west of Whitmore Lake Road between North Territorial and Northfield Church Roads. This area has the potential to be rezoned a mixture of *Single Family Residential 1*, *Single Family Residential 2*, and *Multiple Family Residential*.
- **Northfield Church RTM-A Area** – Approximately 360-acres of land east of US-23, between North Territorial and Northfield Church Roads. This area has the potential to be rezoned *Research, Manufacturing and Technology*.

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- **Northfield Church RTM-B Area** – Approximately 145-acres of land west of Nollar Road and north of Northfield Church Road. This area has the potential to be rezoned *Research, Manufacturing and Technology*.
- **Northfield Church RTM-C Area** – Approximately 616-acres of land east of US-23 and south of Northfield Church Road. This area has the potential to be rezoned *Research, Manufacturing and Technology*.

PROJECTED WASTEWATER FLOWS

Resident Equivalent Units (REUs) were used to equate sanitary flow from commercial and industrial users to residential users. An REU represents a typical single family residential home. The average sewage flow for each REU is 260 gallons per day average. The 260 gallons per day is based on 100 gallons per day per person and 2.6 persons per household. The maximum day flow is typically estimated to be twice the average day flow, and the peak hour demand is determined per the *Ten States Standards*, which for this study has been calculated at three and one-half times the average day flow. The design flows used in this study are as follows.

Average Day Demand = 100 gpd per person x 2.6 people per household = 260 gpd / REU

Maximum Day Demand = Average Demand x 2 = 520 gpd / REU

Peak Hour Demand = Average Day Demand x 3.5 = 910 gpd / REU

Additionally, Northfield Township has several zoning classifications within the Existing and Projected Development Areas. Each zoning district has a maximum allowable development density that corresponds to an average number of REUs per acre. The assumed development densities used in this study are presented in Table 1.

Table 1 - Development Densities		
Zoning Classification	Abbreviation	REU / Acre
Single Family Residential 1	SFR1	4.0
Single Family Residential 2	SFR2	5.8
Low Density Residential	LR	1.0
Multiple Family Residential	MR	5.0
General Commercial District	GC	2.5
Highway Commercial District	GI	2.5
Limited Industrial District	HC	2.5
Planned Shopping Center	LI	2.5
Research / Technology / Manufacturing	RTM	2.5

The development density of 2.5 REU per acre for commercial, industrial, and RTM zoning is based on current development trends in neighboring townships.

In determining REUs for large single-family zoned residential projects, it is assumed that twenty-five percent (25%) of the total acreage available will be utilized for roads, easements, and storm water runoff areas, leaving seventy-five percent (75%). However, for the purposes of this study, an additional factor of seventy percent (70%) has been applied as the maximum allowable development density for the remaining acreage in the residential zoned projects. This percentage has been applied to account for portions of the land in the study area that cannot be built upon due to poor soil conditions, wetlands, or other land constraints. Computation of REUs on a typical 20-acre single-family residential zoned parcel is shown below.

Example

Maximum Development Density = 20-acres x 2 REU / acre x 75% x 70% = 21 REU

For commercial, industrial, and multiple-family zoned parcels, only the seventy percent (70%) factor has been applied as the maximum allowable development density for the total acreage of the parcel. As with the single-family parcels, this percentage has been applied to account for portions of land in the study area that cannot be built upon. Computation of REUs on a typical 20-acre commercial zoned parcel is shown below.

Example

Maximum Development Density = 20-acres x 2.5 REU / acre x 70% = 35 REU

Using the development densities in Table 1 and the seventy percent development assumption, the number of REUs and designed wastewater flows in the projected development areas are presented in Table 2.

Table 2
REU Projection & Design Wastewater Flows

Development Area	Total Acres	REU Projection	Average Day Demand (gallons)	Max Day Demand (gallons)	Peak Hour Demand (gallons)
Wildwood Lake	258	540	140,000	280,000	491,000
Seven Mile	234	490	127,000	254,000	446,000
Kelly	282	600	156,000	312,000	546,000
High School	82	120	31,000	62,000	109,000
Six Mile Commercial	13	30	8,000	16,000	27,000
US-23 Service Rd Commercial	26	50	13,000	26,000	46,000
US-23 Service Rd Residential	17	50	13,000	26,000	46,000
Grand Sakwa Ph I	212	470	122,000	244,000	428,000
Whitmore Lake Rd Commercial	71	130	34,000	68,000	118,000
Nollar Road Commercial	58	110	29,000	58,000	100,000
Nollar Road Residential	9	10	3,000	6,000	9,000
Whitmore Lake Rd Industrial	610	2450	637,000	1,274,000	2,230,000
Whitmore Lake Rd Residential	26	50	13,000	26,000	46,000
Northfield Church RTM-A	360	630	164,000	328,000	573,000
Northfield Church RTM-B	145	260	68,000	136,000	237,000
Northfield Church RTM-C	616	1080	281,000	562,000	983,000
Totals	2,761	7,070	1,839,000	3,678,000	6,435,000

The values in Table 2 have been used to determine the size of new sanitary sewer improvements as well as upgrades of existing infrastructure. The infrastructure improvement requirements are discussed in the *Analysis of Alternatives*.

ANALYSIS OF ALTERNATIVES

The areas of potential sanitary sewer service within Northfield Township for the purpose of this study have been divided service districts within the Whitmore Lake and North Territorial vicinities. Within the Whitmore Lake vicinity, there are four service districts identified, which are the locations of the infrastructure improvements necessary to provide sanitary sewer service to the Wildwood, Seven Mile, and Whitmore Lake High School Development Areas. While sanitary sewer service is not shown extended to the Kelly Development Area, as the land is not expected to be developed in the next twenty years, sanitary sewer infrastructure improvements for the purpose of this study have been sized to accommodate sewage from this area should it become developable. The conceptual locations of new sanitary sewer transmission mains for the Whitmore Lake Vicinity are shown in *Figure 6*.

Within the North Territorial vicinity, there are also three service districts identified, which are the locations of the infrastructure improvements necessary to provide sanitary sewer service to the 6 Mile, US-23 Service Road Commercial and Residential, Grand Sakwa Phase I, Whitmore Lake Commercial, and Nollar Road Commercial and Residential Development Areas. The conceptual locations of new sanitary sewer transmission mains for the North Territorial vicinity are shown in *Figure 7*.

The Whitmore Lake Road Industrial, Whitmore Lake Residential, and Northfield Church Road RTM A, B, and C Development Areas that have been identified by the Township are in the Northfield Church Road vicinity and would discharge to existing sanitary sewer in the North Territorial SAD, but conceptual locations of new sanitary sewer transmission mains have not been provided as part of this study. At projected growth rates, these areas are not anticipated to experience development levels in the next twenty years sufficient to support the construction costs of extending sanitary sewer service.

Whitmore Lake Vicinity

The Wildwood Lake, Seven Mile, Kelly, and Whitmore Lake High School Development Areas are located within the Whitmore Lake vicinity and will require four service districts to accommodate development. The four districts represent approximately 885-acres of land and have the potential to generate 2,430 ultimate REUs if developed to maximum density. Though it is not anticipated that the Kelly Development Area will be developed in the next twenty years, gravity sewer infrastructure improvements have sized to accommodate future flows from this area. Detailed opinions of probable project cost for each service district are shown in Appendix C.

- **Service District 1** (*Figure 8*) – this area includes the replacing the existing 18-inch gravity sewer between Barker Road and the Eight Mile Pump Station with 24-inch pipe. The upgrade of this pipe is necessary to accommodate additional flow from the Wildwood Lake, Seven Mile, and Kelly Development Areas. The conceptual opinion of probable project cost for Service District 1 is \$860,000.
- **Service District 2** (*Figure 9*) – this area includes constructing new 8-inch sanitary sewer lines along Jennings Roads to service the Wildwood Lake Development Area. The new pipe will connect to existing 8-inch and 10-inch sewer lines. Additionally, approximately 350-linear feet of existing 10-inch line on Barker Road will be replaced with 12-inch sewer. Routing a portion of the flow through the North Pointe Community's existing 8-inch sewer line reduces the overall project cost of providing sanitary sewer service and still accommodates the anticipated 540 REUs from the Wildwood Lake Development Area. The conceptual opinion of probable project cost for Service District 2 is \$780,000.

- **Service District 3** – this area includes constructing new 8-inch sanitary sewer lines along 7 Mile Road to service the Seven Mile Development Area. Flow from the Kelly Development Area beyond twenty years will be routed through the existing Eagle Gardens development sanitary sewer, which will require upgrading the Eagle Gardens Pump Station at that time. Additional sewer capacity along East Shore Drive and Barker Road between US-23 and Seven Mile Road will also be required to accommodate the ultimate 1,210 REUs from the Seven Mile Development Area, the Kelly Development Area, and Green Oak Township. There are several options available to Northfield Township to upgrade the existing sanitary sewer routes along East Shore Drive and Barker Road.

Option A (Figure 10) – replace existing 12-inch sewer along East Shore Drive with 15 and 18-inch pipe, and replace existing 18-inch sewer between the railroad and US-23 with 21-inch pipe. East Shore Pump Station #1 will be upgraded to an 850-gpm firm pumping capacity. The conceptual opinion of probable construction cost for this option is \$4,290,000.

Option B (Figure 11) – replace existing 12-inch sewer along East Shore Drive between Seven Mile Road and the East Shore Pump Station #1 with 15-inch pipe. East Shore Pump Station #1 will be upgraded to an 850-gpm firm pumping capacity. The pump station will discharge sewage through a new 8-inch force main that will be directionally drilled along East Shore Drive to Whitmore Lake Road. The force main will discharge to replacement 18 and 21-inch sewer. The existing 12-inch sewer along East Shore Drive between the East Shore Pump Station and Whitmore Lake Road will remain in place to provide continued service to existing customers. The conceptual opinion of probable construction cost for this option is \$3,030,000.

Option C (Figure 12) – construct a new pump station with an 850-gpm firm pumping capacity to collect flow from the Seven Mile Development Area and Green Oak Township near the intersection of Seven Mile Road and East Shore Drive. A new 8-inch force main will be installed along East Shore Drive from Seven Mile Road to Whitmore Lake Road. The force main will discharge to replacement 18 and 21-inch sewer. The existing 12-inch sewer and East Shore Pump Station # 1 along East Shore Drive to Whitmore Lake Road will remain in place to provide continued service to existing customers. The conceptual opinion of probable construction cost for this option is \$2,300,000.

- **Service District 4 (Figure 13)** – this area includes constructing new 8-inch gravity sewer from the existing sewer line at the intersection of Coyle and 6 Mile Roads approximately 1,600 linear feet to the property of the proposed Whitmore Lake High School. The proposed high school is expected to have approximately 1,200 students and generate 120 REU. The Whitmore Lake Pump Station has sufficient capacity to accommodate the additional flow from the proposed school. The conceptual opinion of probable project cost for Service District 4 is \$350,000.

Eight Mile Pump Station Upgrade Requirements

The Eight Mile Pump Station will be modified to accept flow only from the Whitmore Lake vicinity, including the Wildwood Lake, Seven Mile, Kelly, and Whitmore Lake High School Development Areas. Assuming the additional REU demand from the new areas, the peak hour flow to the pump station from the Whitmore Lake vicinity will be approximately 2,830-gpm, while the existing firm pumping capacity of the station is 3,300-gpm. This additional flow, combined with the anticipated flow from the North Territorial Vicinity that currently discharges to the Eight Mile Pump Station, will exceed the Eight Mile Pump Station firm pumping capacity. Modifications to the pump station to increase capacity will include transporting sewage flow directly from the North Territorial Pump Station to the WWTP by extending its existing force main. The Whitmore Lake vicinity sewage flow will eventually exceed the capacity of the single 12-inch force main between the Eight Mile Pump Station and the WWTP. When the total dynamic head within the 12-inch force main exceeds the Eight Mile Pump Station's ability to transport the sewage flow, an additional 3,200 linear feet of 16-inch force main will need to be installed parallel to the existing 12-inch. There is an existing 8-inch force main installed parallel to the existing 12-inch, but due to its age and as it has been out of service for approximately 12 years, it is likely that it will be unsuitable for further use. The conceptual opinion of probable project cost for the Eight Mile Pump Station Upgrade is \$600,000.

North Territorial Vicinity

The seven development areas located within the North Territorial vicinity and will require three construction projects to accommodate development. The seven areas represent approximately 550-acres of land and have the potential to generate 850 REUs if developed to the seventy percent of maximum density allowed per zoning. Detailed conceptual opinions of probable project cost for each construction project are shown in Appendix C.

- **Service District 5** (*Figure 14*) – this area includes constructing new 12-inch sewer along 5 Mile and Whitmore Lake Roads. The new 12-inch sewer will connect to existing 15-inch gravity line and flow to the North Territorial Pump Station. The construction of this pipe is necessary to accommodate additional flow of 600 REU from the Grand Sakwa Phase I and Whitmore Lake Road Commercial Development Area. The conceptual opinion of probable project cost for Service District 5 is \$1,180,000.
- **Service District 6** (*Figure 15*) – this area includes constructing a low-pressure sewer from the US-23 Service Road Commercial and Residential Development Area, as well as a portion of the 6 Mile Commercial District. The new low-pressure system will discharge additional 115 REU flow to an existing 8-inch gravity sewer and flow to the North Territorial Pump Station. The conceptual opinion of probable construction cost for Service District 6 is \$530,000.
- **Service District 7** (*Figure 16*) – this area includes constructing 21-inch gravity sewer along North Territorial Road to and south along Nollar Road, with an 8-inch branch line to accommodate additional flow of 120 REU from the Nollar Road Commercial and Residential Development Area. The conceptual opinion of probable construction cost for Service District 7 is \$840,000.

North Territorial Pump Station Upgrade Requirements

This pump station has been designed to accommodate flow from the North Territorial Phase I SAD only. As only one 12-inch force main was installed at the time of construction, any flow over 700-gpm, the current firm pumping capacity of the station, will generate head conditions that exceed the pump's operating range. Installation of a second parallel 12-inch force main will raise the capacity of the pump station to 1,400-gpm.

The North Territorial SAD is expected to generate 390,000 gallons (1,500 REU) of average day sewage flow, or a peak hour flow of 950-gpm. As the existing single 12-inch force main can only accommodate 700-gpm of flow, when the firm pumping capacity of the North Territorial Pump Station is reached, an upgrade of an additional 700-gpm pump and 21,000 linear feet of 12-inch force main will be required. The conceptual opinion of probable cost for this upgrade is \$2,280,000.

The additions of Six Mile, US-23 Service Road Commercial and Residential, Grand Sakwa Phase I, Whitmore Lake Commercial, and Nollar Road Commercial and Residential Development Areas are expected to generate another 221,000 gallons (850 REU) of average day sewage flow, or a peak hour flow of 540-gpm. The total sewage flow from the North Territorial SAD and the new development areas is 1,490-gpm, which is 90-gpm (140 REU) over the ultimate firm pumping capacity of the North Territorial Pump Station. Any development beyond the 1,500 REU allocated to the North Territorial SAD and 710 REUs from the new development areas will require a new pump station.

When sewage flow from the North Territorial Pump Station exceeds the firm pumping capacity of the Eight Mile Pump Station, the sewage flow from the North Territorial Pump Station will be diverted directly to the WWTP. This will be accomplished by combining the flows from the parallel 12-inch force main with a single 16-inch force main, approximately 3,200 linear feet long. To provide additional pumping capacity to accommodate the an equalization basin that will be part of the expansion of the

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Northfield WWTP, modifications to the pump impellers at the North Territorial Pump Station made be required as well. The conceptual opinion of probable cost for this upgrade is \$670,000. The combined conceptual opinion of probable cost for all the North Territorial Pump Station upgrades is \$2,950,000.

RECOMMENDATION

It is recommended that Northfield Township pursue improvements to the sanitary sewer system that encompass both expansion of new infrastructure and increasing capacity of existing infrastructure. Due to the uncertainty regarding location and timing of new development in the Whitmore Lake and North Territorial vicinities, it is also recommended infrastructure improvements be examined during the design phase not only for the sewage flows from the immediate development areas, but that they also be examined and designed to accommodate the likelihood of additional significant flow from potential adjacent development areas. While over-sizing infrastructure for potential development in the future will represent a higher initial capital cost for the various projects identified, that cost would be less than replacing the new infrastructure or installing additional sewer lines later when future development arrives.

Whitmore Lake Vicinity

It is recommended that several sections of existing sanitary sewer infrastructure in the Whitmore Lake vicinity be upgraded before additional developments are permitted to connect to the sanitary sewer system. Due to the level of existing sewage flow as well as the inflow and infiltration susceptibility of the existing sanitary sewer infrastructure, the sewers have the potential to experience backups due to exceeded capacity in the 25-year or greater rain event. Upgrades of existing sanitary sewer infrastructure as detailed in Service Districts 1, 2, and 4, as well as Option C of Service District 3, should be considered as new development in the Whitmore Lake vicinity arrives. Additionally, the sewage flow rate at the Eight Mile Pump Station should be monitored as additional developments are included to the sanitary sewer system. When the firm pumping capacity of the pump station is reached, sewage flow from the North Territorial vicinity will need to be diverted from the pump station directly to the Northfield WWTP. An increase in sanitary sewage flow from the Whitmore Lake vicinity will require an expansion of the Northfield WWTP.

North Territorial Vicinity

It is recommended that the existing sanitary sewer infrastructure be extended in the North Territorial vicinity as additional developments are permitted to connect to the sanitary sewer system. Extensions of the existing sanitary sewer infrastructure as detailed in Service Districts 5, 6, and 7 should be considered as new development in the North Territorial vicinity arrives. When the existing firm pumping capacity of the North Territorial Pump Station is reached, the pump station will require the upgrade of an additional pump and an additional parallel force main to the Northfield WWTP.

Northfield Wastewater Treatment Plant

The existing Northfield WWTP processes an average flow of 800,000 gallons per day and has a treatment capacity of 1,300,000 gallons per day. An additional 390,000 gallons per day of sewage flow is expected from the North Territorial SAD as development increases. Sewage flows from the additional service areas in the Whitmore Lake and North Territorial vicinities have the potential to generate an additional average flow of 680,000 gallons per day, which totals 1,870,000 gallons per day of existing and potential sewage flow to the WWTP. As the inclusion of the majority of the new service areas identified in the Whitmore Lake and North Territorial vicinities to the sanitary sewer system will require exceed capacity at the Northfield WWTP, we recommend its expansion. We further recommend that Northfield Township monitor development in the development areas identified in the Northfield Church Road vicinity. While sanitary sewage service is not anticipated in these areas in the next twenty years at anticipated growth rates, they have the potential to generate an additional average sewage flow 1,160,000 gallons per day. Inclusion of the Northfield Church Road development areas will likely require a future expansion of the Northfield WWTP beyond what is necessary to accommodate the Whitmore Lake and North Territorial vicinities.

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APPENDIX A

**Whitmore Lake Vicinity
Conceptual Opinions of Probable Project Cost**

Service District 1

Service District 2

Service District 3 – Option A

Service District 3 – Option B

Service District 3 – Option C

Service District 4

Eight Mile Pump Station Upgrade

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APPENDIX B

**North Territorial Vicinity
Conceptual Opinions of Probable Project Cost**

Service District 5

Service District 6

Service District 7

North Territorial Pump Station Parallel Force Main Installation

North Territorial Pump Station Force Main Extension to WWTP

APPENDIX C

Study Figures

Figure 1 – Whitmore Lake Vicinity Existing Sanitary Sewer

Figure 2 – Whitmore Lake Vicinity Existing Peak Flows & Max Pipe Capacities

Figure 3 – North Territorial Vicinity Existing Sanitary Sewer

Figure 4 – Whitmore Lake Vicinity Projected Development Areas

Figure 5 – North Territorial Vicinity Projected Development Areas

Figure 6 – Whitmore Lake Vicinity Service Districts 1 – 4

Figure 7 – North Territorial Vicinity Service Districts 5 – 7

Figure 8 – Whitmore Lake Vicinity Service District 1

Figure 9 – Whitmore Lake Vicinity Service District 2

Figure 10 – Whitmore Lake Vicinity Service District 3 – Option A

Figure 11 – Whitmore Lake Vicinity Service District 3 – Option B

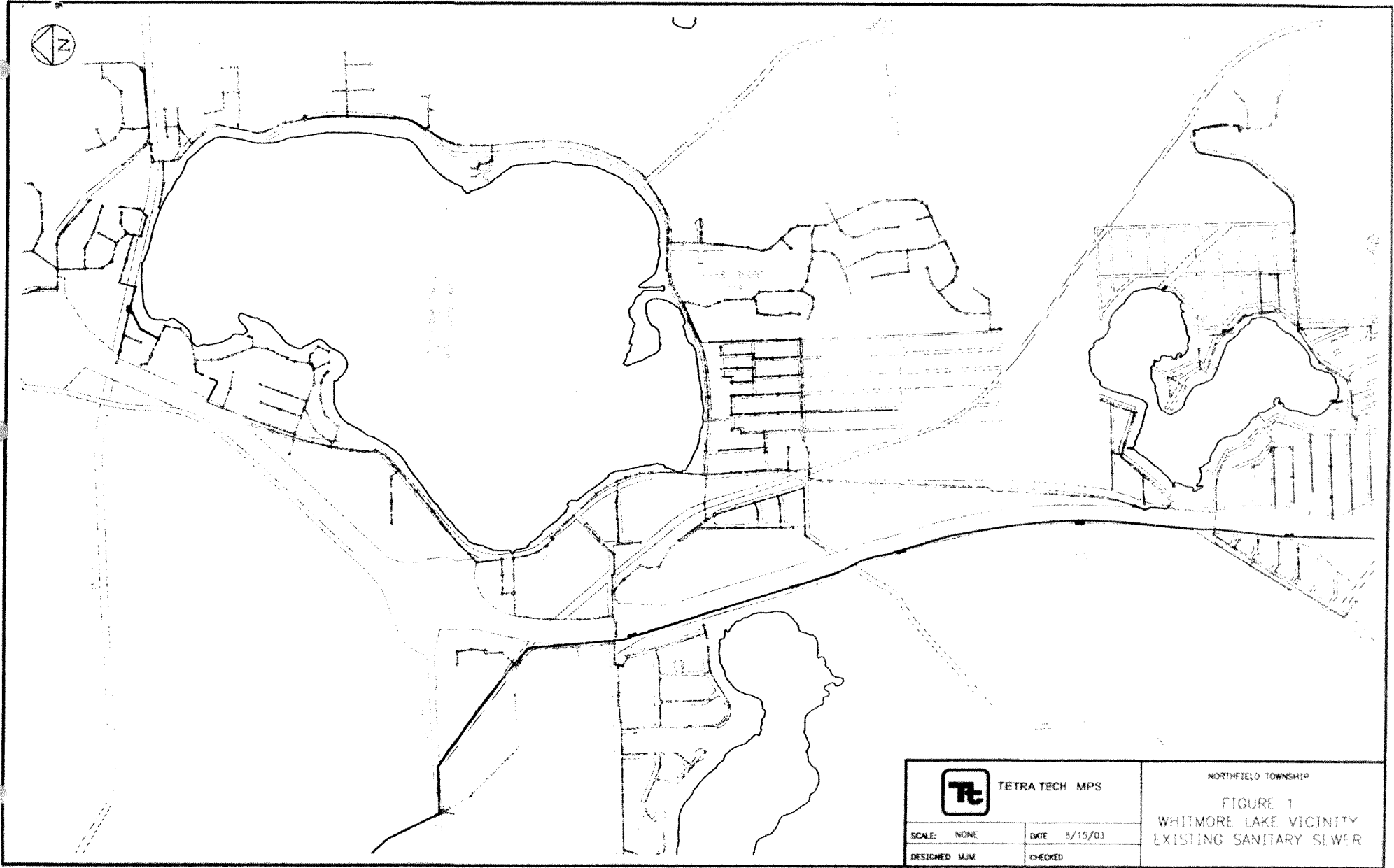
Figure 12 – Whitmore Lake Vicinity Service District 3 – Option C

Figure 13 – Whitmore Lake Vicinity Service District 4

Figure 14 – North Territorial Vicinity Service District 5

Figure 15 – North Territorial Vicinity Service District 6

Figure 16 – North Territorial Vicinity Service District 7



TETRA TECH MPS

SCALE: NONE

DATE 8/15/03

DESIGNED MJM

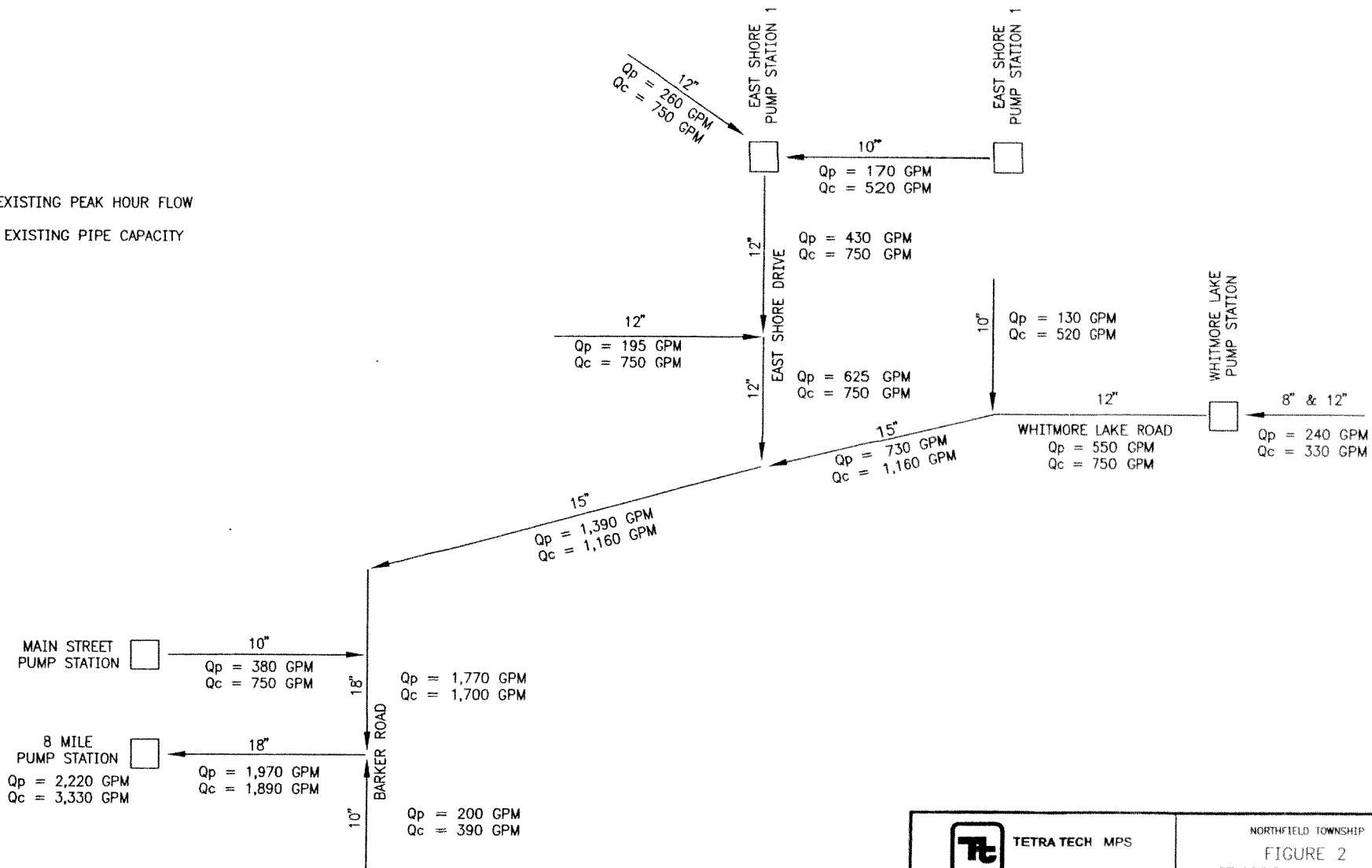
CHECKED

NORTHFIELD TOWNSHIP



Q_p = EXISTING PEAK HOUR FLOW

Q_c = EXISTING PIPE CAPACITY




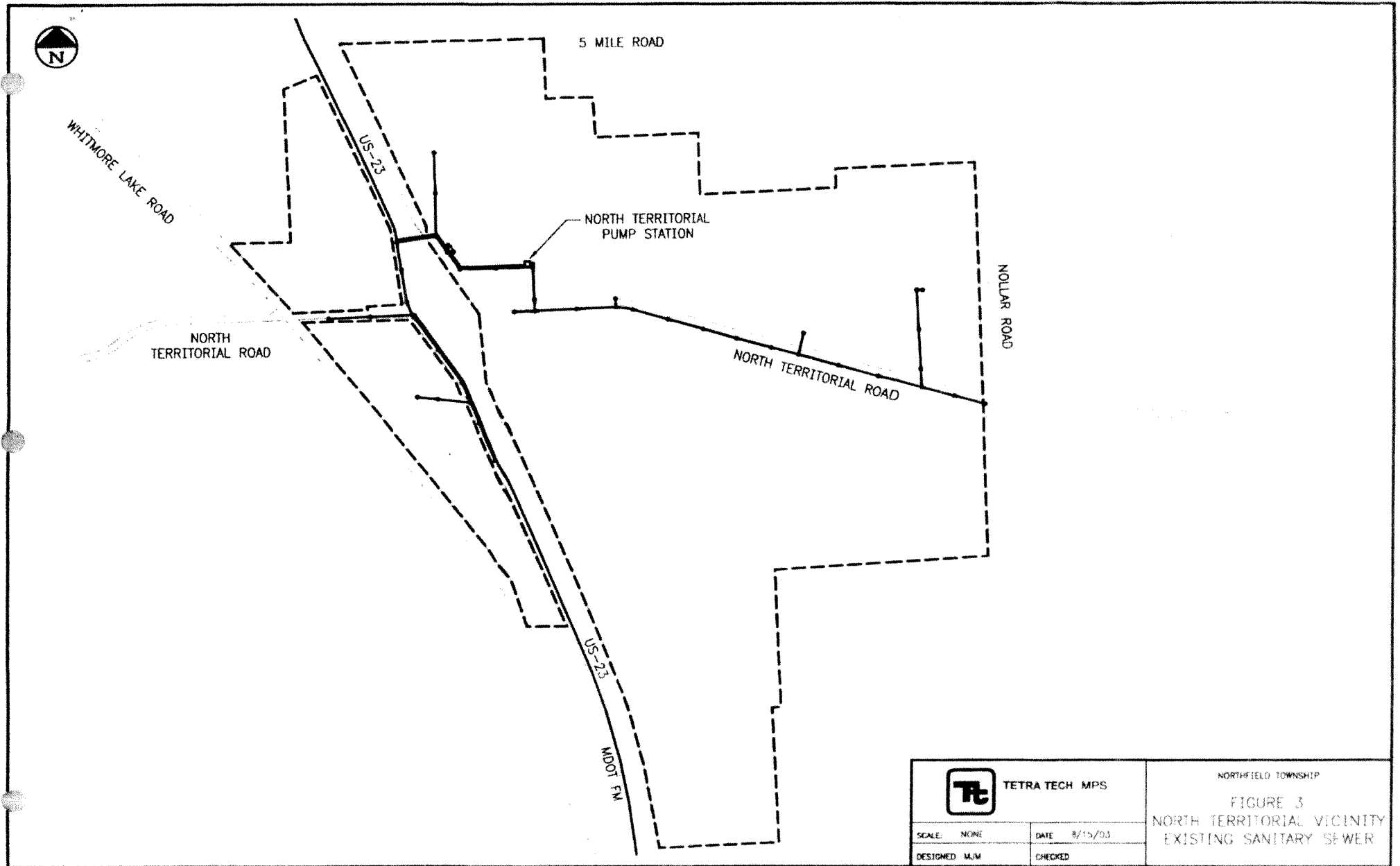
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SCALE: NONE		DATE: 8/15/03	
DESIGNED: MJM		CHECKED:	

FIGURE 2
WHITMORE LAKE VICINITY
EXISTING PEAK FLOWS &
MAXIMUM PIPE CAPACITY



TETRA TECH MPS

SCALE: NONE

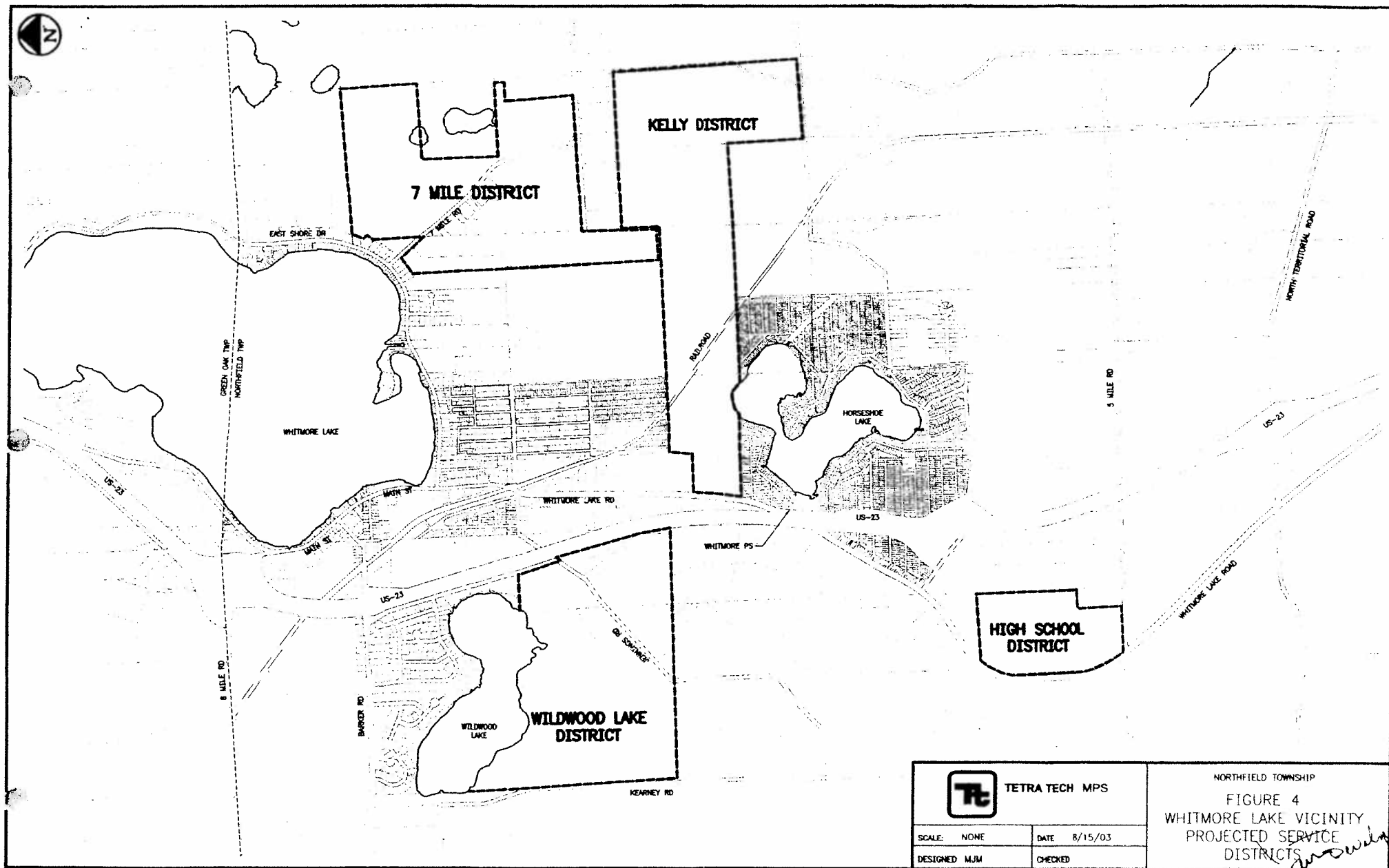
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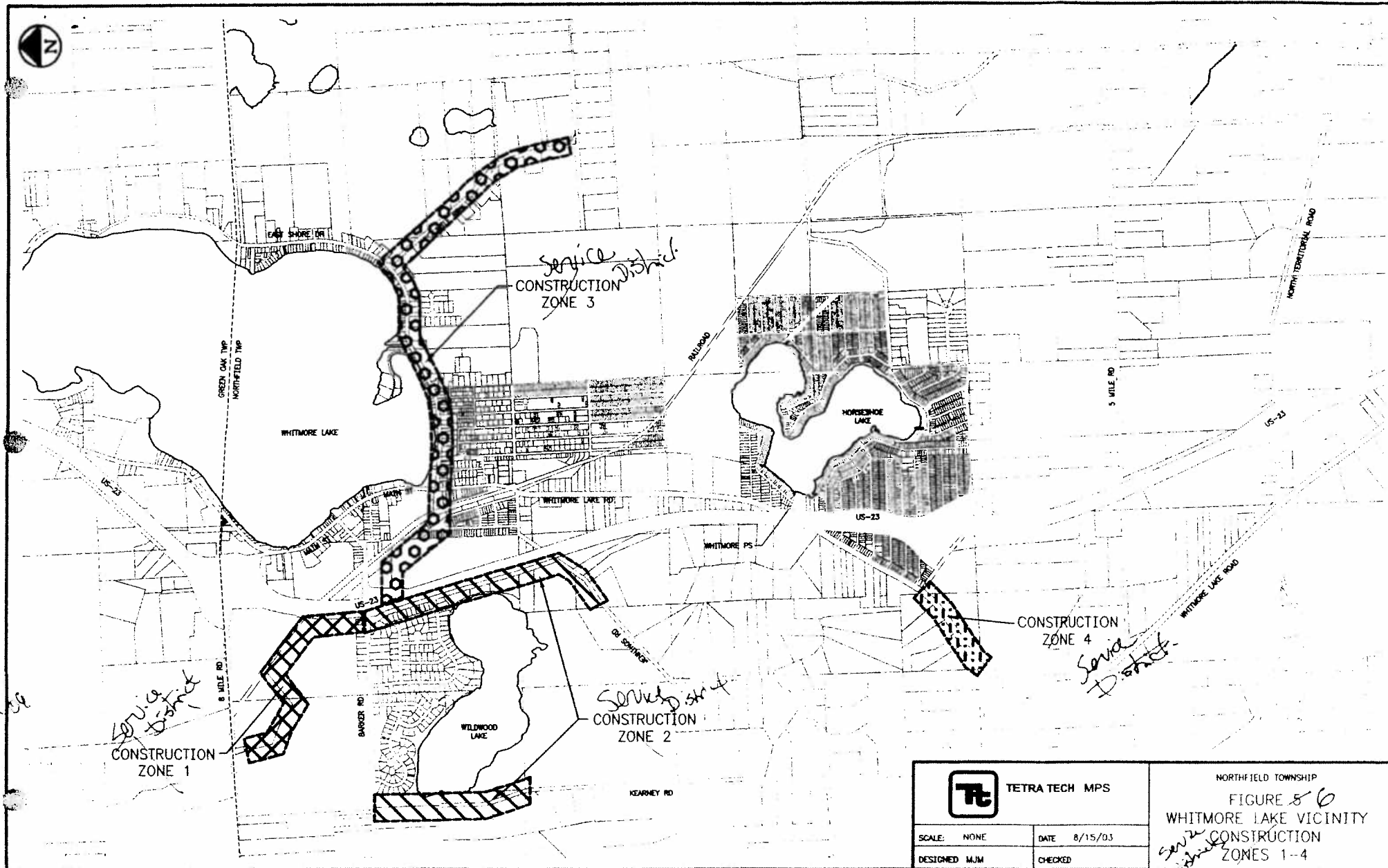
DESIGNED: WJM

CHECKED:

NORTHFIELD TOWNSHIP

FIGURE 3
NORTH TERRITORIAL VICINITY
EXISTING SANITARY SEWER





TETRA TECH MPS

SCALE: NONE

DATE 8/15/03

DESIGNED MJM

CHECKED

NORTHFIELD TOWNSHIP

FIGURE 5/6

WHITMORE LAKE VICINITY

CONSTRUCTION

ZONES 1-4



TO NORTHFIELD WWTP

FM

8 MILE RD

8 MILE PS

FM

RAILROAD

24"

US-23

CONSTRUCTION ZONE 1

REPLACE EXISTING 18-INCH GRAVITY SEWER WITH 24-INCH GRAVITY SEWER. THIS SEWER MAIN WILL SERVICE EXISTING FLOW AND FUTURE FLOW FROM DISTRICTS 1, 2, 3 AND 4.



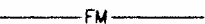
MOBILE HOME PARK

24"

FM

BARKER RD

LEGEND

EXISTING GRAVITY 
UPSIZED GRAVITY 
EXISTING FM 



TETRA TECH MPS

SCALE: NONE

DATE 8/15/03

DESIGNED M/JM

CHECKED

NORTHFIELD TOWNSHIP

FIGURE 8
WHITMORE LAKE VICINITY
CONSTRUCTION ZONE 1

MOBILE HOME
PARK



BARKER RD

10"

US-23

8"

WILDWOOD
LAKE

KEARNEY RD

8"




JENNINGS RD

12" FM

CONSTRUCTION ZONE 2

INSTALL NEW 8-INCH GRAVITY SEWER ALONG
JENNINGS & KEARNEY ROAD. TIE INTO
EXISTING 8-INCH AND 10-INCH SEWERS.
REPLACE 350-LF SECTION OF 10-INCH WITH
12-INCH SEWER TO ACCOMMODATE FUTURE
FLOW FROM DISTRICT 1.

LEGEND

EXISTING GRAVITY 
UPSIZED GRAVITY 
EXISTING FM  FM



TETRA TECH MPS

SCALE: NONE

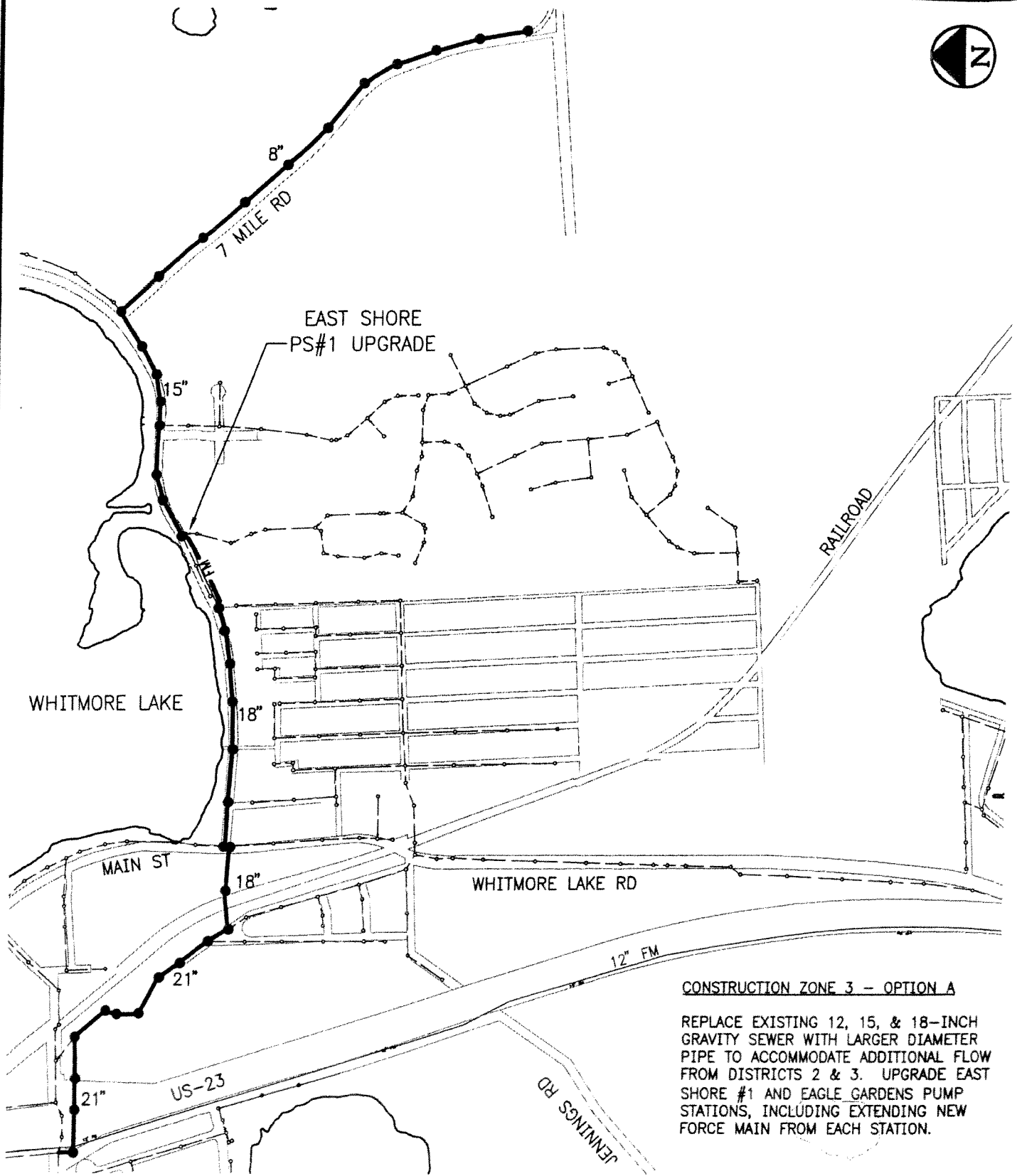
DATE 8/15/03

DESIGNED M/JM

CHECKED

NORTHFIELD TOWNSHIP

FIGURE 9
WHITMORE LAKE VICINITY
CONSTRUCTION ZONE 2



CONSTRUCTION ZONE 3 - OPTION A

REPLACE EXISTING 12, 15, & 18-INCH GRAVITY SEWER WITH LARGER DIAMETER PIPE TO ACCOMMODATE ADDITIONAL FLOW FROM DISTRICTS 2 & 3. UPGRADE EAST SHORE #1 AND EAGLE GARDENS PUMP STATIONS, INCLUDING EXTENDING NEW FORCE MAIN FROM EACH STATION.

LEGEND

EXISTING GRAVITY	
UPSIZED GRAVITY	
EXISTING FM	
EXISTING FM	



TETRA TECH MPS

SCALE: NONE

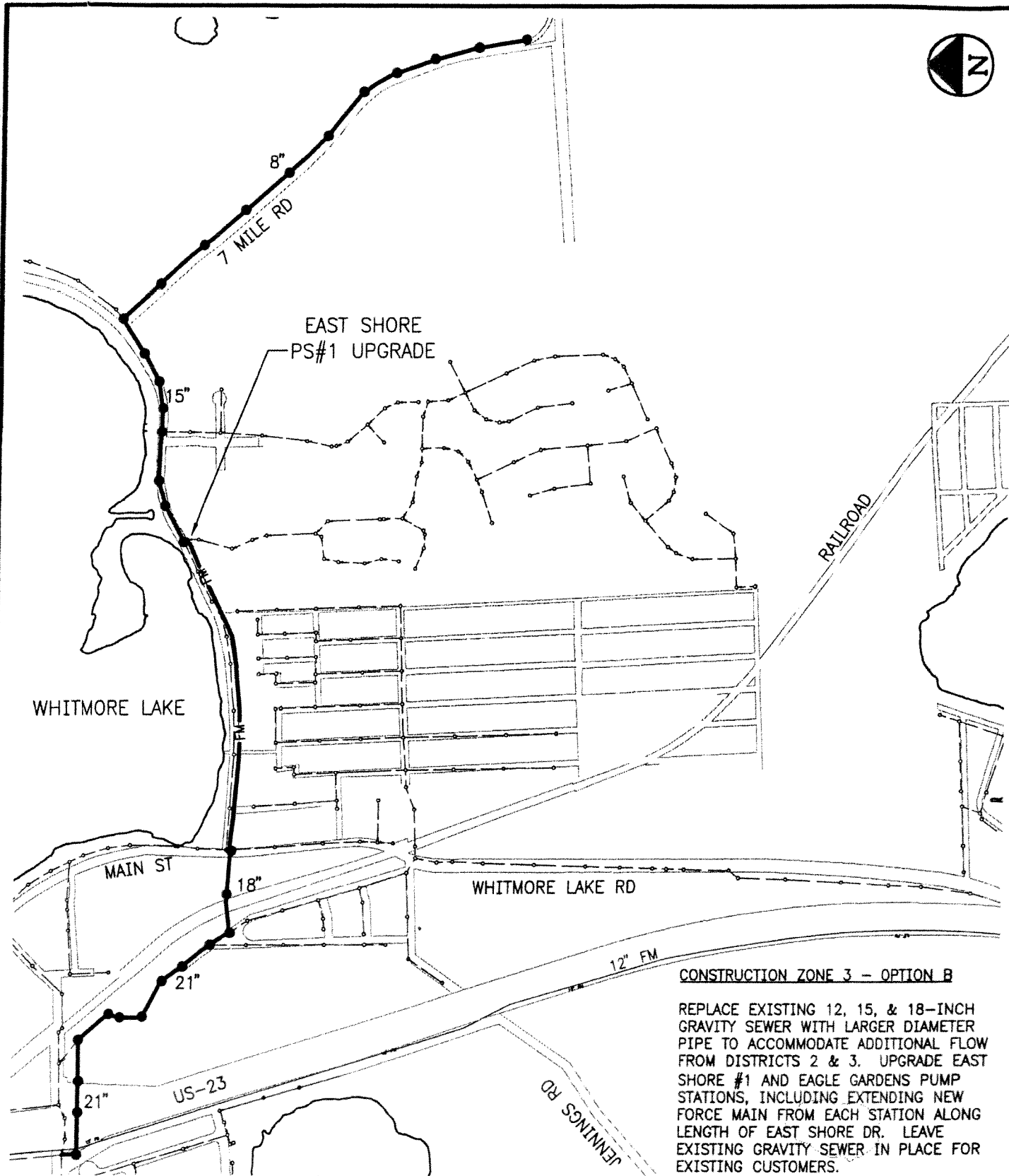
DATE 8/15/03

DESIGNED MJM

CHECKED

NORTHFIELD TOWNSHIP

FIGURE 10
WHITMORE LAKE VICINITY
CONSTRUCTION ZONE 3
OPTION A



CONSTRUCTION ZONE 3 - OPTION B

REPLACE EXISTING 12, 15, & 18-INCH GRAVITY SEWER WITH LARGER DIAMETER PIPE TO ACCOMMODATE ADDITIONAL FLOW FROM DISTRICTS 2 & 3. UPGRADE EAST SHORE #1 AND EAGLE GARDENS PUMP STATIONS, INCLUDING EXTENDING NEW FORCE MAIN FROM EACH STATION ALONG LENGTH OF EAST SHORE DR. LEAVE EXISTING GRAVITY SEWER IN PLACE FOR EXISTING CUSTOMERS.

LEGEND

EXISTING GRAVITY	
UPSIZED GRAVITY	
EXISTING FM	
EXISTING FM	

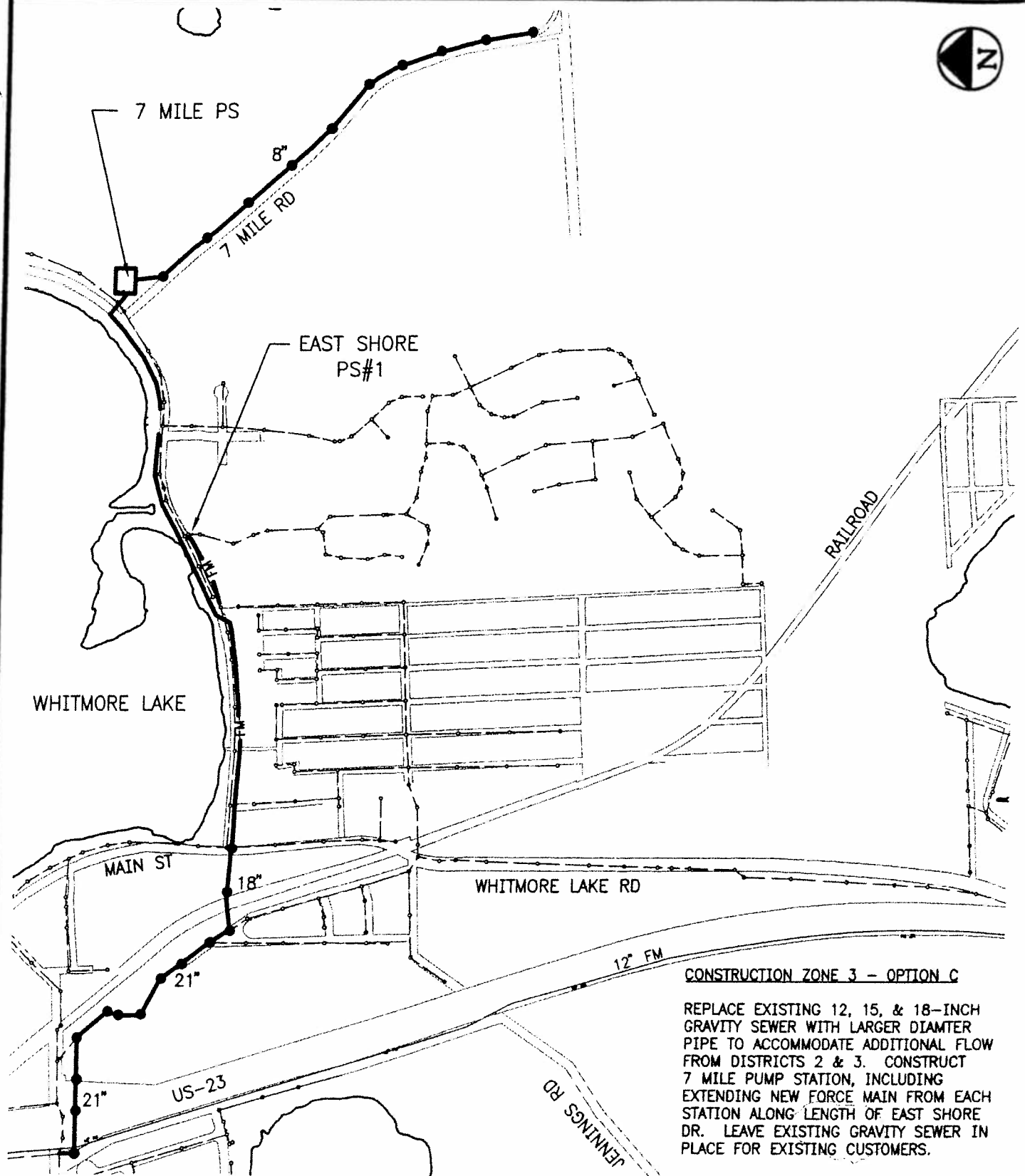


TETRA TECH MPS

SCALE: NONE	DATE 8/15/03
DESIGNED M/JM	CHECKED

NORTHFIELD TOWNSHIP

FIGURE 11
WHITMORE LAKE VICINITY
CONSTRUCTION ZONE 3
OPTION B



0:\01961367\01 Figures\Figure12.dwg

LEGEND

EXISTING GRAVITY	—○—
UPSIZED GRAVITY	—●—
EXISTING FM	—FM—
EXISTING FM	—FM—



TETRA TECH MPS

SCALE: NONE

DATE 8/15/03

DESIGNED M.J.M.

CHECKED

NORTHFIELD TOWNSHIP

FIGURE 12
WHITMORE LAKE VICINITY
CONSTRUCTION ZONE 3
OPTION C



HORSESHOE
LAKE

WHITMORE PS

US-23

8"




WHITMORE LAKE RD

PROPOSED WHITMORE
LAKE HIGH SCHOOL

CONSTRUCTION ZONE 4

EXTEND NEW 8-INCH GRAVITY SEWER
APPROXIMATELY 1,600-LF ALONG
WHITMORE LAKE ROAD TO THE PROPOSED
WHITMORE LAKE HIGH SCHOOL SITE.

LEGEND

EXISTING GRAVITY 
UPSIZED GRAVITY 
EXISTING FM  FM



TETRA TECH MPS

SCALE: NONE

DATE 8/15/03

DESIGNED M/JM

CHECKED

NORTHFIELD TOWNSHIP

FIGURE 13
WHITMORE LAKE VICINITY
CONSTRUCTION ZONE 4



WHITMORE LAKE RD

PROPOSED WHITMORE
LAKE HIGH SCHOOL

US-23

5 MILE RD

12"

NORTH TERRITORIAL
PUMP STATION

12"

POTENTIAL COMMERCIAL
DEVELOPMENT

PROPOSED GRAND SAKWA
DEVELOPMENT

12"

NORTH TERRITORIAL RD

US-23

CONSTRUCTION ZONE 5

EXTEND 12-INCH GRAVITY SEWER ALONG
WHITMORE LAKE ROAD TO ACCOMMODATE
FUTURE FLOW FROM DISTRICTS 8 & 9.

LEGEND

EXISTING GRAVITY ———○—————
UPSIZED GRAVITY ———●—————
EXISTING FM ———FM—————



TETRA TECH MPS

SCALE: NONE

DATE 8/15/03

DESIGNED M/JM

CHECKED

NORTHFIELD TOWNSHIP

FIGURE 14
WHITMORE LAKE VICINITY
CONSTRUCTION ZONE 5

North Terr.
SD



RE

US-23

FM

5 MILE RD



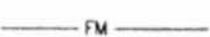
12' FM

NORTH TERRITORIAL
PUMP STATION

POTENTIAL COMMERCIAL
DEVELOPMENT

US-23

LEGEND

EXISTING GRAVITY 
UPSIZED GRAVITY 
EXISTING FM 



TETRA TECH MPS

SCALE: NONE

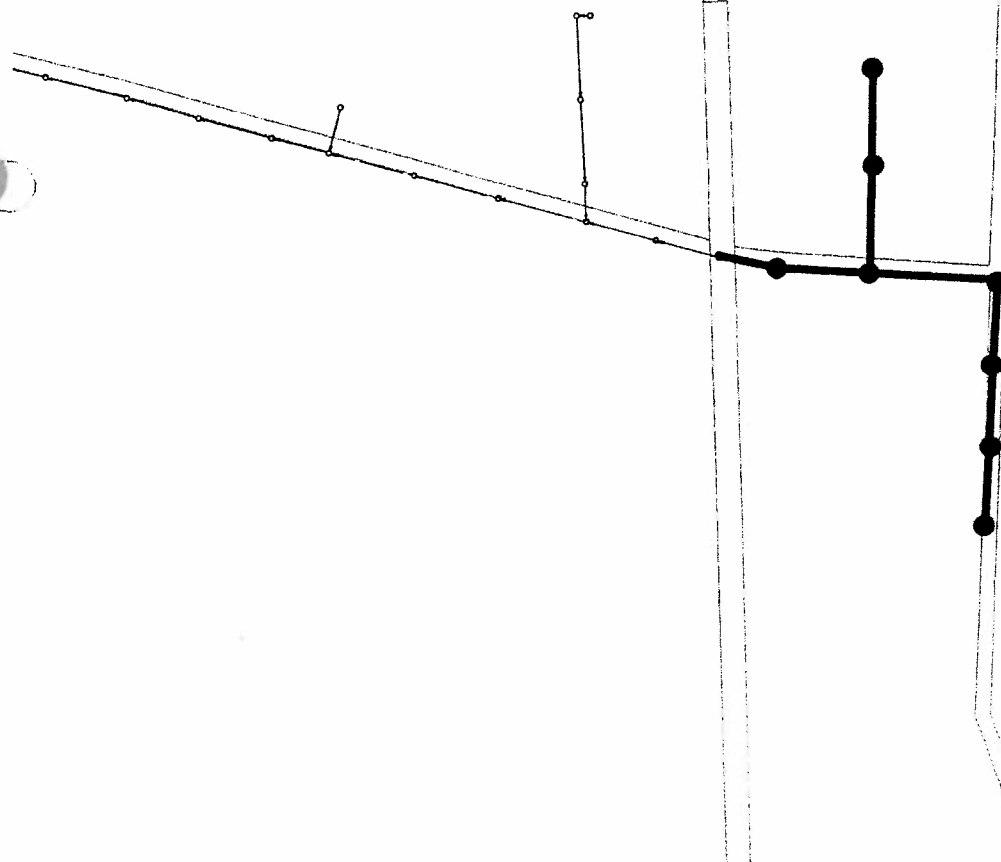
DATE 8/15/03

DESIGNED M/JM

CHECKED

NORTHFIELD TOWNSHIP

NT
FIGURE 15
WHITMORE LAKE VICINITY
CONSTRUCTION ZONE 6



LEGEND

TESTING GRAVITY ———○—————
UPSIZED GRAVITY ———●—————
EXISTING FM ——— FM ———



TETRA TECH MPS

SCALE: NONE

DATE 8/15/03

DESIGNED MJM

CHECKED

NORTHFIELD TOWNSHIP

NT. FIGURE 16
WHITMORE LAKE VICINITY
~~CONSTRUCTION~~ ZONE 7
SD1

NORTHFIELD TOWNSHIP

North Territorial Sanitary Sewer Improvements

CONTRACTS 0196.064-S-1, S-2, AND S-3

May 1998

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5 North Territorial Pipe Sizing	5
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7 Eight Mile Road Pumping Station Design Data	7
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Figures (located after text)

1	Service Area
2	Zoning
3	Estimated Flows

INTRODUCTION

GENERAL

The North Territorial Sanitary Sewer Improvements are located in Northfield Township, Washtenaw County, Michigan. Phase I of the project is designed to provide sanitary sewer service to existing and future developments along North Territorial Road from US-23 to Nollar Road. The development of this area has been hindered due to poor soil conditions and a high groundwater table. The project will include approximately 11,500 linear feet of gravity sewer, 21,000 linear feet of transmission main along US-23, a new pump station at North Territorial Road, and the reconstruction of the Eight Mile Road Station. Northfield Township will own, operate, and maintain the proposed system.

SERVICE AREA

Enclosed is a map (Figure 1) which delineates the proposed Phase 1 and Ultimate service areas. The Phase 1 service area consists of primarily vacant land along North Territorial Road from US-23 to Nollar Road. The majority of the land is zoned RTM (research), which supports development such as offices and light industrial facilities. The "Ultimate" service area was determined by the Township as a tool to facilitate the sizing of the interceptor sewers and pump stations being installed.

PROPOSED FACILITIES

The system will be a combination of gravity sewers, pump stations, and force mains. The area along North Territorial Road will be served by a gravity sewer on the south side of the road. The sewer will drain west from Nollar Road to a submersible pump station near Five Mile Road. A gravity sewer will also be extended west of US-23 to provide service for the MDOT rest area and the portion of the "Ultimate" service area which is west of US-23. The pump station will discharge through a 12-inch pressure main across US-23 and north along US-23 to Eight Mile Road. The force main will discharge to the Eight Mile Road pump station, which will be reconstructed to handle this additional flow. The new Eight Mile Road Pump Station will continue to discharge to the Northfield Township Wastewater Treatment Plant on Leman Road in Green Oak Township, Livingston County, Michigan. Table 1 shows proposed sizes and footage of the gravity sewers and force mains.

Table 1
Sizes of Gravity Sewers and Force Mains

Item	Size	Lineal Feet	TOTAL
Gravity Sewer	8"	2,050	
	12"	3,700	
	18"	5,750	11,500
Force Main	12"	21,000	21,000

EXISTING SEWER SYSTEM

The existing sanitary sewer system in Northfield Township is composed of gravity sewers and force mains discharging to the main pump station on Eight Mile Road and ultimately to the Northfield Wastewater Treatment Plant. The existing wastewater treatment plant uses primary settling tanks, a trickling filter, aeration tanks, final settling tank, and sand filters to treat wastewater. The Township is currently expanding the facility by adding an additional aeration tank, final settling tank, and sand filters. Future expansions plans include constructing an equalization basin, primary settling tank, final tank, sand filter, and a sludge storage tank. The pump station at Eight Mile Road will be reconstructed to accommodate the additional flow due to planned future developments in the service area.

BASIS OF DESIGN

The design capacities of the gravity sanitary sewer, force main, and pumping stations are based on the projected development of the service districts. The design assumptions for the development rate are listed below.

GRAVITY SEWER

The flows from gravity sewer are based on the predicted average flow, with a peaking factor to account for the diurnal fluctuations associated with sanitary flow.

Population (average household)	2.6
Per Capita Flow Rate	100 gal/day
Peaking Factor	Based on Ten States Standards

The commercial and industrial users were equated to residential users by Residential Equivalent Units (REUs). Each REU equates to 260 gallons per day based on the residential user flow. Table 2 shows the existing facilities and the number of REUs that they have been assigned for design purposes

Table 2
Existing Facilities

No.	Description	REUs
1-4	Single Family Homes	4
5	Duplex Home	2
6	Sunoco	2
7	Moehrle, Inc.	5
8	Carter Lumber	1
9	Ann Arbor Dog Training	1
10	Bloom Roofing System	1
11	Rhetec	31
12	MDOT Rest Area	22
	TOTAL	69

The projected wastewater flows are based on zoning and future anticipated land use. Table 3 lists zoning classifications, areas, and the existing and estimated flow associated with each zoning.

Table 3
Estimated Flows

Zoning	Avg.Flow/ Acre	Phase 1 Acres	Ultimate Acres	REUs /Acre	Phase 1 Flow	Ultimate Flow
R	520	0	1500	2	0	780,000
O	650	0	150	2.5	0	97,500
RTM	650	400	550	2.5	260,000	357,500
GI	650	70	70	2.5	45,500	45,500
GC	780	69	220	3	53,820	171,600
PSC	910	40	100	3.5	36,400	91,000
TOTAL		579	2,550		395,720	1,543,100

The zoning terms are defined as follows:

R	residential
O	office
RTM	research
GI	general industrial
GC	general commercial
PSC	planned shopping center

Figure 2 shows a map of the zoning within Phase 1 and the Ultimate service areas. Figure 3 shows the flow patterns and estimated size of the main in the Phase 1 service area.

Table 4 shows the subareas of the Ultimate service area and the projected flows contributing to the main; this table does not include the flow from the two new developments shown on Figure 3. The total ultimate peak flow to the North Territorial pump station is expected to be 4.73 MGD.

Table 4
Subareas and Expected Flows

Subarea	Zoning	Avg. Flow (gpd)	Projected Flow (MGD)
A	PSC/R	168,350	0.66
B	R	187,200	0.56
C	R/GI	334,100	1.01
D	RTM/R	187,200	0.61
E	GC/O/R	315,221	0.99
F	GC/R	75,267	0.32

Table 5 indicates the pipe sizes and expected flows for the sewer system on North Territorial Road. The pipe numbers correspond to the numbers on the map in Figure 3. The sewers are sized to carry the future ultimate flow as the service area is developed.

Table 5
North Territorial Pipe Sizing

Pipe Number	Pipe Size (inches)	Pipe Cap. (MGD)	Projected Peak Flow (MGD)
1	8	0.72	0.25
2	12	1.56	0.60
3 - 5	18	3.54	1.90
6	8	0.72	0.01
7	18	3.54	2.76
8	18	3.54	1.97
9	12	1.56	1.31
TOTAL			4.73

3300 gpm

SUBMERSIBLE PUMPING STATIONS

Eight Mile Road

The submersible station on Eight Mile Road will be designed to provide continuous flow to the WWTP by using variable speed pumps that will be controlled with sonic level transmitters. The pumps will be non-clog sewage pumps that will pass three-inch solids. The pumps will discharge flow from the wet

well through a plug valve (shutoff) and a check valve (to prevent backflow) to a common header pipe in the valve vault located in the electrical building.

The pumps will be explosion-proof, UL or FM approved. The pumping station will be provided with stainless steel lifting chains, slides, and guide rail systems for pump removal and maintenance. The pump station will have a divided wet well with sluice gates to allow isolation of either side of the station for maintenance.

The Eight Mile Road pump station will be provided with a permanent generator for use in case of a power outage. The generator will be equipped with an automatic transfer switch that will automatically transfer power from the control panel to the generator in the event of power failure. The Eight Mile Road pump station will also have a bypass line that will enable the operators to run the pump station with a portable pump in the event that either the pumps in the station are down or the control panel is not functioning. Table 6 shows existing and future REUs considered in the design of the Eight Mile pump station.

Table 6
Existing and Future Service at Eight Mile Station

Service Area	REUs
Existing Flow	2,730
Shadowood	44
Eagle Gardens	162
Wildwood	70
Winterhaven Condominiums	30
Westbrook Apartments	132
Future	400
TOTAL	3568

Table 7 provides a summary of design parameters for the Eight Mile Road pumping station.

Table 7
Eight Mile Road Pumping Station Design Data

Design REUs	4168
Design Hour(gpd/REU)	260
Peaking Factor	4*
Design Peak Hour Flow (gpm)	3300
Design Firm Pumping Capacity (gpm)	3300
Number of Pumps	4
Pump Control Method	Sonic Level Transmitter
Total Dynamic Head (feet)	100
Force Main Length (feet) and Size (inches)	6,000 12 & 8
Wet Well Dimensions (feet)	16.5 x 17
Wet Well Working Volume (gallons)	3345
Wet Well Storage Volume (gallons)	9186
Type of Telemetry	radio

* Value obtained from flow study.

North Territorial Road Pump Station

The submersible station at North Territorial Road will be designed as a triplex station to accommodate flow from future planned developments. Two pumps will be installed initially, with the third pump added once future flows are introduced to the sewer system.

The pump station at North Territorial Road will have submersible pumps. The pumps will be non-clog sewage pumps that will pass three-inch solids. The pumps will discharge flow from the wet well through a plug valve (shutoff) and a check valve (to prevent backflow) to a common header pipe in an underground valve vault. The submersible station at North Territorial Road will be equipped with a portable generator for use in the event of a power outage. The pumps will be explosion-proof, UL or FM approved. The pumping station will be provided with stainless steel lifting chains, slides, and guide rails systems for pump removal and maintenance.

Table 8 provides a summary of design parameters for the North Territorial Road Pumping Station.

Table 8
North Territorial Road Pumping Station Design Data

Design REUs	600
Design Hour (gpd/REU)	260
Peaking Factor	3
Design Peak Hour Flow (gpm)	700
Design Firm Pumping Capacity (gpm)	3300
Number of Pumps	3
Pump Control Method	Sonic Level Transmitter
Total Dynamic Head (feet)	80
Force Main Length (feet) and Size (inches)	23,000 ft., 12-inch
Wet Well Dimensions (feet)	10 x 12
Wet Well Working Volume (gallons)	4040
Wet Well Storage Volume (gallons)	7181
Type of Telemetry	radio

Telemetry

The Eight Mile Road pump station will be provided with a sonic level transmitter that will read the level of volume in the station. The transmitter will read levels and send the information via radio transmitter to monitoring equipment at the plant. The monitoring equipment at the plant will notify the operators to respond to the alarm. This communication equipment helps increase response time and prevent extended down-time of the pumping station.

The pump station at North Territorial Road will be equipped with a sonic level transmitter in the wet well. The sonic level transmitter will read levels and send the information via radio transmitter to monitoring equipment at the plant. The monitoring equipment at the plant will notify operators to respond to the alarm.

McNAMEE
PORTER
& SEELEY
INC.

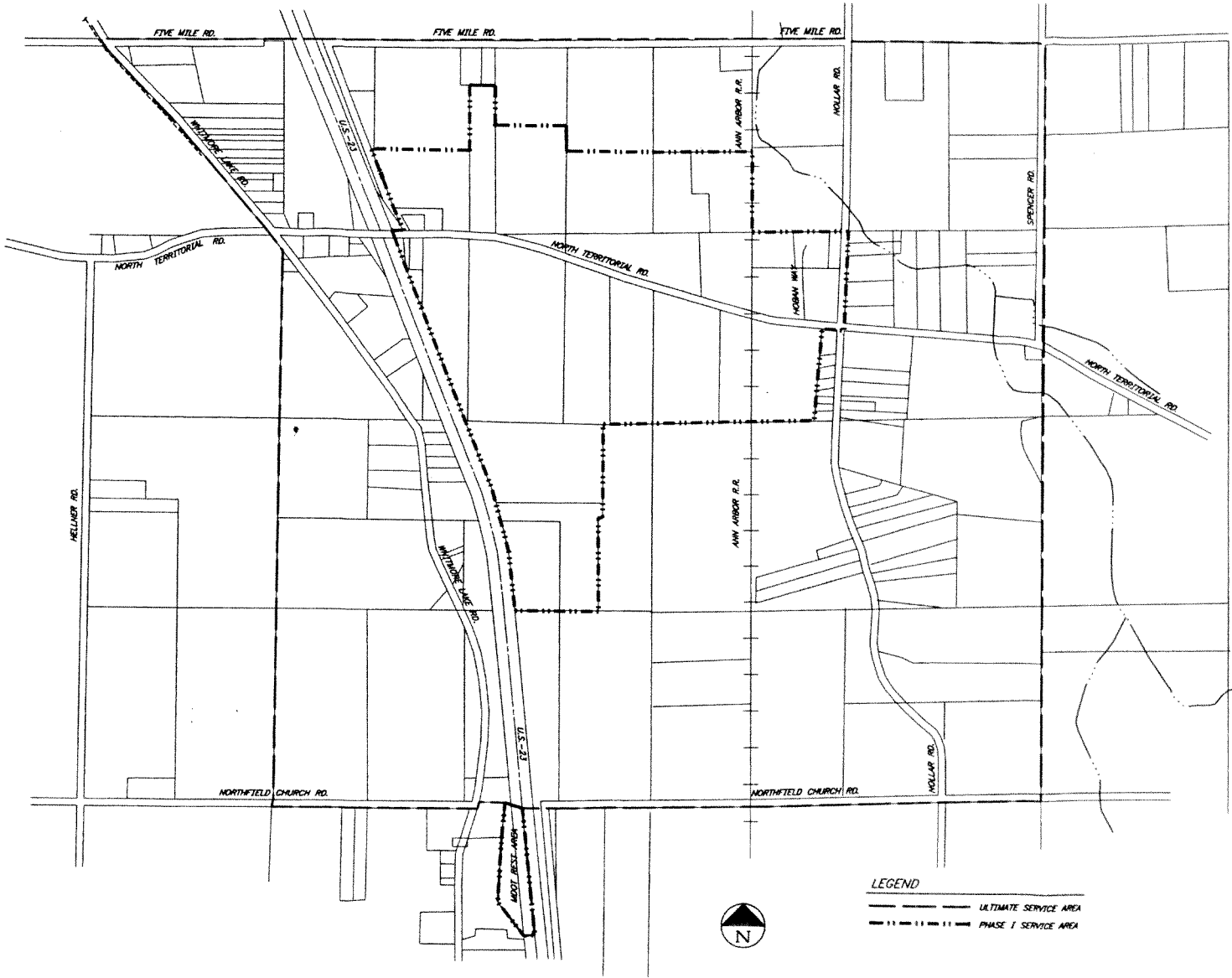


FIGURE
1

NORTHFIELD TOWNSHIP, WASHTENAW COUNTY
NORTH TERRITORIAL SANITARY SEWER
BASIS OF DESIGN
SERVICE AREA

McNAMEE
PORTER
& SEELEY
INC.



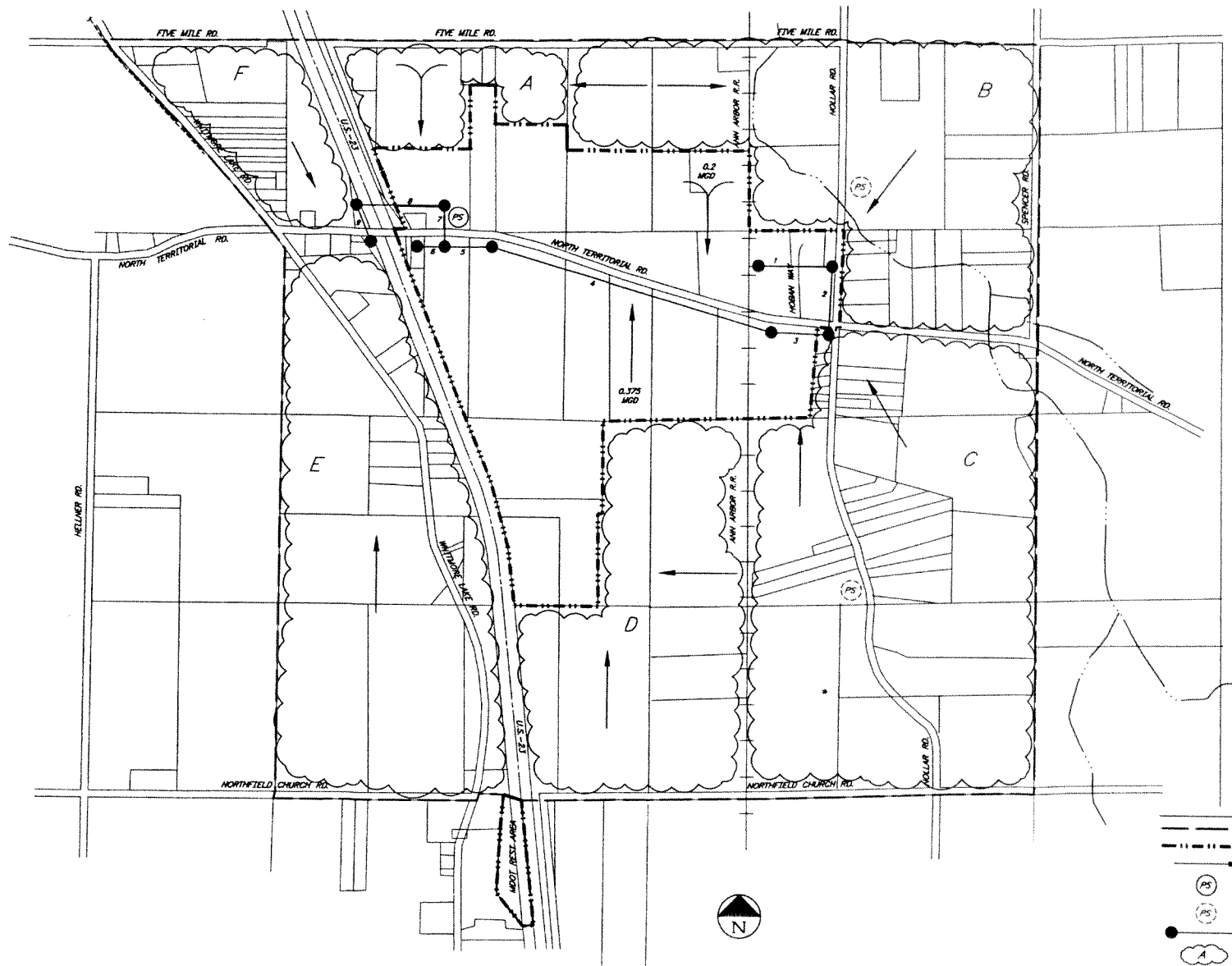
LEGEND

	ULTIMATE SERVICE AREA
	PHASE I SERVICE AREA
	RESIDENTIAL
	OFFICE
	GENERAL COMMERCIAL
	GENERAL INDUSTRIAL
	RESEARCH
	PLANNED SHOPPING CENTER

FIGURE

2

NORTHFIELD TOWNSHIP, WASHTENAW COUNTY
NORTH TERRITORIAL SANITARY SEWER
BASIS OF DESIGN
ZONING



LEGEND

- ULTIMATE SERVICE AREA
- - - PHASE I SERVICE AREA
- ANTICIPATED FLOW RATE
- (PS) PUMP STATION
- (-PS-) FUTURE PUMP STATION
- GRAVITY SEWER
- ☁ SUB-AREA
- 1 PIPE NUMBERS

McNAMEE
PORTER
& SEELEY
INC.



FIGURE 3 NORTHFIELD TOWNSHIP, WASHTENAW COUNTY
NORTH TERRITORIAL SANITARY SEWER
BASIS OF DESIGN
ESTIMATED FLOWS

Howard Fink

From: Rubel, Brian [Brian.Rubel@tetrattech.com]
Sent: Monday, October 27, 2014 4:50 PM
To: finkh@twp.northfield.mi.us
Subject: Updated Sewer Capacity Memo
Attachments: Sewer Capacity Summary Rev. A.pdf



TETRA TECH, INC.

INTEROFFICE MEMORANDUM

TO: Howard Fink, Northfield Township Manager
FROM: Brian Rubel
DATE: October 27, 2014
SUBJECT: Wastewater Capacity Summary

BACKGROUND

Northfield Township provides wastewater treatment services for portions of Northfield and Green Oak Township. This memo is prepared to summarize some key items related to wastewater treatment, in general, and sewer capacity in the southern part of the sewer system. The information within this memo comes from both past studies and more recent calculations of system capacity.

WASTEWATER TREATMENT CAPACITY

The Township owns and operates a tertiary (3-stage) wastewater treatment plant (abbreviated WWTP). The Township possesses a permit from the Michigan Department of Environmental Quality (MDEQ) to discharge wastewater to the Horseshoe Lake Drain. That permit allows the present plant to discharge 1.3 million gallons of wastewater per day (abbreviated mgd). The permit also provides provisions for Northfield to expand the WWTP up to 3.0 mgd should an expansion be desired.

Present flows average between 0.6 to 0.7 mgd. However, flows during the morning and evening arrive at a higher rate and during nighttime at a lower rate. During wet weather, the flows into the plant increase due to the infiltration of groundwater and the inflow of stormwater (abbreviated as I/I).

The difference between 0.7 mgd and the plant capacity of 1.3 mgd indicates the WWTP has capacity remaining during dry weather to serve new connections. Tetra Tech believes Northfield Township could add up to 1,900 residential equivalent user (abbreviated REUs with one REU being equivalent to one single family home) connections before the MDEQ would request the WWTP to be expanded. However, it is a legal and policy matter to determine how many of these 1,900 REUs may have been previously allocated to either Green Oak Township or the North Territorial SAD.

During large storms, WWTP Superintendent Hardesty reports that the incoming flows can exceed 3 mgd. Above a peak rate of 2 mgd, the WWTP staff must bypass some treatment processes due to capacity limitations. Bypass of treatment processes are not desired and create a risk that the permit limits may not be met. Thus, any significant new development will increase the flows during wet weather and make effective treatment more challenging.

It is subjective as to what a significant development may be. Wastewater from a few new homes would be immeasurable at the WWTP. It is my opinion that after about 100 new homes, an increase in flow would be noticeable and measurable at the WWTP and create additional operational challenges.

Northfield Township has long considered constructing a storage basin at the WWTP. The purpose of the storage basin would be to capture wet weather flows and return the water to the WWTP after the storm. Tetra Tech has records that show as early as 1988 a storage basin was discussed. However, a storage basin has never been constructed.

During development interest in 2005, the Township requested Tetra Tech to prepare a cost opinion for a plant expansion (to a capacity of 2.25 mgd) and construction of a storage basin. The opinion of cost for that improvement was \$12.7 million. Given the age of this opinion and changes to state law regarding the sizing of storage basins, the cost would be significantly larger today.

Due to the observed wet weather restrictions at the WWTP, Tetra Tech suggests that the Township again consider construction of a storage basin concurrent with significant development. A plant expansion would not be immediately needed to serve new development unless the research shows the available dry weather capacity has been reserved for Green Oak and special assessment districts.

NORTH TERRITORIAL SPECIAL ASSESSMENT DISTRICT

The existing North Territorial Special Assessment District (SAD) was constructed in year 2000 and consists of a collection sewer, pump station, and 12-inch diameter force main to Eight Mile Road. These facilities were sized to accommodate the approximately 1,500 REUs that were projected to be constructed within the SAD limits. Current connections are far below this number as little development within the SAD has occurred.

The pump station and force main were not sized for additional connections beyond the limits of the SAD. It was assumed that future growth would construct pump station improvements including parallel force main(s). An opinion of cost was prepared in 2003 that places a value of \$2.28 million on the next improvement. The cost will be larger in today's dollars.

Given the sparse density of development within the existing SAD, the existing North Territorial Pump Station and existing force main can accommodate growth until the number of REUs reaches 1,500. However, Tetra Tech suggests that significant new developments contribute funds toward constructing the pump station and force main improvements that will eventually be needed as well as the cost of the storage basin at the WWTP.

SUMMARY OF KEY THRESHOLDS

<u>Total REUs</u>	<u>Need</u>
100 or more additional (anywhere in Township)	Raise funds for WWTP storage
100 or more additional (North Territorial area)	Raise funds for new pump station and force main
1,500 or more total (North Territorial area)	Construct pump station and force main improvements
1,900 additional (anywhere in Township)*	Construct WWTP expansion

*assuming capacity has not been reserved for Green Oak Township or other users

There are negligible current connections to North Territorial Pump Station (fewer than 100) thus an additional number of REUs is approximately the same number as the total number of REUs. To illustrate the use of the table with just one example, if 1,500 REUs of development demand materializes tributary to the North Territorial

Pump Station and 400 REUs materialize elsewhere in the system, Northfield Township would need to initiate all of the items listed in the above table.

Howard Fink

From: Rubel, Brian [Brian.Rubel@tetrattech.com]
Sent: Monday, October 27, 2014 5:23 PM
To: finkh@twp.northfield.mi.us
Subject: Sewer Capacity Information
Attachments: NT Sewer Capacity Summary.PDF; NT Sewer Improvements 1998.pdf; NT Sewer Study 2003.pdf; NT Sewer letter from Tetrattech.PDF; Sewer Capacity Summary Rev. A.pdf

Howard;

Some documents regarding sewer and wastewater treatment capacity are attached.

Brian Rubel

Brian M. Rubel, PE | Vice President

Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570

brian.rubel@tetrattech.com

Tetra Tech | Water, Environment, Infrastructure

710 Avis Drive | Ann Arbor, MI 48108 | www.tetrattech.com

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Howard Fink

From: Howard Fink [finkh@twp.northfield.mi.us]
Sent: Monday, October 27, 2014 5:29 PM
To: Angela Westover; Burns, Paul; Howard Fink; Jackie Otto; Janet Chick; Kathy Braun; Kathy Braun; Marilyn; Marilyn Handloser-Engstrom; Marilyn Handloser-Engstrom; Tracy Thomas; Wayne Dockett
Subject: FW: Sewer Capacity Information
Attachments: NT Sewer Capacity Summary.PDF; NT Sewer Improvements 1998.pdf; NT Sewer Study 2003.pdf; NT Sewer letter from Tetrattech.PDF; Sewer Capacity Summary Rev. A.pdf

Hi Everyone,

Attached are all the relevant studies (that I am aware of) and a summary of Brian Rubel's analysis of sewer capacity issues. Please let me know if and when you wish to discuss this as a board.

Hope everyone is well. Please note that this information is considered public and will be sent to the planning commission members shortly.

Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [mailto:Brian.Rubel@tetrattech.com]
Sent: Monday, October 27, 2014 5:23 PM
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Brian Rubel

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Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
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Tetra Tech | Water, Environment, Infrastructure
710 Avis Drive | Ann Arbor, MI 48108 | www.tetrattech.com

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Howard Fink

From: jchick711@aol.com
Sent: Tuesday, October 28, 2014 9:21 AM
To: finkh@twp.northfield.mi.us; westovera@twp.northfield.mi.us; burns@peblaw.net; ottoj@twp.northfield.mi.us; kbraun@dmsax.com; kathysuebraun@gmail.com; hmarilyn@yahoo.com; engstromm@twp.northfield.mi.us; marilyn_engstrom@yahoo.com; tstplc12@gmail.com; dockettw@twp.northfield.mi.us
Subject: Re: Sewer Capacity Information

This would be good information for the PC to have as well. As a board we can have this discussion at an upcoming workshop so we are all aware of the implications for use and development for the future.

Janet

Janet M.Chick

-----Original Message-----

From: Howard Fink <finkh@twp.northfield.mi.us>
To: Angela Westover <westovera@twp.northfield.mi.us>; Burns, Paul <burns@peblaw.net>; Howard Fink <finkh@twp.northfield.mi.us>; Jackie Otto <ottoj@twp.northfield.mi.us>; Janet Chick <jchick711@aol.com>; Kathy Braun <kbraun@dmsax.com>; Kathy Braun <kathysuebraun@gmail.com>; Marilyn <hmarilyn@yahoo.com>; Marilyn Handloser-Engstrom <engstromm@twp.northfield.mi.us>; Marilyn Handloser-Engstrom <marilyn_engstrom@yahoo.com>; Tracy Thomas <tstplc12@gmail.com>; Wayne Dockett <dockettw@twp.northfield.mi.us>
Sent: Mon, Oct 27, 2014 5:29 pm
Subject: FW: Sewer Capacity Information

Hi Everyone,

Attached are all the relevant studies (that I am aware of) and a summary of Brian Rubel's analysis of sewer capacity issues. Please let me know if and when you wish to discuss this as a board. Hope everyone is well. Please note that this information is considered public and will be sent to the planning commission members shortly.

Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [<mailto:Brian.Rubel@tetrattech.com>]
Sent: Monday, October 27, 2014 5:23 PM
To: finkh@twp.northfield.mi.us
Subject: Sewer Capacity Information

Howard;

Some documents regarding sewer and wastewater treatment capacity are attached.

Brian Rubel

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

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Howard Fink

From: Jackie Otto [ottoj@twp.northfield.mi.us]
Sent: Tuesday, October 28, 2014 12:29 PM
To: jchick711@aol.com; Howard Fink; Angela Westover; burns@peblaw.net; kbraun@dmsax.com; kathysuebraun@gmail.com; hmarilyn@yahoo.com; Marilyn Engstrom; marilyn_engstrom@yahoo.com; tstplc12@gmail.com; Wayne Dockett
Subject: RE: Sewer Capacity Information

The Sewer Capacity has broader implications and impacts future township growth in both commercial and residential. While I agree it should be a topic for discussion at a workshop meeting, it would also be good to have this workshop meeting as a joint meeting with the PC - I recommend that it is scheduled sooner than later.
Thank you Howard for distributing the information.

Jacqueline R. Otto

Northfield Township Board of Trustees
Township Trustee

Cell: 734-268-2251

Email: ottoj@twp.northfield.mi.us

From: jchick711@aol.com [jchick711@aol.com]
Sent: Tuesday, October 28, 2014 9:21 AM
To: Howard Fink; Angela Westover; burns@peblaw.net; Jackie Otto; kbraun@dmsax.com; kathysuebraun@gmail.com; hmarilyn@yahoo.com; Marilyn Engstrom; marilyn_engstrom@yahoo.com; tstplc12@gmail.com; Wayne Dockett
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To: Angela Westover <westovera@twp.northfield.mi.us>; Burns, Paul <burns@peblaw.net>; Howard Fink <finkh@twp.northfield.mi.us>; Jackie Otto <ottoj@twp.northfield.mi.us>; Janet Chick <jchick711@aol.com>; Kathy Braun <kbraun@dmsax.com>; Kathy Braun <kathysuebraun@gmail.com>; Marilyn <hmarilyn@yahoo.com>; Marilyn Handloser-Engstrom <engstromm@twp.northfield.mi.us>; Marilyn Handloser-Engstrom <marilyn_engstrom@yahoo.com>; Tracy Thomas <tstplc12@gmail.com>; Wayne Dockett <dockettw@twp.northfield.mi.us>
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Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189

Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [<mailto:Brian.Rubel@tetrattech.com>]
Sent: Monday, October 27, 2014 5:23 PM
To: finkh@twp.northfield.mi.us
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Brian Rubel

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

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Howard Fink

From: Mark Stanalajczo [sterlingdentalgroup@gmail.com]
Sent: Tuesday, October 28, 2014 3:31 PM
To: Howard Fink
Subject: Re: Sewer Capacity Information

So in reading through these...there really doesn't need to be any additional capacity at the WWTP currently for the proposed Biltmore development. Or am I looking at this information wrong?

Thanks

Mark

On Tue, Oct 28, 2014 at 2:57 PM, Howard Fink <finkh@twp.northfield.mi.us> wrote:

FYI

Howard

Howard Fink

Northfield Township Manager


8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Howard Fink [mailto:finkh@twp.northfield.mi.us]
Sent: Monday, October 27, 2014 5:29 PM
To: Angela Westover; Burns, Paul; Howard Fink (finkh@twp.northfield.mi.us); Jackie Otto (ottoj@twp.northfield.mi.us); Janet Chick (jchick711@aol.com); Kathy Braun; Kathy Braun (kathysuebraun@gmail.com); Marilyn; Marilyn Handloser-Engstrom (engstromm@twp.northfield.mi.us); Marilyn Handloser-Engstrom (marilyn_engstrom@yahoo.com); Tracy Thomas (tstplc12@gmail.com); Wayne Dockett (dockettw@twp.northfield.mi.us)
Subject: FW: Sewer Capacity Information

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Howard

Howard Fink

Northfield Township Manager

8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [<mailto:Brian.Rubel@tetrattech.com>]
Sent: Monday, October 27, 2014 5:23 PM
To: finkh@twp.northfield.mi.us
Subject: Sewer Capacity Information



Howard;

Some documents regarding sewer and wastewater treatment capacity are attached.

Brian Rubel


Brian M. Rubel, PE | Vice President

Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570

brian.rubel@tetrattech.com

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Howard Fink

From: jchick711@aol.com
Sent: Sunday, November 02, 2014 1:28 PM
To: finkh@twp.northfield.mi.us; westovera@twp.northfield.mi.us; burns@peblaw.net; ottoj@twp.northfield.mi.us; kbrown@dmsax.com; kathysuebraun@gmail.com; hmarilyn@yahoo.com; engstromm@twp.northfield.mi.us; marilyn_engstrom@yahoo.com; tstplc12@gmail.com; dockettw@twp.northfield.mi.us
Subject: Re: Sewer

Any date is fine with me. I am sure this is already part of the plan ...Brian Rubel will be there to review the information and answer any questions? Possibly Tim Hardesty.

Janet

-----Original Message-----

From: Howard Fink <finkh@twp.northfield.mi.us>
To: Angela Westover <westovera@twp.northfield.mi.us>; Burns, Paul <burns@peblaw.net>; Howard Fink <finkh@twp.northfield.mi.us>; Jackie Otto <ottoj@twp.northfield.mi.us>; Janet Chick <jchick711@aol.com>; Kathy Braun <kbrown@dmsax.com>; Kathy Braun <kathysuebraun@gmail.com>; Marilyn <hmarilyn@yahoo.com>; Marilyn Handloser-Engstrom <engstromm@twp.northfield.mi.us>; Marilyn Handloser-Engstrom <marilyn_engstrom@yahoo.com>; Tracy Thomas <tstplc12@gmail.com>; Wayne Dockett <dockettw@twp.northfield.mi.us>
Sent: Fri, Oct 31, 2014 3:22 pm
Subject: Sewer

Hi Everyone,

A suggestion was made at the Board Meeting to hold a joint PC and BOT meeting on the sewer capacity issues. I would suggest either the 19th (which is the PC Meeting) or November 25 (which would be our next workshop). We could also do it on the 11th, with just a few items that would need to be voted on for BOT issues (Health Insurance being one). If we do it on the 11th, I will only have what is absolutely necessary to be voted on at that meeting to preserve time.

Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

Howard Fink

From: Rubel, Brian [Brian.Rubel@tetrattech.com]
Sent: Monday, November 03, 2014 7:50 AM
To: finkh@twp.northfield.mi.us
Subject: Status Report
Attachments: October 2014 Northfield As-needed Sewer project-status-aa.doc; October 2014 Northfield Stormwater project-status-aa.doc

Howard;

Status report son stormwater and the as-needed sewer are attached. I think you and I should review some items on stormwater if you are free sometime the next few weeks.

Brian

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

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TETRA TECH, INC.

710 Avis Drive, Ann Arbor, MI 48108
Telephone: 734.665.6000
Fax: 734.665.2570

PROJECT STATUS COMMUNICATION

DATE: November 2, 2014

PREPARED BY: Brian Rubel

PROJECT: Northfield As-Needed Sewer

Tt PROJECT NO: 200-12748-15001 CONTACT: Mr. Howard Fink

Task completed or in-progress since last status communication.

Conducted brief capacity assessment
Held three phone conferences
Met with developer
Prepared summary memo

Opportunities for cost avoidance or added value.

Tetra Tech has spent over 40 additional hours that were not invoiced

Impediments, roadblocks, assistance needed.

None

Change (or potential change) of scope items or customer concession. (Details on attached Request to Change Authorization)

None

Schedule:

Tetra Tech believes we have completed all services requested and the original budget has been exhausted. We will attend an evening meeting and not charge for our attendance.

Next task or action items.

See schedule

Please do not hesitate to contact any member of your Team at any time.

Brian M. Rubel
Project Manager

Phone: 734.213.4081 Email: Brian.rubel@tetrattech.com



TETRA TECH, INC.

710 Avis Drive, Ann Arbor, MI 48108
Telephone: 734.665.6000
Fax: 734.665.2570



PROJECT STATUS COMMUNICATION

DATE: November 2, 2014

PREPARED BY: Brian Rubel

PROJECT: Northfield Stormwater Permitting

Tt PROJECT NO: 200-12748-12003 CONTACT: Mr. Howard Fink

Task completed or in-progress since last status communication.

Sent Township ideas for 2014 mailer and 2013/2014 training
Responded to MDEQ regarding comments on the Township's 2013 application
Solicited ideas and pricing from HRWC regarding using their assistance in public education

Opportunities for cost avoidance or added value.

Ran copies of native plant brochure and transmitted to the Township (for use at Whitmore Lake Board Meeting) at no charge.

Tetra Tech was authorized to spend \$7,400 in 2012 for stormwater. Tetra Tech actually spent \$1,400 in 2012 due to both Tetra Tech efficiencies and the Township self-performing many tasks. Tetra Tech spent about \$2,500 in 2013 and \$1,300 in 2014.

Impediments, roadblocks, assistance needed.

The new permit will require the Township to be rigorous with public education and employee training.

Our call to the HRWC revealed that they will assist in developing public education content but not the mailing.

Change (or potential change) of scope items or customer concession. (Details on attached Request to Change Authorization)

None

Schedule:

The Township should include the updated management plan on its website but may wish to wait for MDEQ approval before doing this.
The Township should also complete the staff training. This was due by 12/31/13. A record of attendance should be kept.
The Township should plan for its 2014 public education mailer and 2014 training.

Next task or action items.

See schedule



TETRA TECH, INC.

710 Avis Drive, Ann Arbor, MI 48108
Telephone: 734.665.6000
Fax: 734.665.2570

Please do not hesitate to contact any member of your Team at any time.

Brian M. Rubel
Project Manager

Phone: 734.213.4081

Email: Brian.rubel@tetrattech.com

Howard Fink

From: Howard Fink [finkh@twp.northfield.mi.us]
Sent: Thursday, November 06, 2014 3:11 PM
To: Angela Westover; Burns, Paul; Howard Fink; Jackie Otto; Janet Chick; Kathy Braun; Kathy Braun; Marilyn; Marilyn Handloser-Engstrom; Marilyn Handloser-Engstrom; Tracy Thomas; Wayne Dockett
Subject: Agenda

Hi Everyone,

Packets will be ready shortly. We are still in the process of trying to figure out an alternative Health Insurance Option and will have that by Tuesday, but the details won't be available by 5:00 pm today. I will email everyone as soon as I have some numbers and a recommendation to present. There will be a tax tribunal case on the agenda as well (not closed session). Tami and I will be providing a update on meals and wheels during our reports. Other than that, the meeting will be dedicated to the sewer capacity issues.

David Stollman (owner of Biltmore) has confirmed that he will be at the meeting. Brian Rubel will also be there and will be giving a short presentation to begin the discussion.

Thanks,
Howard

Howard Fink
Northfield Township Manager
3350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

Howard Fink

From: Howard Fink [finkh@twp.northfield.mi.us]
Sent: Thursday, November 06, 2014 3:38 PM
To: Howard Fink; Angela Westover; Burns, Paul; Jackie Otto; Janet Chick; Kathy Braun; Kathy Braun; Marilyn; Marilyn Engstrom; Marilyn Handloser-Engstrom; Tracy Thomas; Wayne Dockett
Subject: RE: Agenda

Hi Again,
The Meeting will be a joint meeting with the Planning Commission.
Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Howard Fink [mailto:finkh@twp.northfield.mi.us]
Sent: Thursday, November 06, 2014 3:11 PM
To: Angela Westover; Burns, Paul; Howard Fink (finkh@twp.northfield.mi.us); Jackie Otto (ottoj@twp.northfield.mi.us); Janet Chick (jchick711@aol.com); Kathy Braun; Kathy Braun (kathysuebraun@gmail.com); Marilyn; Marilyn Handloser-Engstrom (engstromm@twp.northfield.mi.us); Marilyn Handloser-Engstrom (marilyn_engstrom@yahoo.com); Tracy Thomas (tstplc12@gmail.com); Wayne Dockett (dockettw@twp.northfield.mi.us)
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Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

Howard Fink

From: jchick711@aol.com
Sent: Thursday, November 06, 2014 4:35 PM
To: finkh@twp.northfield.mi.us
Subject: Re: Agenda

Which side do I sit on :) LOL

Janet M.Chick

-----Original Message-----

From: Howard Fink <finkh@twp.northfield.mi.us>
To: 'Howard Fink' <finkh@twp.northfield.mi.us>; Angela Westover <westovera@twp.northfield.mi.us>; Burns, Paul <burns@peblaw.net>; Jackie Otto <ottoj@twp.northfield.mi.us>; Janet Chick <jchick711@aol.com>; Kathy Braun <kbraun@dmsax.com>; Kathy Braun <kathysuebraun@gmail.com>; Marilyn <hmarilyn@yahoo.com>; Marilyn Handloser-Engstrom <engstromm@twp.northfield.mi.us>; Marilyn Handloser-Engstrom <marilyn_engstrom@yahoo.com>; Tracy Thomas <tstplc12@gmail.com>; Wayne Dockett <dockettw@twp.northfield.mi.us>
Sent: Thu, Nov 6, 2014 3:37 pm
Subject: RE: Agenda

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8350 Main St., Ste. A
Whitmore Lake, MI 48189
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Northfield Township Manager

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Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

Howard Fink

From: jchick711@aol.com
Sent: Friday, November 07, 2014 11:05 AM
To: finkh@twp.northfield.mi.us; jackiotto@yahoo.com; tstplc12@gmail.com
Subject: Re: Agenda

Hi Howard,

Spoke with Jacki and Tracy this morning. There is concern that having Stollman at the joint meeting next week might not be beneficial to the sewer discussion at this time. What we .. at least the three of us thought, is that this discussion was about our sewer system in regard to current and/or future capacity, and what the direction for the future should be for the township in general and not specific to any currently proposed development.

We are not sure we should make decisions or having discussions about our sewers based on a single proposal at this time. We should talk about what we want where first. Then a subsequent discussion could be had when we are looking solely at a development.

Your thoughts? Should we put it out to the rest of the board to decide if having him there is necessary or even a good idea for the purpose of this initial discussion?

Correct me if I am wrong please.

Janet

-----Original Message-----

From: Howard Fink <finkh@twp.northfield.mi.us>
To: 'Howard Fink' <finkh@twp.northfield.mi.us>; Angela Westover <westovera@twp.northfield.mi.us>; Burns, Paul <burns@peblaw.net>; Jackie Otto <ottoj@twp.northfield.mi.us>; Janet Chick <jchick711@aol.com>; Kathy Braun <kbrown@dmsax.com>; Kathy Braun <kathysuebraun@gmail.com>; Marilyn <hmarilyn@yahoo.com>; Marilyn Handloser-Engstrom <engstromm@twp.northfield.mi.us>; Marilyn Handloser-Engstrom <marilyn_engstrom@yahoo.com>; Tracy Thomas <tstplc12@gmail.com>; Wayne Dockett <dockettw@twp.northfield.mi.us>
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8350 Main St., Ste. A
Whitmore Lake, MI 48189
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To: Angela Westover; Burns, Paul; Howard Fink (finkh@twp.northfield.mi.us); Jackie Otto (ottoj@twp.northfield.mi.us); Janet Chick (jchick711@aol.com); Kathy Braun; Kathy Braun (kathysuebraun@gmail.com); Marilyn; Marilyn Handloser-Engstrom (engstromm@twp.northfield.mi.us); Marilyn Handloser-Engstrom (marilyn_engstrom@yahoo.com); Tracy Thomas (tstplc12@gmail.com); Wayne Dockett (dockettw@twp.northfield.mi.us)
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Thanks,
Howard

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Northfield Township Manager
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Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

Howard Fink

From: Howard Fink [finkh@twp.northfield.mi.us]
Sent: Tuesday, September 09, 2014 12:08 PM
To: 'Rubel, Brian'
Subject: RE: Sewer Capacity Assessment

Agreed. What is the necessary fee?
Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [<mailto:Brian.Rubel@tetrattech.com>]
Sent: Tuesday, September 09, 2014 11:06 AM
To: tdhardesty@att.net; finkh@twp.northfield.mi.us
Subject: Sewer Capacity Assessment

Tim/Howard;

I am writing regarding the Sewer Capacity Assessment that may be required as part of any future development. I strongly recommend that Tetra Tech's services be contracted through Northfield Township from an escrow deposit made from the developers. There are numerous reasons this is advantageous to both Tetra Tech and Northfield Township including the clarity that Tetra Tech is working on behalf of the best interests of Northfield Township.

I am happy to meet with developers to gather technical information but do not wish to meet with them to define the scope. The scope should be agreed to between Tetra Tech and Northfield Township.

I understand that Doug Lewan has been instructed to tell a developer to work with Tetra Tech. I am happy to meet with them to review the scope that Tim and I developed (I think Tim should attend that meeting). From that point, I would like to suggest that the Township and developer work on developing an escrow amount for the necessary fee.

Brian R.

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

Tetra Tech | Engineering Consulting Services
710 Avis Drive | Ann Arbor, MI 48108 | www.tetrattech.com

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Howard Fink

From: Howard Fink [finkh@twp.northfield.mi.us]
Sent: Wednesday, September 10, 2014 9:17 AM
To: 'Rubel, Brian'
Subject: RE: Sewer Capacity Assessment

Ok.

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [mailto:Brian.Rubel@tetrattech.com]
Sent: Wednesday, September 10, 2014 7:04 AM
To: finkh@twp.northfield.mi.us; tdhardesty@att.net
Subject: Sewer Capacity Assessment

Howard/Tim;

As the evening progressed, I became increasingly uncomfortable with the idea of the next discussion being with the developer.

I strongly believe the Township (the three of us) need to first develop a scope and fee we want for the study and then present it to the developer. Until that time, we are wasting our time meeting with the developer.

Brian

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

Tetra Tech | Engineering Consulting Services
710 Avis Drive | Ann Arbor, MI 48108 | www.tetrattech.com

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Howard Fink

From: Howard Fink [finkh@twp.northfield.mi.us]
Sent: Wednesday, September 10, 2014 9:58 AM
To: 'Rubel, Brian'
Subject: RE: Sewer Capacity Assessment

That is fine.

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [mailto:Brian.Rubel@tetrattech.com]
Sent: Wednesday, September 10, 2014 9:32 AM
To: Howard Fink
Subject: RE: Sewer Capacity Assessment

I can talk this afternoon or most times early next week. It may be best that I come to your place.

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

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From: Howard Fink [mailto:finkh@twp.northfield.mi.us]
Sent: Wednesday, September 10, 2014 9:17 AM
To: Rubel, Brian
Subject: RE: Sewer Capacity Assessment

Ok.

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [mailto:Brian.Rubel@tetrattech.com]
Sent: Wednesday, September 10, 2014 7:04 AM
To: finkh@twp.northfield.mi.us; tdhardesty@att.net
Subject: Sewer Capacity Assessment

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Howard Fink

From: Howard Fink [finkh@twp.northfield.mi.us]
Sent: Tuesday, September 30, 2014 2:47 PM
To: 'Rubel, Brian'
Subject: RE: NORTHFIELD TOWNSHIP SEWER SYSTEM CAPACITY SUMMARY Version 2

Brian,
Are you available now to chat. If so I want to get Tim in here.
Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [<mailto:Brian.Rubel@tetrattech.com>]
Sent: Tuesday, September 30, 2014 11:18 AM
To: finkh@twp.northfield.mi.us
Subject: NORTHFIELD TOWNSHIP SEWER SYSTEM CAPACITY SUMMARY Version 2

Howard Fink

From: Howard Fink [finkh@twp.northfield.mi.us]
Sent: Tuesday, September 30, 2014 4:20 PM
To: 'David J Stollman'
Subject: FW: Northfield As-Needed
Attachments: Northfield As-Needed.pdf

Hi David,

FYI – Please let me know how you want to proceed. The money should be deposited with the Township and then Tetra Tech can bill us accordingly.

Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [<mailto:Brian.Rubel@tetrattech.com>]
Sent: Friday, September 26, 2014 3:00 PM
To: finkh@twp.northfield.mi.us
Subject: FW: Northfield As-Needed

Howard;

The proposal that we discussed this morning and the developer will pick up the tab.

Brian

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

Tetra Tech | Engineering Consulting Services
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From: Chappell, Ann
Sent: Friday, September 26, 2014 2:50 PM
To: Rubel, Brian
Subject: Northfield As-Needed



TETRA TECH

September 26, 2014

Mr. Howard Fink
Northfield Township Manager
8350 Main Street
Whitmore Lake, MI 48189

Re: As-needed Engineering Service

Dear Mr. Fink;

Tetra Tech has appreciated the opportunity to be of service to Northfield Township since 1961. Tetra Tech and Northfield Township have together designed and overseen the construction of many important parts of the Township's infrastructure.

Tetra Tech has and continues to spend many hours each month serving the Township with small services primarily relating to answering questions on available sewer capacity and wastewater treatment operation. For the last few years, these services have been supplied without charging a fee.

In recent months, development interest has increased and meetings and discussions regarding sewer service are regularly occurring. Tetra Tech continues to support the Township's interests in these discussions. We believe the property owners requesting these services should reimburse the Township for the engineering costs. We have prepared this proposal to address Tetra Tech's services.

We propose the following scope of services.

SCOPE

Provide as-needed consultation to Northfield Township only upon the request of Township Manager Fink or WWTP Superintendent Hardesty. This work is intended to cover Tetra Tech's costs for meeting attendance, research and calculations.

COMPENSATION

We suggest a budget of \$2,000 be established. This budget will not be exceeded without your prior written communication. We will invoice for our services on a time and material basis. Tetra Tech will provide a written monthly report outlining each hour invoiced.

EXECUTION

If you agree with this scope of services, please sign in the space below indicating your acceptance.

Tetra Tech
710 Avis Drive, Ann Arbor, MI 48108
Tel 734.665.6000 Fax 734.665.2570 www.tetrattech.com



TETRA TECH

We appreciate your consideration of this request and appreciate this opportunity to continue our long history of service to Northfield Township.

Sincerely;

Brian M. Rubel, P.E.
Vice President

PROPOSAL ACCEPTED BY _____

TITLE _____ **DATE** _____



Tetra Tech of Michigan, PC

Engineering Services Standard Terms & Conditions

Services Consultant will perform services for the Project as set forth in the provisions for Scope of Work/Fee/Schedule in the proposal and in accordance with these Terms & Conditions. Consultant has developed the Project scope of service, schedule, and compensation based on available information and various assumptions. The Client acknowledges that adjustments to the schedule and compensation may be necessary based on the actual circumstances encountered by Consultant in performing their services. Consultant is authorized to proceed with services upon receipt of an executed Agreement.

Compensation In consideration of the services performed by Consultant, the Client shall pay Consultant in the manner set forth above. The parties acknowledge that terms of compensation are based on an orderly and continuous progress of the Project. Compensation shall be equitably adjusted for delays or extensions of time beyond the control of Consultant. Where total project compensation has been separately identified for various tasks, Consultant may adjust the amounts allocated between tasks as the work progresses so long as the total compensation amount for the project is not exceeded.

Fee Definitions The following fee types shall apply to methods of payment:

- **Salary Cost** is defined as the individual's base salary plus customary and statutory benefits. Statutory benefits shall be as prescribed by law and customary benefits shall be as established by Consultant employment policy.
- **Cost Plus** is defined as the individual's base salary plus actual overhead plus professional fee. Overhead shall include customary and statutory benefits, administrative expense, and non-project operating costs.
- **Lump Sum** is defined as a fixed price amount for the scope of services described.
- **Standard Rates** is defined as individual time multiplied by standard billing rates for that individual.
- **Subcontracted Services** are defined as Project-related services provided by other parties to Consultant.
- **Reimbursable Expenses** are defined as actual expenses incurred in connection with the Project.

Payment Terms Consultant shall submit invoices at least once per month for services performed and Client shall pay the full invoice amount within 30 days of the invoice date. Invoices will be considered correct if not questioned in writing within 10 days of the invoice date. Client payment to Consultant is not contingent on arrangement of project financing or receipt of funds from a third party. In the event the Client disputes the invoice or any portion thereof, the undisputed portion shall be paid to Consultant based on terms of this Agreement. Invoices not in dispute and unpaid after 30 days shall accrue interest at the rate of one and one-half percent per month (or the maximum percentage allowed by law, whichever is the lesser). Invoice payment delayed beyond 60 days shall give Consultant the right to stop work until payments are current. Non-payment beyond 70 days shall be just cause for termination by Consultant.

Additional Services The Client and Consultant acknowledge that additional services may be necessary for the Project to address issues that may not be known at Project initiation or that may be required to address circumstances that were not foreseen. In that event, Consultant notify the Client of the need for additional services and the Client shall pay for such additional services in an amount and manner as the parties may subsequently agree.

Site Access The Client shall obtain all necessary approvals for Consultant to access the Project site(s).

Underground Facilities Consultant and/or its authorized subcontractor will conduct research and perform site reconnaissance in an effort to discover the location of existing underground facilities prior to developing boring plans, conducting borings, or undertaking invasive subsurface investigations. Client recognizes that accurate drawings or knowledge of the location of such facilities may not exist, or that research may reveal as-built drawings or other documents that may inaccurately show, or not show, the location of existing underground facilities. In such events, except for the sole negligence, willful misconduct, or practice not conforming to the Standard of Care cited in this Agreement, Client agrees to indemnify and hold Consultant and/or its Subcontractor harmless from any and all property damage, injury, or economic loss arising or allegedly arising from borings or other subsurface penetrations.

Regulated Wastes Client is responsible for the disposal of all regulated wastes generated as a result of services provided under this Agreement. Consultant and Client

mutually agree that Consultant assumes no responsibility for the waste or disposal thereof.

Contractor Selection Consultant may make recommendations concerning award of construction contracts and products. The Client acknowledges that the final selection of construction contractors and products is the Client's sole responsibility.

Ownership of Documents Drawings, specifications, reports, programs, manuals, or other documents, including all documents on electronic media, prepared under this Agreement are instruments of service and are, and shall remain, the property of Consultant. Record documents of service shall be based on the printed copy. Consultant will retain all common law, statutory, and other reserved rights, including the copyright thereto. Consultant will furnish documents electronically; however, the Client releases Consultant from any liability that may result from documents used in this form. Consultant shall not be held liable for reuse of documents or modifications thereof by the Client or its representatives for any purpose other than the original intent of this Agreement, without written authorization of and appropriate compensation to Consultant.

Standard of Care Services provided by Consultant under this Agreement will be performed in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances. Consultant makes no warranty or guaranty, either express or implied. Consultant will not be liable for the cost of any omission that adds value to the Project.

Period of Service Consultant shall perform the services for the Project in a timely manner consistent with sound professional practice. Consultant will strive to perform its services according to the Project schedule set forth in the provisions for Scope of Work/Fee/Schedule above. The services of each task shall be considered complete when deliverables for the task have been presented to the Client. Consultant shall be entitled to an extension of time and compensation adjustment for any delay beyond Consultant control.

Insurance and Liability Consultant shall maintain the following insurance and coverage limits during the period of service. The Client will be named as an additional insured on the Commercial General Liability and Automobile Liability insurance policies.

Worker's Compensation – as required by applicable state statute

Commercial General Liability - \$1,000,000 per occurrence for bodily injury, including death and property damage, and \$2,000,000 in the aggregate

Automobile Liability –\$1,000,000 combined single limit for bodily injury and property damage

Professional Liability (E&O) - \$1,000,000 each claim and in the aggregate

The Client shall make arrangements for Builder's Risk, Protective Liability, Pollution Prevention, and other specific insurance coverage warranted for the Project in amounts appropriate to the Project value and risks. Consultant shall be a named insured on those policies where Consultant may be at risk. The Client shall obtain the counsel of others in setting insurance limits for construction contracts.

Indemnification Consultant shall indemnify and hold harmless the Client and its employees from any liability, settlements, loss, or costs (including reasonable attorneys' fees and costs of defense) to the extent caused solely by the negligent act, error, or omission of Consultant in the performance of services under this Agreement. If such damage results in part by the negligence of another party, Consultant shall be liable only to the extent of Consultant's proportional negligence.

Dispute Resolution The Client and Consultant agree that they shall diligently pursue resolution of all disagreements within 45 days of either party's written notice using a mutually acceptable form of mediated dispute resolution prior to exercising their rights under law. Consultant shall continue to perform services for the Project and the Client shall pay for such services during the dispute resolution process unless the Client issues a written notice to suspend work.

Suspension of Work The Client may suspend services performed by Consultant with cause upon fourteen (14) days written notice. Consultant shall submit an invoice for services performed up to the effective date of the work suspension and the Client shall pay Consultant all outstanding invoices within fourteen (14) days. If the work suspension exceeds thirty (30) days from the effective work suspension date, Consultant shall be entitled to renegotiate the Project schedule and the compensation terms for the Project.

Termination The Client or Consultant may terminate services on the Project upon seven (7) days written notice without cause or in the event of substantial failure by the other party to fulfill its obligations of the terms hereunder. Consultant shall submit an invoice for services performed up to the effective date of termination and the Client shall pay Consultant all outstanding invoices within fourteen (14) days. The Client may withhold an amount for services that may be in dispute provided that the Client furnishes a written notice of the basis for their dispute and that the amount withheld represents a reasonable value.

Authorized Representative The Project Manager assigned to the Project by Consultant is authorized to make decisions or commitments related to the project on behalf of Consultant. Only authorized representatives of Consultant are authorized to execute contracts and/or work orders on behalf of Consultant. The Client shall designate a representative with similar authority.

Project Requirements The Client shall confirm the objectives, requirements, constraints, and criteria for the Project at its inception. If the Client has established design standards, they shall be furnished to Consultant at Project inception. Consultant will review the Client design standards and may recommend alternate standards considering the standard of care provision.

Independent Consultant Consultant is and shall be at all times during the term of this Agreement an independent consultant and not an employee or agent of the Client. Consultant shall retain control over the means and methods used in performing Consultant's services and may retain subconsultants to perform certain services as determined by Consultant.

Compliance with Laws Consultant shall perform its services consistent with sound professional practice and endeavor to incorporate laws, regulations, codes, and standards applicable at the time the work is performed. In the event that standards of practice change during the Project, Consultant shall be entitled to additional compensation where additional services are needed to conform to the standard of practice.

Permits and Approvals Consultant will assist the Client in preparing applications and supporting documents for the Client to secure permits and approvals from agencies having jurisdiction over the Project. The Client agrees to pay all application and review fees.

Limitation of Liability In recognition of the relative risks and benefits of the project to both the Client and Consultant, the risks have been allocated such that the Client agrees, to the fullest extent permitted by law, to limit the liability of Consultant and its subconsultants to the Client and to all construction contractors and subcontractors on the project for any and all claims, losses, costs, damages of any nature whatsoever or claims expenses from any cause or causes, so that the total aggregate liability of Consultant and its subconsultants to all those named shall not exceed \$50,000 or the amount of Consultant's total fee paid by the Client for services under this Agreement, whichever is the greater. Such claims and causes include, but are not limited to negligence, professional errors or omissions, strict liability, breach of contract or warranty.

Consequential Damages Neither the Client nor Consultant shall be liable to the other for any consequential damages regardless of the nature or fault.

Waiver of Subrogation Consultant shall endeavor to obtain a waiver of subrogation against the Client, if requested in writing by the Client, provided that Consultant will not increase its exposure to risk and Client will pay the cost associated with any premium increase or special fees.

Environmental Matters The Client warrants that they have disclosed all potential hazardous materials that may be encountered on the Project. In the event unknown hazardous materials are encountered, Consultant shall be entitled to additional compensation for appropriate actions to protect the health and safety of its personnel, and for additional services required to comply with applicable laws. The Client shall indemnify Consultant from any claim related to hazardous materials encountered on the Project except for those events caused by negligent acts of Consultant.

Cost Opinions Consultant shall prepare cost opinions for the Project based on historical information that represents the judgment of a qualified professional. The Client and Consultant acknowledge that actual costs may vary from the cost opinions prepared and that Consultant offers no guarantee related to the Project cost.

Contingency Fund The Client acknowledges the potential for changes in the work during construction and the Client agrees to include a contingency fund in the Project budget appropriate to the potential risks and uncertainties associated with the Project. Consultant may offer advice concerning the value of the contingency fund; however, Consultant shall not be liable for additional costs that the Client may incur beyond the contingency fund they select unless such additional cost results from a negligent act, error, or omission related to services performed by Consultant.

Safety Consultant shall be responsible solely for the safety precautions or programs of its employees and no other party.

Information from Other Parties The Client and Consultant acknowledge that Consultant will rely on information furnished by other parties in performing its services under the Project. Consultant shall not be liable for any damages that may be incurred by the Client in the use of third party information.

Force Majeure Consultant shall not be liable for any damages caused by any delay that is beyond Consultant's reasonable control.

Waiver of Rights The failure of either party to enforce any provision of these terms and conditions shall not constitute a waiver of such provision nor diminish the right of either party to the remedies of such provision.

Warranty Consultant warrants that it will deliver services under the Agreement within the standard of care. No other expressed or implied warranty is provided by Consultant.

Severability Any provision of these terms later held to violate any law shall be deemed void and all remaining provisions shall continue in force. In such event, the Client and Consultant will work in good faith to replace an invalid provision with one that is valid with as close to the original meaning as possible.

Survival All provisions of these terms that allocate responsibility or liability between the Client and Consultant shall survive the completion or termination of services for the Project.

Assignments Neither party shall assign its rights, interests, or obligations under the Agreement without the express written consent of the other party.

Governing Law The terms of agreement shall be governed by the laws of the state where the services are performed provided that nothing contained herein shall be interpreted in such a manner as to render it unenforceable under the laws of the state in which the Project resides.

Collection Costs In the event that legal action is necessary to enforce the payment provisions of this Agreement if Client fails to make payment within sixty (60) days of the invoice date, Consultant shall be entitled to collect from the Client any judgment or settlement sums due, reasonable attorneys' fees, court costs, and expenses incurred by Consultant in connection therewith and, in addition, the reasonable value of Consultant's time and expenses spent in connection with such collection action, computed at Consultant's prevailing fee schedule and expense policies.

Equal Employment Opportunity Consultant will comply with federal regulations pertaining to Equal Employment Opportunity. Consultant is in compliance with applicable local, state, and federal regulations concerning minority hiring. It is Consultant's policy to ensure that applicants and employees are treated equally without regard to race, creed, sex, color, religion, veteran status, ancestry, citizenship status, national origin, marital status, sexual orientation, or disability. Consultant expressly assures all employees, applicants for employment, and the community of its continuous commitment to equal opportunity and fair employment practices.

Attorney Fees Should there be any suit or action instituted to enforce any right granted in this contract, the substantially prevailing party shall be entitled to recover its costs, disbursements, and reasonable attorney fees from the other party. The party that is awarded a net recovery against the other party shall be deemed the substantially prevailing party unless such other party has previously made a bona fide offer of payment in settlement and the amount of recovery is the same or less than the amount offered in settlement. Reasonable attorney fees may be recovered regardless of the forum in which the dispute is heard, including an appeal.

Third Party Beneficiaries Nothing in this Agreement shall create a contractual relationship with or a cause of action in favor of a third party against either the Client or the Consultant. The Consultant's services under this Agreement are being performed solely for the Client's benefit, and no other entity shall have any claim against the Consultant because of this Agreement or the performance or nonperformance of services hereunder. The Client agrees to include a provision in all contracts with contractors and other entities involved in this project to carry out the intent of this paragraph.

Captions The captions herein are for convenience only and are not to be construed as part of this Agreement, nor shall the same be construed as defining or limiting in any way the scope or intent of the provisions hereof.

Howard Fink

From: Howard Fink [finkh@twp.northfield.mi.us]
Sent: Tuesday, September 30, 2014 4:39 PM
To: 'dstollman@me.com'
Subject: FW: Northfield As-Needed
Attachments: Northfield As-Needed.pdf

FYI

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Howard Fink [mailto:finkh@twp.northfield.mi.us]
Sent: Tuesday, September 30, 2014 4:20 PM
To: 'David J Stollman'
Subject: FW: Northfield As-Needed

Hi David,

FYI – Please let me know how you want to proceed. The money should be deposited with the Township and then Tetra Tech can bill us accordingly.

Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [mailto:Brian.Rubel@tetrattech.com]
Sent: Friday, September 26, 2014 3:00 PM
To: finkh@twp.northfield.mi.us
Subject: FW: Northfield As-Needed

Howard;

The proposal that we discussed this morning and the developer will pick up the tab.

Brian

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

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From: Chappell, Ann

Sent: Friday, September 26, 2014 2:50 PM

To: Rubel, Brian

Subject: Northfield As-Needed

Howard Fink

From: Howard Fink [finkh@twp.northfield.mi.us]
Sent: Thursday, October 02, 2014 9:52 AM
To: 'Rubel, Brian'
Subject: RE: NORTHFIELD TOWNSHIP SEWER SYSTEM CAPACITY SUMMARY Version 2

Brian,
Can you give me a call? Wanted to see if you met with Scott and how that went.
Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [mailto:Brian.Rubel@tetrattech.com]
Sent: Tuesday, September 30, 2014 2:50 PM
To: Howard Fink
Subject: RE: NORTHFIELD TOWNSHIP SEWER SYSTEM CAPACITY SUMMARY Version 2

5 minutes and I'll be free.

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

Tetra Tech | Engineering Consulting Services
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From: Howard Fink [mailto:finkh@twp.northfield.mi.us]
Sent: Tuesday, September 30, 2014 2:47 PM
To: Rubel, Brian
Subject: RE: NORTHFIELD TOWNSHIP SEWER SYSTEM CAPACITY SUMMARY Version 2

Brian,
Are you available now to chat. If so I want to get Tim in here.
Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [mailto:Brian.Rubel@tetrattech.com]
Sent: Tuesday, September 30, 2014 11:18 AM
To: finkh@twp.northfield.mi.us
Subject: NORTHFIELD TOWNSHIP SEWER SYSTEM CAPACITY SUMMARY Version 2

Howard Fink

From: Howard Fink [finkh@twp.northfield.mi.us]
Sent: Friday, October 24, 2014 12:17 PM
To: 'Rubel, Brian'
Subject: FW: Sewer scans
Attachments: NT Sewer Capacity Summary.PDF; NT Sewer Improvements 1998.pdf; NT Sewer Study 2003.pdf; NT Sewer letter from Tetrattech.PDF

FYI

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Jennifer Carlisle [<mailto:Carlislej@twp.northfield.mi.us>]
Sent: Friday, October 24, 2014 9:41 AM
To: Howard Fink
Subject: Sewer scans

Jennifer Carlisle
Asst. to Northfield Twp. Mgr.
734-449-2880 ext. 18
carlislej@twp.northfield.mi.us

Lisa Johnson, Legal Administrative Assistant
to the Law Office of Paul E. Burns

133 West Grand River
Brighton, Michigan 48116
(810) 227-5000 FAX (810) 220-5895

<Township Board - Sewer Plant Limitations Attachment 1b of 2.pdf>

Howard Fink

From: Howard Fink [finkh@twp.northfield.mi.us]
Sent: Friday, October 24, 2014 4:15 PM
To: 'Marilyn'
Subject: RE: Lakealand Property Owners Association, Hamburg Township and Portage and Base Lake Assoc. Inc v Township of Northfield and Township of Green Oak and Related Intergovernmental Agreements, Part 1a of 2

Yeah. Will do next time we chat.

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Marilyn [mailto:hmarilyn@yahoo.com]
Sent: Friday, October 24, 2014 3:52 PM
To: Howard Fink
Subject: Fwd: Lakealand Property Owners Association, Hamburg Township and Portage and Base Lake Assoc. Inc v Township of Northfield and Township of Green Oak and Related Intergovernmental Agreements, Part 1a of 2

I have no idea what this is about....can you fill me in.

Marilyn Handloser
Remax Classic
248-231-4216

Spelling and grammar mistakes are compliments of my iPad.

Begin forwarded message:

From: "Johnson, Lisa" <lisa@peblaw.net>
Date: October 24, 2014, 11:28:10 AM EDT
To: Angela Westover <westovera@twp.northfield.mi.us>, Jacki Otto <jackiotto@yahoo.com>, Jacki Otto <ottoj@twp.northfield.mi.us>, Janet Chick <chickj@twp.northfield.mi.us>, Janet Chick <jchick711@aol.com>, Kathy Braun <braunk@twp.northfield.mi.us>, Kathy Braun <kathysuebraun@gmail.com>, Marilyn Engstrom <engstromm@twp.northfield.mi.us>, Marilyn Engstrom <hmarilyn@yahoo.com>, Tracy Thomas <Thomast@twp.northfield.mi.us>, Tracy Thomas <tstplc12@gmail.com>, Wayne Dockett <DockettW@twp.northfield.mi.us>
Cc: Howard Fink <Finkh@twp.northfield.mi.us>, "Rubel, Brian" <Brian.Rubel@tetrattech.com>, Tim Hardesty <tdhardesty@att.net>, Brad Maynes <maynes@peblaw.net>, Paul Burns <burns@peblaw.net>
Subject: Lakealand Property Owners Association, Hamburg Township and Portage and Base Lake Assoc. Inc v Township of Northfield and Township of Green Oak and Related Intergovernmental Agreements, Part 1a of 2

Due to the size of Part 1, please see part 1b of 2 attachments with regard to the above-referenced matter. Thank you.

Howard Fink

From: Howard Fink [finkh@twp.northfield.mi.us]
Sent: Monday, October 27, 2014 11:45 AM
To: 'Rubel, Brian'
Subject: RE: Sewer scans

Brian, The only issue I see is how the 1900 number relates to the 1500 number.
Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [<mailto:Brian.Rubel@tetrattech.com>]
Sent: Friday, October 24, 2014 4:54 PM
To: finkh@twp.northfield.mi.us
Subject: FW: Sewer scans

Howard;

Some past reports involving the North Territorial District and a general memo on sewer/wastewater capacity are attached.

Brian R.

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

Tetra Tech | Water, Environment, Infrastructure
710 Avis Drive | Ann Arbor, MI 48108 | www.tetrattech.com

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Howard Fink

From: Howard Fink [finkh@twp.northfield.mi.us]
Sent: Monday, October 27, 2014 11:46 AM
To: 'Rubel, Brian'
Subject: Sewer

And by issue, I mean clarification.

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

Howard Fink

From: Howard Fink [finkh@twp.northfield.mi.us]
Sent: Monday, October 27, 2014 5:29 PM
To: Angela Westover; Burns, Paul; Howard Fink (finkh@twp.northfield.mi.us); Jackie Otto (ottoj@twp.northfield.mi.us); Janet Chick (jchick711@aol.com); Kathy Braun; Kathy Braun (kathysuebraun@gmail.com); Marilyn; Marilyn Handloser-Engstrom (engstromm@twp.northfield.mi.us); Marilyn Handloser-Engstrom (marilyn_engstrom@yahoo.com); Tracy Thomas (tstplc12@gmail.com); Wayne Dockett (dockettw@twp.northfield.mi.us)
Subject: FW: Sewer Capacity Information
Attachments: NT Sewer Capacity Summary.PDF; NT Sewer Improvements 1998.pdf; NT Sewer Study 2003.pdf; NT Sewer letter from Tetrattech.PDF; Sewer Capacity Summary Rev. A.pdf

Hi Everyone,

Attached are all the relevant studies (that I am aware of) and a summary of Brian Rubel's analysis of sewer capacity issues. Please let me know if and when you wish to discuss this as a board.

Hope everyone is well. Please note that this information is considered public and will be sent to the planning commission members shortly.

Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [mailto:Brian.Rubel@tetrattech.com]
Sent: Monday, October 27, 2014 5:23 PM
To: finkh@twp.northfield.mi.us
Subject: Sewer Capacity Information

Howard;

Some documents regarding sewer and wastewater treatment capacity are attached.

Brian Rubel

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

Tetra Tech | Water, Environment, Infrastructure
710 Avis Drive | Ann Arbor, MI 48108 | www.tetrattech.com

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Howard Fink

From: Howard Fink [finkh@twp.northfield.mi.us]
Sent: Tuesday, October 28, 2014 2:57 PM
To: 'chockley@twp.northfield.mi.us'; 'Janet Chick'; Ken Dignan; 'cousinob@twp.northfield.mi.us'; 'romanl@twp.northfield.mi.us'; 'dignank@twp.northfield.mi.us'; 'iaquintosam@twp.northfield.mi.us'; 'Mark Stanalajczo'
Subject: Sewer Capacity Information
Attachments: NT Sewer Capacity Summary.PDF; NT Sewer Improvements 1998.pdf; NT Sewer Study 2003.pdf; NT Sewer letter from Tetrattech.PDF; Sewer Capacity Summary Rev. A.pdf

FYI

Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Howard Fink [mailto:finkh@twp.northfield.mi.us]
Sent: Monday, October 27, 2014 5:29 PM
To: Angela Westover; Burns, Paul; Howard Fink (finkh@twp.northfield.mi.us); Jackie Otto (ottoj@twp.northfield.mi.us); Janet Chick (jchick711@aol.com); Kathy Braun; Kathy Braun (kathysuebraun@gmail.com); Marilyn; Marilyn Handloser-Engstrom (engstromm@twp.northfield.mi.us); Marilyn Handloser-Engstrom (marilyn_engstrom@yahoo.com); Tracy Thomas (tstplc12@gmail.com); Wayne Dockett (dockettw@twp.northfield.mi.us)
Subject: FW: Sewer Capacity Information

Hi Everyone,

Attached are all the relevant studies (that I am aware of) and a summary of Brian Rubel's analysis of sewer capacity issues. Please let me know if and when you wish to discuss this as a board.

Hope everyone is well. Please note that this information is considered public and will be sent to the planning commission members shortly.

Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [mailto:Brian.Rubel@tetrattech.com]
Sent: Monday, October 27, 2014 5:23 PM
To: finkh@twp.northfield.mi.us
Subject: Sewer Capacity Information

Howard;

Some documents regarding sewer and wastewater treatment capacity are attached.

Brian Rubel

Brian M. Rubel, PE | Vice President

Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570

brian.rubel@tetrattech.com

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Howard Fink

From: Howard Fink [finkh@twp.northfield.mi.us]
Sent: Wednesday, November 05, 2014 1:59 PM
To: Jennifer Carlisle (carlislej@twp.northfield.mi.us)
Subject: FW: Sewer Capacity Information
Attachments: NT Sewer Capacity Summary.PDF; NT Sewer Improvements 1998.pdf; NT Sewer Study 2003.pdf; NT Sewer letter from Tetrattech.PDF; Sewer Capacity Summary Rev. A.pdf

FYI – for meeting.

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [<mailto:Brian.Rubel@tetrattech.com>]
Sent: Monday, October 27, 2014 5:23 PM
To: finkh@twp.northfield.mi.us
Subject: Sewer Capacity Information

Howard;

Some documents regarding sewer and wastewater treatment capacity are attached.

Brian Rubel

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

Tetra Tech | Water, Environment, Infrastructure
710 Avis Drive | Ann Arbor, MI 48108 | www.tetrattech.com

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Howard Fink

From: Howard Fink [finkh@twp.northfield.mi.us]
Sent: Thursday, November 06, 2014 3:11 PM
To: Angela Westover; Burns, Paul; Howard Fink (finkh@twp.northfield.mi.us); Jackie Otto (ottoj@twp.northfield.mi.us); Janet Chick (jchick711@aol.com); Kathy Braun; Kathy Braun (kathysuebraun@gmail.com); Marilyn; Marilyn Handloser-Engstrom (engstromm@twp.northfield.mi.us); Marilyn Handloser-Engstrom (marilyn_engstrom@yahoo.com); Tracy Thomas (tstplc12@gmail.com); Wayne Dockett (dockettw@twp.northfield.mi.us)
Subject: Agenda

Hi Everyone,

Packets will be ready shortly. We are still in the process of trying to figure out an alternative Health Insurance Option and will have that by Tuesday, but the details won't be available by 5:00 pm today. I will email everyone as soon as I have some numbers and a recommendation to present. There will be a tax tribunal case on the agenda as well (not closed session). Tami and I will be providing a update on meals and wheels during our reports. Other than that, the meeting will be dedicated to the sewer capacity issues.

David Stollman (owner of Biltmore) has confirmed that he will be at the meeting. Brian Rubel will also be there and will be giving a short presentation to begin the discussion.

Thanks,
Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

Howard Fink

From: Howard Fink [finkh@twp.northfield.mi.us]
Sent: Thursday, November 06, 2014 3:38 PM
To: 'Howard Fink'; Angela Westover; Burns, Paul; Jackie Otto (ottoj@twp.northfield.mi.us); Janet Chick (jchick711@aol.com); Kathy Braun; Kathy Braun (kathysuebraun@gmail.com); Marilyn; Marilyn Handloser-Engstrom (engstromm@twp.northfield.mi.us); Marilyn Handloser-Engstrom (marilyn_engstrom@yahoo.com); Tracy Thomas (tstplc12@gmail.com); Wayne Dockett (dockettw@twp.northfield.mi.us)
Subject: RE: Agenda

Hi Again,
The Meeting will be a joint meeting with the Planning Commission.
Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Howard Fink [mailto:finkh@twp.northfield.mi.us]
Sent: Thursday, November 06, 2014 3:11 PM
To: Angela Westover; Burns, Paul; Howard Fink (finkh@twp.northfield.mi.us); Jackie Otto (ottoj@twp.northfield.mi.us); Janet Chick (jchick711@aol.com); Kathy Braun; Kathy Braun (kathysuebraun@gmail.com); Marilyn; Marilyn Handloser-Engstrom (engstromm@twp.northfield.mi.us); Marilyn Handloser-Engstrom (marilyn_engstrom@yahoo.com); Tracy Thomas (tstplc12@gmail.com); Wayne Dockett (dockettw@twp.northfield.mi.us)
Subject: Agenda

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Thanks,
Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

Howard Fink

From: Howard Fink [finkh@twp.northfield.mi.us]
Sent: Friday, November 07, 2014 11:40 AM
To: 'jchick711@aol.com'
Subject: RE: Agenda

Yes, I think it should be directed to the whole board, and see what happens.
Thank you.
Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: jchick711@aol.com [mailto:jchick711@aol.com]
Sent: Friday, November 07, 2014 11:05 AM
To: finkh@twp.northfield.mi.us; jackiotto@yahoo.com; tstplc12@gmail.com
Subject: Re: Agenda

Hi Howard,

Spoke with Jacki and Tracy this morning. There is concern that having Stollman at the joint meeting next week might not be beneficial to the sewer discussion at this time. What we .. at least the three of us thought, is that this discussion was about our sewer system in regard to current and/or future capacity, and what the direction for the future should be for the township in general and not specific to any currently proposed development.

We are not sure we should make decisions or having discussions about our sewers based on a single proposal at this time. We should talk about what we want where first. Then a subsequent discussion could be had when we are looking solely at a development.

Your thoughts? Should we put it out to the rest of the board to decide if having him there is necessary or even a good idea for the purpose of this initial discussion?

Correct me if I am wrong please.

Janet

-----Original Message-----

From: Howard Fink <finkh@twp.northfield.mi.us>
To: 'Howard Fink' <finkh@twp.northfield.mi.us>; Angela Westover <westovera@twp.northfield.mi.us>; Burns, Paul <burns@peblaw.net>; Jackie Otto <ottoj@twp.northfield.mi.us>; Janet Chick <jchick711@aol.com>; Kathy Braun <kbraun@dmsax.com>; Kathy Braun <kathysuebraun@gmail.com>; Marilyn <hmarilyn@yahoo.com>; Marilyn Handloser-Engstrom <engstromm@twp.northfield.mi.us>; Marilyn Handloser-Engstrom <marilyn_engstrom@yahoo.com>; Tracy Thomas <tstplc12@gmail.com>; Wayne Dockett <dockettw@twp.northfield.mi.us>
Sent: Thu, Nov 6, 2014 3:37 pm
Subject: RE: Agenda

Hi Again,
The Meeting will be a joint meeting with the Planning Commission.
Howard

Howard Fink

Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Howard Fink (<mailto:finkh@twp.northfield.mi.us>)

Sent: Thursday, November 06, 2014 3:11 PM

To: Angela Westover; Burns, Paul; Howard Fink (finkh@twp.northfield.mi.us); Jackie Otto (ottoj@twp.northfield.mi.us); Janet Chick (jchick711@aol.com); Kathy Braun; Kathy Braun (kathysuebraun@gmail.com); Marilyn; Marilyn Handloser-Engstrom (engstromm@twp.northfield.mi.us); Marilyn Handloser-Engstrom (marilyn_engstrom@yahoo.com); Tracy Thomas (tstplc12@gmail.com); Wayne Dockett (dockettw@twp.northfield.mi.us)

Subject: Agenda

Hi Everyone,

Packets will be ready shortly. We are still in the process of trying to figure out an alternative Health Insurance Option and will have that by Tuesday, but the details won't be available by 5:00 pm today. I will email everyone as soon as I have some numbers and a recommendation to present. There will be a tax tribunal case on the agenda as well (not closed session). Tami and I will be providing a update on meals and wheels during our reports. Other than that, the meeting will be dedicated to the sewer capacity issues.

David Stollman (owner of Biltmore) has confirmed that he will be at the meeting. Brian Rubel will also be there and will be giving a short presentation to begin the discussion.

Thanks,
Howard

Howard Fink
Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

Howard Fink

From: BT! Customer Services© [tdhardesty@att.net]
Sent: Wednesday, September 10, 2014 11:54 AM
To: Rubel, Brian
Cc: Howard Fink
Subject: Re: Sewer Capacity Assessment

Brian,

1:00 on Monday the 15th would work fine for me.

Tim H

On Wednesday, September 10, 2014 11:07 AM, "Rubel, Brian" <Brian.Rubel@tetrattech.com> wrote:

How about 1 PM or 2 PM?

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

Tetra Tech | Engineering Consulting Services
710 Avis Drive | Ann Arbor, MI 48108 | <http://www.tetrattech.com/>

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From: BT! Customer Services© [<mailto:tdhardesty@att.net>]
Sent: Wednesday, September 10, 2014 11:05 AM
To: Rubel, Brian
Subject: Re: Sewer Capacity Assessment

Brian,

Howard has an 11:00 meeting with an insurance co. Is there another time that would work for you? I can cancel my morning apt if that would be best for you. It is just a salesman coming between 7 and 8.

Tim

On Wednesday, September 10, 2014 10:03 AM, "Rubel, Brian" <Brian.Rubel@tetrattech.com> wrote:

Tim is busy this afternoon. Could we meet Monday (9/15) at 11 at Howard's office? I could also meet in the afternoon.

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

Tetra Tech | Engineering Consulting Services
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Howard Fink

From: David Stollman [dstollman@me.com]
Sent: Friday, October 10, 2014 9:51 AM
To: Jennifer Carlisle
Cc: Howard Fink
Subject: Re: meeting next week

Jennifer,

I will need to do it by phone. Do you have a conference call #? If not, we can use mine:

Conference Call #: (712) 432-0385
Participant Code: 952338#

Let me know.

DJS

Please note new address below

David J. Stollman
President
Biltmore Development LLC

NEW ADDRESS:
89 Lake Shore Road
Grosse Pointe Farms, MI 48236

Phone: (248) 563-5800
Fax: (248) 499-1006
Email: dstollman@me.com
dstollman@BiltmoreDevelopment.com

www.BiltmoreDevelopment.com



On Oct 9, 2014, at 4:09 PM, Jennifer Carlisle <Carlislej@twp.northfield.mi.us> wrote:

Howard said he would like to meet if you can

From: David Stollman [<mailto:dstollman@me.com>]
Sent: Thursday, October 09, 2014 3:21 PM
To: Jennifer Carlisle
Subject: Re: meeting next week

Jennifer - are we meeting or having a call?

Sent from my iPhone

On Oct 9, 2014, at 3:19 PM, Jennifer Carlisle <Carlislej@twp.northfield.mi.us> wrote:

Sounds like Wednesday at 10:00 works for everyone. See you then

Thanks,
Jennifer Carlisle
Asst. to Northfield Twp. Mgr.
734-449-2880 ext. 18
carlislej@twp.northfield.mi.us

Howard Fink

From: David Stollman [dstollman@me.com]
Sent: Thursday, October 09, 2014 4:41 PM
To: Jennifer Carlisle
Cc: Howard Fink
Subject: Re: meeting next week

Will let u know tmrw. Waiting for a meeting to be scheduled that may conflict. I thought we were scheduling a call.

Sent from my iPhone

On Oct 9, 2014, at 4:09 PM, Jennifer Carlisle <Carlislej@twp.northfield.mi.us> wrote:

Howard said he would like to meet if you can

From: David Stollman [<mailto:dstollman@me.com>]
Sent: Thursday, October 09, 2014 3:21 PM
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Sent from my iPhone

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Jennifer Carlisle
Asst. to Northfield Twp. Mgr.
734-449-2880 ext. 18
carlislej@twp.northfield.mi.us

Howard Fink

From: Jennifer Carlisle [Carlislej@twp.northfield.mi.us]
Sent: Thursday, October 09, 2014 4:09 PM
To: 'David Stollman'
Cc: Howard Fink
Subject: RE: meeting next week

Howard said he would like to meet if you can

From: David Stollman [mailto:dstollman@me.com]
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To: Jennifer Carlisle
Subject: Re: meeting next week

Jennifer - are we meeting or having a call?

Sent from my iPhone

On Oct 9, 2014, at 3:19 PM, Jennifer Carlisle <Carlislej@twp.northfield.mi.us> wrote:

Sounds like Wednesday at 10:00 works for everyone. See you then

Thanks,
Jennifer Carlisle
Asst. to Northfield Twp. Mgr.
734-449-2880 ext. 18
carlislej@twp.northfield.mi.us

Howard Fink

From: Jennifer Carlisle [Carlislej@twp.northfield.mi.us]
Sent: Thursday, October 09, 2014 3:19 PM
To: 'Rubel, Brian'; David Stollman; swb@midwesternconsulting.com; Howard Fink
Subject: meeting next week

Sounds like Wednesday at 10:00 works for everyone. See you then

Thanks,
Jennifer Carlisle
Asst. to Northfield Twp. Mgr.
734-449-2880 ext. 18
carlislej@twp.northfield.mi.us

Howard Fink

From: David J Stollman [dstollman@biltmoredevelopment.com]
Sent: Tuesday, September 30, 2014 6:09 PM
To: Howard Fink
Cc: Scott Betzoldt; Brian.Rubel@tetrattech.com
Subject: Re: Northfield As-Needed
Attachments: Tetra Tech Biltmore Agreement 093014.pdf

Howard/Brian,

Attached is the executed Agreement for As Needed Services from Tetrattech. I will have a check issued in the morning and dropped in the mail.

Regards,

DJS

Please note new address below

David J. Stollman
President
Biltmore Development LLC

NEW ADDRESS:
89 Lake Shore Road
Grosse Pointe Farms, MI 48236

Phone: (248) 563-5800

Fax: (248) 499-1006
Email: dstollman@me.com
dstollman@BiltmoreDevelopment.com

www.BiltmoreDevelopment.com



On Sep 30, 2014, at 4:19 PM, Howard Fink <finkh@twp.northfield.mi.us> wrote:

Hi David,

FYI – Please let me know how you want to proceed. The money should be deposited with the Township and then Tetra Tech can bill us accordingly.

Howard

Howard Fink

Northfield Township Manager
8350 Main St., Ste. A
Whitmore Lake, MI 48189
Phone: (734) 449-2880 x 12
Fax: (734) 449-0123

From: Rubel, Brian [<mailto:Brian.Rubel@tetrattech.com>]
Sent: Friday, September 26, 2014 3:00 PM
To: finkh@twp.northfield.mi.us
Subject: FW: Northfield As-Needed

Howard;

The proposal that we discussed this morning and the developer will pick up the tab.

Brian

Brian M. Rubel, PE | Vice President
Direct: 734.213.4081 | Main: 734.665.6000 | Fax: 734.665.2570
brian.rubel@tetrattech.com

Tetra Tech | Engineering Consulting Services
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From: Chappell, Ann
Sent: Friday, September 26, 2014 2:50 PM
To: Rubel, Brian
Subject: Northfield As-Needed

<Northfield As-Needed.pdf>

Special Assessment Roll
Roll for Year 2014
Population: All Records

Sp. District Heading	Parcel # Owner	Principal Admin Fee	Interest Penalty	Addtl Penlty Cert Fee	Total Installment	Prin Bal Payoff Int	Total Payoff
810 LAKE PTE	B -02-05-427-004 FISHER JOHN P & PATRICIA A	446.60 0.00	18.22		464.82	3,672.85 15.61	3,688.46
810 LAKE PTE	B -02-05-427-005 KLUMP TERRANCE E & SANDRA	446.60 0.00	18.22		464.82	3,672.85 15.61	3,688.46
810 LAKE PTE	B -02-05-427-006 BURCHI DEAN & DEBRA R	446.60 0.00	18.22		464.82	3,672.85 15.61	3,688.46
810 LAKE PTE	B -02-05-427-009 MULAWKA DAVID J & (NANCY)	446.60 0.00	18.22		464.82	3,672.85 15.61	3,688.46
Total Parcels: 4		1,786.40 0.00	72.88		1,859.28	14,691.40 62.44	14,753.84