

# Septage Treatment Facility

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Grand Traverse County Department of Public Works

## Volume Estimate & Substantial Completion Investigation

December, 2009

2090600

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## I. INTRODUCTION

The Grand Traverse County Septage Treatment Facility (STF) began receiving waste for treatment in May, 2005. Since then, the waste volume delivered to the plant has not met the volume projections used for designing the plant and financing its construction, operation and financial reserves.

The STF was designed and constructed by Gourdie-Fraser / Christman, LLC, a limited liability corporation formed for the purpose of designing and building the STF under a contract with the Grand Traverse County Department of Public Works. The contract provided for a substantial completion date with liquidated damages for completion after that date. The STF was not completed on the specified date and questions have been raised about the appropriateness of the issuance of the Certificate of Substantial Completion.

While the plant was being designed and constructed, Mr. Michael Houlihan was the Project Manager for the Grand Traverse County Department of Public Works.

On June 9, 2009, Mr. Chris Bzdok authored a memo to the Sewer and Water Committee of the Board of Public Works describing the concerns of the Department of Public Works related to the issues of the volume projection and the completion date for the STF (see Appendix A).

Subsequently, the Grand Traverse County Department of Public Works retained Prein&Newhof to investigate the two issues raised by Mr. Bzdok's memo as follows:

### A. Volume and Revenue

1. Whether Gourdie-Fraser exercised reasonable professional care in making the volume estimates that served as the basis of design capacity for the septage treatment plant.

2. If Gourdie-Fraser did not exercise reasonable professional care in making the estimates, whether Mr. Houlihan exercised reasonable professional care in supervising that aspect of the project.

## B. Certificate of Completion

Whether Mr. Houlihan exercised reasonable professional care as Project Manager in the approval of the Certificate of Substantial Completion.

In order to accomplish the work described above, Prein&Newhof reviewed the Department of Public Works' files, made other investigations as described below and prepared this report.

## II. Volume and Revenue

### A. Estimates of Volume

In 2002, Gourdie-Fraser Associates (GFA) prepared estimates of volume based on 2001 data. The expected volume of waste to be brought to the plant was estimated for three categories of waste. The categories of waste are:

- Septic Tank
- Holding Tank
- Grease Traps

The estimates were prepared based on methods described in an EPA manual titled *Guide to Septage Treatment and Disposal*, September 1994 (see Appendix B).

#### 1. "Method One"

The first method that was used involved counting the number of tanks within Grand Traverse County in each waste category and estimating the pumping frequency.

Apparently, GFA estimated volume based on this method, but the estimate was not used for final design or financing.

## 2. “Method Two”

For the second method, hauler surveys were conducted by GFA in which haulers supplied data regarding their annual hauling volume for 2001. Apparently the results of this method were used for design and financing of the STF. The EPA document considered collecting actual records from local septage haulers the most accurate approach to estimate septage generation. However, the survey did not determine the septage volume generated within Grand Traverse County as a fraction of the total volume delivered by each hauler.

## B. Timeline for the Volume Estimates

The Department of Public Works’ file documents provide the following timeline for the various volume estimates. Reference documents in Appendix B are identified using Prein&Newhof report format as follows beginning with the first paragraph below: B.1.

### 1. January 31, 2002

GFA prepared a “method one” estimate of volume based on the number of tanks in Grand Traverse County. Each category of tanks was counted. Septic tank hauling was estimated to take place at three year intervals and holding tank hauling was estimated at eight times per year. The result of this estimate was 13.4 million gallons per year from the entire county and 9.5 million gallons per year from six selected townships of Acme, Blair, East Bay, Garfield, Long Lake, and Peninsula.

2. May 29, 2002

A septage treatment plan was presented to the Board of Public Works. The revised volume estimate by GFA using “method one” dated May 15, 2002, was 12 million gallons per year for the county and 8.4 million gallons per year from seven townships (Acme, Blair, East Bay, Elmwood, Garfield, Long Lake and Peninsula). There is no explanation in this document for the reduced estimate in spite of the addition of Elmwood Township compared with the January 31, 2002 estimate (above). Accompanying “Financial Projections” dated May 16, 2002 used the revised volume estimates described above.

3. November 19, 2002

A revised septage plan was presented by GFA to the Board of Public Works with the same estimates as described in Section II.B.2 above.

4. December 22, 2002

GFA prepared a “method two” estimate based on a survey of eight haulers resulting in the following volume for 2001:

Type of Waste	Volume (gallons/year)
Septic Tanks	6,347,381
Holding Tanks	3,061,810
Grease Traps	349,550
Total	9,758, 741

5. December 8, 2003

Michael Houlihan’s memo containing revised financial projections dated 11/24/03 used the GFA “method two” estimate based on the hauler survey of 2001 volumes. This projection was based on the 2001 volume of 9,758,741 gallons per year and a

projected 2005 estimated volume of 10,403,236 gallons per year as itemized on the following table:

Type of Waste	Volume (gallons/year)	
	2001	2005
Septic Tanks	6,347,381	6,688,215
Grease Trap	349,550	381,050
Holding Tanks	3,061,810	3,333,971
Total	9,758,741	10,403,236

6. March 31, 2004

The Design-Build contract between Gourdie-Fraser / Christman and Grand Traverse County was signed and a Notice to Proceed was issued on July 15, 2004.

7. April 25, 2005

A resolution dated April 25, 2005 drafted by Michael Houlihan contained a projected cash flow budget for year one for the STF dated April 1, 2005. This budget was for a fiscal year beginning in June 2005 extending through May, 2006. It contained the following projected flow:

Type of Waste	Volume (gallons/year)
Septic Tanks	6,688,215
Holding Tanks	3,333,971
Grease Trap	381,050
Total	10,403,236

The total of 10,403,236 gallons per year is the volume from GFA's "method two" projection based on the haulers survey from 2001 projected forward to 2005 (see Section II.B.5 above).

This projection was presented to the Board of Public Works about a month before the STF began receiving waste. At the time of the resolution, the rates to be charged for the 3 categories of waste were as follows:

Septage Waste:	\$0.12/gallon
Holding Tank Waste:	\$0.04/gallon
Grease Trap Waste	\$0.18/gallon

#### 8. September 13, 2006

On September 13, 2006, the Grand Traverse County Department of Public Works issued an Operating Plan for the STF. The plan provided for a slight modification to the fee structure as follows:

Septage:	\$0.12/gallon
Holding Tank:	\$0.04/gallon
Restaurant Grease:	\$0.12/gallon

Grease was not received at the STF until August, 2007 after the above fee change took effect.

### C. Review & Evaluation

#### 1. "Method One"

The "method one" volume estimate was prepared in January, 2002, for the 2001 volume. The estimated volume was approximately 13.4 million gallons per year in 2005 (see Section II.B.1, above). Later, this estimate was revised to 12 million gallons per year in 2005 (see Section II.B.2, above).

An error in GFA's use of "method one" is their assumption of septic tank pumping every three years. Discussion with haulers in the Grand Traverse County area and reference to septage manuals and wastewater textbooks indicate that a frequency of four to six years represents normal septic tank pumping practice.

The manuals and text books include the following:

- EPA Handbook, "Septage Treatment and Disposal", 1984, p19
- EPA, "Guide to Septage Treatment and Disposal", Sept. 1994, p6
- Metcalf & Eddy, Inc., "Wastewater Engineering", Third Edition, p 1094
- WEF Manual of Practice No 24, "Septage Handling", p7

In the case of the STF, the cost increase associated with hauling septage to the new STF facility likely caused some homeowners to pump their tanks before the STF start-up and other homeowners to delay pumping of their tanks even longer than normal.

Although the "method one" estimate was not used for later design and financing, the high volume estimate that resulted from "method one" made "method two" results appear to be conservative for financing purposes.

## 2. "Method Two"

A "method two" estimate using data from the hauler survey was prepared in December, 2002 for 2001 volume (see Section II.B.4, above). An error in GFA's use of method two was the failure to account for waste originating outside the County and beyond the 15 mile limit which could be hauled to other disposal facilities or land application sites. The GFA "method two" estimate was repeatedly used for public information, design and financing of the STF through April, 2005, just before the plant opened.

Although haulers were unwilling to provide 2002 volume data, beginning in January, 2003, the Michigan Department of Environment Quality has kept public records of each hauler's septage volume.

Figure 1 is a map showing Grand Traverse County and surrounding counties, the location of the STF and the haulers that deliver waste to the STF. DEQ regulations require that septage originating within the 15 mile radius must be delivered to the STF or another approved treatment plant. Ordinances in the Townships that financed the plant require hauling to the STF. In September 2010, the radius will increase to 25 miles. Figure 2 shows the 25 mile radius that relates to each of the other septage treatment facilities in the area of Grand Traverse County.

Table 1 compares the total annual volume hauled versus the Grand Traverse County volume for each hauler. Total volumes are from DEQ records. County volumes in 2003 are from hauler estimates resulting from a Prein&Newhof telephone survey of the haulers in and around Grand Traverse County. 2008 volumes are from STF records.

2003 data indicate that GFA did not reduce the total hauler volume (approximately 12 million gallons) to account for only the waste originating from Grand Traverse County (approximately 6 million gallons). 2008 data indicate an increase from 2003 of approximately 12% for waste generated in Grand Traverse County (from 6,520,144 gallons in 2003 to 7,335,051 gallons in 2008).

### 3. Use of the Estimates

Septage volume estimates were used for two purposes: design and financing. It was not necessary to use the same estimate for both purposes. In fact, conservative practice would not use the same estimate for design and financing.

Because the waste volume was unknown, could not be controlled by the county and was affected by cost and individual decisions by thousands of potential customers, different estimates should have been used as described below.

a. Design

A good facility design would be based on a high waste volume estimate. If the design estimate were eventually determined to be higher than the volume delivered to the plant, the marginal cost of a larger plant would be insignificant compared to the problems that would result from a low estimate of volume. One such problem might be an overloaded plant shortly after start up.

GFA used “method two”, 10 year projected volume of 12,350,000 gallons per year divided by 260 working days times a factor of 2 to determine the daily capacity of the plant at 95,000 gallons per day. Thus, although the GFA estimate of the annual volume was too high, the design value of 95,000 gallons for the daily capacity of the plant is reasonable.

b. Financing

On the other hand, a conservative financing plan would use a low annual volume estimate to avoid a shortfall in revenue.

The GFA volume estimate was too high because the hauler data was not reduced by the volume of waste originating from outside Grand Traverse County. Table 1 indicates that the 2003 volume originating from Grand Traverse County by the haulers contacted by GFA was 6,060,078 gallons, far below the 2001 estimate of 9,758,741 gallons or the 2005 estimate of 10,403,326 gallons. Table 1 also indicates that the volume from the haulers contacted by GFA which originated in

Grand Traverse County in 2008 (6,760,763 gallons) is reasonably close to the actual volume received at the STF (7,335,051). Waste outside the County is not required to be brought to the STF. The comparatively higher disposal cost has been a disincentive for disposal there. Haul distance is also a factor affecting the cost to the individual customers since other disposal options are available outside the County.

Projected volume and revenue, actual volume and revenue and the deficit for each are shown on Table 2. Volume data from the STF is shown on Table 3.

## **D. Conclusions**

The projected waste volume was too high because “method two” relied on the haulers survey but failed to account for the waste originating out of the County which is not being hauled to the STF. The use of a high annual volume estimate for financing the STF resulted in a shortfall in revenue when the predicted volume did not materialize.

GFA did not exercise reasonable professional care by overestimating the volume, using it for three years (from 2002 to 2005) and not validating it prior to the financial plan and bond sale.

Michael Houlihan did not exercise reasonable professional care as Project Manager for the Grand Traverse County Department of Public Works. The Project Manager for the County should oversee and validate the volume estimates and the purposes for which they were to be used. The STF was designed and financed in 2004 and rates were established in 2005 using estimates of volume from a 2001 survey of haulers. The data were not reduced for waste originating out of the County. The data could have been compared to DEQ records beginning with January 2003.

Mr. Houlihan did not validate the estimate prepared by GFA but used it as a basis for financing the plant.

### III. SUBSTANTIAL COMPLETION

#### A. Documents

The following documents are relevant to the issue of substantial completion. The documents referred to here are contained in Appendix C.

1. Contract Between Grand Traverse County and Gourdie-Fraser/Chrisman, LLC for Design and Construction of a Septage Treatment Facility

This document is unique in that it does not follow either the American Institute of Architects (AIA) or the Engineer's Joint Contract Documents Committee (EJCDC) standard agreement forms.

The articles within the agreement that bear on the issue of substantial completion are as follows:

- a. Article I. Contract Documents, Scope of Work

“...substantial completion as defined herein will take place not later than April 29, 2005.”

- b. Article 2.3.5

“Performance testing is the testing required for verification that the facility is functioning as required by this contract as provided in Exhibit A. Except as the Owner and Design-Builder may otherwise agree, Performance Testing shall be satisfactorily completed before substantial completion and confirmed at the time of final payment.”

c. Article 2. 3.6

“Substantial completion occurs on the date established in a Certificate of Substantial Completion when the facility is open for the receipt of septage and holding tank waste (including grease traps) from licensed septage haulers. The Certificate of Substantial Completion shall identify the date upon which the facility opened for business and shall state the respective responsibilities of the Owner and Design-Builder for site security, maintenance, heat, utilities, damage to the Work and insurance. The certificate shall also list the items to be completed or corrected and establish a time for their correction or completion as the case may be.”

d. Article 3.5. Before Substantial Completion

“Before Substantial Completion, except as otherwise may be agreed, Design-Builder shall secure such permits, certificates of inspection, testing or approval as may be required by applicable law or regulation or manufacturer’s requirements and deliver them to the Owner. Design-Builder shall also secure all written warranties and equipment manuals and deliver them to Owner. Design-Builder shall also provide to Owner three copies of a draft operating manual for operation of the septage treatment facility. The operating manual shall be modified and updated at the time of final payment based upon the experience of the actual plant operation, if necessary.”

e. Article 3.6 Warranties

“Design-Builder warrants that all materials and equipment furnished under this contract will be new unless otherwise specified, of good quality, in conformity with the contract documents and free from defective workmanship or materials. Warranties shall commence on the date of substantial completion of the work. Design-Builder shall correct all construction which proves to be defective in workmanship or materials within a period of one year from the date of final payment.”

f. Article 6.2. Substantial Completion-Liquidated Damages

“The date of Substantial Completion of the Work shall be not later than the date set forth in Article I. The parties agree that time is of the essence of this Contract and that Owner will suffer substantial damages if opening of the septage treatment facility is delayed beyond that time, but that such damages would be difficult to measure. The parties agree that Design-Builder will pay to Owner the sum of \$850 per day in liquidated damages and not as a penalty as the sole remedy for each day of delay beginning April 30, 2005 and continuing until such time as Design-Builder’s conditions for substantial completion are met.”

g. Article 6.2.1 Extension of Time

“Design-Builder’s time in which to accomplish Substantial Completion shall be extended if: a) Change Orders are executed for changes in the Work and the extension of time; b) acts or omissions of the Owner or separate contractors employed by Owner delay Design-Builders performance of the work; c) Hazardous Waste is encountered upon the site by Design-Builder; d) Site conditions are encountered which differ from those reasonably to be expected

delay the Work; and e) Flood, fire, or other natural disaster or labor dispute prevents performance of the Work.“

h. Article 8.1 Change Orders

“A Change Order is a written instrument issued after execution of this Contract signed on behalf of the Owner and Design-Builder stating their agreement upon a change in any adjustment of the Work, the Contract Price and the date of Substantial Completion. Each adjustment in the Contract Price resulting from a Change Order shall clearly separate design services and construction services.”

i. Article 8.5 Claims for Additional Cost or Time

“For any claim for an increase in the Contract Price or extension in the date of Substantial Completion, or both, Design-Builder shall give Owner written notice of the claim within seven (7) days after the occurrence giving rise to the claim or after Design-Builder first recognizes the condition giving rise to the claim which ever is later. Except in an emergency, notice shall be given before proceeding with the work. Claims for design and estimating cost incurred in connection with possible changes requested by Owner, but which do not proceed shall be made within seven (7) days after the decision is made not to proceed. Any change in Contract Price or the date of Substantial Completion or both resulting from such claim shall be authorized by Change Order.”

j. Article 8.6 Emergencies

“In any emergency affecting the safety of persons or property or both, Design-Builder shall act at its discretion to prevent threatened damage or injury or loss. Any change in the contract price or extension of the date for substantial

completion on account of emergency work will be determined as provided in this article.”

k. Article 9.2.7 Payment on Substantial Completion

“Upon substantial completion of the work, Owner shall pay Design-Builder the unpaid balance of the contract price less: a) a sum equal to the estimated cost of completing any unfinished items as agreed to by Owner and Design-Builder; b) any liquidated damages incurred by Owner due to delay in completion of the Work, and c) \$100,000. The Owner thereafter shall pay Design-Builder monthly the amount held back for unfinished items as each item is completed.”

l. Exhibit A. Performance Standards

This exhibit contains a listing of capacity and treated water quality. Capacity is shown as follows:

Design Flows:

Holding Tanks	30,000 GPD	(Summer Month)
Septage	60,000 GPD	(Summer Months)
Grease Trap	5,000 GPD	
Average Daily Flow	95,000 GPD	

2. Amendment 1

The contract price was amended on July 9, 2004. No change was made in the date of substantial completion.

3. Notice to Proceed

The Notice to Proceed was issued on July 15, 2004.

#### 4. Certificate of Substantial Completion

The Certificate of Substantial Completion is dated May 20, 2005. The certificate was issued on AIA document G704. The document provided for retainage of \$150,000 including a contract provision of \$100,000 and retainage for incomplete work of \$50,000.

The document also provided for retainage from suppliers holding purchase orders directly from Grand Traverse County in the amount of \$64,671.

#### 5. Amendment 2

Amendment 2, dated on December 6, 2005 authorized reconstruction of the damaged portion of the plant after a wall collapsed and authorized changes determined to be necessary after inspection of the plant by NTH acting as the County's independent consultant. The work was called restoration work (to repair the damage) and corrective work (to correct defective work). The amendment provides for the dates upon which corrective work was to begin but is silent regarding a substantial completion date for the restoration and corrective work. Reimbursement of Owner's cost was included and warranties were extended.

### **B. Review and Evaluation**

#### 1. AIA Document for Substantial Completion

Although the contract was not based on an AIA standard format, the Certificate of Substantial Completion used AIA document G704-1992. AIA document A-201 provides commentary on use of G-704. This document is designed for use in a typical contract between the Owner and Contractor with an Architect also holding a contract with the Owner. This substantial completion document provides for signature by the

Architect who is expected to act as an independent advisor to the Owner. Typically, using this document, the Architect (or other design professional) would determine the date of substantial completion based on ability of the work to perform its intended use.

However, the STF was constructed using a Design-Build contract and there was no independent architect. AIA G704 and A-201 make reference to “Architect” as the head design professional. Because of the nature of the STF design and construction, an Engineer would either assist or take the place of the Architect as the head design professional. His or her duties during construction would include observing the construction and advising the Owner that it did or did not comply with the Plans and Specifications. Also, the head design professional would advise the Owner when the project was substantially complete.

In the case of the STF, the review by an independent party (Architect) was lacking. GFA/Christman, LLC, was the Design-Build Contractor. There was no independent advisor for the County.

## 2. System Process Status

An attachment to the Certificate of Substantial Completion was a document titled “System Process Status”. On this document, there are two significant processes which were not complete:

### a. “II. B. EQ Pumps”

“2. Pump 1 is being inspected for excessive vibration, will have solution to repair when inspection is complete.”

This is an indication that one of the two pumps installed at the Influent Equalization Tank was inoperable on the date of the Certificate of Substantial Completion.

b. "III. Fine Screens"

"A. Current installed screens do not meet the required flow rates. Testing is being performed in conjunction with the manufacturer's input to determine the correct screen size. After these determinations are made, procurement will begin on new screens that will achieve are (sic) desired flow rate of 150 gpm per screen.

"B. Until new screens arrive the system will continue to operate at a lower flow rate by controlling influent EQ pumps with VFD's."

This indicates that the plant was not able to receive its design flow on the date of the Certificate of Substantial Completion.

3. Defective Construction

On June 19, 2005, the east wall and roof of the aeration tank collapsed. The subsequent discharge of approximately 115,000 gallons of liquid caused further damage to the adjoining electrical room (part of the screening and dewatering facility). Also, the membrane building was damaged.

Following the collapse, Grand Traverse County Department of Public Works retained NTH to evaluate the damage, determine the necessary repairs and also determine the need for corrective work on all of the structures making up the STF. In a report dated October 17, 2005, NTH described the necessary restoration of the structures that were damaged by the collapse and also presented an extensive list of corrective work which involved essential items of the original construction that were defective or missing.

#### 4. Grease Disposal

Documents in the file indicate that the facility was unable to accept grease until August, 2007. That was two years and two months after the date of the Certificate of Substantial Completion which was issued in spite of the Design-Build Contract (Article 2.3.6) which included waste from grease traps as a pre-condition to Substantial Completion.

#### 5. Plant Testing

Some but not all of the process units were tested prior to the date of the Certificate of Substantial Completion.

It is unlikely that the aeration tanks (membrane tanks) were tested prior to the Certificate of Substantial Completion or they would have collapsed then.

Plant performance testing was commenced in 2007 and completed in June, 2009. (This should have been done prior to issuing the Certificate of Substantial Completion to comply with Article 2.3.5 of the Design-Build contract.) Testing was conducted by CH2M Hill OMI (OMI). Results of the testing were documented by a report titled "Results of Grand Traverse County Septage Treatment Facility Capacity Testing", November 19, 2009.

Early in the testing process, it was determined that the membranes could not achieve the desired permeate rate for which they were designed. GFA/Christman, LLC made modifications to the membrane system which included the addition of four new membrane modules and conversion of the operating program. This modification was completed in July, 2009.

Conclusion of the testing indicated that membrane capacity is affected by the temperature of the liquid which ranges from 50°F in the winter to 84°F in August. Maximum capacity of the STF was determined to be 82,970 gallons per day in July and September and 87,080 gallons per day in August. These values are 92.2% and 96.8% respectively of the contract capacity of 90,000 gallons per day in the summer months. (The plant capacity of 95,000 gallons per day includes 5,000 gallons per day of grease which does not pass through the membranes).

Exhibit A to the Design – Build Contract (Performance Standards) specifies an “Average Daily Flow” of 95,000 gallons per day. Testing by OMI has revealed that the maximum flow which the plant is capable of treating is less than the specified average.

## 6. Summary

### a. Prior to May 20, 2005

At the time the Certificate of Completion was issued on May 20, 2005, it was known that, in addition to a lengthy punch list, two critical parts of the plant were deficient:

- One of two equalization pumps was inoperable
- The fine screens would not meet the contractually required flow rates

### b. On June 19, 2005

When the aeration tank wall collapsed, it became clear that construction was defective. Subsequent inspections by NTH revealed that many critical components of the reinforcing of the concrete tanks had been omitted and much of the construction was inadequate.

c. February, 2007 to June, 2009

The plant testing by OMI indicated in early 2007 that the membrane capacity was inadequate to treat 95,000 gallons per day of waste as required by the Design-Build contract.

Additional membranes were added to the plant. Testing in early 2009 indicated that the plant could treat 82,000 gallons per day to 87,000 gallons per day of septage plus holding tank waste compared with the specified capacity of 90,000 gallons per day in the summer.

d. August, 2007

The STF received grease for the first time.

## C. Conclusions

For the following reasons, it is concluded that Mr. Houlihan did not exercise reasonable professional care in approval of the Certificate of Substantial Completion.

1. Independent professional advice was not obtained regarding the status of the plant when the Certificate of Substantial Completion was issued on May 20, 2005. The subsequent wall collapse and thorough, professional inspection by NTH revealed that much of the construction was incomplete or defective.
2. The documents accompanying the Certificate of Substantial Completion indicated that at least two critical components of the plant were not able to meet the required capacity.
3. Adequate testing was not performed as required in the Design-Build contract Section 2.3.5. This is clear from the failure of the plant to perform when the testing ultimately

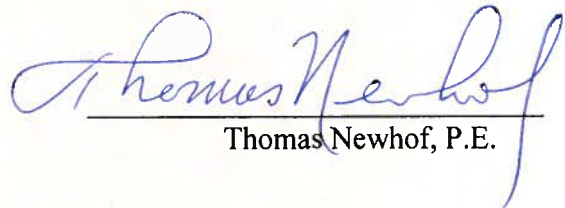
was conducted in 2007 and 2009 resulting in an increase of 33% of the membrane capacity to achieve 92.2% to 96.8% of the contract capacity.

4. The plant was not able to accept grease trap waste as specified in the Design-Build contract Section 2.3.6 until August, 2007.

#### IV. CREDITS

This report was prepared by Prein&Newhof staff with major contributions from Nathan VerHeul, P.E., Mark Prein, P.E. and Thomas Newhof, P.E.

Prein&Newhof



Thomas Newhof, P.E.

## Tables

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**TABLE 1**

**GRAND TRAVERSE COUNTY SEPTAGE HAULER VOLUMES  
2003 & 2008**

County	Hauler	2003		2008	
		Total Gallons <sup>(1)</sup>	GTC Gallons <sup>(2)</sup>	Total Gallons <sup>(1)</sup>	GTC Gallons <sup>(3)</sup>
Grand Traverse	1 Larry Clark Pumper Service	1,805,690	458,336	1,115,731	1,111,934
	2 Sogge Enterprises/Belanger Septic and Security Sanitation	120,900	120,900	2,003,379	1,952,955
	3 Walt Steuer Pumping Service	2,587,660	2,199,511	1,559,387	1,559,387
	4 Cole Septic Service	242,750	242,750	not in business	not in business
	5 M&K Resources (aka Belanger, bought by Sogge)	516,980	516,980	not in business	not in business
Leelanau	6 Williams Pumping Service	2,966,501	1,483,251	4,633,890	1,635,788
	7 Bay Pumping Service (bought by Williams)	2,166,400	433,280	not in business	not in business
	8 Houdek's Pumping Service	2,044,400	0	NA	38,592
Benzie	9 Benzie Crystal & Interlochen Pumping service	0	0	3,014,638	516,221
Wexford	10 Johnson Septic Tank Service	355,725	17,786	405,016	6,179
	11 Raymer's Dozer Service	not in business	not in business	55,550	3,488
Antrim	12 Gmoser's Septic Service	2,104,770	800,000	1,425,982	476,340
	13 J & S Portable Restrooms	not in business	not in business	344,600	0
Kalkaska	14 A-1 Rent-A-Jon	48,600	0	21,850	720
	15 Boardman Valley Construction	239,000	9,000	219,230	0
	16 Ralph's Septic Pumping	820,703	30,000	215,750	24,358
	17 Savage Septic Service	833,400	208,350	440,610	0
NA	18 PCS <sup>(4)</sup>	NA	NA	NA	9,089
<b>Total Volume</b>		<b>16,853,479</b>	<b>6,520,144</b>	<b>15,455,613</b>	<b>7,335,051</b>
Volume from Haulers Contacted by GFA		11,999,354	6,060,078	11,394,729	6,760,762

(1) Total Volumes according to MDEQ records

(2) Volumes based on actual hauling records or estimates (% of total or approx. volume) received from phone conversations with haulers

(3) Volumes from GTC Septage Treatment Facility Records

(4) MDEQ Septage Hauler Directory has no record of PCS

= Haulers contacted by GFA

= Unable to confirm if hauler was contacted by GFA

**TABLE 2**

**GRAND TRAVERSE SEPTAGE RECEIVING FACILITY  
Septage Volume and Revenue - Projected vs. Actual**

	Projected		Actual		Volume Deficit (gal.)	Revenue Deficit (gal.)
	Volume (gal.)	Revenue (\$)	Volume (gal.)	Revenue (\$)		
<b>2005 (May - Dec.)</b>						
Septic	4,458,810	\$535,057	1,992,444	\$239,093	2,466,366	\$295,964
Holding	2,222,647	\$88,906	1,700,453	\$68,018	522,194	\$20,888
Grease	254,033	\$30,484	0	\$0	254,033	\$30,484
Total	6,935,491	\$654,447	3,692,897	\$307,111	<b>3,242,594</b>	<b>\$347,336</b>
<b>2006</b>						
Septic	6,801,826	\$816,219	2,641,739	\$317,009	4,160,087	\$499,210
Holding	3,424,691	\$136,988	2,583,369	\$103,335	841,322	\$33,653
Grease	391,550	\$46,986	0	\$0	391,550	\$46,986
Total	10,618,067	\$1,000,193	5,225,108	\$420,343	<b>5,392,959</b>	<b>\$579,849</b>
<b>2007</b>						
Septic	6,915,437	\$829,852	3,113,694	\$373,643	3,801,743	\$456,209
Holding	3,515,412	\$140,616	2,617,718	\$104,709	897,694	\$35,908
Grease	402,050	\$48,246	211,685	\$25,402	190,365	\$22,844
Total	10,832,899	\$1,018,715	5,943,097	\$503,754	<b>4,889,802</b>	<b>\$514,961</b>
<b>2008</b>						
Septic	7,029,049	\$843,486	3,608,503	\$433,020	3,420,546	\$410,466
Holding	3,606,132	\$144,245	3,226,805	\$129,072	379,327	\$15,173
Grease	412,550	\$49,506	556,851	\$66,822	(144,301)	(\$17,316)
Total	11,047,731	\$1,037,237	7,392,159	\$628,915	<b>3,655,572</b>	<b>\$408,322</b>
<b>2009 (Jan. - Oct.)</b>						
Septic	5,952,217	\$714,266	3,182,578	\$381,909	2,769,639	\$332,357
Holding	3,080,710	\$123,228	2,774,907	\$110,996	305,803	\$12,232
Grease	352,542	\$42,305	391,917	\$47,030	(39,375)	(\$4,725)
Total	9,385,468	\$879,799	6,349,402	\$539,936	<b>3,036,066</b>	<b>\$339,864</b>

Notes:

- Revenue based on the following rates:

Septic	\$0.12
Holding	\$0.04
Grease	\$0.12

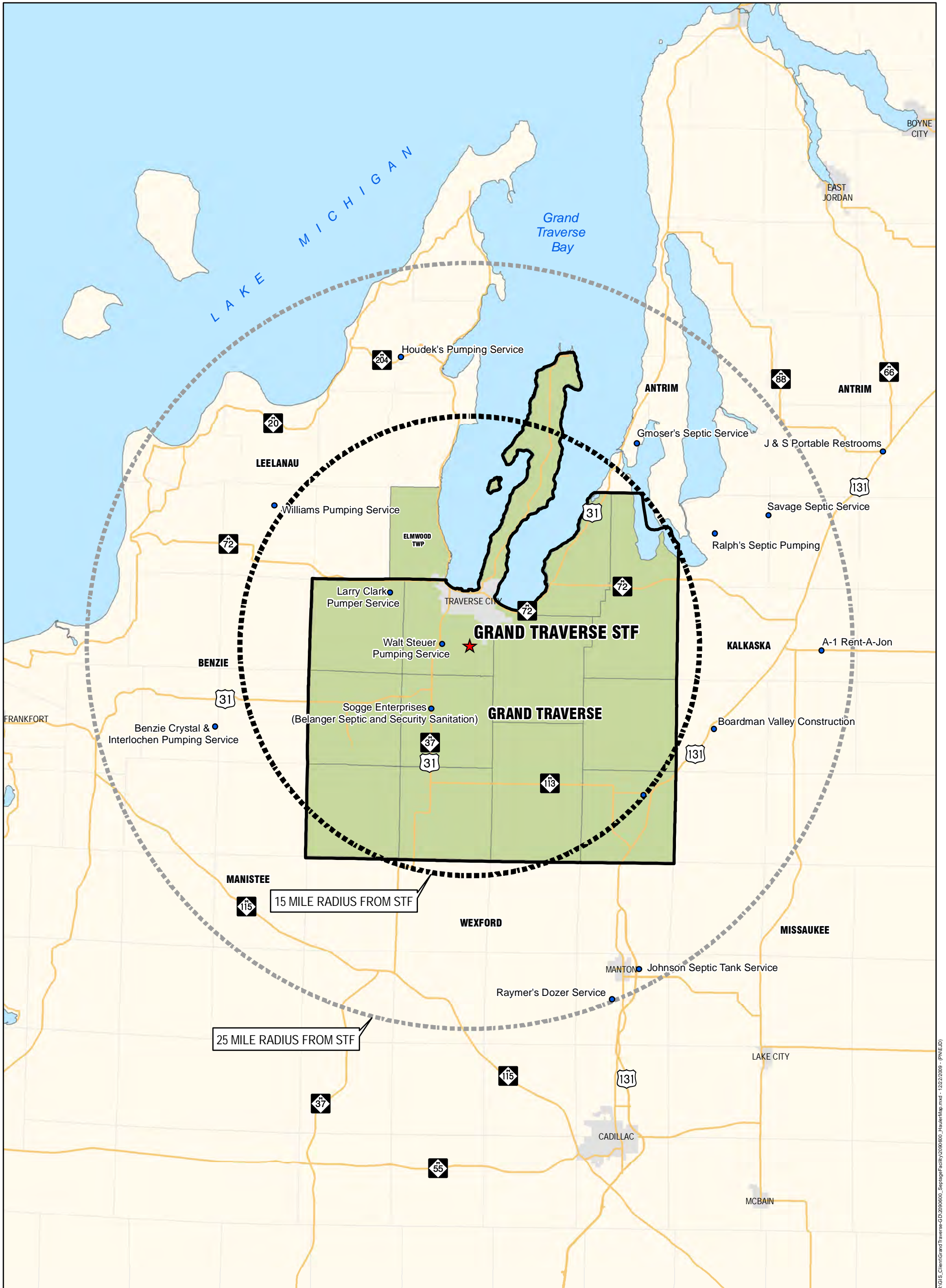
- Projected volumes for partial years (2005 and 2009) assume equal monthly volumes, i.e. monthly volumes are not adjusted for seasonality

TABLE 3

SEPTAGE TREATMENT FACILITY COMPARISON OF GALLONS & DOLLARS SUMMARY TO-DATE											Percent of \$
DATE		SEPTAGE TANK	HOLDING TANK	CHERRY BLOSSOM	BAY HARBOR	BAY HARBOR	AMERICAN WASTE	GREASE TRAPS	TOTAL GALLONS	TOTAL \$	Increase/Decrease from Prev. YR same month
					0.04	New	New				
					As of 6/1/08	07/2009	10/01/09				
		0.12	0.04	0.0589	0.03	0.03	0.03	0.12			
		per gallon	per gallon	per gallon	per gallon	per gallon	per gallon	per gallon			
May 2005		107,695	86,120	0	0	0	0	0	193,815	\$16,368.20	
June 2005		172,844	115,197	0	0	0	0	0	288,041	\$25,349.16	
July 2005		291,188	320,081	0	0	0	0	0	611,269	\$47,745.80	
August 2005		350,349	339,969	0	0	0	0	0	690,318	\$55,640.61	
September 2005		298,271	260,060	0	0	0	0	0	558,331	\$46,194.95	
October 2005		437,527	210,396	0	0	0	0	0	647,923	\$60,919.08	
November 2005		264,761	201,059	0	0	0	0	0	465,820	\$39,813.68	
December 2005		69,809	167,571	0	0	0	0	0	237,380	\$15,079.92	
		1,992,444	1,700,453	0	0	0	0	0	3,692,897	\$307,111.40	
January 2006		72,595	136,918	21,671	0	0	0	0	231,184	\$15,464.54	
February 2006		42,000	129,575	106,831	0	0	0	0	278,406	\$16,515.35	
March 2006		135,416	185,644	365,761	0	0	0	0	686,821	\$45,219.00	
April 2006		274,278	196,668	295,345	0	0	0	0	766,291	\$58,175.90	
May 2006		301,272	241,855	264,576	0	0	0	0	807,703	\$61,410.37	275.18%
June 2006		318,370	272,406	0	0	0	0	0	590,776	\$49,100.64	93.70%
July 2006		257,433	351,104	0	0	0	0	0	608,537	\$44,936.12	-5.88%
August 2006		265,044	337,243	415,169	0	0	0	0	1,017,456	\$69,748.45	25.36%
September 2006		277,328	233,642	181,992	0	0	0	0	692,962	\$53,344.37	15.48%
October 2006		352,199	178,945	0	69,000	0	0	0	600,144	\$52,181.68	-14.34%
November 2006		250,962	155,938	0	1,033,000	0	0	0	1,439,900	\$77,672.96	95.09%
December 2006		94,842	163,431	0	609,500	0	0	0	867,773	\$42,298.28	180.49%
		2,641,739	2,583,369	1,651,345	1,711,500	0	0	0	8,587,953	\$586,067.66	
January 2007		76,778	148,462	0	483,000	0	0	0	708,240	\$34,471.84	122.91%
February 2007		71,334	176,896	0	644,000	0	0	0	892,230	\$41,395.92	150.65%
March 2007		125,306	167,579	0	851,000	0	0	0	1,143,885	\$55,779.88	23.35%
April 2007		256,891	256,987	0	1,161,500	0	0	0	1,675,378	\$87,566.40	50.52%
May 2007		373,965	250,348	0	1,092,500	0	0	0	1,716,813	\$98,589.72	60.54%
June 2007		294,299	182,679	0	920,000	0	0	0	1,396,978	\$79,423.04	61.76%
July 2007		309,314	331,752	0	782,000	0	0	0	1,423,066	\$81,667.76	81.74%
August 2007		282,660	315,784	0	736,000	0	20,596	1,355,040	\$78,462.08	12.49%	
September 2007		349,728	216,862	0	1,160,500	0	41,939	1,769,029	\$102,094.52	91.39%	
October 2007		458,524	208,746	0	1,368,500	0	38,738	2,074,508	\$122,761.28	135.26%	
November 2007		387,142	172,080	0	1,299,500	0	60,136	1,918,858	\$112,536.56	44.89%	
December 2007		127,753	189,543	0	1,092,500	0	50,276	1,460,072	\$72,645.20	71.75%	
		3,113,694	2,617,718	0	11,591,000	0	211,685	17,534,097	\$987,394.20		
January 2008		107,084	198,013	0	1,391,500	0	41,206	1,737,803	\$81,375.32	136.06%	
February 2008		62,710	214,167	0	1,184,500	0	30,981	1,492,358	\$67,189.60	62.31%	
March 2008		85,056	224,448	0	1,207,500	0	49,857	1,566,861	\$73,467.48	31.71%	
April 2008		441,318	272,886	0	1,689,500	0	44,541	2,448,245	\$136,798.52	56.22%	
May 2008		510,696	233,574	0	1,667,500	0	52,738	2,464,508	\$143,655.04	45.71%	
					As of 6/1/08						
					0.03						
June 2008		400,846	345,319	0	1,644,500	0	60,620	2,451,285	\$118,523.68	49.23%	
July 2008		428,536	439,094	0	1,690,500	0	58,702	2,616,832	\$126,747.32	55.20%	
August 2008		339,553	330,405	0	1,667,500	0	56,518	2,393,976	\$110,769.72	41.18%	
September 2008		444,167	273,770	0	1,881,298	0	46,238	2,445,473	\$120,238.34	17.77%	
October 2008		434,124	273,998	0	1,529,324	0	36,814	2,274,260	\$113,352.20	-7.66%	
November 2008		238,273	227,814	0	1,483,525	0	36,438	1,986,050	\$86,583.63	-23.06%	
December 2008		116,140	193,317	0	1,402,217	0	42,198	1,753,872	\$68,799.75	-5.29%	
		3,608,503	3,226,805	0	18,239,364	0	556,851	25,831,523	\$1,247,500.80		
January 2009		71,333	185,785	0	1,276,500	0	36,727	1,570,345	\$58,663.60	-27.87%	
February 2009		92,671	179,472	0	1,127,000	0	39,344	1,438,487	\$58,830.68	-15.42%	
March 2009		101,574	210,675	0	1,667,000	0	39,352	2,018,601	\$75,348.12	2.56%	
April 2009		360,316	225,704	0	1,886,000	0	30,815	2,502,835	\$112,543.88	-17.73%	
May 2009		502,658	303,091	0	2,035,500	0	52,950	2,894,199	\$139,861.60	-2.64%	
June 2009		387,842	341,682	0	2,070,000	0	34,555	2,834,079	\$126,454.92	6.69%	
July 2009		358,556	429,706	0	2,024,000	125,500	51,927	2,989,689	\$130,931.20	3.30%	
August 2009		371,525	372,077	0	2,469,500	307,500	37,553	3,558,155	\$147,282.44	32.98%	
September 2009		392,033	278,073	0	2,101,000	438,000	42,056	3,251,162	\$139,383.60	15.92%	
October 2009		544,070	248,642	0	2,087,500	523,500	194,679	26,638	3,625,029	\$162,601.01	43.45%
November 2009		0	0	0	0	0	0	0	0	\$0.00	
December 2009		0	0	0	0	0	0	0	0	\$0.00	
		3,182,578	2,774,907	0	18,744,000	1,394,500	194,679	391,917	26,882,581	\$1,149,931.05	
<b>GRAND TOTALS</b>		<b>14,538,958</b>	<b>12,903,252</b>	<b>1,851,345</b>	<b>50,285,864</b>	<b>1,394,500</b>	<b>194,679</b>	<b>1,160,453</b>	<b>82,129,051</b>	<b>\$4,258,004.81</b>	

## Figures

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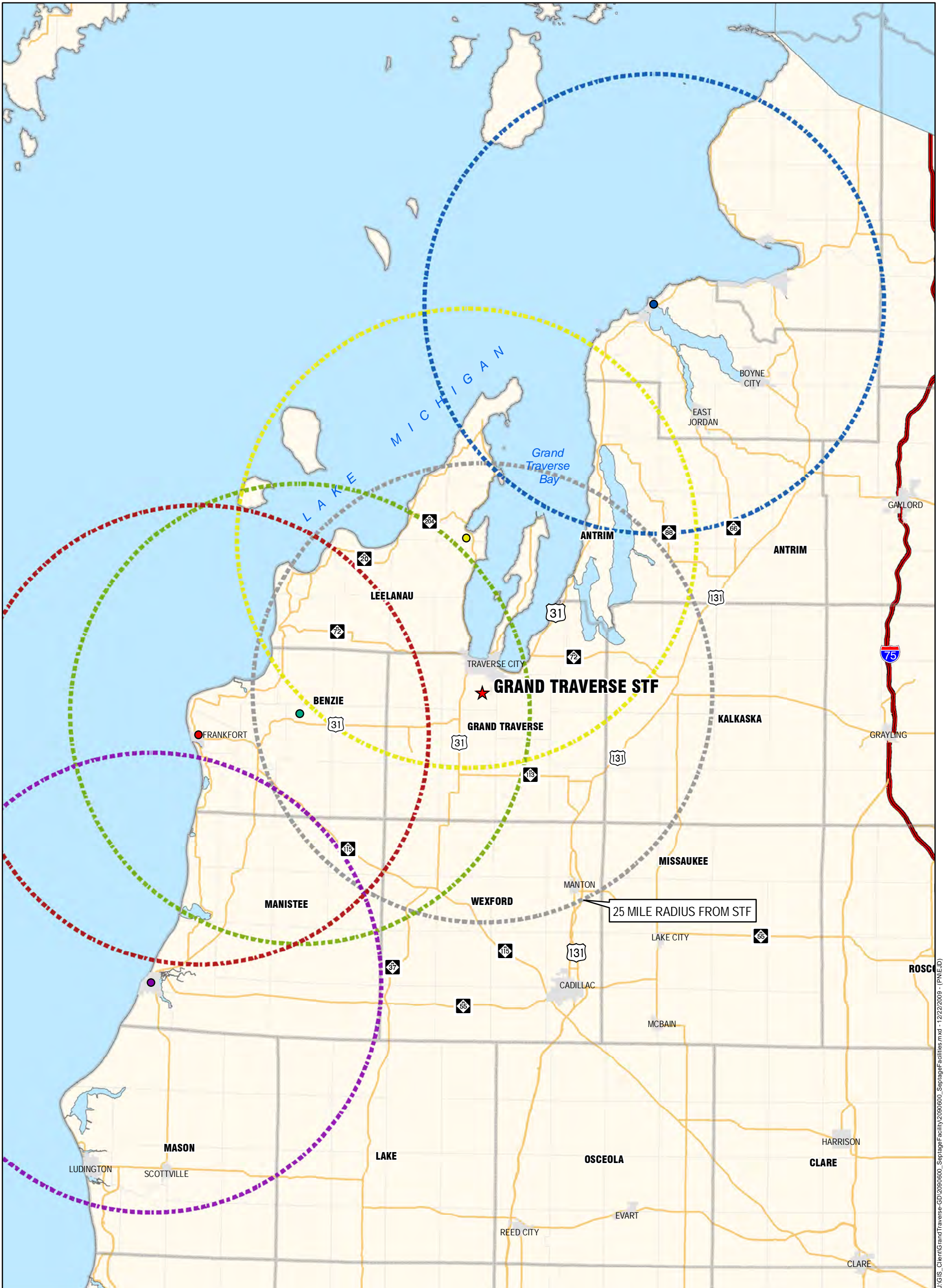
1" = 6 miles

Participating Communities






Grand Traverse County Department of Public Works  
Septage Treatment Facility

FIGURE 1

SEPTAGE TREATMENT FACILITY AND HAULER LOCATIONS



1" = 10 miles

-  Betsie Lake Utilities Authority WWTP
-  Big Fish Environmental, LLC
-  Little River Band of Ottawa Indians Utility Department
-  Suttons Bay
-  Village of Honor

Grand Traverse County Department of Public Works  
 Septage Treatment Facility

FIGURE 2

SEPTAGE TREATMENT FACILITIES AND 25 MILE RADII



**M E M O**

**TO:** Sewer & Water Committee; Board of Public Works; copies to Ross Childs, Dennis Aloia, Dianne Thompson, and Alan Schneider

**FROM:** Chris Bzdok

**DATE:** June 9, 2009

**RE:** Recommendations for septage treatment plant liability investigation

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**Introduction**

The Grand Traverse County Board of Public Works passed a motion on May 26th to investigate whether any of the professionals involved in the development of the septage treatment plant engaged in conduct that gives rise to a claim for monetary damages. I volunteered to make some recommendations about how to go about such an investigation and specifically what questions to answer.

I have looked at some, but not all, of the key documents, including some of the design and construction contracts, the septage plan, some letters, an EPA guide, the certificate of substantial completion for the plant, and a few other items. I only evaluated a possible liability investigation of revenue shortfalls or losses, because I believe that construction and investigation costs related to the collapse of the wall have already been dealt with, and the County has been made whole for those.

This memo identifies two primary questions upon which an investigation like the one identified in the BPW's motion should focus:

1. The first question is whether Gourdie-Fraser breached its standard of professional care in making the septage volume projections that were the basis for the design size of the plant.
2. The second question is whether Michael Houlihan breached his standard of professional care in the issuing of the Certificate of Substantial Completion for the plant.

I discuss both questions in detail below. There are a few related questions that should be answered, too. These are also discussed below.

Getting answers to all of these questions will require an opinion on the applicable standard of care from a professional or professionals with expertise in the relevant field(s). I have some suggestions about how those professionals might be found.

By identifying these questions, I am not saying that anyone is liable. I am saying that in determining whether they could be liable, these are the most important issues on which to focus.

### **Possible Sources of Liability**

To investigate whether Gourdie-Fraser or Michael Houlihan could potentially be liable for damages arising out of the septage plant, we need to examine two things:

- (1) what the sources of liability might be;  
and
- (2) what acts or omissions might give rise to liability.

The two possible sources of liability I can see are:

- (a) liability arising from a contract,  
or
- (b) liability for the breach of a standard of care (a/k/a professional negligence).

Professional negligence deserves some preliminary discussion.

### **Professional Negligence**

As providers of professional services, both Gourdie-Fraser and Mr. Houlihan have a duty to perform services consistent with the standard of care for their profession. They can be held liable for negligence if they failed to use reasonable care in the exercise of the skills of their professions. This could be:

- (a) failing to do something which a person of ordinary learning, judgment or skill in their profession would do;  
or
- (b) doing something which a person in their profession of ordinary learning, judgment or skill would not do under the same circumstances.

The key question for professional negligence is not whether Gourdie-Fraser or Houlihan made a mistake. The key question is whether they exercised reasonable care relative to what others in their professions would do.

- Gourdie-Fraser can be liable for professional negligence if it did not act consistently with the standard of care for an engineer.<sup>1</sup>

- Mr. Houlihan can be liable for professional negligence if he did not act consistently with the standard of care for an attorney in his capacity as counsel for the BPW and Sewer and Water Committee.

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<sup>1</sup>Most cases alleging professional negligence by engineers involve injuries or property damage. This case is a little different, but is similar in the most relevant respects.

- It is possible that Mr. Houlihan could also be liable for professional negligence in his capacity as project manager of the septage facility design and construction, if he did not act consistently with the standard of care for this type of project management. Professional negligence can include negligent supervision. The question is, in what capacity was Houlihan acting as the project manager? As an engineer? An architect? A general contractor? I have not seen a job description for the project manager position and do not know if one exists. If not, we will have to glean the answer from what he was authorized to do in meeting minutes and from the services he actually performed.

- Christman appears to have acted as a contractor and so can only be liable for ordinary negligence, not professional negligence.

- Gourdie-Fraser/Christman LLC is more of a gray area. It is a limited liability company composed of Gourdie-Fraser Inc. and The Christman Company. The design-build contract says that work may be performed by either entity, so I should think that liability for negligence – professional or otherwise – could be assigned to whoever did something negligent (if anything) in performing work under the contract. I note that both Gourdie-Fraser and Christman guarantee the performance of the LLC in Section 2.1 of the design/build contract.

To determine whether an engineer, project manager, or attorney breached the standard of care that applies to their profession, we need to seek the opinion of someone in that profession. That person or persons must determine what a professional in a given situation should do to exercise reasonable care in completing a specific task or responding to a particular issue. In other words, we need an expert opinion.

The answers should be relatively simple to get if we find the right expert and ask the right questions. The right questions can be found in some specific acts that occurred during the history of the septage facility.

### **Specific Acts**

#### ***Volume projections used as the basis of design size***

As everyone who follows this situation knows, the septage volume projections made by Gourdie-Fraser were higher than the actual septage volumes that have been received. According to Table 2.1 of the Financial and Operations Analysis done by Plante Moran and URS, the design volume estimates were just over 11 million gallons of combined wastes per year, and the actual volumes were about 5.8 million gallons in 2007 and 7.6 million gallons (projected) in 2008.<sup>2</sup> The problem, as I understand it, is that the size of the plant – and therefore its cost, and the revenue stream available to re-pay that cost – were based on the inaccurate projections.

The question under a standard of care analysis is not whether the projections were wrong, but whether Gourdie-Fraser exercised reasonable professional care in making the projections. According to Gourdie-Fraser, it used an EPA document called "Guide to Septage Treatment and Disposal" as a guide to make volume projections. Pages 5 and

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<sup>2</sup>I have not attempted to estimate what the monetary value of the difference is, or what proportion of that would be recoverable as damages. The special waste contracts, for example, could be viewed as mitigation of damages, or it could be viewed as "value-added" waste the County was going to get anyway.

6 of the EPA guide suggest three approaches to estimating generation rates. According to its own "briefing sheet" dated February 9, 2009, Gourdie-Fraser did two things:

First, it estimated the number of septage and holding tanks and the frequency with which they were pumped, as mentioned in the EPA guide.

Second, "at the request of the County, Gourdie-Fraser established septage, holding tank and grease volumes by interview of local haulers since no metered information existed. Haulers selected for interview were based on those currently operating land application sites within Grand Traverse County along with three additional haulers who expressed interest in utilizing the facility."

Subsequently, the County asked Gourdie-Fraser to re-confirm the numbers from the haulers, but the haulers did not agree to provide new numbers.

The question that needs to be answered is whether Gourdie-Fraser exercised reasonable care relative to what other engineers would do in estimating the septage volumes for this plant. Only an expert in the relevant field can answer this question.

One argument that may come up is that Gourdie-Fraser followed the EPA guide, so they *ipso facto* met the standard of care. This may be true, or it may not – we cannot determine that from the use of the EPA guide alone, for several reasons.

First, under Michigan law, compliance with governmental and industry standards does not necessarily preclude a finding that the professional breached a standard of care

Second, the EPA does not hold the guide out as a basis for designing a septage plant. The guide says on the first page:

The purpose of this guide is to present practical information on the handling, treatment, and disposal of septage in a concise, recommendations-oriented format for easy use by administrators of waste management programs, septage haulers, and managers or operators of septage handling facilities. The guide is not intended to provide detailed engineering design information.<sup>3</sup>

Third, the interviews of the haulers were not suggested in the EPA guide. Again, that doesn't mean interviewing haulers was *not* a reasonable way to make volume estimates; it just means the EPA guide does not answer the question.<sup>4</sup>

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<sup>3</sup>Section 1.1, Purpose, emphasis added.

<sup>4</sup>The septage treatment plan, dated August 9, 2002 and written by Michael Houlihan, makes this statement at page 7:

Predicting future septage treatment demand is necessary but difficult. In the first place, we have little firm data concerning present pumping rates. Second, we don't know what the impact will be of increased costs for the homeowner. We may expect that some people will pump less often if it costs more, but have no standard to apply. Third, although we have an

(continued...)

We will need to give the engineering expert a copy of Gourdie-Fraser's files on the original estimates, as well as the files from the hauler interviews and the subsequent contacts with the haulers. Jim Minster indicated at the May 29th BPW meeting that Gourdie-Fraser has turned everything over except the hauler files.

### ***Certificate of substantial completion & liquidated damages***

The other issue for which we need an expert opinion is the issuing of the certificate of substantial completion for the plant and its relationship to a section in the design/build contract on liquidated damages. Page 13 of that contract states:

#### **6.2 Substantial Completion - Liquidated Damages**

The date of Substantial Completion of the Work shall be not later than the date set forth in Article I. The parties agree that time is of the essence of this Contract and that Owner will suffer substantial damages if opening of the septage treatment facility is delayed beyond that time, but that such damages will be difficult to measure. The parties agree that Design-Builder will pay to Owner the sum of \$850.00 per day in liquidated damages and not as a penalty as the sole remedy for each working day of delay beginning April 30, 2005 and continuing until such time as Design-Builder's conditions for substantial completion are met.<sup>5</sup>

"Substantial completion" is defined at page 3 of the contract:

Substantial Completion occurs on the date established in a Certificate of Substantial Completion when the facility is open for the receipt of septage and holding tank waste (including grease traps) from licensed septage haulers.

There is an interpretation question here. Does substantial completion occur:

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<sup>4</sup>(...continued)

idea about population growth in our area, we don't know how many existing septage customers will hook up to sewers during the ten year period in question. As a result, we don't present these projections as more than our best ideas, to be modified by experience.

I do not believe that Mr. Houlihan's statement can disclaim Gourdie-Fraser's standard of care obligation, or his own standard of care - if any - as the project supervisor. For that matter, I do not think Gourdie-Fraser could disclaim its standard of care, either. However, this passage will be brought up.

<sup>5</sup>Section 6.2.1 has extension provisions - change orders which extend time, delays caused by owner, etc. I am not aware whether any extensions were granted.

- (a) when the conditions for substantial completion are met, *i.e.* when the facility is open for the receipt of septage and holding tank waste including grease traps;
- or
- (b) on the date established in the Certificate of Substantial Completion?

The way the contract was set up, these two dates were supposed to be the same. They problem is that they were not the same. The certificate for substantial completion was issued with an effective date of May 20, 2005 – about three weeks after the date in the liquidated damages provision. However, there are a number of items listed in a "System Process Status" report from Gourdie-Fraser/Christman, LLC that had not been completed. While I am not an engineer and do not claim to understand the System Process Status report, there is language in it that says a grease pump was not yet in operation, that fine screens did not meet required flow rates, and perhaps the ATAD system may not have been operational at that time.<sup>6</sup>

We also know that the definition of substantial completion in the design/build contract required the facility to be open for all three types of waste – including grease traps – to be considered substantially complete, and the facility in fact did not accept grease trap waste until August 14, 2007. This is roughly two years and four months after the liquidated damages deadline of April 30, 2005.

In a draft letter dated May 21, 2009, Mr. Houlihan took the position that the controlling date for the liquidated damages provision was the date the Certificate of Substantial Completion was issued. This may or may not be correct – as I indicated, it is an issue of interpretation. If Mr. Houlihan is not correct, and any liquidated damages continued to run until the project was in fact substantially complete under the contract documents, then Gourdie-Fraser may be liable for liquidated damages between April, 30, 2005 and August 14, 2007.

If Mr. Houlihan is correct, and any liquidated damages were extinguished by the Certificate of Substantial Completion, that brings up a different question: Why was the Certificate of Substantial Completion issued before the project was substantially complete under the contract?

The Certificate of Substantial Completion starts the warranty period running; transfers responsibility for security, maintenance, heat, utilities, damage to the work, and insurance to the County; and – under Houlihan's interpretation – ends the accruing of liquidated damages.<sup>7</sup> Presumably, it also allows the County to use the facility.

The certificate itself is a document produced by the American Institute of Architects. It is supposed to be completed by a licensed architect, who certifies that:

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<sup>6</sup>While I believe the County has been made whole for the collapse of the wall at the facility, it may be relevant to the substantial completion question that the collapse occurred on June 18, 2005, or 29 days after the certificate of substantial completion was issued.

<sup>7</sup>If no extensions had been granted, I estimate Gourdie-Fraser/Christman had accrued about 15 working days' worth of liquidated damages liability between April 30 and May 20, 2005. 15 working days x \$850 per working day is \$12, 750. I do not know if the County had such a claim, was advised it had such a claim, and/or waived the claim.

The Work performed under this Contract has been reviewed and found, to the Architect's best knowledge, information and belief, to be substantially complete. Substantial completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the work for its intended use.

On the Certificate of Substantial Completion for the septage facility, the first signature line says:

\_\_\_\_\_ N/A  
ARCHITECT

The second signature lines are signed by Gourdie-Fraser/Christman and by a representative of Grand Traverse County.

This raises several questions. Why was a document that is supposed to be certified by an architect signed with no architect's certification? Who did certify that the work was substantially complete? On what basis? What losses did the County incur as a result? Liquidated damages during the period from April of 2005 to August of 2007, if the County was eligible to receive them, would have been substantial. I do not know if the County suffered actual damages due to the loss of grease trap waste revenue during that time period, or how much.

The answers to these questions again require a standard of care opinion from an independent expert. To the extent that Mr. Houlihan handled the Certificate of Substantial Completion in his capacity as Project Manager for design and construction of the facility, the standard of care opinion needs to be whether he acted with reasonable care in that capacity or was professionally negligent in carrying out his supervisory responsibilities.

To the extent this issue relates to Mr. Houlihan's services as counsel for the Sewer & Water Committee and the BPW, the standard of care opinion needs to come from a lawyer with expertise in legal professional negligence. Note that this lawyer would be functioning as a witness, not as someone who would prosecute a civil case if one were brought.

### Other Contractual Provisions

Other provisions in the contracts do not require different questions to be answered than the ones already outlined. The Agreement for Preliminary Design between Gourdie-Fraser and the County dated June 30, 2003 states on page 5:

All services rendered by Engineer to Owner hereunder shall be performed with the care and skill ordinarily used by members of the Engineer's profession practicing in Northwest Michigan at the present time, provided that information readily available to Engineer through professional publications and seminars shall be deemed part of the standard of practice. The parties acknowledge that the facility to be designed and constructed under this agreement and subsequent agreement will require

Engineer to consult with others knowledgeable in the field and that such association is an essential part of this Agreement.

This language is similar to the general standard of care discussed above, with the possible exception of the reference to Northwest Michigan.<sup>8</sup>

Section 10.3 of the Design/Build contract requires Gourdie-Fraser/Christman to carry insurance for "claims arising from the negligent performance of engineering services under this Contract ..." This again assumes the existence of general standard of care obligations.

Amendment Two to the Design/Build contract, dated December 6, 2005, states that it is the "full and complete agreement for the reconstruction of the Septage Treatment Facility," but it does not waive or release anyone from liability related to other matters.

Mr. Houlihan's contract as legal counsel for BPW is from 1981 and says nothing about liability or damages.

### Recommendations

Based on the above, I have the following recommendations:

1. a. Hire someone with expertise in the design and construction of septage treatment facilities to give an opinion on whether Gourdie-Fraser exercised reasonable professional care in making the volume estimates that served as the basis for the design capacity of the septage treatment plant.
- b. If the answer to the first question is that Gourdie-Fraser did not exercise reasonable professional care in making the volume estimates, ask the same firm to give an opinion on whether Mr. Houlihan exercised reasonable professional care in supervising that aspect of the project.
2. a. Use the same firm to give an opinion as to whether Mr. Houlihan exercised reasonable professional care as Project Manager in the approval of the Certificate of Substantial Completion.
- b. Hire a lawyer with expertise in legal professional negligence to give an opinion as to whether Mr. Houlihan exercised reasonable professional care as counsel for the Sewer & Water Committee and BPW in the approval of the Certificate of Substantial Completion.

Since NTH has expertise in septage treatment facilities, but could be perceived as having a professional relationship with Mr. Houlihan because they worked together on the wall collapse investigation, I suggest that we seek a recommendation from NTH about someone else to use for ##'s 1(a)-(b) and 2(a). An alternative would be to ask CH2MHill for such a recommendation. If someone cannot be found with specific expertise in design and construction of stand-alone septage treatment plants, then we should retain someone

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<sup>8</sup>Standards of care for some professions are based on practices in the locality, and for other professions the answer is less clear. I have not researched the issue in detail for this memo.

with expertise in the design and construction of septage treatment equipment at WWTPs.

### Disclaimers

- A. There are a number of other issues that would no doubt come up were a civil action to be brought in this matter. These would include who the proper parties would be, what dispute resolution process would need to occur first, statutes of limitations, etc. I have not reviewed or researched these issues in detail, but I do not believe they need to be answered now, nor do I believe they present insurmountable obstacles at this time to resolving the central questions of the proposed investigation.
- B. While this snowballed into a larger project than I had intended, I am only offering this memo as my homework as a BPW member who is trying to help move the process along. I am not purporting to represent anyone, or to offer legal advice, and do not mean for this memo to be relied upon in an attorney-client fashion. It is a contribution to ongoing deliberations.
- C. I have only looked at a few of the salient documents from what I imagine to be a very large file covering a long time period. I offer these as conclusions from the documents I have seen, not from documents or conclusions I have not seen or am not aware of.

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