



**G. NON-ARRANGED PARTICIPATION:**

*Non-arranged participation will include those in the audience not listed on the agenda that wish to speak. At the Village President's discretion, members of the audience may be called on to speak at any time. Those addressing the Council will state their name, and address. This section is limited to 5-minutes per participant or 10-minutes for group representatives*

**H. COMMUNICATIONS:**

1. Ann Arbor News article regarding Left-Turn Signal Changes

**Page# 13-14**

**I. REPORTS:**

1. Board, Commission, & Other Reports- "Bi-annual or as needed"

Assistant Village Manager  
Dexter Area Chamber  
DAHS&M Gordon Hall Mgmt Team Representative  
Downtown Development Chair  
DAFD Representative  
Farmer's Market Representative  
HRWC Representative  
Library Board Representative  
Planning Commission Chair  
Parks Commission Chair  
Tree Board Chair  
WATS Policy Committee Representative  
WAVE, Representative

2. Subcommittee Reports

Facility Committee- None  
Utility Committee- Minutes from 1-24-08

**Page# 15-66**

3. Village Manager Report

**Page# 67-68**

*"This meeting is open to all members of the public under Michigan Open Meetings Act."*

**[www.villageofdexter.org](http://www.villageofdexter.org)**

4. President's Report

Page# 69-70

**J. CONSENT AGENDA**

*Bills & Payroll will be a standing item under consent agenda. Discussion of the Budget and Financial matters will be covered under the Presidents Report as a standing item. Items under consent agenda are considered routine and will be acted upon in one motion. There will be no separate discussion of these items unless a Council Member so requests, and the item will be removed from Consent and added to the regular agenda at the end of New Business.*

1. Consideration of: Bills & Payroll in the amount of: **\$76,548.18**

Page# 71-78

**K. OLD BUSINESS- Consideration and Discussion of:**

1. Discussion of: Main Street Bridge Project – Phase 2 Funding Update

Property Agreement

Page# 79-84

MDEQ Permit-Issued 2-1-2008

Page# 85-110

Permit Conditions

Page# 111-120

URS – Sediment Agreement Doc.

Page# 121-132

**L. NEW BUSINESS- Consideration and Discussion of:**

1. Consideration of: Request from the Park Commission for a FY 2007/08 Budget Amendment for the completion of park development at Community Park

Page# 133-136

2. Consideration of: Resolution authorizing Downtown Development Bonds, series 2008A (Limited Tax General Obligation) (Taxable) not to exceed \$1,600,000

Page# 137-164

*"This meeting is open to all members of the public under Michigan Open Meetings Act."*

[www.villageofdexter.org](http://www.villageofdexter.org)

3. Consideration of: Resolution authorizing Downtown Development Bonds, Series 2008B (Limited Tax General Obligation) in the amount of \$2,000,000

**Page# 165-180**

4. Discussion of: Request from Scio Township to participate in a Western Regional Police Study.

**Page# 181-182**

5. Discussion of: Formula Prohibitions a.k.a. Form Based Zoning

**Page# 183-200**

6. Consideration of: Recommendation to contract with Rodwan Consulting Company to complete the OPEB Valuation at a cost not to exceed \$4,800

**Page# 201-214**

MOTION TO GO INTO CLOSED SESSION: To discuss Union Negotiations. Closed Session is requested in accordance with the Open Meetings Act, MCL 15.268 sec. 8(d).

**M. COUNCIL COMMENTS**

**N. NON-ARRANGED PARTICIPATION**

*Same as item F. Those addressing the Council will state their name, and address. This section is limited to 5-minutes per participant or 10-minutes for group representatives.*

**O. ADJOURNMENT:**

*"This meeting is open to all members of the public under Michigan Open Meetings Act."*

**[www.villageofdexter.org](http://www.villageofdexter.org)**

DEXTER VILLAGE COUNCIL  
REGULAR MEETING  
MONDAY, JANUARY 28, 2008

AGENDA 2-11-08  
ITEM C-1

**A. CALL TO ORDER AND PLEDGE OF ALLEGIANCE**

The meeting was called to order at 7:30 by President Keough in the Dexter Senior Center located at 7720 Dexter Ann Arbor Rd. in Dexter, Michigan

**B. ROLL CALL:**

D. Fisher P. Cousins S.Keough  
J. Semifero J. Carson R. Tell  
J. Smith

**C. APPROVAL OF THE MINUTES**

Regular Council Meeting Minutes- January 14, 2008

Motion Cousins, support Semifero to approve the Council Meeting Minutes with corrections under Council comments Carson (CAP/DART meeting on January 19<sup>th</sup>) and Semifero (resignation from Webster Township Board not Scio).

Ayes: Cousins,Fisher,Smith,Semifero,Tell,Carson.Keough.

Nays: none

Motion carries

Council Work Session Meeting Minutes- January 14, 2008

Motion Cousins, support Semifero to approve the Work Session Minutes as submitted.

Ayes: Smith,Semifero,Tell,Carson,Fisher,Cousins,Keough

Nays: none

Motion carries

Council Work Session Meeting Minutes- January 19, 2008

Motion Semifero, support Carson to approve the Work Session Meeting Minutes as submitted.

Ayes: Semifero,Tell,Fisher,Carson,Cousins,Smith,Keough

Nays: none

Motion carries

**D. PREARRANGED PARTICIPATION**

None

**E. APPROVAL OF THE AGENDA**

Motion Cousins, support Semifero to approve the agenda adding under closed session the topic of land acquisition.

---

Ayes: Tell, Carson, Cousins, Smith, Fisher, Semifero, Keough

Nays: none

Motion carries

**F. PUBLIC HEARINGS**

none

**G. NON-ARRANGED PARTICIPATION:**

none

**H. COMMUNICATIONS:**

1. Comcast Cable Plans- 1-15-08 article
2. Washtenaw County B of C 2008 calendar
3. Washtenaw County Road Commission 2008 calendar

**I. REPORTS**

1. Washtenaw County Sheriff Dept. – Lieutenant Dieter  
October, November, December 2007 reports
2. Treasurer/Finance Director- Marie Sherry  
Second Quarter Report 2007/08  
Cash balance Report as of December 30, 2007  
Investment Policy
3. Board, Commission and other reports- Bi-annual or as needed.  
  
Library Board Representative- Pat Cousins  
construction is on schedule  
  
WAVE, representative- Jim Carson  
report in packet, ridership is up
4. Subcommittee report  
  
Facility Report- none  
Utility Report- 1-24-08 verbal update
5. Village Manager Report  
Mrs. Dettling submits her report as per packet
6. President's Report  
Mr. Keough submits his report as per packet

**J. CONSENT AGENDA**

1. Consideration of: Bills and Payroll in the amount of \$217,558.10
2. Consideration of: Request from Hal Wolfe, co-ordinator of the Dexter- Ann Arbor

---

Run to allow the event to be held on Sunday, June 1, 2008 and further allow for road closures to accommodate the event.

Motion Fisher, support Smith to approve the consent agenda as presented.

Ayes: Carson,Cousins,Fisher,Smith,Semifero,Tell,Keough.

Nays: None

Motion carries

**K. OLD BUSINESS-Consideration and Discussion of:**

1. Discussion of : Main Street Bridge Project- Phase 2 funding update property issues

Motion Fisher, support Smith to suspend rules to move Item L 4. Discussion of: Signal Timing Report and recommendation for cycle lengths to L 1.

Ayes: Cousins,Fisher,Smith,Semifero,Tell,Carson,Keough

Nays: none

Motion carries

**L. NEW BUSINESS-Consideration of and Discussion of:**

1. Discussion of: Signal timing Report and recommendation for cycle lengths
2. Consideration of: Setting a Public hearing for March 10, 2008 to hear public comment pertaining to an ordinance of private sale of Village property.

Motion Cousins, support Semifero to set a Public hearing for March 10, 2008 for the purpose of public comment regarding an ordinance of private sale of Village property.

Ayes: Smith,Semifero,Tell,Carson,Fisher,Cousins,Keough

Nays: none

Motion carries

3. Consideration of: Resolution declaring the intent of the Council of the Village of Dexter to vacate certain public right of ways

Motion Carson, support Smith to approve the resolution to vacate certain public right of ways as described in Item L 2., agenda 1-28-08.

Ayes: Semifero,Tell,Fisher,Carson,Cousins,Smith,Keough

Nays: none

Motion carries

4. Consideration of: A letter of support for Care Response Ambulance

Motion Cousins, support Fisher to approve a letter of support for Care Response Ambulance.

---

Ayes: Tell,Carson,Cousins,Smith,Fisher,Semifero,Keough

Nays: none

Motion carries

5. Consideration of: Proposal from Tom Traciak of ACI finance to update the water & sewer financial analysis-rate study at a cost NTE \$6500.

no vote, staff to complete study in house.

6. Consideration of: Authorization to enter into the “ road development agreement” with Dexter Community Schools for improvement to Dexter Ann Arbor Road.

Motion Tell, support Smith to approve the authorization to enter into the “ road development agreement” with Dexter Community Schools for improvement to Dexter Ann Arbor Road.

Ayes: Carson,Cousins,Fisher,Smith,Semifero,Tell,Keough

Nays: none

Motion carries

7. Consideration of: Nomination and appointment of Ray Tell as President Pro Tem

Motion Carson, support Fisher to nominate and appoint Ray Tell as President Pro Tem.

Ayes: Cousins,Fisher,Smith Semifero,Tell,Carson,Keough

Nays: none

Motion carries

8. Consideration of: Resolution of Organizational Matters

Motion Semifero, support Smith to adopt the resolution for establishing organizational matters as identified in Item L. 8 , agenda 1-28-08 with the inclusion of Ray Tell as President Pro Tem.

Ayes: Smith,Semifero,Tell,Carson,Fisher,Cousins,Keough

Nays: none

Motion carries

9. Consideration of: Fiscal Year 2007-08 Budget Amendments

Motion Carson, support Semifero to approve the Fiscal Year 2007-08 Budget amendments as presented.

Ayes: Semifero,Tell,Fisher,Carson,Cousins,Smith,Keough

Nays: none

Motion carries

10. Consideration of: Amendments to Council rules

Motion Smith, support Cousins to adopt the amendments to council rules as identified in Item L. 10 , agenda 1-28-08 with the following exceptions:

2.2 shall say next meeting not Monday meeting

Rule 12, take out November – leave as General election

Rule 17, filling a vacancy on Council, shall be as outlined in Item L. 10 with the addition of Mr. Smith's addendum utilizing example D ( attached hereto).

Ayes: Carson,Cousins,Smith,Fisher

Nays: Tell,Semifero,Keough

Motion carries

11. Consideration of: Tree Policy

Motion Carson, support Smith to adopt the Tree Policy as presented by the Tree Board.

Ayes: Carson,Cousins,Fisher,Smith,Semifero,Tell,Keough

Nays: none

Motion carries

12. Consideration of: resolution for the purpose of establishing contributions to the Village tree replacement restricted account

Motion Tell, support Carson to adopt the resolution for establishing contributions to the Village tree replacement restricted account. ( note- asterisks removed from document and D.B.H. means diameter, breast, and height)

Ayes: Cousins,Fisher,Tell,Carson

Nays: Smith,Semifero,Keough

Motion carries

13. Discussion of: General Agreement with Dexter Area Historical Society & Museum entered into December 12, 2005

no one from Village automatically on Board of Historical Society per agreement

Mrs. Dettling to write a letter to Historical Society re: the Village's interest in having representation on the Historical Society's management team

Motion Tell, support Smith to go into closed session re: union negotiations and land acquisition.

Ayes: Smith,Semifero,Tell,Carson,Fisher,Cousins,Keough.

Nays: none

Motion carries

Motion Smith, support Cousins to exit closed session.

Ayes: Semifero, Tell, Fisher, Carson, Cousins, Smith, Keough

Nays: none

Motion carries

Motion Fisher, support Cousins to authorize negotiations re: land acquisition as discussed in closed session.

Ayes: Tell, Carson, Cousins, Smith, Fisher, Semifero, Keough

Nays: none

Motion carries

**M. COUNCIL COMMENTS**

none

**N. NON-ARRANGED PARTICIPATION**

none

**O. ADJOURNMENT**

Motion Carson, support Smith to adjourn at 11:52

Unanimous voice vote

Cheerfully submitted,

David F. Boyle  
Clerk, Village of Dexter

Approved for Filing: \_\_\_\_\_



---

### Memorandum

To: Village Council  
Donna Dettling  
From: Allison Bishop, AICP, Community Development Manager  
Re: General Code - Snow Ordinance Amendment  
PUBLIC HEARING  
Date: February 11, 2008

---

On January 14, 2008 the Village Council set a public hearing to review the proposed amendments to Chapter 46, Division 3, Sections 46-77 and 46-79.

#### REVIEW

Over the past several years staff has diligently tried to notify, educate and facilitate snow removal on residential and commercial sidewalks throughout the village. Every year inspections are conducted following snow storms and every year over 100 letters are sent out to residents notifying them of the rules and regulations for snow removal. Each year a notice is also put in the newsletter reminding residents of the snow removal regulations during the winter season.

To date staffs efforts seem to have made a small impact on garnering compliance and therefore staff would like to recommend that the ordinance be amended.

Attached are proposed amendments to the ordinance and the fine schedule from Chapter 22, Civil Infractions, of the General Code. Based on the information in Chapter 22 the fine amounts are not being changed. The proposed changes include:

1. Clarification of notifications, only one initial notice will be given per winter season.
2. The ordinance also gives the village the authority to have the snow removed 24 hours after a violation notice if the snow has not yet been cleared.

To help protect the safety of village residents on village sidewalks staff requests Council's support for the recommended ordinance amendments.

Please feel free to contact me prior to the meeting with questions.

Thank you,

DIVISION 3. SNOW REMOVAL\*

\*State law references: Authority to require the owners or occupiers of lots or premises to remove all snow or ice from sidewalks in front of or adjacent to such lots or premises, MCL 67.9.

Sec. 46-76. Snow clearance required.

- (a) Businesses and residents shall clear the sidewalks adjoining their property of snow. Failure to clear the sidewalks in a timely manner constitutes a violation of this division.
  - (b) Owners/residents shall have such sidewalks clear within 48 hours of snow cessation.
  - (c) Business owners shall have such sidewalks clear by the start of business or when possible within four hours of snow cessation.
- (Ord. eff. 7-3-2002(3), § 2.0)

Sec. 46-77. Procedure for notice of violation.

The procedure for notice of violation of this division shall be as follows:

- (1) The owner/resident will be contacted to clear the sidewalk by the village manager and/or designee.
  - (2) The first notice may be in person, in writing or by direct telephone contact.
  - (3) The second notice for residents may be processed no earlier than three days following the initial notice date, and within 24 hours of the initial notice date for business owners.
- (Ord. eff. 7-3-2002(3), § 3.0)

Deleted: .

Sec. 46-78. Failure to clear sidewalk.

- (a) Failure to either clear or contract to clear a sidewalk will result in the village contracting to clear the sidewalk.
  - (b) The property owner shall reimburse the village for contracted expenses.
  - (c) Failure to reimburse the village will result in the placement of a lien against the property, plus expenses.
- (Ord. eff. 7-3-2002(3), § 4.0)

Sec. 46-79. Notification and fines.

(a) Notification and fines under this division shall be as follows:

- (1) *Initial notice.* No fine with explanation explaining ramifications if sidewalk is not cleared within 48 hours. An initial notice will only be given once per winter season.
- (2) *First Violation.* \$50.00, and sidewalk must be cleared within 24 hours or the village causes the removal of snow and bills the property owner.
- (3) *Second Violation (First Repeat Violation).* \$100.00 and sidewalk must be cleared within 24 hours or the village causes the removal of snow and bills the property owner.
- (4) *Subsequent Violation.* \$250.00 and sidewalk must be cleared within 24 hours or the village causes the removal of snow and bills the property owner.

Deleted: 15  
Formatted: Font: Italic  
Deleted: Second notice  
Deleted: with explanation of ramifications if  
Deleted: is not  
Deleted: .  
Formatted: Font: Italic  
Deleted: Third notice. The village causes the removal of snow and bills the property owner or resident within 24 hours.  
Formatted: Font: Italic

~~(5) Contract for snow removal. Actual cost, plus \$25.00, to be paid within 30 days.~~

Deleted: 4

~~Contract costs are in addition to civil fines.~~

~~(b) Failure to pay fines and/or invoices within required period will result in the placement of a lien against a property.~~

~~(Ord. eff. 7-3-2002(3), § 5.0)~~

Deleted: If it becomes necessary to place

Deleted: more than twice during the same winter season, the fine shall be \$200.00, plus actual clearing cost, for subsequent clearing of sidewalks of snow

Sec. 46-80. Snow removal individual/contractors.

(a) Village officers and staff will maintain a list of either paid or volunteer snow removal individuals/contractors on file for village residents. Village staff shall respond to resident inquiries within one business day.

(b) It is the responsibility of the resident/property owner to contact a snow removal service, as necessary.

(Ord. eff. 7-3-2002(3), § 6.0)

Sec. 46-81. Hardship and exemption.

(a) If this division creates a hardship to a village resident or village street plowing contributes to an increased hardship, village staff may exercise discretion in enforcing its terms. Exemption forms shall be made available for those who demonstrate a need for exemption from this division.

(b) Village residents may contest village staff actions with the village council as specified in section 18-34.

(Ord. eff. 7-3-2002(3), § 7.0)

Secs. 46-82--46-99. Reserved.

for a particular municipal civil infraction violation, the increased fine for a repeat offense shall be as follows:

- (1) For any offense, which is a first repeat offense, the fine shall be \$100.00.
- (2) For any offense, which is a second repeat offense or any subsequent repeat offense, the fine shall be \$250.00.
- (3) A copy of the schedule, as amended from time to time, shall be posted at the municipal ordinance violations bureau.

(d) Each day on which any violation of any section of this Code or village ordinance continues constitutes a separate offense and shall be subject to penalties or sanctions as a separate offense.

(Ord. No. 9-2004, 2-9-2004)

**Sec. 22-10. Schedule of civil fines.**

(a) A schedule of civil fines payable to the bureau for admissions of responsibility by persons served with municipal ordinance violation notices is established. The fines for the violations listed in this section shall be as follows:

TABLE INSET:

Code Section	Municipal Civil Infraction	First Violation	First Repeat Violation	Second or Subsequent Repeat Violation
10-31	Dogs	\$ 50.00	\$ 100.00	\$ 250.00
18-1	Failure to remove a temporary sign, poster or advertising	50.00	100.00	250.00
18-34	Failure to abate a public nuisance	50.00	100.00	250.00
18-61	Noise	50.00	100.00	250.00
18-82	Roadside dumping and littering	50.00	100.00	250.00
18-112	Storage and repair of motor vehicles	50.00	100.00	250.00
22-9a	Failure to obtain a permit	50.00	100.00	250.00
38-34	Collection and disposal of solid waste	50.00	100.00	250.00
46-76	Failure to remove snow, ice, dirt or debris	50.00	100.00	250.00
54-81	Parking violations	See section 54-81		
54-135	Operation of controlled vehicle in regulated area	5.00	25.00	100.00

(b) A copy of the schedule shall be posted at the bureau.

(Ord. No. 9-2004, 2-9-2004)

**DEXTER VILLAGE  
COUNCIL  
NOTICE OF PUBLIC HEARING**

Notice is hereby given that the Dexter Village Council will hold a public hearing Monday, February 11, 2008 at 7:30 p.m. at the Dexter Senior Center - 7720 Dexter-Ann Arbor Street, Dexter, Michigan for the purpose of hearing public comment regarding the following proposed ordinance amendments to Chapter 46, Division 3, Snow Removal, Section 46-77 and 46-79 of the Village of Dexter General Code:

Section 46-77. Procedure for notice of violation.

The procedure for notice of violation of this division shall be as follows:

(1) The owner/resident will be contacted to clear the sidewalk by the village manager and/or designee.

(2) The first notice may be in person, in writing or by direct telephone contact.

(3) The second notice for residents may be processed no earlier than three days following the initial notice date, and within 24 hours of the initial notice date for business owners.

Section 46-79. Notification and fines.

(a) Notification and fines under this division shall be as follows:

(1) *Initial notice.* No fine with explanation explaining ramifications if sidewalk is not cleared within 48 hours. An initial notice will only be given once per winter season.

(2) *First Violation.* \$50.00 and sidewalk must be cleared within 24 hours or the village causes the removal of snow and bills the property owner.

(3) *Second Violation (First Repeat Violation).* \$100.00 and sidewalk must be cleared within 24 hours or the village causes the removal of snow and bills the property owner.

(4) *Subsequent Violation.* \$250.00 and sidewalk must be cleared within 24 hours or the village causes the removal of snow and bills the property owner.

(5) *Contract for snow removal.* Actual cost, plus \$25.00, to be paid within 30 days. Contract costs are in addition to civil fines.

(b) Failure to pay fines and/or invoices within required period will result in the placement of a lien against a property.

A complete copy of this Ordinance is available at the Village Office, located on the second floor of the National City Bank Building 8123 Main Street, Dexter MI weekdays between 9:00 am and 5:00 pm or at [www.villageofdexter.org](http://www.villageofdexter.org)

Allison Bishop, Community Development Manager  
Dexter, MI 48130

Publish: January 24, 2008

**STATE OF MICHIGAN**

of Washtenaw, ss:

**COLLEEN COOPER**

I, \_\_\_\_\_, do hereby swear, depose and says the annexed printed copy of a notice from The Dexter Leader, a newspaper printed and circulated in \_\_\_\_\_ and county; that the said notice has been duly published in said \_\_\_\_\_ for 0 successive weeks, the first insertion thereof being on the \_\_\_\_\_ 24th day of January, A.D. 20 08 and subsequent insertions being on the \_\_\_\_\_

That she is chief clerk of said newspaper and knows the facts stated herein.

*Colleen Cooper*

COLLEEN COOPER

Subscribed and sworn to me this 30<sup>th</sup> day of January, 08 A.D.

*Linda D. Pearsall*

Notary Public, Washtenaw County, Michigan

My commission expires: 4-10-11

LINDA D. PEARSALL  
Notary Public, State of Michigan  
County of Washtenaw  
My Commission Expires Apr. 10, 2011  
Acting in the County of WASHTENAW



2/1/08

# State changing left-turn signals

## Flashing red lights will be phased out

BY JIM IRWIN  
*The Associated Press*

DETROIT — When it comes to turning left, Michigan drivers will have to learn new habits in order to get it right.

Federal safety officials are requiring that Michigan phase out signals using flashing red lights

for left-turning traffic and replace them with a four-phase system of left-turn arrows.

The new signals will work like this: Left-turn arrows will go from flashing yellow (turn left after yielding to oncoming traffic), to steady green (proceed with left turn) to steady yellow (prepare to stop, or complete the left turn if you are legally within the intersection), to red (stop).

The new signals have been installed at eight intersections and

freeway ramps around Michigan, MDOT spokeswoman Janet Foran said. Of the 300 or so signals that use flashing red arrows, MDOT plans to replace about 20 of them every year, she said.

There is no deadline for the removal of existing older signals. But after Oct. 1, all new signals regulating left turns must include the four-phase system.

Studies have shown that flashing yellow arrows help prevent crashes and allow more traffic

through an intersection, whereas the flashing red can be confusing, according to Foran.

“Michigan and Delaware, I think, were the only two states in the union that used the flashing red, and it apparently sent mixed messages to the driver, especially somebody from out of state,” said James Lillo, engineer-manager for the Bay County Road Commission. “Red is ‘stop’ and what does flashing red mean? People didn’t really know.”

AGENDA 2-11-08  
ITEM H-1

**ADDITIONAL INFORMATION**

**Introducing the yellow left-turn signal**

Locations using the new flashing yellow arrow traffic signal being phased in by the Michigan Department of Transportation:

**Lansing Area:**

- Old U.S. 27 (Lansing Road) at Canal Road
- Michigan 43 (Grand River) at Park Lake

**Jackson Area:**

- Interstate 94 EB Off-Ramp at Airport Road
- Interstate 94 WB Off-Ramp at Airport Road

**Howell Area:**

- M-59 at Oak Grove/Michigan

**Grand Rapids Area:**

- M-37 (Alpine) at Menard's/Alpine Crossing

**Ludington Area:**

- U.S. 10 at Jebavy
- U.S. 10 at U.S. 31 SB On-Ramp

**Locations where the new signals are scheduled to be installed in 2008:**

**Metro Detroit Area:**

- I-94 EB Off-Ramp at Pelham
- I-94 WB Off-Ramp at Pelham
- M-153 (Ford Road) at Canton Center
- M-153 at Lotz
- M-153 at Sheldon

- 
- M-153 at Ikea Dr.

**Battle Creek Area:**

- M-66 (Division) at I-94 BL (Hamblin)
- M-66 (Division) at Michigan
- M-66 (Division) at Van Buren

**Grand Rapids Area:**

- M-11 (28th St.) at Buchanan
- M-11 (28th St.) at Division

**Lansing Area:**

- M-43 (Grand River) at Okemos
- M-43 (Grand River) at Marsh

**Benton Harbor Area:**

- I-94 EB Off-Ramp at Pipestone

**Flint Area:**

- I-75 NB Off-Ramp at M-57
- M-57 at Peterson Road
- M-57 at Plaza Drive

*Source: Traffic and Safety Section, Michigan Department of Transportation*

AGENDA 2-11-08

ITEM I-2

# Meeting Summary

**Utility Committee Meeting  
January 24, 2008 5pm  
Village of Dexter**



Attendees:     Shawn Keough                             Joe Semifero  
                     Donna Dettling                                 Ed Lobdell  
                     Courtney Nicholls                                 Rhett Gronevelt  
                     Robert Czachorski                                 Christine Cale

## 1) Recap of the Village's Wastewater Activities

a) **SRF Project Plan** – At a meeting on 10/22/07, the Village and OHM met with the MDEQ to discuss a Sept 28, 2007 letter sent from the MDEQ to the Village indicating that the Village of Dexter's project plan would not be listed on the fiscal year 2008 Project Priority List (PPL) for SRF funding. The results of that meeting were several action items (see attached meeting minutes). OHM drafted a response to the Sept 28, 2007 letter addressing the necessary action items. The following is a quick summary of those items:

1. *Cost-effective analysis of the sanitary sewer rehabilitation costs to the cost of constructing an equalization basin.* – A cost-effective analysis was completed showing that it was most cost-effective to only construct the EQ basin. Other alternatives, including the rehabilitation of the sanitary sewer, were not the most cost effective. If approved by DEQ, the sanitary sewer rehabilitation portion of the project plan will be removed, and only the EQ basin construction portion remains eligible for SRF funding. It is recommended that the Village continue to perform O&M on their sanitary sewers to ensure proper function of the sewers and discussion about budgeting for the rehabilitation pursued.
2. *Revisit the metering data to identify areas of high I/I and confirm that further SSES work is not necessary in the Village.* – The metering data was revisited, and it was discovered that much of the I/I is coming from Sub-district 3. The sources of I/I were not identified through traditional SSES work. It is recommended that the Village continue O&M operations to identify any potential sources of I/I, and some ideas were discussed. However, further SSES work is not believed to be necessary, and it is hoped DEQ will concur.
3. *Quantify the effectiveness of the manhole rehabilitation.* – This was completed through the Antecedent Moisture Model. See notes below.
4. *Finalize the size of the equalization basin.* – This was also completed as part of the Antecedent Moisture Model.

b) **Cedars of Dexter – Part 41 permitting** – The Village has been working with the developer of the Cedars of Dexter site to obtain a Part 41 permit from the MDEQ. Other than some minor technical details on the plans, the main factor that was preventing the

issuance of the permit was the capacity of the Wastewater Treatment Plant. The meeting of 11/19/07 with the Jackson District Staff identified two possible means of addressing the peak capacity issue: 1) The potential reduction of peak flows due to the manhole rehabilitation program could be evaluated, and 2) Consideration of how the plant currently handles flows in excess of the peak capacity of 1.3 MGD, might be the premise for enforcement actions that could include release of Part 41 Permits.

- i) **WWTP capacity** – The WWTP does not have any additional peak (wet weather) capacity. However, if the wet weather flows can be addressed, average-day capacity exists. The manhole rehabilitation was completed to reduce the amount of I/I entering the wastewater system during wet weather. The AMM evaluated the rehabilitation effectiveness and estimates that the peak I/I flow may have been reduced by as much as 0.30 MGD. This information suggests that additional connections due to development could be made without increasing the likelihood of an SSO from what existed prior to the rehabilitation. Significant time was spent discussing what this means, and the risks that remain, if an SSO were to occur.
- ii) **Deb Snell letter dated 11/30/07** – Occasionally, the sand filters (tertiary treatment) are bypassed to process the excess wet weather flows that enter the WWTP. This is identified as “blending”. Even with the bypassing of the filters, the Village has not exceeded the effluent discharge limits of their NPDES permit. However, the recent MDEQ letter states that the DEQ views the sand filter bypass, or “blending”, as a violation of the NPDES permit, and may consider this as a reason for escalated enforcement with the Village. This was discussed, and the response letter attached clarifies the Village’s position that a violation has not occurred and we wish to discuss further with MDEQ. If enforcement action results, it could include the release of additional Part 41 Permits.

- 2) **Antecedent Moisture Model (AMM)** – The AMM was completed using the flows from December 2006 to December 2007, one full year after the manhole rehabilitation project was completed. Several conclusions were drawn from the completion of the AMM.
  1. The I/I wet weather response at the WWTP is predominantly caused by inflow, likely impervious areas that are directly connected to the sewer system (i.e. parking lots, roof drains, etc.).
  2. Using the 2007 rain data and flows, the Village’s system is a rather dry system when compared with other similar systems. This type of system is ideally suited for wet weather flow equalization.
  3. A 500,000-gallon equalization basin would meet the Village’s needs, allowing for some planned growth while capitalizing on the on the current dry-weather flow treatment capacity of the WWTP.
  4. A frequency analysis suggests that the manhole rehabilitation project removed

approximately 0.30 MGD of peak I/I flows, which is similar to the initial prediction of 0.19 MGD.

- 3) Responses to the MDEQ** – Three letter responses were sent to the MDEQ on January 30, 2008. Attached to these minutes is the correspondence leading up to the following letter responses to the MDEQ.
1. Chip Heckathorn, SRF Group – A letter was sent in response to a Sept 26, 2007 letter from the MDEQ addressing the necessary action items to add the Village to the PPL for FY 2009 for SRF project funding. The attachments included a cost-effective analysis, metering data, and the AMM. It is hoped this information would amend the project plan to include only the EQ basin and put back on PPL.
  2. Tiffany Myers, District Office – A letter was sent in response to a Jan 17, 2008 letter and Oct 10<sup>th</sup> email addressing items regarding the Part 41 permit for the Cedars of Dexter site. Attachments include the AMM and revised Cedars of Dexter plans. It is hoped this information allows for the issuance of a Part 41 permit for the Cedars of Dexter site.
  3. Deb Snell, District Office – A letter was sent in response to a Nov 30, 2007 letter regarding the bypass of sand filters in the WWTP. No additional attachments were necessary. This letter should establish the Village's position relative to the DEQ's belief that the bypassing of tertiary treatment is a violation, and begin discussions of what actions the DEQ is requesting the Village to take.

While the MDEQ has received these items and we've had phone conversations, there has not yet been a formal response from the MDEQ to the letters. OHM will contact them by Feb 15, 2008 if nothing has been received from the MDEQ at that time.

January 30, 2008

Mr. Chip Heckathorn  
Michigan Department of Environmental Quality  
Revolving Loan and Operator Certification Section  
Environmental Sciences and Services Division  
525 West Allegan Street  
PO Box 30457  
Lansing, MI 48909-7957



Re: State Revolving Fund  
Village of Dexter  
SRF Project No. 5291-01

Dear Mr. Heckathorn:

Based on flow records from the Village of Dexter WWTP, wet weather flows have exceeded the plant's design peak flow rate on several occasions. On July 1, 2007, the Village submitted a SRF Project Plan to the MDEQ in the hopes of obtaining a SRF loan to rehabilitate leaking sanitary sewers and for the construction of an equalization basin to address storm induced wet weather flows reaching the WWTP.

In the correspondence from your office to Donna Dettling, the Village Manager, dated September 28, 2007, the MDEQ indicated that the Village of Dexter's proposed project would not be listed on the FY 2008 Project Priority List (PPL), and that additional information was needed before they could approve the Project Plan and place it back on the PPL. Specifically, the MDEQ indicated that a new cost-effective analysis was required, and that additional SSES work was necessary to justify the cost analysis.

Addressing the peak wet weather flows is vital to the Village, as it is directly tied to their ability to secure additional Part 41 permits. Without additional permits, the Village will be unable to provide additional sanitary sewer service to the property owners in the Village.

On October 22, 2007, OHM and the Village met with representatives of the MDEQ to discuss the required updates to the Project Plan and the potential for the Village to obtain additional Part 41 permits. Good discussion occurred at the meeting, and the following action items were identified:

- Amend the existing project plan to include a cost-effective analysis of comparing sanitary sewer rehabilitation costs to the cost of transporting and treating the clear water.
- Re-evaluate the flow metering data (March 2007 – July 2007) to determine which sub-districts exhibited high wet weather response and consequently should be targeted for future SSES efforts, if necessary.
- Perform modeling to finalize the size of the proposed equalization basin.
- Quantify the effectiveness of the 2006 manhole rehabilitation program using a minimum of 12 months of flow data following the rehabilitation to determine the impact on the necessary volume of storage.
- Arrange a meeting with the District office to address the potential of issuing Part 41 permits in light of the additional information provided to the MDEQ.

#### Cost-effective Analysis of Sanitary Sewer Rehabilitation Costs to the Cost of Transport and Treat

The selected alternative in the Project Plan included \$1,000,000 in sanitary sewer rehabilitation along with the construction of a 1-million gallon equalization basin estimated at \$2,800,000. A cost-effective analysis was performed for each individual sewer identified for rehabilitation by considering the cost of rehabilitating a particular stretch of sanitary sewer against the cost to store the equivalent amount of storm water expected to be removed.

The cost-effective analysis showed constructing storage is more cost-effective than rehabilitating the sanitary sewers. Therefore, the Project Plan should be amended to include only construction of an equalization basin as the selected alternative. Attached to this letter is a breakdown of the cost-effective analysis.

However, it should be noted that a number of the sewers identified in the Project Plan have significant structural deficiencies that should be repaired. MDEQ rules prohibit funding of structural repairs, except interceptors. Therefore, the Village is exploring alternative sources of funding for the sewer repairs.

#### Re-evaluate Flow Metering Data from March 2007 – July 2007

In the initial Metering Report dated July 26, 2007, the results showed very low system response to storm events. Dividing the flows by the number of people in each metering sub-district resulted in a range of 46 to 93 gpcd, far below the EPA's guideline of 275 gpcd in which I/I removal is determined to be cost-effective. This may have been partially the result of smaller storms during the metering period. Between March and June, the maximum flow rate at the WWTP was 0.96 MGD. The WWTP has been known to exceed the peak hour capacity of 1.3 MGD and design peak flows are projected to be 1.9 MGD (discussed below). Therefore, the metering period did not contain any large wet weather events.

In the original analysis, the average maximum wet weather flow was used to analyze the amount of I/I in the system. This was computed by averaging the peak flows from the small rain events that did occur during the metering period. Because so many of the events were small, when their peaks were averaged it made it difficult to identify sub-districts with high I/I. The small rainfalls and subsequently mild peak flows observed during the metering period made it challenging to use the metering data to isolate high I/I areas in the system from the data with this methodology.

For this re-evaluation, we looked at the maximum peak wet weather flow for the two largest events that occurred during the metering period on April 25 and April 30, 2007 (see attached hydrographs). Although they were smaller rain events (total rain of 1.36 inches and 0.80 inches, respectively, in 24-hours), both events exhibited a discernable I/I response in the system. For both events, about half of the I/I flow occurred in the collection system upstream of the last two meters in the system (Meter 1 and the Westridge Pump Station). The other half of the I/I occurred between these meters and the WWTP Parshall flume meter. This area includes sub-district 3 and the WWTP site (see attached map). By acreage this area represents less than 4% of the service district, while it generated about half of the I/I. For the remainder of the system, only sub-district 7 showed an I/I response with a wet weather/dry weather peak flow ratio greater than two.

Sub-districts 3 and 7 were investigated as part of the 2000 SSES and the 2006 I/I Study, which included sewer televising and additional manhole inspection confirming the results of the 2000 SSES. Although they still appear to be contributing I/I even after the manholes rehabilitation, all located public sources of I/I in these areas have been considered as alternatives in the Project Plan analysis, and have not proven to be cost effective. No other districts appear to be significant sources of I/I, and therefore, no further SSES and/or televising efforts are recommended.

The fact that sub-district 3 still exhibits so much I/I suggests that there is a significant source of I/I that has eluded our SSES investigation. This could be caused by a storm drain or a roof lead corrected by a trap, among other things. As part of the Village's maintenance of their wastewater system, the Village is continuing to investigate potential sources of I/I.

#### Proposed Equalization Basin Sizing & Quantification of 2006 Manhole Rehabilitation Effectiveness

In the 2007 Project Plan, it was noted that a peak storm flow of 2.6 MGD may have reached the plant in May of 2004 (although the recording device was unable to record it) and that a 1-million gallon equalization basin recommended for the Village's system. The size of the basin was a conservative estimate and used traditional

methodology for sizing. Since the original review of the equalization basin size was completed, the Village embarked on a manhole rehabilitation program (November – December 2006) and has since seen reductions in peak flows during storm events.

Therefore, a detailed system hydrologic model was performed in January 2008 in order to determine the appropriate size of the equalization basin taking into consideration the manhole rehabilitation work that was performed. In addition, another goal of the modeling was to quantify the effectiveness of the manhole rehabilitation program. Attached to this letter is a copy of the modeling report (Antecedent Moisture Model – Technical Memo). Following are the conclusions from the modeling effort:

1. The Village sanitary sewer system is a relatively dry system, considering the age of many sewers. The 2007 average day flow rate was 0.31 MGD and the design 10-year frequency storm is 1.9 MGD resulting in a wet weather peaking factor of 6.1. This is compared to a peaking factor of 10 or greater for wet systems.
2. In 2007, the modeling shows that the vast majority of I/I observed occurred from inflow sources. The infiltration component was almost negligible.
3. Exceedances of peak WWTP capacity are primarily due to the low peak design factor of only 2.2 (1.3 MGD/0.58 MGD). Plants designed with low peaking factors often require equalization storage to maximize operation.
4. The results of the 2008 modeling effort identified that a 500,000-gallon equalization basin is the appropriate size. This size basin will enable the WWTP to be fully utilized to its design average day flow of 0.58 MGD.
5. The manhole rehabilitation program was determined to be effective. It is estimated that upwards of 0.3 MGD may have been removed from the system at the design 10-year frequency storm (2.2 MGD reduced to 1.9 MGD).

We believe that the additional information presented satisfies the items required by your office to place the Village's proposed project back on the PPL for future funding. If you concur with this assessment, please indicate what information, if any, may be required to supplement the Project Plan and place the project on the PPL. We appreciate the MDEQ's time assisting the Village to secure funding through the SRF program. If you have any questions or wish to discuss this information, please feel free to contact me.

Very truly yours,  
Orchard, Hiltz & McCliment, Inc.



Rhett Gronevelt, P.E.  
Client Representative

Enclosures

cc: Donna Dettling, Village Manager, Village of Dexter, 8140 Main Street, Dexter, MI 48130  
Janet Monroe, MDEQ, Revolving Loan and Operator Certification Section, Environmental Sciences and Services Division, 525 West Allegan Street, PO Box 30457, Lansing, MI 48909-7957  
Les Prether, MDEQ, Revolving Loan and Operator Certification Section, Environmental Sciences and Services Division, 525 West Allegan Street, PO Box 30457, Lansing, MI 48909-7957  
Tiffany Meyers, MDEQ Surface Water Quality Division, Jackson State Office Building, Fourth Floor, 301 E. Louis Glick Highway, Jackson, MI 49201

# Memorandum



**Date:** January 30, 2008

**To:** Donna Dettling, Village Manager

**CC:** Ed Lobdell, DPS Superintendent

**From:** Rhett Gronevelt, P.E.  
Christine Cale, P.E.

**Re:** Inflow and Infiltration Study  
Cost-effective Analysis

OHM conducted an Inflow and Infiltration (I/I) analysis for the Village of Dexter in July 2006. The I/I analysis included televising the sanitary sewers in the Old Village area (metering sub-districts 3, 7, and 10). In addition, an investigation was completed in 2006 to reassess the condition of the manholes that were identified as having deficiencies in the 2000 Sanitary Sewer Evaluation Survey. Based on the results of the manhole investigations, manhole rehabilitation was completed in November 2006.

The recommendations for sewer rehabilitation based on the 2006 I/I study were included in the SRF project plan, which the Village submitted to MDEQ on July 1, 2007 in an effort to obtain a low interest loan for completing the improvements. The MDEQ requested that the Village perform a cost-effective analysis of the sewer rehabilitation to determine if it is more cost-effective to repair the sanitary sewers or to transport and treat the excess flow.

As part of the I/I analysis, the peak I/I removal in gallons per minute (GPM) was estimated for each pipe based on observed deficiencies. The analysis also provided recommended rehabilitation techniques for the deficient pipes and an associated cost for such repairs. In order to determine if the pipe rehabilitation was cost-effective, it was necessary to compare the cost of rehabilitation to the cost of transporting and treating the excess flow.

The existing wastewater treatment plant (WWTP) does not have adequate capacity to treat the peak flows. Therefore, the transport and treat cost has two components: cost of constructing storage and savings at the WWTP by storing excess flows. The savings at the WWTP are expected to be negligible since the operation and maintenance will not change significantly. The cost for storing the excess flows was estimated to be \$2.75 per gallon. The volume in gallons was determined by assuming the estimated peak I/I (GPM) occurs over an eight-hour period, which is a typical duration for response to a rain event for the Village. The cost-effective analysis was completed on a per pipe basis, and the calculations are provided in the attached spreadsheet.

The results of the cost-effective analysis show that only three of the 74 pipes included in the analysis are cost-effective to repair on an I/I removal basis. As a result, it is recommended that the Village omit sanitary sewer rehabilitation from the SRF Project Plan alternative.

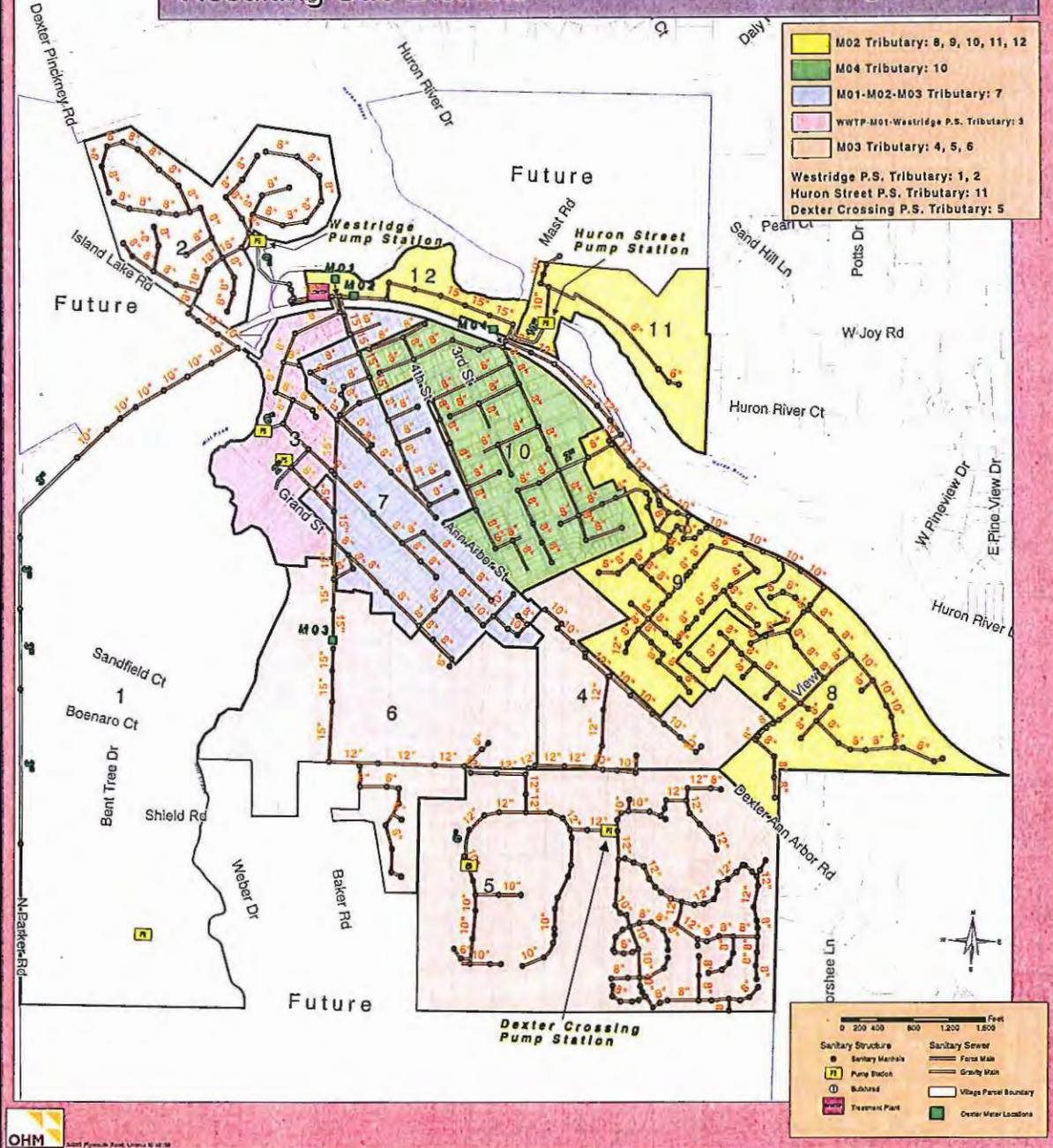
Priority Rating	Rehabilitation Category	Incomplete Investigation	Deficiency	Pipe ID	Street Name	From MH	To MH	Length of Sewer (ft)	Pipe Size (in)	Material	Potential Peak I/I Removal* (gpm)	Cost-effective Analysis				
												Volume (gallons)	Approximate Rehab Cost	Transport and Treat Cost		Cost-effective?
														WWTP O&M Savings	Storage Cost \$2.75/gal	
Low	1		Structural	1	Second Street	302	301	198	8	Clay	0.01	3	\$297	N/A	\$9	No
High	5		I/I	4	Second Street	304	303	525	8	Clay	2.58	1239	\$78,750	N/A	\$3,408	No
Low	3		I/I	55	Second Street	306	307	265	8	Clay	0.46	220	\$5,300	N/A	\$605	No
Medium	3	X	I/I & Structural	8	Inverness Street	309	313	292	8	Clay	0.50	241	\$5,840	N/A	\$664	No
High	5		I/I & Structural	9	Second Street	310	309	298	8	Clay	3.54	1697	\$44,700	N/A	\$4,666	No
Low	3		Structural	85	Second Street	311	310	70	8	Clay	0.10	49	\$1,400	N/A	\$136	No
Medium	5		I/I & Structural	51	Inverness Street	315	309	215	8	Clay	2.36	1133	\$32,250	N/A	\$3,115	No
Low	3	X	I/I	11	Third Street	318	317	319	8	Clay	0.03	16	\$6,380	N/A	\$44	No
Low	3	X	Structural	12	Fourth Street	319	320	412	8	Clay	0.25	119	\$8,240	N/A	\$326	No
Low		X	I/I	100	Fourth Street	319	318	484	8	Clay	0.00	0		N/A	\$0	No
Low	3	X	I/I	14	Broad Street	322	321	288	8	Clay	0.46	220	\$5,760	N/A	\$606	No
Low	2	X	Structural	16	Third Street	324	325	465	8	Clay	0.04	20	\$1,860	N/A	\$54	No
Low	3	X	Structural	19	Dover Street	326	327	353	8	Clay	0.15	70	\$7,060	N/A	\$193	No
Low	3	X	Structural	80	Edison	328	Unknown	185	8	Clay	0.10	49	\$3,700	N/A	\$134	No
Low	1	X	Structural	20	Hudson Street	331	330	258	8	Clay	0.01	3	\$387	N/A	\$8	No
Low	3	X	Structural	22	Fourth Street	335	336	275	8	Clay	0.15	70	\$5,500	N/A	\$194	No
Low	3	X	Structural	82	Fourth Street	337	338	521	8	Clay	0.09	42	\$10,420	N/A	\$115	No
Low	1	X	Structural	24	Fourth Street	337	339	269	8	Clay	0.04	17	\$404	N/A	\$47	No
Medium	3	X	I/I & Structural	25	Fourth Street	340	339	476	8	Clay	0.86	415	\$9,520	N/A	\$1,140	No
High	5		Structural	76	Inverness Street	341	342	400	8	Clay	2.33	1120	\$60,000	N/A	\$3,079	No
Low		X	I/I	0	0	506	Unknown	15	0	0	0.00	0		N/A	\$0	No
Low	1	X	Structural	72	Fifth Street	509	589	206	8	Clay	0.00	1	\$309	N/A	\$3	No
High	5	X	Structural	66	Ann Arbor Street	512	582	475	8	Clay	2.32	1116	\$71,250	N/A	\$3,068	No
Medium	4	X	I/I & Structural	64	Ann Arbor Street	512	510	302	8	Clay	0.72	347	\$12,080	N/A	\$955	No
Low	3	X	I/I	29	Grand Street	518	520	165	8	Clay	0.07	35	\$3,300	N/A	\$95	No
Low	1	X	Structural	28	Grand Street	518	516	217	8	Clay	0.01	3	\$326	N/A	\$8	No
High	5		I/I	53	Grand Street	519	605	378	8	Clay	5.05	2423	\$56,700	N/A	\$6,662	No
Low	1	X	Structural	30	Alpine Street	566	565	346	8	PVC	0.02	12	\$519	N/A	\$32	No
Low		X	I/I	112	Back Alley	570	569	505	8	Clay	0.00	0		N/A	\$0	No
Low	1		Structural	34	Back Alley	570	571	77	8	Clay	0.00	1	\$116	N/A	\$2	No
Low		X	I/I	113	Back Alley	571	772	50	8	PVC	0.00	0		N/A	\$0	No
Medium	3	X	I/I	36	Forest Street	572	574	395	8	Clay	0.53	256	\$7,900	N/A	\$703	No
Low	3	X	I/I	37	Off of Central Street	580	506	300	8	Clay	0.48	231	\$6,000	N/A	\$634	No
High	5		Structural	52	Ann Arbor Road	587	588	391	8	Clay	1.75	838	\$58,650	N/A	\$2,304	No
Low	3	X	I/I	101	Ann Arbor Road	587	586	316	8	Clay	0.39	190	\$6,320	N/A	\$521	No
Low	1		Structural	41	Fifth Street	592	591	233	8	Clay	0.01	7	\$350	N/A	\$18	No
Medium	3	X	Structural	47	Hudson Street	599	602	263	8	Clay	0.44	213	\$5,260	N/A	\$586	No
Medium	5	X	I/I	48	Grand Street	605	606	524	8	Clay	2.01	966	\$78,600	N/A	\$2,657	No
Low	1	X	Structural	87	Grand Street	616	617	263	6	Clay	0.02	11	\$395	N/A	\$30	No
Medium	5	X	I/I	32	Alpine Street	703	566	145	8	Clay	1.51	725	\$21,750	N/A	\$1,995	No

Priority Rating	Rehabilitation Category	Incomplete Investigation	Deficiency	Pipe ID	Street Name	From MH	To MH	Length of Sewer (ft)	Pipe Size (in)	Material	Potential Peak I/I Removal* (gpm)	Cost-effective Analysis				
												Volume (gallons)	Approximate Rehab Cost	Transport and Treat Cost		Cost-effective?
														WWTP O&M Savings	Storage Cost \$2.75/gal	
Medium	3		I/I & Structural	2	Second Street	303	302	250	8	Clay	0.61	292	\$5,000	N/A	\$803	No
High	3		Structural	5	Edison Street	304	328	488	8	Clay	1.02	487	\$9,760	N/A	\$1,340	No
Medium	3		I/I	6	Second Street	307	304	272	8	Clay	1.59	764	\$5,440	N/A	\$2,100	No
Low	1	X	Structural	7	Second Street	309	306	523	8	Clay	0.10	47	\$785	N/A	\$129	No
Medium	4		I/I & Structural	10	Cushing Court	312	310	433	8	Clay	2.34	1125	\$17,320	N/A	\$3,094	No
Medium	3	X	I/I	13	Fourth Street	322	319	274	8	Clay	1.12	538	\$5,480	N/A	\$1,478	No
Low	1	X	Structural	15	Broad Street	322	323	398	8	Clay	0.06	31	\$597	N/A	\$84	No
Low	1	X	Structural	3	Third Street	324	302	494	8	Clay	0.13	63	\$741	N/A	\$172	No
Low	1	X	I/I	17	Fourth Street	325	335	232	8	Clay	0.38	181	\$348	N/A	\$498	Yes
High	3		Structural	18	Dover Street	326	303	468	8	Clay	1.33	639	\$9,360	N/A	\$1,758	No
Medium	3	X	I/I & Structural	59	Third Street	326	Unknown	156	8	Clay	0.57	272	\$3,120	N/A	\$749	No
Medium	1	X	Structural	21	Third Street	331	332	401	8	Clay	0.06	29	\$602	N/A	\$80	No
Low	1	X	I/I	26	Inverness Street	340	341	211	8	Clay	0.38	181	\$317	N/A	\$498	Yes
Low	2		I/I	77	Inverness Street	341	Unknown	100	8	Clay	0.25	118	\$400	N/A	\$325	No
High	3	X	I/I	27	Broad Street	504	578	578	8	Clay	2.61	1252	\$11,560	N/A	\$3,443	No
Low	3		I/I	85	Fifth Street	506	507	56	8	Clay	0.48	232	\$1,120	N/A	\$637	No
Medium	3	X	I/I	98	Grand Street	519	518	200	8	Clay	1.58	760	\$4,000	N/A	\$2,089	No
Medium	3		I/I	31	Alpine Street	566	568	339	8	Clay	0.81	387	\$6,780	N/A	\$1,063	No
Low	1	X	Structural	99	Alpine Street	566	703	145	8	Clay	0.02	11	\$218	N/A	\$29	No
Low	1	X	Structural	33	Back Alley	569	568	208	8	Clay	0.05	23	\$312	N/A	\$63	No
Low	1	X	I/I	35	Forest Street	572	569	276	8	Clay	0.15	74	\$414	N/A	\$204	No
Medium	3		I/I	38	Central Street	581	580	136	8	Clay	1.47	705	\$2,720	N/A	\$1,939	No
Medium	3		I/I	67	Central Street	583	710	99	8	Clay	0.58	280	\$1,980	N/A	\$771	No
High	3		I/I & Structural	39	Ann Arbor Street	585	583	474	8	Clay	4.93	2366	\$9,480	N/A	\$6,507	No
High	1		Structural	40	Ann Arbor Street	586	585	353	8	Clay	0.28	134	\$530	N/A	\$368	No
Medium	3	X	I/I & Structural	42	Fifth Street	592	594	293	8	Clay	1.58	756	\$5,860	N/A	\$2,080	No
Medium	3	X	I/I & Structural	44	Fifth Street	594	596	239	8	Clay	1.18	565	\$4,780	N/A	\$1,555	No
Medium	1	X	I/I & Structural	43	Edison Street	594	595	390	8	Clay	0.62	299	\$585	N/A	\$821	Yes
High	3		I/I	45	Forest Street	598	599	513	8	Clay	2.74	1316	\$10,260	N/A	\$3,619	No
Low	1	X	Structural	54	Forest Street	598	514	528	8	Clay	0.14	68	\$792	N/A	\$188	No
Medium	2	X	Structural	46	Forest Street	599	600	295	8	Clay	0.13	64	\$1,180	N/A	\$175	No
Low	3	X	I/I	49	Inverness Street	608	607	236	8	Clay	0.49	237	\$4,720	N/A	\$653	No
High	5		I/I	56	Forest Street	609	610	251	8	Clay	4.84	2324	\$37,650	N/A	\$6,392	No
High	5		I/I	50	Forest Street	609	608	267	8	Clay	3.90	1873	\$40,050	N/A	\$5,150	No



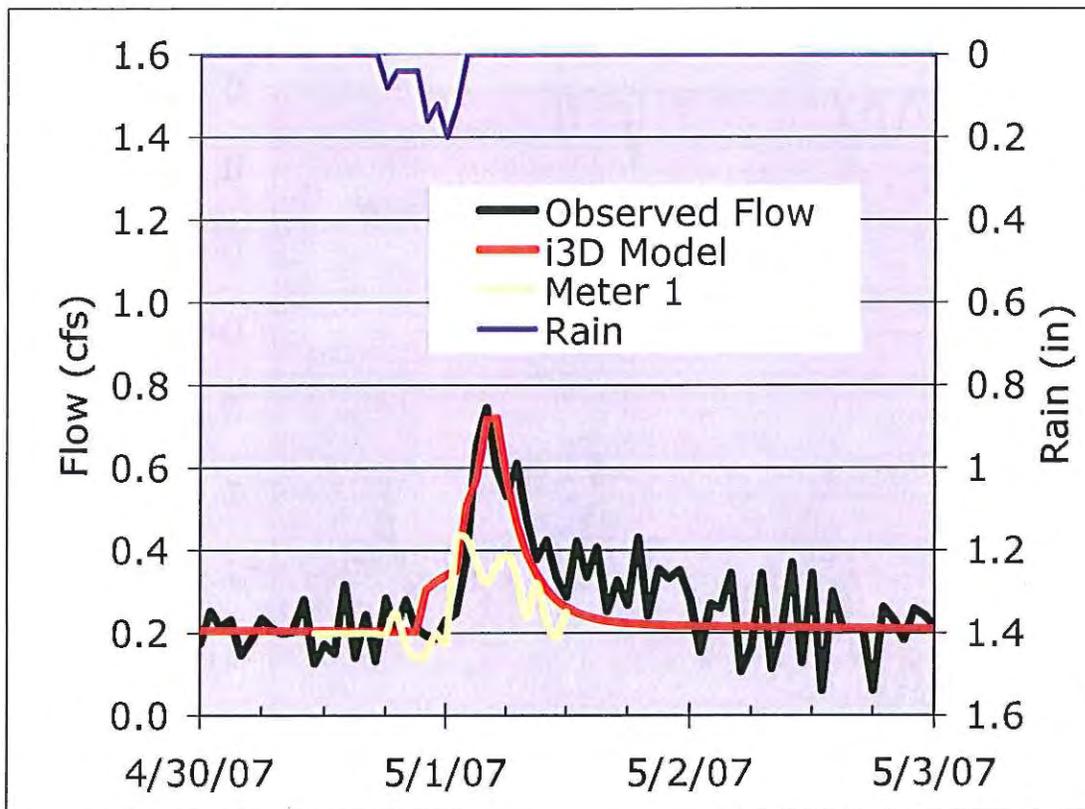
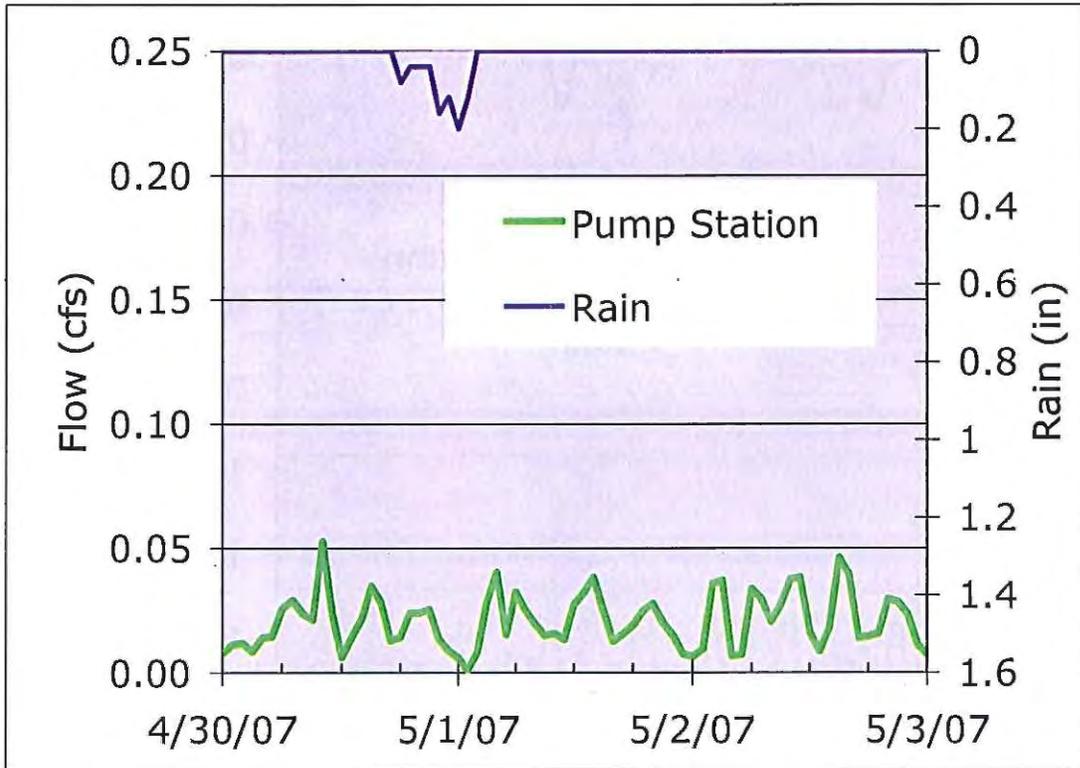
# Location of Temporary Flow Meters and Resulting Sub-Districts

## Village of Dexter





### Storm #2 - April 30



# **Village of Dexter Sanitary Collection System Antecedent Moisture Model - Technical Memo January 22, 2008**



## **Introduction**

The Village of Dexter is considering a sanitary equalization basin at the WWTP to store peak flows from wet weather events and equalize flows to the WWTP. This will maximize the Village's treatment capacity, enabling them to handle existing peak flows and planned growth in the future.

Traditional sizing approaches for an equalization basin involve collecting flows from wet weather events and calibrating a hydrologic model to the observed inflow and infiltration (I/I) response. The model is then used to extrapolate the design flows for a 25-year, 24-hour storm, per the Michigan Department of Environmental Quality (MDEQ) Sanitary Sewer Overflow (SSO) Policy Statement. The drawback of this approach is that it does not account for antecedent moisture effects on the flows. Antecedent moisture refers to the relative wetness or dryness of the area preceding a storm event, which can have a significant effect on the wet weather flows in a sanitary sewer system. The same size rain event produces a higher flow response in the sewer system when antecedent conditions are wet and a lower flow response when they are dry. Frequently, the wetter condition is selected for sizing facilities in order to be conservative, which leads to over-sizing. This results in a higher capital cost and subsequently higher maintenance cost than is necessary.

OHM utilized a different approach for sizing the equalization basin for the Village of Dexter. This approach uses a new hydrologic model called the i3D antecedent moisture model, which accounts for the variations in wetness conditions on the sewer flows. The model accurately simulates the variations in flow from wet and dry antecedent conditions and matches observed flow data very well. Once an accurate antecedent moisture model (AM model) was developed, it is used to size the storage using a frequency analysis. The frequency analysis is based on the MDEQ SSO Policy Statement, which allows sewer improvements to be sized for the 10-year frequency flows as an alternative to the 25-year, 24-hour storm. This eliminates the need to select a wetness condition for sizing the equalization basin, because the antecedent moisture model can be used to simulate a long-period of flows (in this case 52 years of available data from a regional weather station), and then used to determine the storage volume that will not get exceeded statistically more often than once in ten years. This accurate understanding of the system can then be used to select an equalization basin size that balances flow statistics, risk and conservative safety factors in the design approach. The model can also be used to evaluate the effectiveness of the 2006 manhole rehabilitation. The MDEQ has accepted this approach on four other projects prepared by OHM, and the model has been used to analyze dozens of other systems.

## **Purpose of Study**

The purpose of this study is to address some of the action items as a result of recent meetings with the MDEQ on October 22, 2007, and November 19, 2007, specifically the sizing of an equalization basin and the effectiveness of the Village's 2006 manhole rehabilitation. This study developed a model of the sanitary sewer system flows, based on data collected by the Parshall Flume meter at the WWTP during 2007. The model was then run for a long period of record to develop an equalization basin size using the 10-year storm event frequency criteria in MDEQ's policies.

Once the model of the current system was developed, it was used to compare the current system performance to the period between 2003 and 2006 (pre-manhole rehabilitation). The comparison was used to determine the magnitude of the predicted wet weather flow decrease as a result of the manhole rehabilitation. The flows can be converted to Residential Equivalent Units (REUs) to present to the MDEQ and provide evidence for the issuance of Part 41 permits on the system.

## Model Development

An I3D antecedent moisture model was developed from system observations from 2007. Continuous hourly flow from the WWTP influent Parshall flume was collected from March to December to establish flows and hourly rainfall data from a tipping-bucket rain gauge at the WWTP was used to establish the rainfall. Winter flow data was not used in model development due to snowmelt and frozen ground effects, as well as the MDEQ SSO policy which focuses on the growth season (defined by MDEQ as April through October). Figure 1 (three pages) depicts the model fits for the largest events that occurred during the 2007 observations. Table 1 (attached at end of memo) summarizes the results of the accuracy of fit analysis for these storms.

For each storm shown on Table 1, peak flow and volume errors were tabulated. Negative values indicate that the modeled peak flow or volume was less than the observed while positive values represent modeled values that are greater than observed. At the bottom of the table, the net and total errors are averaged for all the storms. Net error is the average of all the errors and allows positive and negative variances to offset each other. Model errors caused by spatially varied rainfall or flow meter inaccuracy are expected, and the net error allows the effect to cancel out. Total error is the average of the absolute value of the errors. The goal of this analysis was to have a net error of 10% or less and a total error of 20% or less to be comfortable that the model is accurately representing the system dynamics. These goals are met by the model, with net errors for peak flow and volume of 5.3% and 3.7%, respectively, and total errors for peak and volume of 13.7% and 20%, respectively. This is considered excellent model performance, especially considering that the model is predicting the variations in capture coefficient (the percentage of rainwater captured by the sewer) with no additional input from the modeler once calibrated. The fact that the net errors for both peak flow and volume are positive indicate that the model is slightly over-predicting the system flows, and therefore may be slightly conservative.

The original intent of the study was to develop a second model of the system using observations from 2005 to represent the pre-manhole rehabilitation condition. 2005 system flows were collected on circular charts and daily rainfall totals were collected at the WWTP. Continuous hourly rainfall and flow is required to develop a model of the system. The original plan was to develop continuous flows from the paper circular charts, and to estimate the hourly rainfall over the service area by using daily rain at the WWTP and the hourly rain pattern from a nearby National Weather Service (NWS) Gauge in Ann Arbor. This data was collected and assembled in the model, and an attempt was made to develop a model using it. However, it was found that methodology for estimating the hourly rainfall from the daily totals did not produce hourly rainfall estimates that were suitable for modeling. For example, there were several days where the WWTP gauge recorded a large storm event in a 24-hour period, but the Ann Arbor gauge only recorded a small amount of rainfall in one hour. It is not possible to estimate an accurate hourly rainfall distribution for such storms. Because accurate hourly rainfall is critical for developing a system model, it was not possible to use the 2005 observations to develop a comparison model to quantify the pre-manhole rehabilitation system performance. Other techniques were used to quantify the pre-manhole rehabilitation condition and effectiveness of the rehabilitation, and these are described later in this memo.

## Discussion of The Model

Because the model was developed from only a single year of data, there is a risk that the relative wetness or dryness of 2007 may create an overall bias in the model. To understand the potential for this effect, the rainfall recorded at the Dexter WWTP and the Ann Arbor NWS gauge for 2007 were examined. The Dexter WWTP recorded a total rainfall in 2007 of 39.6-inches, or 3.3 inches per month. The Ann Arbor NWS rain gauge data was only available through August and recorded a total rainfall of 24.6-inches in the first eight months of the year, or 3.1 inches per month. Annual average rainfall in this area is about 32-inches per year or 2.7-inches per month. Based on the available rainfall data, it appears that 2007 was slightly wetter than normal. Therefore, the potential exists for a slight bias in the model towards wetter antecedent moisture conditions, which would tend to make the model slightly more conservative.

Long-term records at the WWTP were examined to understand how variations in ground water levels affect base flows and infiltration rates. Figure 2 depicts the long-term variations in daily flows at the WWTP. As shown in the figure, there are some base flow variations between season and years. In particular, 2004-2005 had the largest base flow variation, exhibiting about a 0.20 MGD variation from low to high in average flows. For the 2007 model, a constant base flow was used. For evaluating design conditions, the impacts of base flow variations should be considered.

Examination of the model components leads to insights for the Village of Dexter system. For example, the model developed from the 2007 data shows that the wet weather response is dominated by inflow, with a very small infiltration component. This results in wet weather flows that are short and spikey with fast recessions. Additionally, the capture coefficient variation in the system from antecedent moisture effects was very mild. Table 1 contained the capture coefficient for each storm analyzed in 2007. The ratio of the highest capture coefficient to the lowest is only about 2, or about a 100% variation due to AM effects. Other systems with more severe AM effects have experienced variations of 500-1000% or more in capture coefficients. A system that is dominated by inflow response with a relatively mild AM variation suggests that the predominant I/I sources in the system are from directly connected impervious areas.

The use of the AM model allows a direct comparison of the relative I/I performance across several systems unitized by antecedent moisture conditions, rainfall and acreage. This can be used to compare the relative wetness of the Village of Dexter to other systems. OHM has performed AM models for 33 sub-areas of various systems to benchmark I/I levels. The 33 systems range from very dry separate systems to very wet separate systems, and even include 2 combined areas (storm water and sanitary sewage conveyed in a single pipe). A standard rainfall period was used to establish consistent AM conditions and a unitized rainfall was routed through the same AM condition for all 33 sub-area models in order to make direct comparisons of system performance under the same AM and storm conditions. Peak flows per acre and capture coefficients were then used to evaluate the relative I/I response between the 33 sub-areas. Figures 3 and 4 show the results of the evaluation for peak flows and volumes, and show where the Village of Dexter system ranks. As shown in the figures, the Dexter system exhibited the lowest capture coefficient response of all 33 systems, and ranked in bottom third of the 33 systems for peak flow per acre (26th percentile). The very low ranking on capture coefficient is consistent with low infiltration signal observed in the AM model, because infiltration is often the cause of large capture volumes, and inflow alone in separate sewers tends to not produce high capture rates due to its short duration. Peak flow in the Dexter system rank higher compared to other systems (26th percentile) than capture percentage (3<sup>rd</sup> percentile), indicating that for the 2007 data used to build the model, the peak flows driven by inflow in the system are more severe than volume effects driven by infiltration.

These rankings suggest that although the Village of Dexter may have challenges with peak flow capacity, compared to other systems the Dexter system is relatively dry, and that capacity bottlenecks are driven more by low capacity rather than high rates of wet weather I/I. Because the

I/I response is dominated by inflow, the wet weather hydrograph tends to be spiky with a quick recession. A system with these characteristics is ideally suited for wet weather flow equalization.

## Frequency Analysis

In order to determine the peak flows in the system and equalization volumes required, a frequency analysis was performed. This was done by performing a 52-year continuous model using climatological data from Detroit City Airport. The highest peak flow that occurred in each year (the annual maxima series) during the growth season (April – October) was developed from the model results, and a Log Pearson Type III probability distribution was developed to develop 10-year recurrence interval peak flows and volumes. This is a similar methodology to that used by FEMA to develop 100-year floodplain elevations.

Figure 5 depicts the results of the frequency analysis for peak flows. The figure depicts the annual maximum flows in each year, their ranking, and assigned probability. The peak flows and probabilities are then plotted on a graph, and a probability distribution function is fit to the data. As shown on the figure, the 10-year frequency peak flow (annual probability of 0.10) for the system is 1.90 MGD, assuming that the peak I/I occurs during the average base sewage flows observed in 2007 of 0.31 MGD. This is in contrast to the existing WWTP peak hour capacity of 1.3 MGD. Also shown on the figure is the exceedance probability of the 1.3 MGD WWTP capacity, which is 0.45. This means that for the post-manhole rehabilitation condition, in any given year there is a 45% chance of meeting or exceeding a peak flow of 1.3 MGD, which means the average recurrence interval is about 2.2 years (the reciprocal of the annual probability).

The same frequency analysis methodology described in the previous paragraph was used to determine the required storage volume. The annual maxima series for storage volumes during the growth season (April – October) was developed by computing the storage volumes needed for each storm in order to fully capture volumes that exceed the WWTP peak hour capacity of 1.3 MGD. This was done for four different scenarios to understand the impacts of future growth and sensitivities to the model assumptions, and the resulting 10-year frequency equalization volumes were determined for each scenario. Base flows listed for each scenario are expressed as average dry-weather sewage flow. However, in the volume computations, each wet weather event was assumed to occur in addition to the daily dry weather peak flow (tops of the diurnal flows), which was determined to be about 1.70 times the average sewage flow from 2007 data. The statistical plots for each scenario are shown in Figures 6 – 9. Table 2 summarizes the resulting 10-year equalization volumes for each scenario. The scenarios are described below:

1. **Existing Conditions (Figure 6)** – This scenario used the model developed from the 2007 observations with an average sewage base flow observed in 2007 of 0.31 MGD.
2. **Future Conditions (Figure 7)** – This scenario used the model developed from the 2007 observations, and increased the average sewage base flow to 0.58 MGD, which represents the design average flow of the WWTP.
3. **Future Conditions with higher I/I response (Figure 8)** – This scenario increased the I/I model developed from the 2007 observations by 50%, and increased the average base sewage flow to 0.58 MGD, which represents the design average flow of the WWTP.
4. **Future Conditions with higher I/I response and higher infiltration (Figure 9)** – This scenario increased the average base sewage flow to 0.58 MGD, which represents the design average flow of the WWTP, increased the I/I model developed from the 2007 observations by 50%, added an additional 0.20 MGD of base flow to the simulation to account for infiltration variations in the system.

**Table 2**  
**Required Equalization Volume for Each Scenario**

No.	Description	Volume (gallons)
1	Existing Conditions	60,000
2	Future Conditions	180,000
3	Future Conditions with higher I/I response	350,000
4	Future Conditions with higher I/I response & higher infiltration	480,000

The modeling methodology used results in a very accurate model that tends to eliminate most conservative safety factors in the system design. For this reason, it is prudent to perform system design by allowing for a safety factor in the I/I model. That was the basis behind scenarios 3 and 4 that increase the I/I model by 50% and the base flows for infiltration by 0.20 MGD, respectively. Design considerations for the equalization basin sizing should include future base flow increases from planned growth, some allowance for conservativeness in the I/I model, an allowance for some variability in the long-term base flow variations from ground water infiltration, and the volume that may be used on a daily basis to equalize dry weather flows for more efficient operations at the WWTP. Based in these factors, an equalization basin volume of 500,000 gallons represents a prudent size that balances these considerations.

### **Manhole Rehabilitation Effectiveness**

As described earlier, the original intent of the study was to develop a second model of the system using observations from 2005 to represent the pre-manhole rehabilitation condition. This model could then be compared to the 2007 model to evaluate the effectiveness of the manhole rehabilitation. It was found that this methodology was problematic due to limitations in the rainfall data prior to 2007, so an alternative approach was developed based on observed flow frequencies at the WWTP. The idea is to develop the frequency of large flow events from the pre-manhole rehabilitation condition using WWTP Monthly Operation Report (MOR) flow records from 2003-2006. These frequencies can then be compared to the peak flow frequency plot from the long-term continuous simulation shown in Figure 5. The long-term continuous simulation was developed from the 2007 model, so it represents the system response to post-manhole rehabilitation conditions. Direct comparison of the frequencies from these two sources can be used to estimate the effectiveness of the rehabilitation and make an estimate of the peak flows removed.

Table 3 shows the largest peak flow events at the WWTP between 2003 and 2006 during the seven (7) months of the MDEQ defined growth season. It should be noted that there was a metering issue in September and October of 2005 and peak data was not available for those months. This results in 3.7 years of observed flow during the growth season for comparison.

**Table 3**  
**Largest Events During the Growth Season Observed at the WWTP 2003-2006**

No.	Date	Peak Flow (MGD)
1	10/17/06	1.40
2	9/12/03	1.30
3	5/21/04	1.30
4	10/29/04	1.30
5	10/9/06	1.28
6	5/25/05	1.24
7	5/14/06	1.24
8	4/14/05	1.06
9	9/8/03	1.00
10	9/22/03	1.00
11	8/19/04	1.00
12	7/8/05	1.00
13	5/10/06	1.00

Table 3 is separated into two parts. The top part of Table 3 shows that there were four (4) events that equaled or exceeded a peak flow rate of 1.3 MGD. The bottom part of the table shows that there were a total of 13 events that equaled or exceeded a peak flow rate of 1.0 MGD. Table 4 converts these peak flow observations into frequencies for the pre-manhole rehabilitation condition. These can be compared to the frequencies determined from the 2007 model to estimate the rehabilitation effectiveness. Table 5 shows the frequencies of exceeding these same peak flows for the post-manhole rehabilitation. These values were determined from the annual maxima series shown on Figure 5 from the post-rehabilitation model.

**Table 4**  
**Peak Flow Frequency for 2003-2006**  
**(Pre-Manhole Rehabilitation Conditions)**

Peak Flow	Number of Times Equaled or Exceeded	Number of Years	Frequency (occurrences per growth season)
1.3 MGD	4	3.7	1.08
1.0 MGD	13	3.7	3.51

Note: shaded row is depicted as a point on the frequency plot in Figure 10

**Table 5**  
**Peak Flow Frequency from 2007 Model**  
**(Post-Manhole Rehabilitation Conditions)**

Peak Flow	Number of Times Equaled or Exceeded	Number of Years	Frequency (occurrences per growth season)
1.3 MGD	25	52	0.48
1.0 MGD	48	52	0.92

Comparing Tables 4 and 5 shows that there is a significant decrease in the frequency of these large events from the pre-manhole rehabilitation conditions and the post-rehabilitation conditions. The frequency of exceeding the WWTP peak hour capacity of 1.3 MGD was reduced by about half, and the frequency of exceeding 1.0 MGD was decreased by about 75%. These calculations are consistent with the observations of the WWTP operators, who have indicated that the system flows seem significantly lower since the manhole rehabilitation was performed in late 2006.

Figure 10 depicts the frequency of exceeding 1.3 MGD for the period 2003-2006 (the row highlighted in Table 4) on the frequency plot from the continuous model in order to allow a direct comparison of the peak flows from pre- and post-rehabilitation. This point is shown on Figure 10 as a large green dot at a probability of 1.0 and a peak flow of 1.3 MGD. The green line depicted on the figure is drawn parallel to the frequency line for the post-rehabilitation condition from the continuous model. The parallel shape of the line represents a conservative estimate of the pre-rehabilitation frequency, because the actual shape of the line would tend to skew to the right for the lower frequency events. This is because wetter systems tend to produce frequency curves that are flatter and flatter. For example, a perfectly dry system would have a frequency plot that is nearly vertical, whereas a system that is very wet would have a much flatter and more horizontal curve.

The frequency plots shown on Figure 10 can be used to quantify the effectiveness of the manhole rehabilitation. The 10-year frequency peak flow for the pre- and post-rehabilitation condition are summarized in Table 6.

**Table 6**  
**Comparison of Pre- and Post Rehabilitation Design Peak Flows**

Condition	Design Peak Flow (MGD)
Pre-Manhole Rehabilitation	2.20
Post-Manhole Rehabilitation	1.90

As shown in Table 6, the decrease in design peak flows is 0.30 MGD, or about 14%. The estimated peak I/I removal rate from the manhole rehabilitation was 0.19 MGD.

## Conclusions and Recommendations

Based on the modeling and analysis performed, we offer the following conclusions:

1. The I/I flow response observed in the system in 2007 was dominated by inflow and exhibited very little variation from AM effects, suggesting that it is caused by directly connected impervious areas. These sources should be located and removed.
2. Although the Village of Dexter has challenges with peak flow capacity, compared to other systems, the Dexter system is relatively dry. Capacity bottlenecks are driven more by low capacity rather than high rates of wet weather I/I. A system with these characteristics is ideally suited for wet weather flow equalization.
3. A flow equalization basin of 500,000 gallons would capture the 10-year frequency volume during the growth season and would allow for some conservativeness in the design for variability in modeled I/I rates, ground water infiltration rates and daily dry weather flow

equalization. This design would allow for some planned growth and maximize the current treatment capacity of the WWTP.

4. The frequency analysis performed suggests that the manhole rehabilitation was effective, removing an estimated 0.30 MGD of peak I/I flow. This flow capacity could be utilized for new development by assuming that new development would have no I/I and would utilize this capacity at a rate equal to the daily dry-weather peak flow (tops of the diurnals) of the new development. Analysis of the 2007 data shows that a peaking factor of 1.7 times average flows adequately represents the daily dry weather peak flow.
5. The Village should carefully consider the validity and risks of utilizing some or all of the calculated peak capacity of 0.30 MGD created by the manhole rehabilitation for future growth. For any system design, there is always a larger storm event that can occur that will exceed that system design. The post rehabilitation design peak flows (1.9 MGD) are already greater than the WWTP peak hour capacity (1.3 MGD). Therefore, using this capacity for new connections would increase the risk of sewer overflows. The estimated removal rate from rehabilitation is relatively small (14%) compared to the potential inaccuracies created by flow meters, hydrologic models and statistical analysis. While the analysis presented in this memo provides a logical and reasonable basis for the estimated removal rates, the small size of the estimated peak flow removal inherently creates some uncertainty in the result. The ramifications of exceeding the WWTP capacity due to these variables should be understood, carefully considered by the Village and reviewed with MDEQ before using this capacity for growth in the interim period before the equalization basin is constructed.

**Table 1 - Model Accuracy of Fit**

Storm Name	Peak Hour Rain (in)	Total Rain (in)	Capture % over 1,400 acres	Peak Flow Observed (cfs)	Peak Flow Model (cfs)	Peak Error (%)	Volume Observed (Kcf)	Volume Model (Kcf)	Volume Error (%)	Comments
27-Mar-2007	0.24	0.52	0.60%	0.59	0.71	21.5%	15.8	15.2	-4.0%	
25-Apr-2007	0.20	1.36	0.45%	0.70	0.57	-18.1%	31.2	26.6	-14.8%	
30-Apr-2007	0.20	0.80	0.63%	0.75	0.72	-3.5%	25.8	21.7	-16.0%	
09-May-2007	0.20	0.44	0.31%	0.46	0.53	14.6%	7.0	5.8	-16.0%	
03-Jun-2007	0.36	1.40	0.30%	0.70	0.87	24.5%	21.2	26.1	22.9%	
27-Jun-2007	0.76	1.24		0.41	1.24		-3.6	19.0		Convective Rainfall
26-Jul-2007	0.28	0.84	0.41%	0.68	0.65	-4.0%	17.3	24.9	43.5%	
20-Aug-2007	0.48	1.40	0.35%	1.29	1.25	-3.0%	25.0	35.1	40.3%	
24-Aug-2007	0.88	1.00	0.41%	1.06	1.33	25.1%	20.9	18.7	-10.3%	
02-Dec-2007	0.25	0.97	0.33%	0.93	0.84	-9.4%	16.0	14.1	-12.3%	

Net Average Error 5.3%

3.7%

Total Average Error 13.7%

20.0%

Note: Model errors tabulated are positive when model is greater than observed and negative when model is less than observed  
 Net Average Error is the average of the errors including the positives and negatives (allows them to cancel)  
 Total Average Error is the average of the absolute value of the errors (no canceling of positives and negatives)

Figure 1 - 2007 Detailed Plots of Model Results (page 1 of 3)

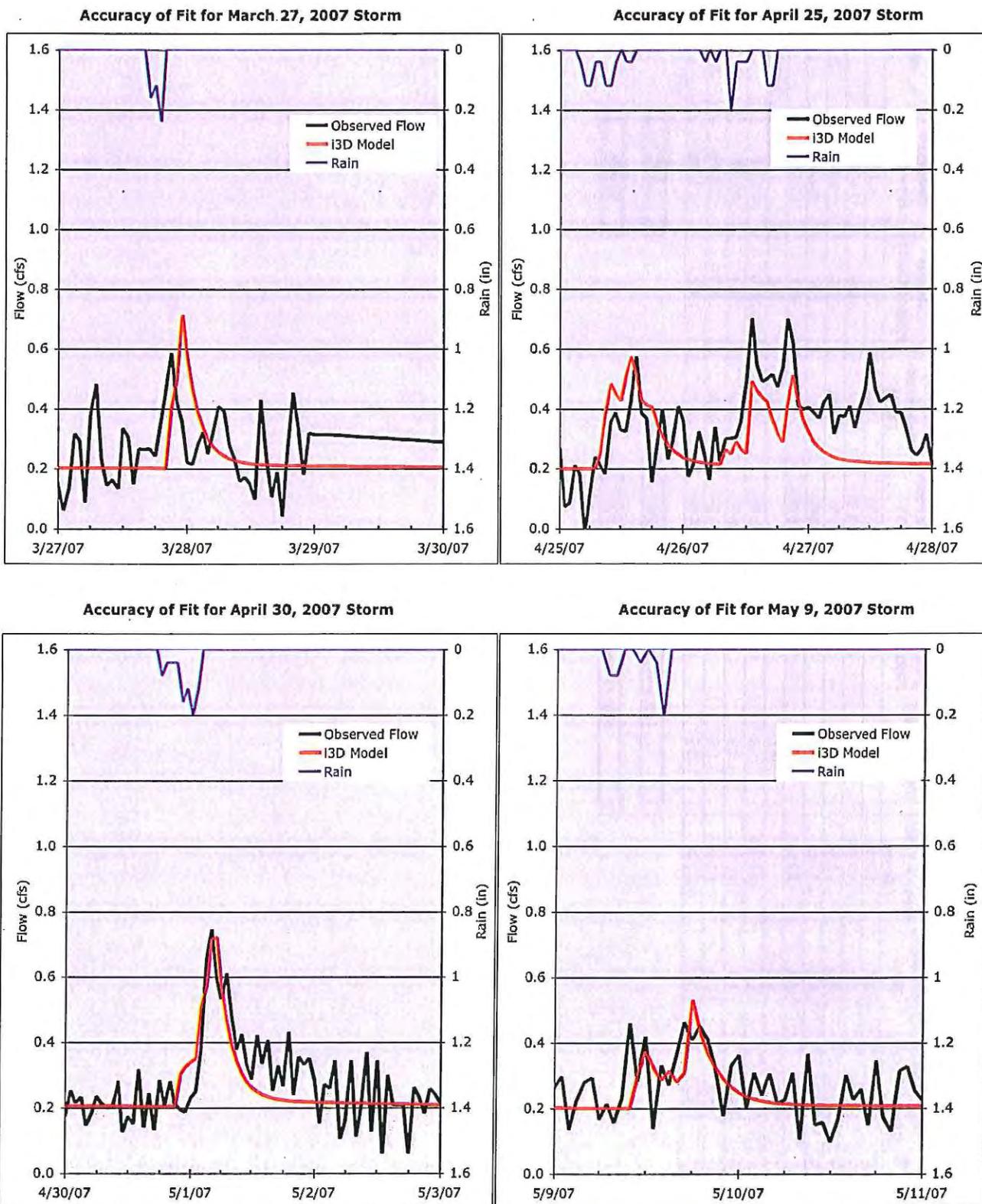
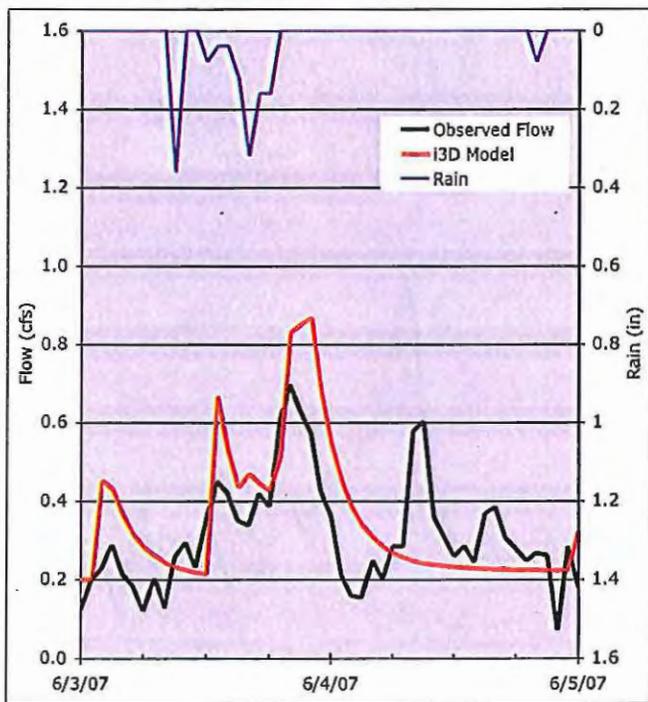
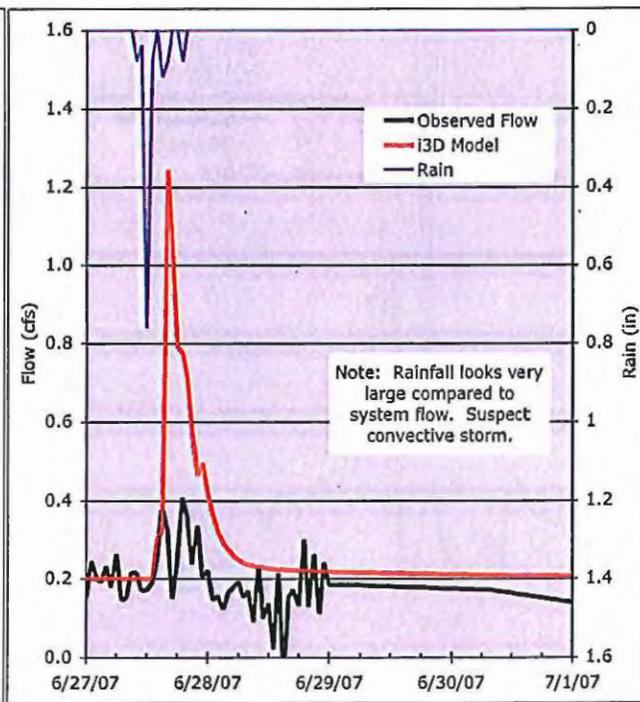


Figure 1 - 2007 Detailed Plots of Model Results (page 2 of 3)

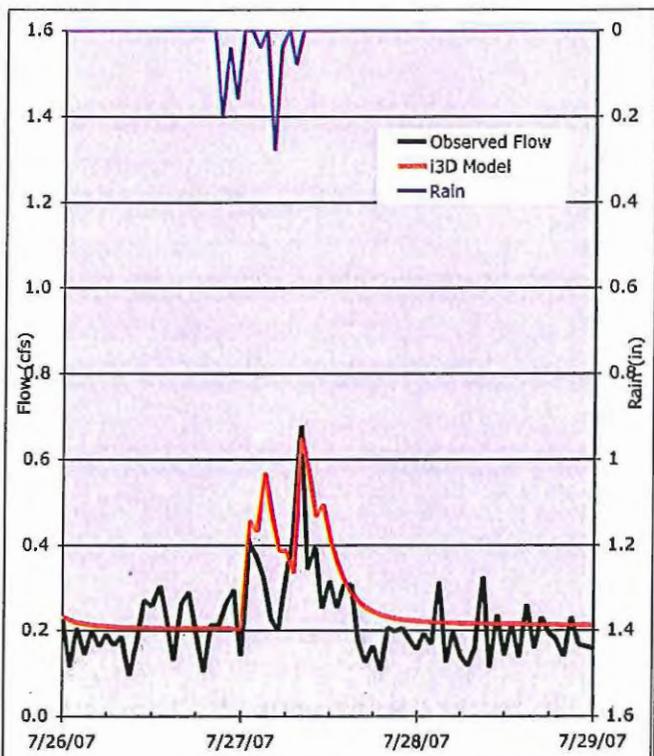
Accuracy of Fit for June 3, 2007 Storm



Accuracy of Fit for June 27, 2007 Storm



Accuracy of Fit for July 26, 2007 Storm



Accuracy of Fit for August 20, 2007 Storm

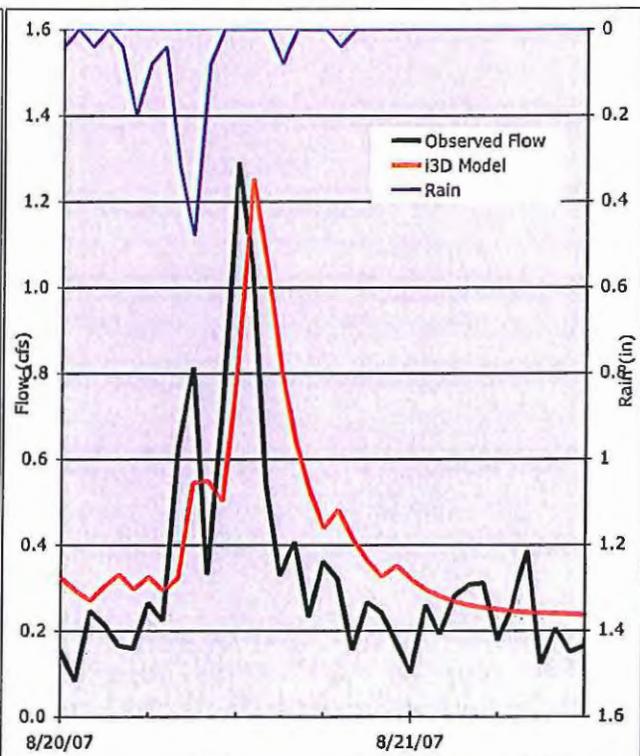
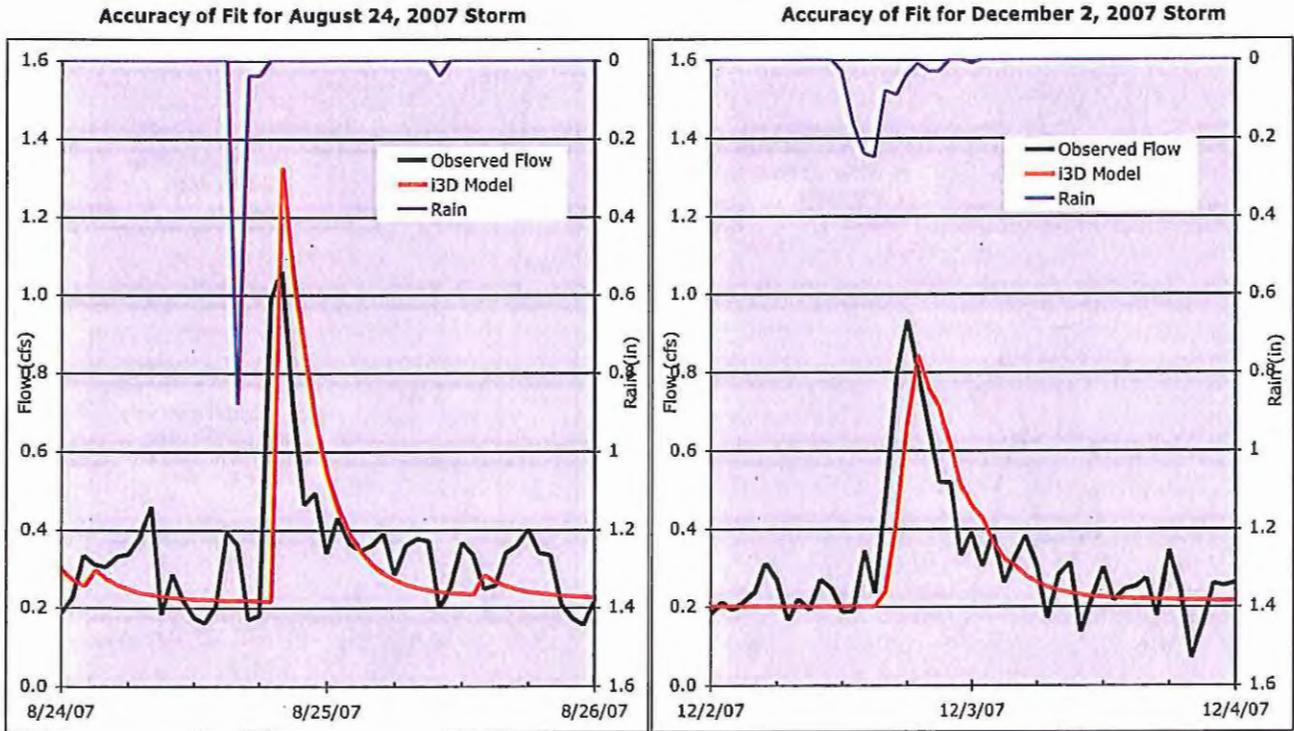
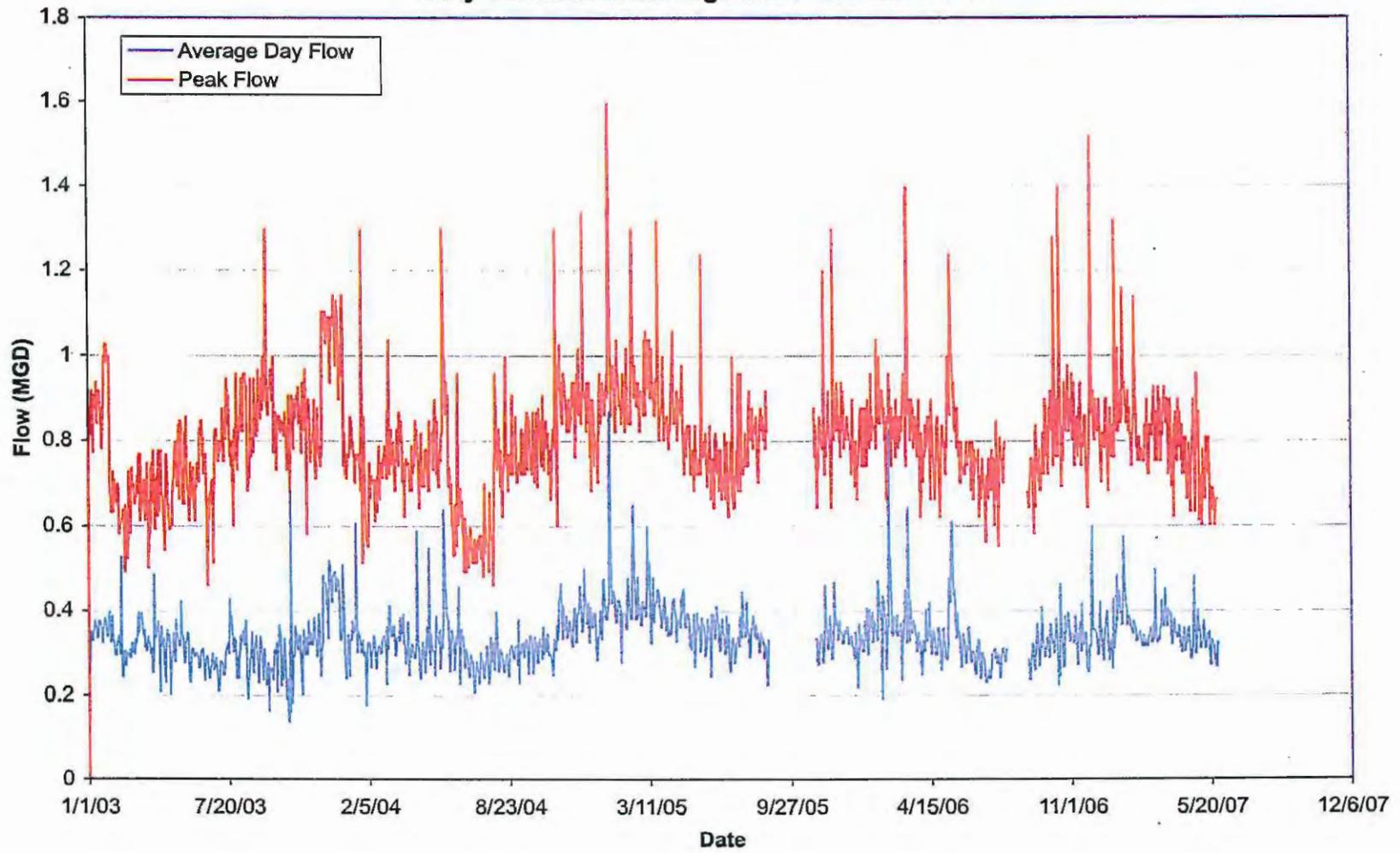


Figure 1 - 2007 Detailed Plots of Model Results (page 3 of 3)



**Figure 2**  
**Daily Variation of Average and Maximum Flows**



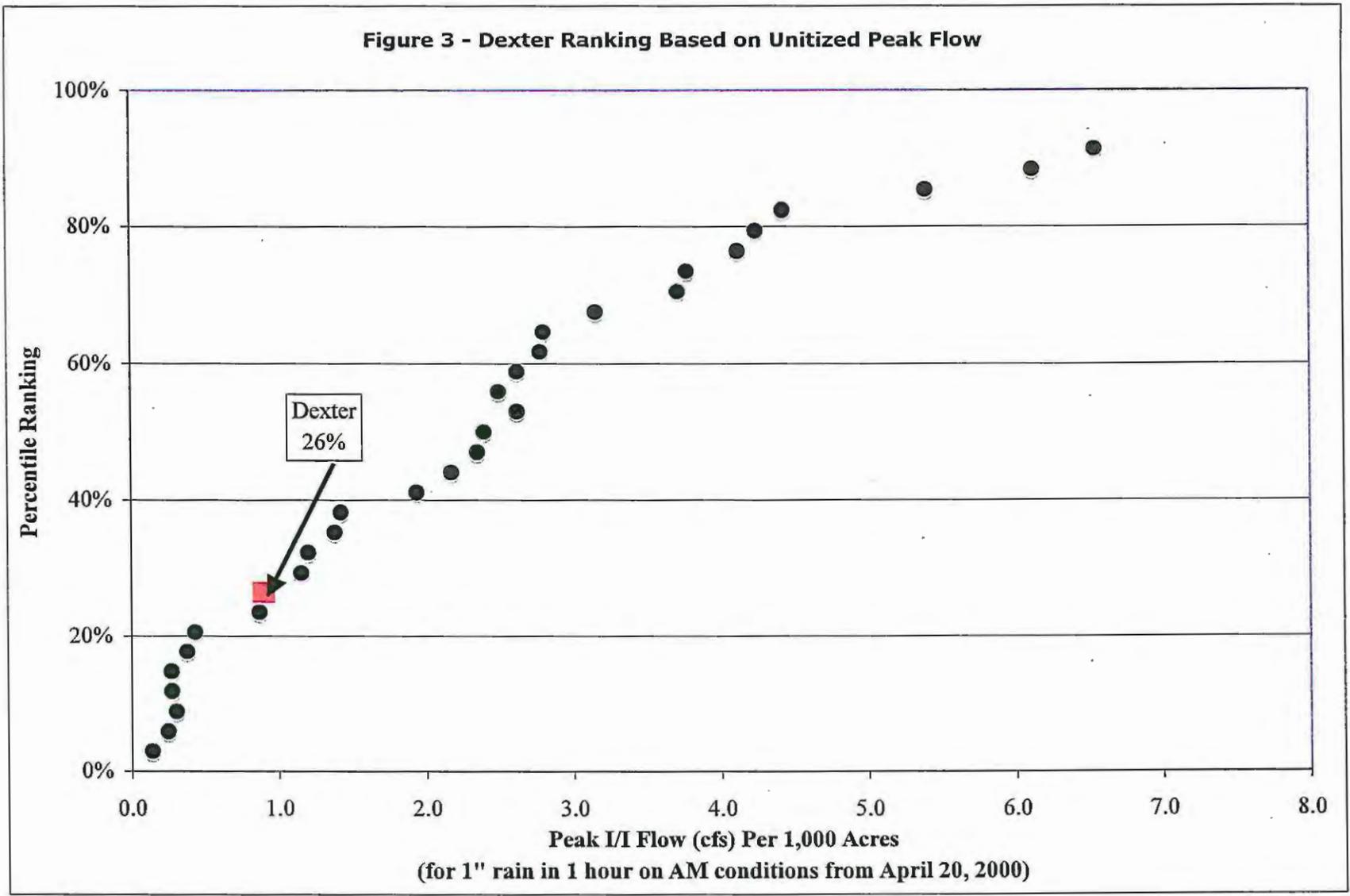
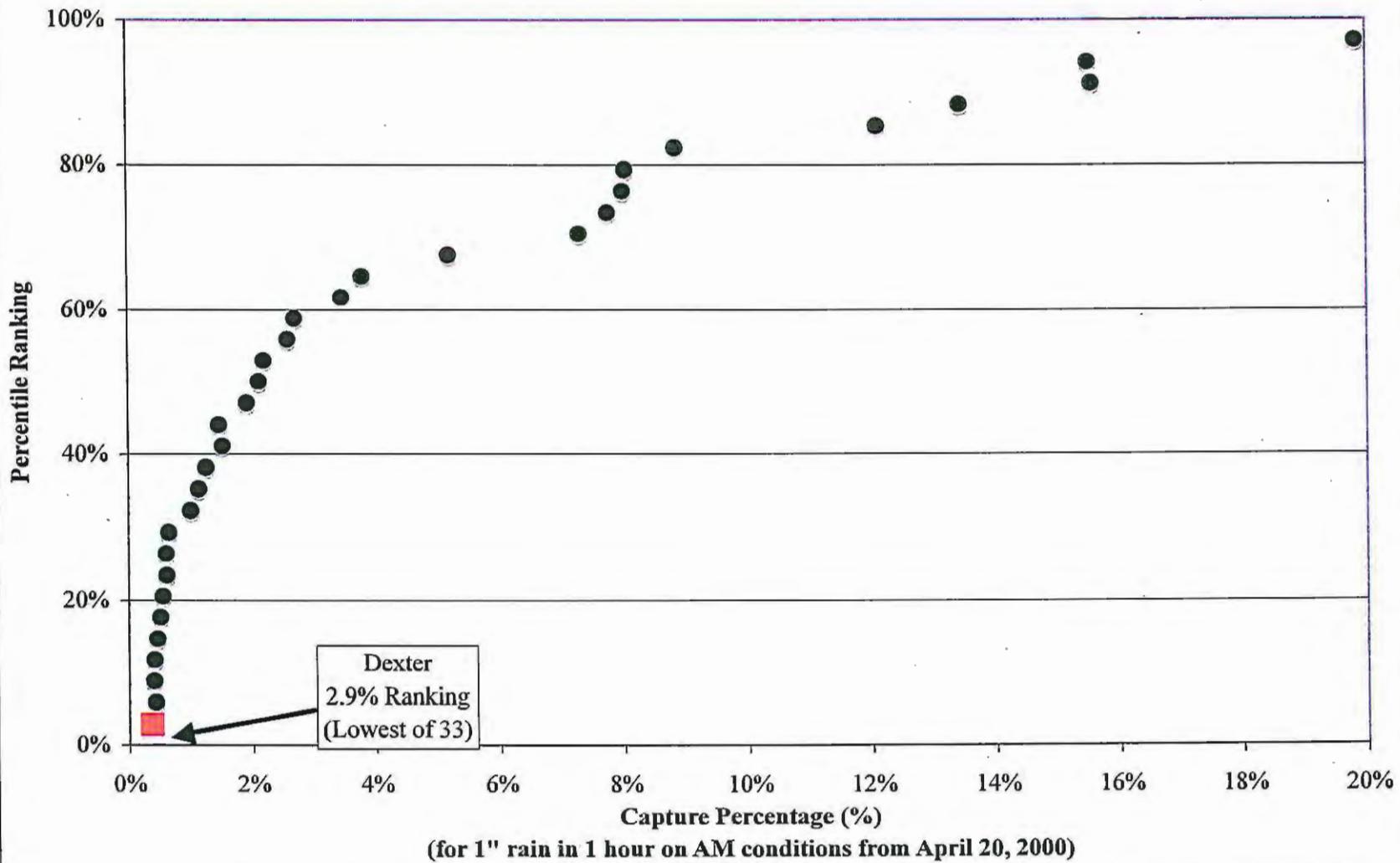
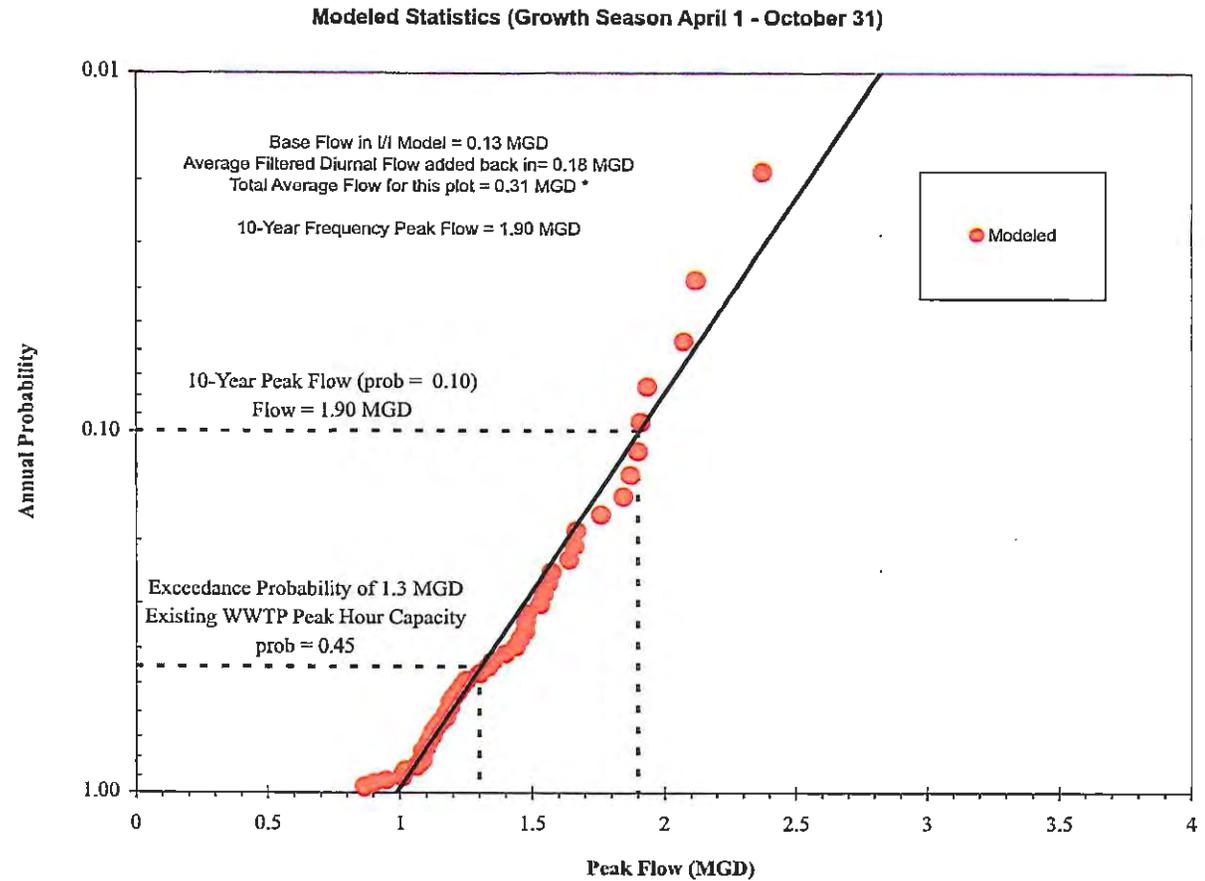


Figure 4 - Dexter Ranking Based on Unitized Volume



**Figure 5 - Growth Season Existing Peak Flows from 2007 Model**

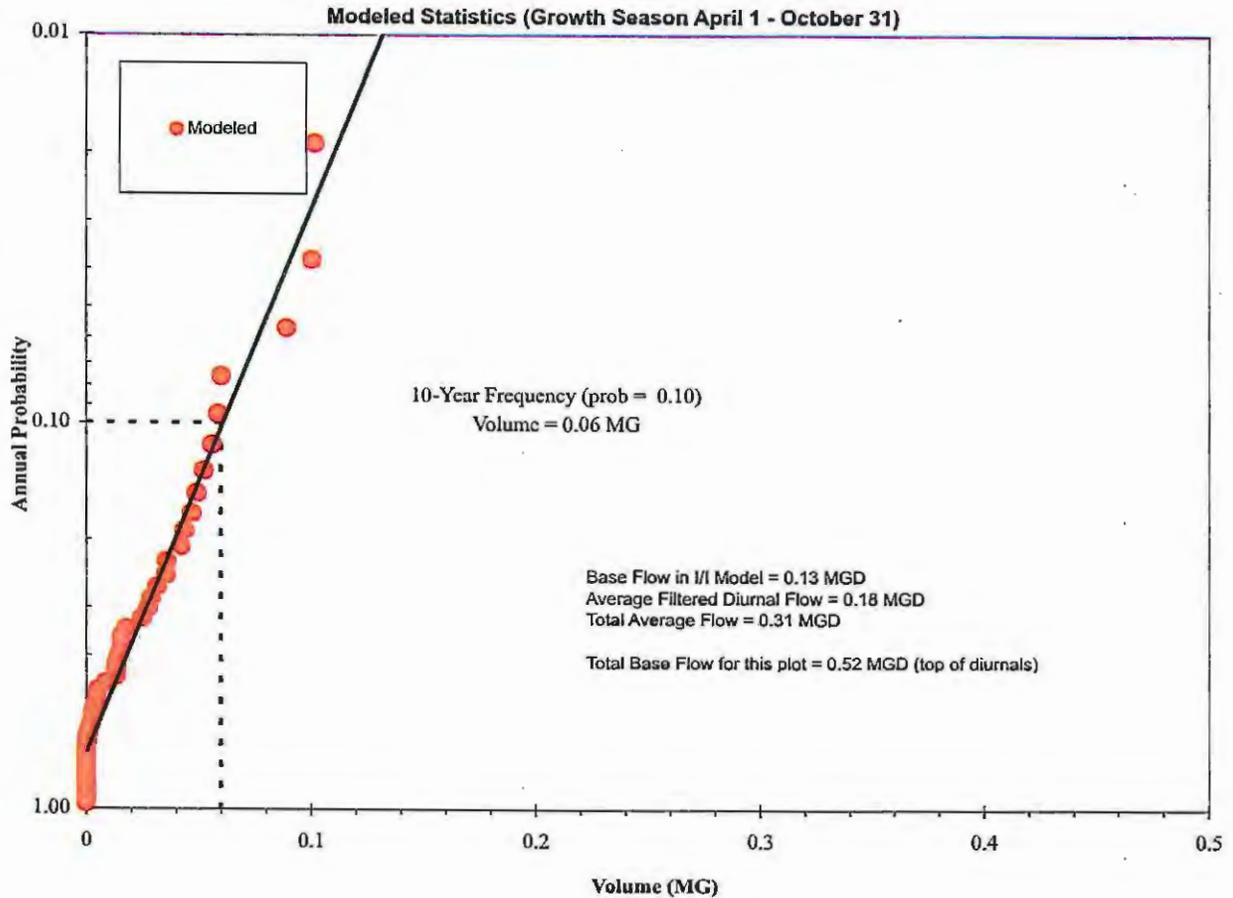
Year	Max Flow (MGD)	Rank	Ranked Values	Annual Probability	Return Period (yrs)
1949	1.53	1	2.38	0.019	53.0
1950	1.13	2	2.12	0.038	26.5
1951	1.19	3	2.07	0.057	17.7
1952	0.95	4	1.94	0.075	13.3
1953	1.02	5	1.91	0.094	10.6
1954	1.66	6	1.90	0.113	8.8
1955	1.09	7	1.87	0.132	7.6
1956	1.64	8	1.84	0.151	6.6
1957	1.40	9	1.76	0.170	5.9
1958	1.35	10	1.67	0.189	5.3
1959	1.94	11	1.66	0.208	4.8
1960	1.10	12	1.64	0.226	4.4
1961	1.58	13	1.58	0.245	4.1
1962	1.06	14	1.56	0.264	3.8
1963	1.30	15	1.54	0.283	3.5
1964	1.25	16	1.53	0.302	3.3
1965	1.14	17	1.48	0.321	3.1
1966	0.90	18	1.48	0.340	2.9
1967	1.33	19	1.48	0.358	2.8
1968	1.76	20	1.46	0.377	2.7
1969	1.84	21	1.44	0.396	2.5
1970	1.08	22	1.40	0.415	2.4
1971	1.54	23	1.35	0.434	2.3
1972	1.48	24	1.33	0.453	2.2
1973	1.11	25	1.30	0.472	2.1
1974	0.79	26	1.25	0.491	2.0
1975	1.18	27	1.23	0.509	2.0
1976	1.87	28	1.22	0.528	1.9
1977	1.23	29	1.20	0.547	1.8
1978	1.09	30	1.19	0.566	1.8
1979	1.16	31	1.19	0.585	1.7
1980	1.48	32	1.18	0.604	1.7
1981	1.02	33	1.18	0.623	1.6
1982	1.90	34	1.16	0.642	1.6
1983	1.67	35	1.14	0.660	1.5
1984	1.11	36	1.13	0.679	1.5
1985	2.07	37	1.13	0.698	1.4
1986	1.46	38	1.11	0.717	1.4
1987	2.12	39	1.11	0.736	1.4
1988	1.20	40	1.10	0.755	1.3
1989	1.22	41	1.09	0.774	1.3
1990	2.38	42	1.09	0.792	1.3
1991	1.44	43	1.09	0.811	1.2
1992	1.56	44	1.08	0.830	1.2
1993	1.13	45	1.06	0.849	1.2
1994	1.48	46	1.02	0.868	1.2
1995	1.19	47	1.02	0.887	1.1
1996	1.01	48	1.01	0.906	1.1
1997	1.18	49	0.95	0.925	1.1
1998	0.87	50	0.90	0.943	1.1
1999	1.09	51	0.87	0.962	1.0
2000	1.91	52	0.79	0.981	1.0



\* Historic average flow has been tabulated as 0.34 MGD. Average flow in this plot based on 2007 observations.

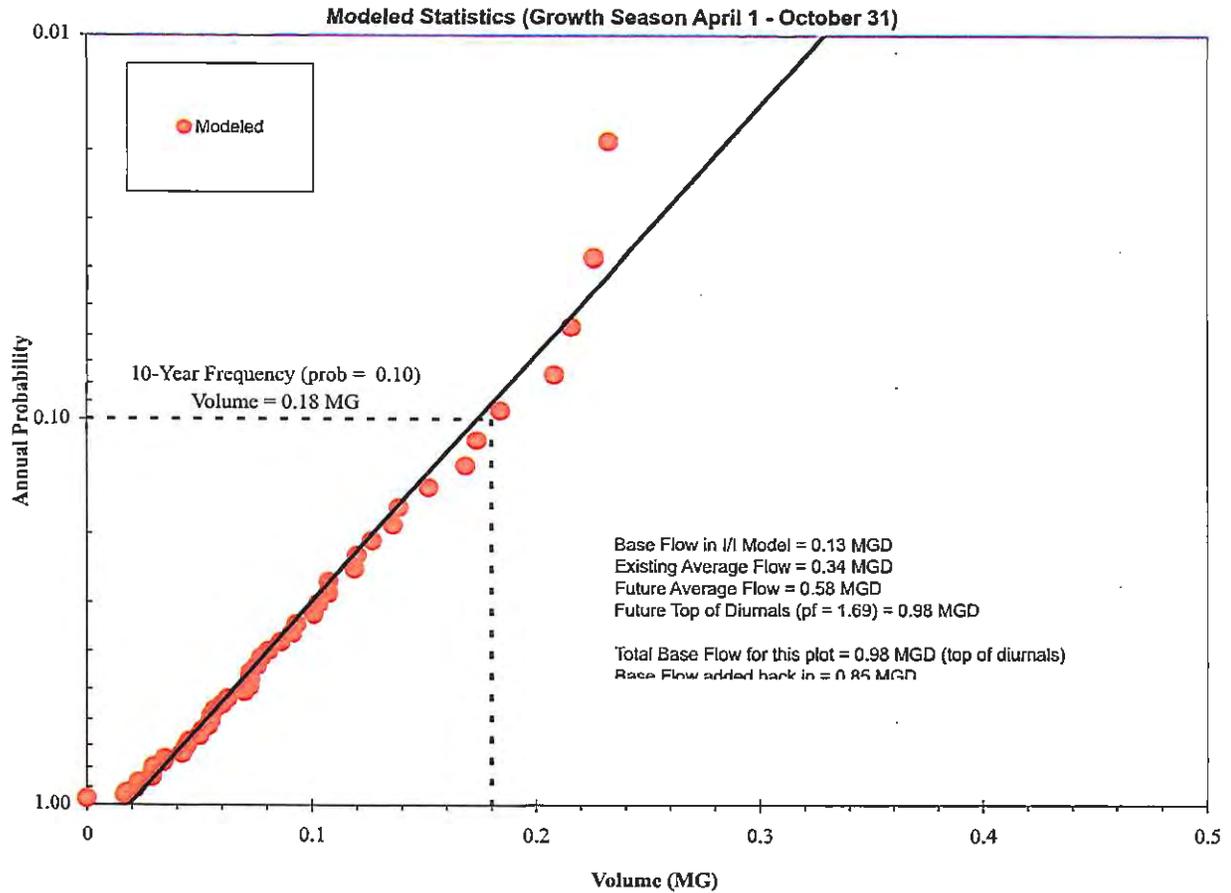
**Figure 6 - Growth Season Volumes - Existing System, Volumes Over 1.3 MGD**

Year	Max Vol (MGD)	Rank	Ranked Values	Annual Probability	Return Period (yrs)
1949	0.03	1	0.10	0.019	53.0
1950	0.00	2	0.10	0.038	26.5
1951	0.00	3	0.09	0.057	17.7
1952	0.00	4	0.06	0.075	13.3
1953	0.00	5	0.06	0.094	10.6
1954	0.06	6	0.06	0.113	8.8
1955	0.00	7	0.05	0.132	7.6
1956	0.04	8	0.05	0.151	6.6
1957	0.04	9	0.05	0.170	5.9
1958	0.02	10	0.04	0.189	5.3
1959	0.05	11	0.04	0.208	4.8
1960	0.00	12	0.04	0.226	4.4
1961	0.03	13	0.04	0.245	4.1
1962	0.00	14	0.03	0.264	3.8
1963	0.01	15	0.03	0.283	3.5
1964	0.01	16	0.03	0.302	3.3
1965	0.00	17	0.02	0.321	3.1
1966	0.00	18	0.02	0.340	2.9
1967	0.01	19	0.02	0.358	2.8
1968	0.06	20	0.02	0.377	2.7
1969	0.04	21	0.01	0.396	2.5
1970	0.00	22	0.01	0.415	2.4
1971	0.03	23	0.01	0.434	2.3
1972	0.02	24	0.01	0.453	2.2
1973	0.00	25	0.01	0.472	2.1
1974	0.00	26	0.01	0.491	2.0
1975	0.00	27	0.00	0.509	2.0
1976	0.04	28	0.00	0.528	1.9
1977	0.00	29	0.00	0.547	1.8
1978	0.00	30	0.00	0.566	1.8
1979	0.00	31	0.00	0.585	1.7
1980	0.02	32	0.00	0.604	1.7
1981	0.00	33	0.00	0.623	1.6
1982	0.06	34	0.00	0.642	1.6
1983	0.05	35	0.00	0.660	1.5
1984	0.00	36	0.00	0.679	1.5
1985	0.10	37	0.00	0.698	1.4
1986	0.01	38	0.00	0.717	1.4
1987	0.10	39	0.00	0.736	1.4
1988	0.00	40	0.00	0.755	1.3
1989	0.00	41	0.00	0.774	1.3
1990	0.09	42	0.00	0.792	1.3
1991	0.01	43	0.00	0.811	1.2
1992	0.01	44	0.00	0.830	1.2
1993	0.00	45	0.00	0.849	1.2
1994	0.02	46	0.00	0.868	1.2
1995	0.00	47	0.00	0.887	1.1
1996	0.00	48	0.00	0.906	1.1
1997	0.00	49	0.00	0.925	1.1
1998	0.00	50	0.00	0.943	1.1
1999	0.00	51	0.00	0.962	1.0
2000	0.05	52	0.00	0.981	1.0



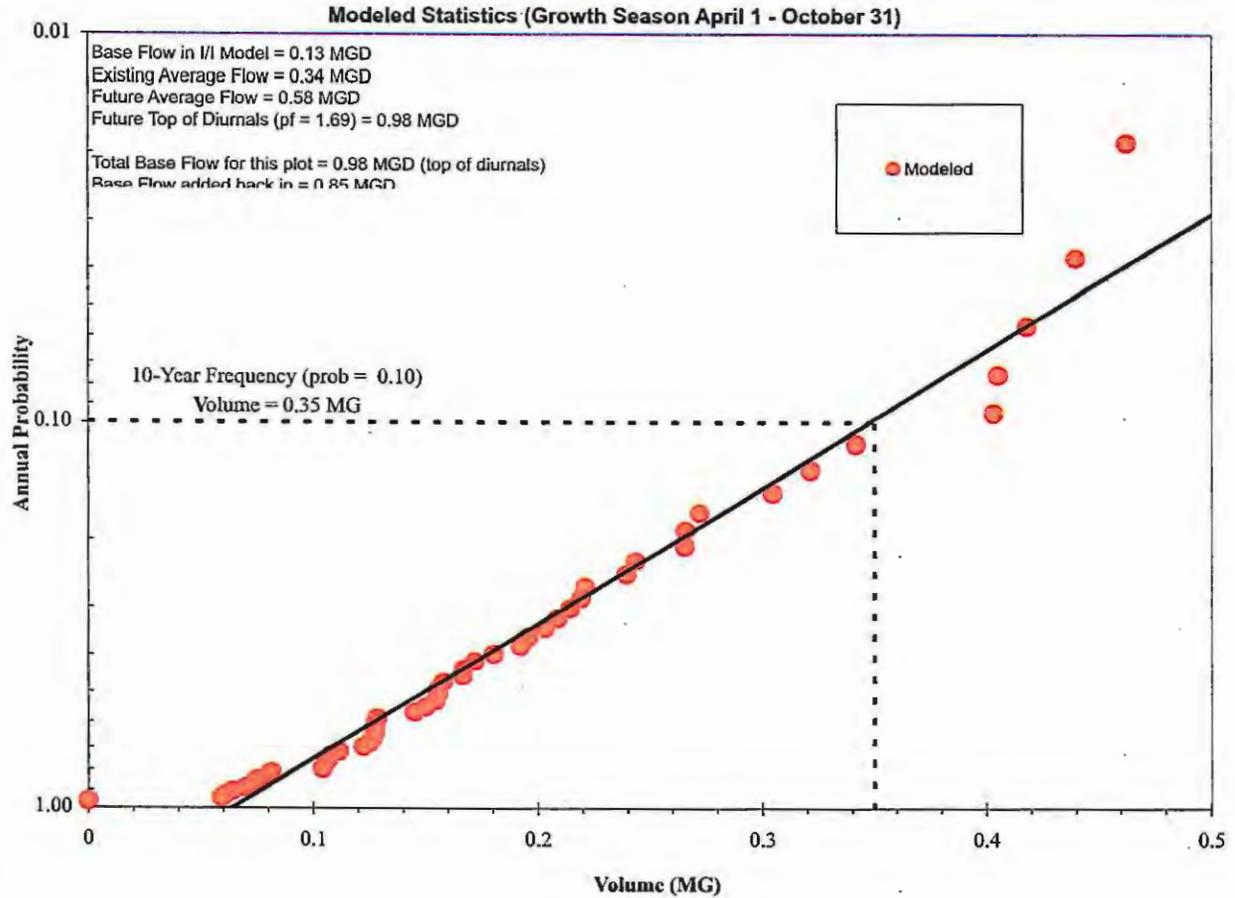
**Figure 7 - Growth Season Volumes - Future System, Volumes Over 1.3 MGD**

Year	Max Vol (MGD)	Rank	Ranked Values	Annual Probability	Return Period (yrs)
1949	0.18	1	0.23	0.019	53.0
1950	0.04	2	0.23	0.038	26.5
1951	0.06	3	0.22	0.057	17.7
1952	0.02	4	0.21	0.075	13.3
1953	0.02	5	0.18	0.094	10.6
1954	0.23	6	0.17	0.113	8.8
1955	0.03	7	0.17	0.132	7.6
1956	0.11	8	0.15	0.151	6.6
1957	0.17	9	0.14	0.170	5.9
1958	0.08	10	0.14	0.189	5.3
1959	0.15	11	0.13	0.208	4.8
1960	0.06	12	0.12	0.226	4.4
1961	0.11	13	0.12	0.245	4.1
1962	0.04	14	0.11	0.264	3.8
1963	0.07	15	0.11	0.283	3.5
1964	0.09	16	0.10	0.302	3.3
1965	0.05	17	0.10	0.321	3.1
1966	0.02	18	0.09	0.340	2.9
1967	0.06	19	0.09	0.358	2.8
1968	0.21	20	0.09	0.377	2.7
1969	0.13	21	0.08	0.396	2.5
1970	0.03	22	0.08	0.415	2.4
1971	0.10	23	0.08	0.434	2.3
1972	0.08	24	0.07	0.453	2.2
1973	0.02	25	0.07	0.472	2.1
1974	0.00	26	0.07	0.491	2.0
1975	0.02	27	0.07	0.509	2.0
1976	0.12	28	0.06	0.528	1.9
1977	0.07	29	0.06	0.547	1.8
1978	0.06	30	0.06	0.566	1.8
1979	0.03	31	0.06	0.585	1.7
1980	0.07	32	0.06	0.604	1.7
1981	0.03	33	0.05	0.623	1.6
1982	0.14	34	0.05	0.642	1.6
1983	0.14	35	0.05	0.660	1.5
1984	0.05	36	0.05	0.679	1.5
1985	0.22	37	0.04	0.698	1.4
1986	0.09	38	0.04	0.717	1.4
1987	0.23	39	0.04	0.736	1.4
1988	0.05	40	0.03	0.755	1.3
1989	0.06	41	0.03	0.774	1.3
1990	0.17	42	0.03	0.792	1.3
1991	0.07	43	0.03	0.811	1.2
1992	0.09	44	0.03	0.830	1.2
1993	0.05	45	0.03	0.849	1.2
1994	0.10	46	0.02	0.868	1.2
1995	0.08	47	0.02	0.887	1.1
1996	0.03	48	0.02	0.906	1.1
1997	0.04	49	0.02	0.925	1.1
1998	0.00	50	0.02	0.943	1.1
1999	0.03	51	0.00	0.962	1.0
2000	0.12	52	0.00	0.981	1.0



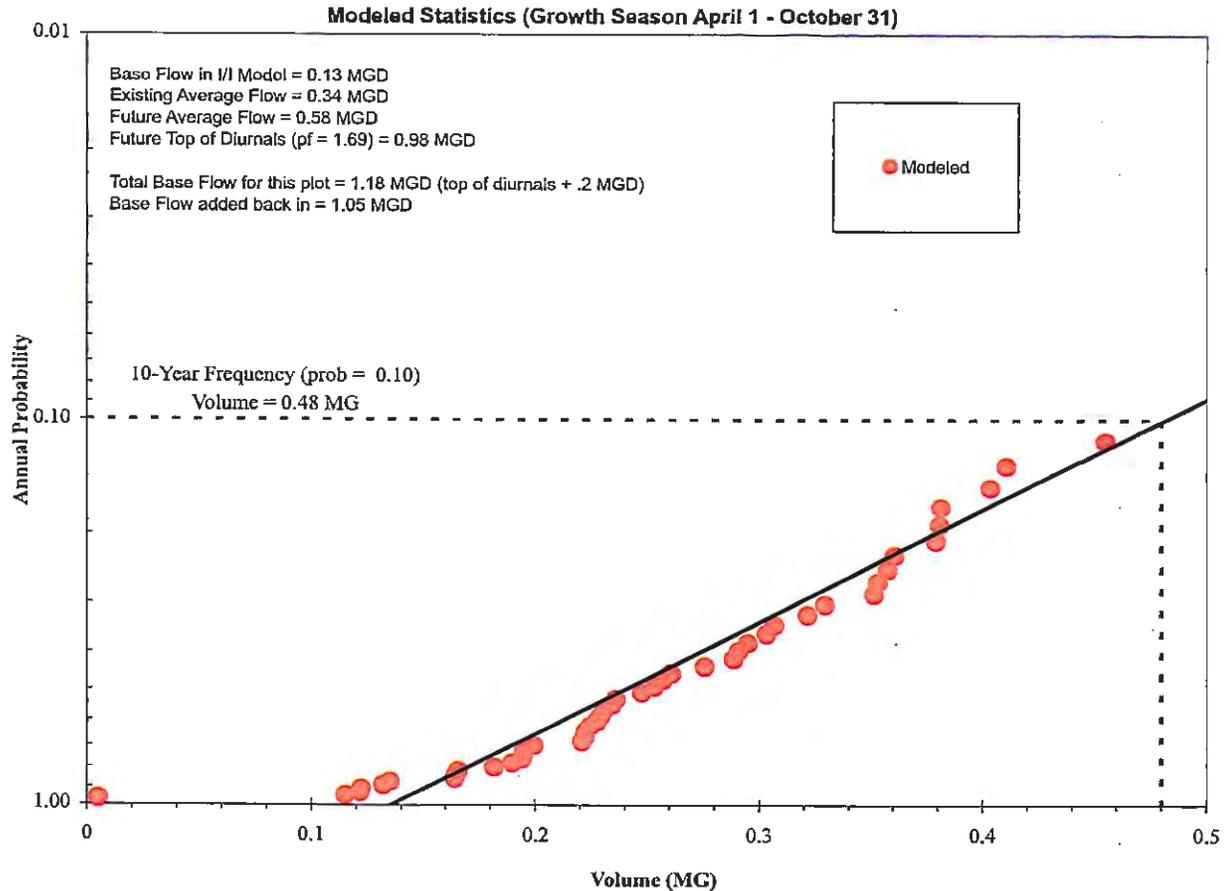
**Figure 8 - Growth Season Volumes - Future System, Volumes Over 1.3 MGD, Conservatively Increase Model by 50%**

Year	Max Vol (MGD)	Rank	Ranked Values	Annual Probability	Return Period (yrs)
1949	0.40	1	0.46	0.019	53.0
1950	0.13	2	0.44	0.038	26.5
1951	0.13	3	0.42	0.057	17.7
1952	0.08	4	0.41	0.075	13.3
1953	0.06	5	0.40	0.094	10.6
1954	0.46	6	0.34	0.113	8.8
1955	0.07	7	0.32	0.132	7.6
1956	0.22	8	0.30	0.151	6.6
1957	0.34	9	0.27	0.170	5.9
1958	0.17	10	0.27	0.189	5.3
1959	0.30	11	0.27	0.208	4.8
1960	0.15	12	0.24	0.226	4.4
1961	0.22	13	0.24	0.245	4.1
1962	0.11	14	0.22	0.264	3.8
1963	0.15	15	0.22	0.283	3.5
1964	0.20	16	0.21	0.302	3.3
1965	0.13	17	0.21	0.321	3.1
1966	0.11	18	0.20	0.340	2.9
1967	0.13	19	0.20	0.358	2.8
1968	0.42	20	0.19	0.377	2.7
1969	0.27	21	0.18	0.396	2.5
1970	0.07	22	0.17	0.415	2.4
1971	0.21	23	0.17	0.434	2.3
1972	0.17	24	0.17	0.453	2.2
1973	0.06	25	0.16	0.472	2.1
1974	0.00	26	0.16	0.491	2.0
1975	0.06	27	0.16	0.509	2.0
1976	0.24	28	0.15	0.528	1.9
1977	0.16	29	0.15	0.547	1.8
1978	0.13	30	0.15	0.566	1.8
1979	0.08	31	0.13	0.585	1.7
1980	0.16	32	0.13	0.604	1.7
1981	0.11	33	0.13	0.623	1.6
1982	0.27	34	0.13	0.642	1.6
1983	0.27	35	0.13	0.660	1.5
1984	0.12	36	0.13	0.679	1.5
1985	0.41	37	0.12	0.698	1.4
1986	0.18	38	0.11	0.717	1.4
1987	0.44	39	0.11	0.736	1.4
1988	0.16	40	0.11	0.755	1.3
1989	0.17	41	0.11	0.774	1.3
1990	0.32	42	0.10	0.792	1.3
1991	0.15	43	0.08	0.811	1.2
1992	0.20	44	0.08	0.830	1.2
1993	0.11	45	0.07	0.849	1.2
1994	0.21	46	0.07	0.868	1.2
1995	0.19	47	0.07	0.887	1.1
1996	0.13	48	0.06	0.906	1.1
1997	0.10	49	0.06	0.925	1.1
1998	0.00	50	0.06	0.943	1.1
1999	0.07	51	0.00	0.962	1.0
2000	0.24	52	0.00	0.981	1.0



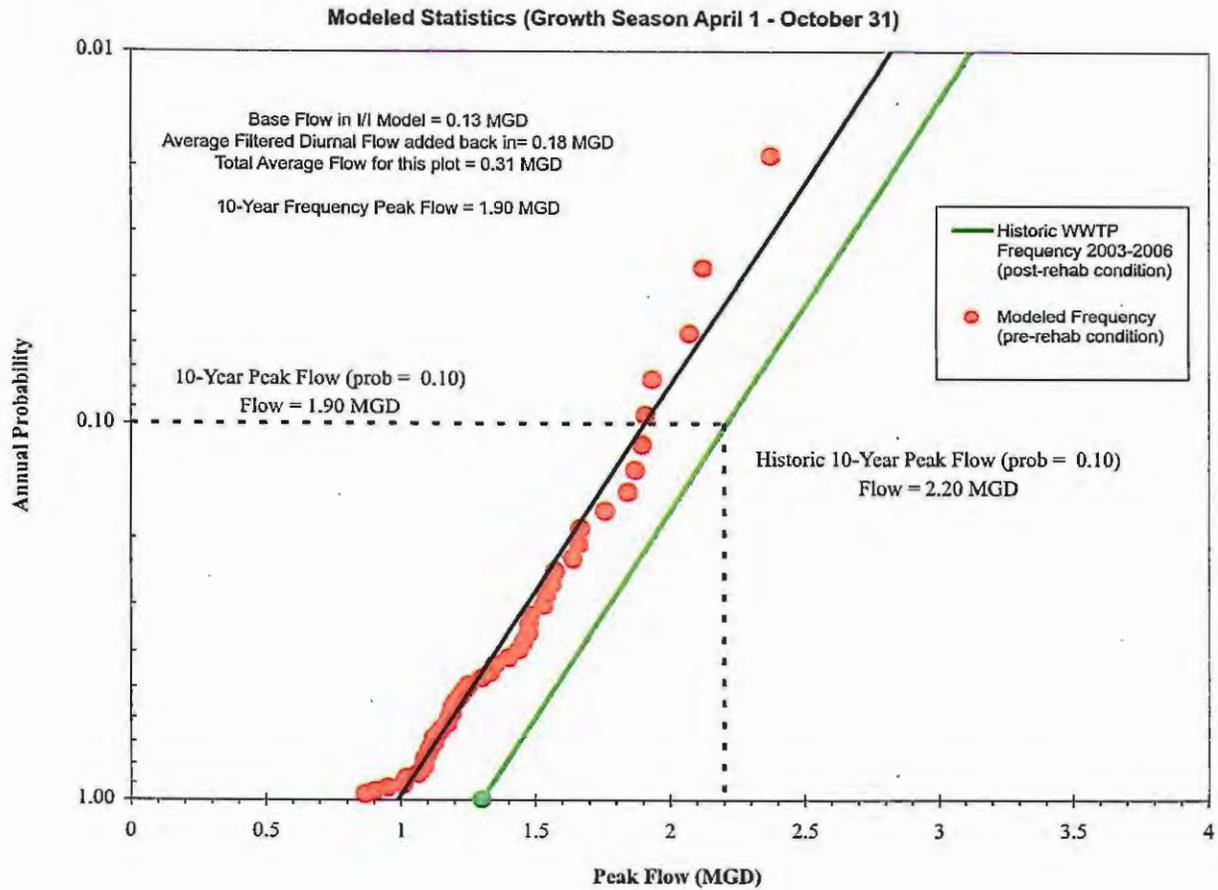
**Figure 9 - Growth Season Volumes - Future System, Volumes Over 1.3 MGD, Increase Model by 50% & + 0.2 MGD**

Year	Max Vol (MGD)	Rank	Ranked Values	Annual Probability	Return Period (yrs)
1949	0.57	1	0.61	0.019	53.0
1950	0.28	2	0.57	0.038	26.5
1951	0.20	3	0.57	0.057	17.7
1952	0.17	4	0.55	0.075	13.3
1953	0.12	5	0.52	0.094	10.6
1954	0.61	6	0.46	0.113	8.8
1955	0.18	7	0.41	0.132	7.6
1956	0.36	8	0.40	0.151	6.6
1957	0.46	9	0.38	0.170	5.9
1958	0.23	10	0.38	0.189	5.3
1959	0.41	11	0.38	0.208	4.8
1960	0.23	12	0.36	0.226	4.4
1961	0.32	13	0.36	0.245	4.1
1962	0.23	14	0.35	0.264	3.8
1963	0.22	15	0.35	0.283	3.5
1964	0.30	16	0.33	0.302	3.3
1965	0.20	17	0.32	0.321	3.1
1966	0.25	18	0.31	0.340	2.9
1967	0.30	19	0.30	0.358	2.8
1968	0.57	20	0.30	0.377	2.7
1969	0.38	21	0.29	0.396	2.5
1970	0.14	22	0.29	0.415	2.4
1971	0.35	23	0.28	0.434	2.3
1972	0.26	24	0.26	0.453	2.2
1973	0.12	25	0.26	0.472	2.1
1974	0.00	26	0.25	0.491	2.0
1975	0.13	27	0.25	0.509	2.0
1976	0.33	28	0.24	0.528	1.9
1977	0.22	29	0.23	0.547	1.8
1978	0.19	30	0.23	0.566	1.8
1979	0.19	31	0.23	0.585	1.7
1980	0.24	32	0.23	0.604	1.7
1981	0.23	33	0.22	0.623	1.6
1982	0.35	34	0.22	0.642	1.6
1983	0.36	35	0.22	0.660	1.5
1984	0.20	36	0.22	0.679	1.5
1985	0.52	37	0.20	0.698	1.4
1986	0.25	38	0.20	0.717	1.4
1987	0.55	39	0.20	0.736	1.4
1988	0.26	40	0.19	0.755	1.3
1989	0.38	41	0.19	0.774	1.3
1990	0.40	42	0.18	0.792	1.3
1991	0.22	43	0.17	0.811	1.2
1992	0.29	44	0.16	0.830	1.2
1993	0.16	45	0.16	0.849	1.2
1994	0.29	46	0.14	0.868	1.2
1995	0.31	47	0.13	0.887	1.1
1996	0.22	48	0.12	0.906	1.1
1997	0.16	49	0.12	0.925	1.1
1998	0.01	50	0.12	0.943	1.1
1999	0.12	51	0.01	0.962	1.0
2000	0.38	52	0.00	0.981	1.0



**Figure 10 - Growth Season Existing Peak Flows with Historic WWTP Frequency**

Year	Max Flow (MGD)	Rank	Ranked Values	Annual Probability	Return Period (yrs)
1949	1.53	1	2.38	0.019	53.0
1950	1.13	2	2.12	0.038	26.5
1951	1.19	3	2.07	0.057	17.7
1952	0.95	4	1.94	0.075	13.3
1953	1.02	5	1.91	0.094	10.6
1954	1.66	6	1.90	0.113	8.8
1955	1.09	7	1.87	0.132	7.6
1956	1.64	8	1.84	0.151	6.6
1957	1.40	9	1.76	0.170	5.9
1958	1.35	10	1.67	0.189	5.3
1959	1.94	11	1.66	0.208	4.8
1960	1.10	12	1.64	0.226	4.4
1961	1.58	13	1.58	0.245	4.1
1962	1.06	14	1.56	0.264	3.8
1963	1.30	15	1.54	0.283	3.5
1964	1.25	16	1.53	0.302	3.3
1965	1.14	17	1.48	0.321	3.1
1966	0.90	18	1.48	0.340	2.9
1967	1.33	19	1.48	0.358	2.8
1968	1.76	20	1.46	0.377	2.7
1969	1.84	21	1.44	0.396	2.5
1970	1.08	22	1.40	0.415	2.4
1971	1.54	23	1.35	0.434	2.3
1972	1.48	24	1.33	0.453	2.2
1973	1.11	25	1.30	0.472	2.1
1974	0.79	26	1.25	0.491	2.0
1975	1.18	27	1.23	0.509	2.0
1976	1.87	28	1.22	0.528	1.9
1977	1.23	29	1.20	0.547	1.8
1978	1.09	30	1.19	0.566	1.8
1979	1.16	31	1.19	0.585	1.7
1980	1.48	32	1.18	0.604	1.7
1981	1.02	33	1.18	0.623	1.6
1982	1.90	34	1.16	0.642	1.6
1983	1.67	35	1.14	0.660	1.5
1984	1.11	36	1.13	0.679	1.5
1985	2.07	37	1.13	0.698	1.4
1986	1.46	38	1.11	0.717	1.4
1987	2.12	39	1.11	0.736	1.4
1988	1.20	40	1.10	0.755	1.3
1989	1.22	41	1.09	0.774	1.3
1990	2.38	42	1.09	0.792	1.3
1991	1.44	43	1.09	0.811	1.2
1992	1.56	44	1.08	0.830	1.2
1993	1.13	45	1.06	0.849	1.2
1994	1.48	46	1.02	0.868	1.2
1995	1.19	47	1.02	0.887	1.1
1996	1.01	48	1.01	0.906	1.1
1997	1.18	49	0.95	0.925	1.1
1998	0.87	50	0.90	0.943	1.1
1999	1.09	51	0.87	0.962	1.0
2000	1.91	52	0.79	0.981	1.0





# Meeting Summary

Village of Dexter



## Meeting with MDEQ – Sanitary Sewer & SRF

Time: Monday, October 22, 2007 1:00 PM

Location: Constitution Hall, Lansing, MI

Attendees:

Janet Monroe, MDEQ	Donna Dettling, Village of Dexter
Tiffany Myers, MDEQ	Courtney Nicholls, Village of Dexter
Les Prether, MDEQ	Vicki Putala, OHM
Clarence Jones, MDEQ	Rhett Gronewelt, OHM
Eric Pocan, MDEQ	Christine Cale, OHM
Karen Totzke, MDEQ	

## Summary:

1. I/I that is cost-effective to remove (removal < transport & treat) is considered excessive I/I.
2. It's possible that the manhole rehabilitation program was more effective than thought because the monitoring period (March 2007 - July 2007) was a very dry period.
3. The Village could be required to pay back the S2 grant if they build the EQ basin with their own funds and that's the option considered to be the cost-effective solution. However, the Village could perform some I/I removal with their own funds as long as a majority of the project (whatever the project is determined to be - I/I removal or EQ basin) is funded through a SRF loan.
4. The Village could submit a Project Plan amendment that includes a cost-effective analysis for removing the excessive I/I, final sizing of the EQ basin and updated project costs.
5. If a Project Plan amendment is submitted, then the Project Plan can be rescored and a new SRF loan amount including the EQ basin can be requested. Provided the Project Plan is approved, the new loan amount would be reflected on the 2008 PPL for funding (October 2008-Sept 2009). Construction of the improvements could begin summer/fall of 2009. Because of the size and number of projects on the 2007 PPL, the Village would likely not be able to construct until 2009.
6. It is noted that the Village is hopeful to fund their wastewater improvements with a SRF loan; however, they are concerned about the timing of Part 41 permits.

## Action Items:

1. The Project Plan will be amended to include a comparison of sanitary sewer rehabilitation costs to the cost of transport and treat.
2. Sanitary sewer response to specific storm events will be summarized by meter district for the data collected from March 2007 - July 2007. The goal of this task is to identify districts that have limited response and those that still appear to have significant I/I. Additional SSES efforts will not be required for areas with limited I/I based on the metering data. Additional flow monitoring and/or SSES efforts may be required for areas that still exhibit significant I/I.

3. Post manhole rehab parshall flume data (December 2006 - November 2007) will be reviewed and compared to pre manhole rehab values to quantify the effectiveness of the manhole rehab program. The MDEQ will consider the results of this analysis in their determination of further issuance of Part 41 permits.
4. Modeling will be performed to finalize the size of the EQ basin.
5. A meeting between the Village and the MDEQ to discuss Part 41 permits will be scheduled in the near future.



JENNIFER M. GRANHOLM  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
LANSING



STEVEN E. CHESTER  
DIRECTOR

September 28, 2007

Ms. Donna Dettling, Village Manager  
Village of Dexter  
8140 Main Street  
Dexter, MI 48130-1092

Dear Ms. Dettling:

SUBJECT: State Revolving Fund (SRF)  
Village of Dexter  
SRF Project No. 5291-01

We have evaluated your letter dated August 9, 2007, requesting further review and consideration of your total SRF project for placement on our Project Priority List (PPL). After careful review and consultation with the district engineer, we are reconfirming our prior decision to partition the project, as stated in our July 17, 2007 letter.

Recent discussions with the district office indicate that the village of Dexter believes that the rehabilitation proposed in the project plan will not appreciably affect the size of the equalization basin. This logic would seem to indicate that the proposed rehabilitation ranked on the fiscal year (FY) 2008 PPL is not cost-effective. In addition, the district office has been informed that the village of Dexter does not now believe that there is excessive Infiltration/Inflow (I/I) in the system, which negates the need for the project currently ranked on the FY 2008 PPL. In light of the analysis presented in the project plan indicating a three fold increase in flows during wet weather, we cannot accept the assertion that there is no inflow problem.

As a result, in addition to determining that the basin will not be listed on the FY 2008 PPL, we have also determined that a completely revised cost-effectiveness analysis must be submitted before efforts can progress toward funding any portion of the proposed project. The revised analysis must clearly identify cost-effective infiltration removal by means of rehabilitation, as well as cost-effective inflow removal. These costs must be evaluated by comparison to the costs to transport and treat the excessive clear water. The treatment component may include an equalization basin and any additional facilities needing enlargement to transport peak flows. The analysis should be in the form of a Sanitary Sewer Evaluation Survey.

Ms. Donna Dettling  
Page 2  
September 28, 2007

If you have any further questions or comments please feel free to contact me or Mr. Les Prether at 517-241-4307.

Sincerely,

A handwritten signature in black ink, appearing to read "Chip Heckathorn", with a long horizontal flourish extending to the right.

Chip Heckathorn  
Revolving Loan and Operator Certification Section  
Environmental Science and Services Division  
517-373-4725

cc: Ms. Tiffany Myers, DEQ-Water Bureau, Jackson District Office  
Mr. Rhett Gronevelt, P.E., OHM



## VILLAGE OF DEXTER

8140 Main Street • Dexter, Michigan 48130-1092 • (734) 426-8303 • Fax (734) 426-5614

### Village Council

Jim Seta  
*President*

Shawn Keough  
*President Pro-Tem*

Jim Carson  
*Councilperson*

Paul Cousins  
*Councilperson*

Donna Fisher  
*Councilperson*

Joe Semifero  
*Councilperson*

Ray Tell  
*Councilperson*

### Administration

Donna Dettling  
*Manager*

David Boyle  
*Clerk*

Marie Sherry, CPFA  
*Treasurer/Finance Director*

Ed Lobdell  
*Public Services Superintendent*

Allison Bishop, AICP  
*Community Development Manager*

THE VILLAGE OF  
DEXTER IS AN EQUAL  
OPPORTUNITY  
PROVIDER AND  
EMPLOYER

www.  
villageofdexter.org

August 9, 2007

Mr. Chip Heckathorn, Chief  
Michigan Department of Environmental Quality  
Revolving Loan and Operator Certification Section  
Environmental Sciences and Services Division  
525 West Allegan Street  
PO Box 30457  
Lansing MI 48909-7957

Re: State Revolving Fund  
Village of Dexter  
SRF Project No. 5291-01

Dear Mr. Heckathorn:

On June 29, 2007, the Village of Dexter submitted a SRF Project Plan for Sanitary Sewer Improvements. The improvements recommended for the Village's wastewater system within the project plan included rehabilitation of sanitary sewers and construction of an equalization basin at the Village's wastewater treatment plant (WWTP).

A letter dated July 17, 2007 from your office indicated that only the sanitary sewer rehabilitation portion of the project will be ranked and placed on the 2008 Project Priority List (PPL). The letter stated that this was due to "insufficient data exists at this time to enable the [DEQ] to confirm proper sizing of the proposed equalization basin."

After further discussions between our engineers, Orchard, Hiltz & McCliment, Inc (OHM), and MDEQ staff, including Tiffany Myers, Les Prether, and Edwyna McKee, the Village of Dexter is respectfully requesting that the decision to only place the sanitary sewer rehabilitation portion of the work on the 2008 PPL is reconsidered by the MDEQ. While the exact sizing of the equalization basin has not yet been determined, the data clearly supports the construction of an equalization basin as the most cost effective means of addressing the peak flow issues at the Village's WWTP. While a more detailed model will be developed during the engineering design, which will confirm the final equalization basin sizing, sufficient analysis has been done to confirm a storage need between 800,000 and 1,000,000 gallons. The final sizing will not have significant impact on the project costs.

In addition, it has been suggested that insufficient metering has been completed to confirm the need of an equalization basin. Metering data from the Parshall flume meter located at the WWTP spanning the last 4½ years has



## VILLAGE OF DEXTER

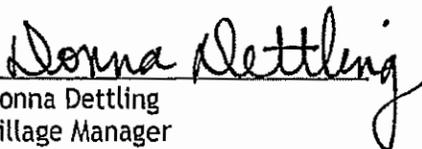
Page 2 of 2

been used in the analysis, as well as temporary sub-district metering this past spring. Analysis of the metering data suggests that the inflow and infiltration removal efforts alone will not bring the system peaks in line with the treatment capabilities of the WWTP. In fact, estimates of the potential I/I removal efficiency show that the removal will be insignificant in regards to the sizing or need for storage in the system to optimize use of the WWTP.

It was suggested that the Village should phase the implementation of the recommended improvements, and submit post-rehab monitoring information before a future application for funds to add storage to the system would be considered. The approach will only add additional effort and cost to the overall improvements that are inevitable.

We feel that the MDEQ has not yet had the opportunity to give adequate consideration to the data and analysis that was submitted, and would request an opportunity to review the information with the DEQ to understand why the entire scope of the recommended improvements cannot be considered on the 2008 PPL. The Village of Dexter requests that the sanitary sewer rehabilitation work and the equalization basin be placed on the 2008 PPL with an estimated construction total of \$3.8 million. We are available to meet with you and your staff at any time to review the information that has been submitted. We look forward to your response, and please feel free to contact me at (734) 426-8303 or Rhett Gronevelt with OHM at (734) 522-6711 with any questions or comments.

Sincerely Yours,

  
Donna Dettling  
Village Manager

cc: Ed Lobdell, Utilities Superintendent, Village of Dexter  
Edwyna McKee, DEQ-Environmental Science and Services Div  
Les Prether, DEQ-Environmental Science and Services Div  
Tiffany Myers, DEQ-Water Bureau, Jackson District Office  
Rhett Gronevelt, P.E., Orchard Hiltz & McCliment, Inc.



JENNIFER M. GRANHOLM  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
LANSING



STEVEN E. CHESTER  
DIRECTOR

July 17, 2007

Ms. Donna Dettling, Village Manager  
Village of Dexter  
8140 Main Street  
Dexter, MI 48130

Dear Ms. Dettling:

SUBJECT: State Revolving Fund (SRF)  
Village of Dexter  
SRF Project No. 5291-01

Thank you for your June 29, 2007 submittal of the village of Dexter (Dexter) SRF Project Plan for Sanitary System Improvements. After careful review of the project plan, it has been determined that insufficient data exists at this time to enable the Department of Environmental Quality to confirm proper sizing of the proposed equalization basin. For this reason, we will rank and place on the fiscal year (FY) 2008 Project Priority List (PPL) only the manhole and sanitary sewer rehabilitation portion of the project. According to the project plan, this rehabilitation work is estimated to total \$1,000,000.

After adequate post-rehab metering data is obtained, Dexter is encouraged to seek funding for further construction, if necessary. We strongly suggest that you remain in contact with your district engineer, Ms. Tiffany Myers, at 517-780-7480, in our Jackson District Office, as you proceed through the proposed sanitary system rehabilitation.

Meanwhile, the rehabilitation loan process is unfolding. Although we are not likely to be able to determine whether this project is in the FY 2008 fundable range until October or later, we will be placing the rehabilitation project on the PPL as seeking a 4<sup>th</sup> Quarter of FY 2008 loan closing. Please stay in contact with Mr. Les Prether, your SRF project manager, at 517-241-4307 for information and guidance in moving through the SRF loan process.

If you have any questions about this action, please do not hesitate to call me or speak with Mr. Les Prether. Thank you.

Sincerely,

Chip Heckathorn, Chief  
Revolving Loan and Operator Certification Section  
Environmental Science and Services Division  
517-373-4725

cc: Ms. Michelle La Rose, OHM  
Ms. Tiffany Myers, DEQ-Water Bureau, Jackson District Office  
Mr. Les Prether, DEQ

January 30, 2008

**Michigan Department of Environmental Quality**  
Surface Water Quality Division  
Jackson State Office Building, Fourth Floor  
301 E. Louis Glick Highway  
Jackson, MI 49201



Attention: Ms. Tiffany Myers  
Environmental Engineer

Regarding: Village of Dexter, Washtenaw County  
Cedars of Dexter Part 41 Permit Application

Dear Ms. Myers:

In August 2007, the Village submitted a Part 41 permit application for the above referenced project. Since that time, we have submitted some additional information in response to concerns raised by your office. Your most recent letter of January 17, 2008 indicates that outstanding issues identified in your October 10, 2007 email still have not been addressed, and that the MDEQ must act on the permit by February 14, 2008.

As you recall, the Village met with several representatives from your office on November 19, 2007 to discuss the issuance of this and other potential Part 41 Permits in the Village of Dexter. At that time, we reviewed the status of the Village's SRF Project Plan, and their desire to seek funding through that program for the construction of an equalization basin, to maximize the capacity of the Village's WWTP. Since that meeting, the Village has completed several additional tasks at the request of the SRF staff, and we are hopeful that the Village's project will be placed on the PPL for future funding in the near future. We have sent you copies of what is being provided to the SRF staff, as we know that you are involved in the review of much of that material.

At the meeting of November 19, 2007, knowing that the Village is, at best, several years from completing the construction of the equalization basin, we asked what options the Village may have to address the capacity concerns, and continue to receive approval for some additional Part 41 permits. The MDEQ indicated that if the Village could prove that the manhole rehabilitation conducted in the fall of 2006 had removed I/I from the system, the MDEQ might be able to consider the issuance of additional connections to the system. We have completed sewer modeling of the Village's system, with one of the goals being to assess the effectiveness of the manhole rehabilitation. This primarily addresses the first item of your October 10 email, regarding the WWTP capacity.

Attached to this letter, please find a copy of the technical report that summarizes the modeling that was completed, and the conclusions that were made. Based on this information, we believe that the manhole rehabilitation had a positive impact on the wet weather flows in the system. The information suggests that the additional connections for this project could be made without increasing the likelihood of an SSO from what existed prior to the rehabilitation.

In addition to the modeling report, the second item in the email referred to a 10-inch pipe that was proposed for a portion on the sanitary sewer along Island Lake Road. The sewer is sized to accommodate future areas of the Village of Dexter based on the 20-yr Future Land Use map (attached) developed for the SRF project plan. The 10-inch sewer accommodates the Cedars of Dexter site and Area D on the Future Land Use map.

The other items in your October 10, 2007 email have been addressed, and are transmitting the revised plans for your review. We hope this letter, the results of the modeling, and the revised plans provide adequate information for the MDEQ to be able to approve the Part 41 permit application for the above project. I understand that limited time exists between the receipt of this information and the deadline for your response. If you do not feel that adequate time exists for you to review this information and approve the Permit application, please let us know if the application should be withdrawn and resubmitted, or if an extension could be requested to allow for additional time. However, should there be any additional comments or questions regarding these matters, please feel free to contact me at 734-466-4575.

Sincerely,  
Orchard, Hiltz & McCliment, Inc.

*Christine A. Cale*

Christine A. Cale, P.E.  
Project Engineer

cc: Mr. Jon Russell, MDEQ, Surface Water Quality Division, Jackson State Office Building, Fourth Floor, 301 E. Louis Glick Highway, Jackson, MI 49201  
Ms. Donna Dettling, Village Manager, Village of Dexter, 8140 Main St, Dexter, MI 48130  
Mr. Ed Lobdell, Village Superintendent of Utilities  
Ms. Kate Collins, UMRC, 805 W. Middle Street, Chelsea, MI 48118  
Kate Bond, Washtenaw Engineering, P.O. Box 1128, 3250 W. Liberty Rd., Ann Arbor, MI 48106  
Mr. Rhett Gronevelt, P.E., OHM



# Meeting Summary

Draft 11/21/07



## Meeting with MDEQ – Act 399 and Part 41 Permits for the Village of Dexter

Time: Monday, November 19, 2007 1:00 PM  
Location: MDEQ - Jackson District Office

Attendees: Jon Russell, MDEQ  
Tiffany Myers, MDEQ  
Bethel Skinker, MDEQ  
Deb Snell, MDEQ  
Jeff Antil, MDEQ  
Donna Dettling, Village of Dexter  
Ed Lobdell, Village of Dexter  
Rhett Gronevelt, OHM  
Christine Cale, OHM

### Summary:

Due to developments within the Village that want to construct public water main and sanitary sewer as part of their site development (including Cedars of Dexter and Dexter Wellness Center), the Village has applied for Act 399 Water Permits and Part 41 Sewer Permits through the MDEQ. This meeting was held to discuss the necessary actions and timeframe for the approval of these permits to allow the developments to proceed with construction.

### *Act 399 Water Permits*

1. The Village provided an update to the MDEQ regarding locating a new water supply. Drilling another test well is scheduled to begin on Monday, November 26, 2007, with the possibility of converting this well to a production well if the results from the 24-hr flow are positive. Bethel has provided approval for these activities.
2. Based on the information provided to the DEQ since our meeting on October 4, 2007, it was determined that the readings from the meter at the water treatment plant, not the wellfield, will be used to record daily water usage. Therefore, the current maximum day usage is 1.15 MGD (recorded on June 10, 2005) as opposed to 1.4 MGD.
3. Based on the water usage recorded by the meter at the WTP, the firm capacity/maximum day ratio is 100%, as opposed to 82% (determined using meter readings from the wellfield).
4. The Village, along with OHM, is assessing all water system needs. The MDEQ has requested a schedule for completion.

### *Part 41 Sewer Permits*

1. The Village and OHM are working to complete the action items from the October 22, 2007 meeting with the MDEQ regarding the wastewater system and SRF project plan.
2. The main concern in issuing Part 41 permits is that the Village's WWTP has limited wet weather capacity. Although, no discharges from the WWTP have been reported as SSO's.
3. The Village has been blending during wet weather flows. DEQ realized that based on the definition of an SSO, blending at the WWTP during wet weather flows violates the Village's permit obligations, and the MDEQ is issuing a letter to clarify the appropriate actions and responsibility of the Village.
4. The MDEQ provided the Village with two potential options: 1) Provide data analysis that proves that the manhole rehabilitation project reduced the flows to the WWTP during wet weather, or 2) Establish an ACO between the MDEQ and the Village. While data analysis is being completed considering 12-months of flow monitoring data (as previously requested by the MDEQ at a meeting on October 22, 2007), the MDEQ is researching the possibility of establishing an ACO with the Village. The Village requested that this be considered because it is possible that the flow monitoring data will not reveal a significant reduction in wet weather flows. To expedite

the process, consideration of an ACO was requested. Based on the SSO definition, an ACO could be issued to the Village. Once the ACO is in place, Part 41 permits can be issued.

Action Items:

*Act 399 Water Permits*

1. The MDEQ has requested the following items regarding the water system:
  - a. Aquifer analysis following the pump test at potential site of the new well
  - b. Construction schedule of new well and connection to system
2. The Village needs to review and implement mandatory water restrictions until the new well comes online.

*Part 41 Sewer Permits*

1. As noted in a previous meeting, the DEQ has requested that an analysis be completed using 12 months of metering data showing the impact that the manhole rehabilitation project has had on the system. Depending on the results, Part 41 permits may be issued.
2. The DEQ will send a notice to the Village regarding blending that has occurred at the WWTP. The Village needs to report to the DEQ when blending occurs.
3. The DEQ will investigate the possibility of issuing an ACO to the Village, and notify the Village mid-December of the results.
4. OHM will provide the DEQ with the requested information regarding the SRF project plan, as requested at the meeting on Oct 22, 2007.



STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
JACKSON DISTRICT OFFICE



JENNIFER M. GRANHOLM  
GOVERNOR

STEVEN E. CHESTER  
DIRECTOR

January 17, 2008

RECEIVED

JAN 22 2008

Ms. Donna Dettling  
Village of Dexter  
8140 Main Street  
Dexter, Michigan 48130

Dear Ms. Dettling:

ORCHARD, HILTZ & McCLIMENT, INC.

SUBJECT: Cedars of Dexter,  
Village of Dexter, Washtenaw County  
Potential Denial of Part 41 Application – Technical Issues

This letter is to advise you that if the outstanding technical issues, including the capacity issues, for the Cedars of Dexter are not resolved by February 14, 2008, the application will be denied. You were notified on October 10, 2007, via email of the technical issues that needed resolution for this application. We have not received a response to that email at this point.

There are statutory limitations for processing applications. Specifically, Sec. 1301 (f) (xi) of Act 325 of 2004 establishes the processing period for Part 41 Applications as, "... 150 days or, if a hearing is held, 90 days after the hearing, whichever is later." Further, Sec. 1307 (1) requires, "By the processing deadline, the department shall approve or deny an application for a permit..." Because the processing period will expire on February 14, 2008, if the permit cannot be issued before that, the department will have no choice but to deny the application and permit.

Be advised that a Part 41 permit is required for this project. Initiation of construction without a Part 41 permit is a violation of law and is punishable by fines and imprisonment.

Please contact this office should you have any questions.

Sincerely,

Tiffany J. Myers  
Environmental Engineer  
Water Bureau  
517-780-7480

TJM/CLH

cc: Mr. Rhett Gronevelt, P.E., Orchard, Hiltz & McCliment, Inc.  
Mr. Joseph K. Maynard, P.E., Washtenaw Engineering Company  
United Methodist Retirement Communities  
Washtenaw County DEIS  
File: Dexter WWTP, Part 41, Washtenaw County

## Cale, Christine

---

**From:** Cale, Christine  
**Sent:** Thursday, January 24, 2008 3:30 PM  
**To:** Cale, Christine  
**Subject:** RE: Cedars of Dexter

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

**From:** Tiffany Myers [mailto:myerstj@michigan.gov]  
**Sent:** Wednesday, October 10, 2007 9:33 AM  
**To:** jkm@wengco.com  
**Cc:** Cale, Christine; Gronevelt, Rhett; Donna Dettling  
**Subject:** Cedars of Dexter

Joe,

I have taken a look at the plans for the above referenced project. There are several issues that need to be resolved prior to issuance of a Part 41 permit. Many of them may need to be addressed by the Village or by OHM, so I am copying them on this email as well. Our comments are as follows:

- 1) Based on information provided to us in the past by the Village and their engineers, the wastewater treatment plant does not have adequate capacity to treat the 25 yr, 24 hr storm (3.9 inches of rain). After we determine the status of their current State Revolving Fund (SRF) Project Plan, we plan to schedule a meeting with the Village to discuss the situation and to determine if there is a way that we can move forward with this proposed project while they are making improvements elsewhere in their system.
- 2) Why was a 10-inch pipe chosen for a portion of this project? According to the Project Basis of Design, the ultimate peak flows could be adequately transported by an 8-inch pipe. Please explain why a 10-inch pipe was chosen. If it is for future flows, a summary of those flows must be provided to us. If it is for any other reason, in addition to providing an explanation, a letter must be submitted to us from the Village. This letter must acknowledge that the proposed sewer is not designed in accordance with Ten State Standards and must state that they will do any additional maintenance that may be necessary due to the use of an oversized pipe.
- 3) A drop manhole is required at manhole S13 and should be noted on the profile.
- 4) A note should be added stating that no debris, frozen material, or organic material may be placed within 2 feet of the top of the pipe.
- 5) A note should also be added stating that highly compressible or organic soils in the foundation area may need to be replaced.
- 6) The Village of Dexter standard specifications which we have on file were received on 10/25/05. These specifications were not signed and sealed by a Professional Engineer licensed in the State of Michigan. The Village must have someone sign and seal a copy of those specification (at least the cover page or table of contents page) and submit that to me.

Obviously, item 1 cannot be addressed at this point. However, I wanted to get these other items to you so that you, the Village and OHM can work on them in the meantime. If you have any questions, please let me know.

Thank you,

Tiffany Myers  
MDEQ, Water Bureau  
Field Operations Division



January 30, 2008

Ms. Debora Snell  
Environmental Quality Analyst  
Michigan Department of Environmental Quality  
Jackson District Office, Water Bureau  
301 East Louis Glick Highway  
Jackson, MI 49201-1556

Re: Bypass of Sand Filters  
Dexter Wastewater Treatment Plant  
NPDES Permit No. MI0022829  
Notice Letter NL-003098

Dear Ms. Snell:

The MDEQ submitted a letter dated November 30, 2007 to the Village of Dexter. The purpose of the letter was to inform the Village that bypassing the sand filters at the WWTP during wet weather events is prohibited under Part II.C.9 of our National Pollutant Discharge Elimination System (NPDES) permit and is also considered a discharge of partially treated sewage and is subject to the sanitary sewer overflow (SSO) reporting requirements of Rule 324.3112a.

Dexter's NPDES permit has a Bypass Prohibition and Notification section (Part II.C.9). In this section, bypass is defined as the "intentional diversion of waste streams from any portion of the treatment facility". In the November 30, 2007 letter, the MDEQ states that bypassing the filters is an intentional bypass of a portion of the WWTP. While it is agreed that bypassing the filters constitutes a bypass of a portion of the WWTP, Part II.C.9 has a section for bypass not exceeding limitations. This section states that "the permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Part II.C.9a, 9b, 9c or 9d... This provision does not relieve the permittee of any notification responsibilities under Part II.C.10 of the NPDES permit".

The Village believes the bypassing the sand filters enabled the Village to maintain efficient operation of the plant and ensure that the sewage was properly treated through the secondary treatment process, and therefore falls under this bypass exemption. In addition, the bypass that needs to be reported in accordance with Dexter's NPDES (Part II.C.10) requirements appears to apply to the NPDES discharge limits, not the bypass of tertiary treatment. On the occasions the filters were bypassed, it is our understanding that the Village of Dexter met their NPDES discharge limits.

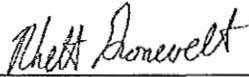
Secondly, the MDEQ noted that bypass of the sand filters is partially treated sewage and subject to the SSO reporting requirements of Rule 324.3112a. Rule 324.3112a defines partially treated sewage as any sewage, sewage and storm water or sewage and wastewater, from domestic or industrial sources that meets the following criteria: is not treated to national secondary treatment standards for wastewater or that is treated to a level less than that required by the person's NPDES Permit.

We understand the filters provide tertiary treatment at the WWTP. Therefore, even with bypassing the filters, the national secondary treatment standards are met, which only require sewage to pass through the secondary treatment processes.

Therefore, based on our understanding of the NPDES permit and Rule 324.3112a, the Village does not believe the bypass of the filters is in violation of our current NPDES permit or the SSO reporting requirements, and consequently the Village should not incur enforcement action from the MDEQ.

In addition, the November 30, 2007 letter noted four action items that needed to be addressed. The Village previously responded to your action items 1 through 4 on January 7, 2008. We are willing to meet with the MDEQ to further discuss the November 30, 2007 letter and action items 1 through 4, and our understanding of the rules and regulations.

Very truly yours,  
Orchard, Hiltz & McCliment, Inc.



---

Rhett Gronevelt, P.E.  
Client Representative

cc: Jon Russell, MDEQ, Surface Water Quality Division, Jackson State Office Building, Fourth Floor, 301 E. Louis Glick Highway, Jackson, MI 49201  
Barry Selden, Enforcement Unit, WB, Jackson State Office Building, Fourth Floor, 301 E. Louis Glick Highway, Jackson, MI 49201  
Donna Dettling, Village Manager, Village of Dexter  
Ed Lobdell, DPS Superintendent, Village of Dexter



JENNIFER M. GRANHOLM  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
JACKSON DISTRICT OFFICE



STEVEN E. CHESTER  
DIRECTOR

November 30, 2007

CERTIFIED MAIL

NOTICE LETTER  
NL-003098

Mr. Edward Lobdell, Superintendent  
Village of Dexter Water Utilities  
8360 Huron Street  
Dexter, Michigan 48130

Dear Mr. Lobdell:

**SUBJECT:** Bypass of Sand Filters  
Dexter Wastewater Treatment Plant  
NPDES Permit No. MI0022829

It has come to the attention of Department of Environmental Quality (DEQ), Water Bureau, staff that the Dexter Wastewater Treatment Plant (WWTP) has had occasion to bypass their tertiary treatment sand filters during wet weather events due to limited hydraulic capacity of the filters. This water is then blended with fully treated final effluent and discharged via Outfall 001 to Mill Creek. DEQ has reviewed this issue and has made the following determination:

Be advised that intentional bypassing of any portion of the treatment facility is prohibited per Part II.C.9. of your facility's National Pollutant Discharge Elimination System (NPDES) Permit No. MI0022829, unless certain qualifying conditions are met. Bypassing the sand filters due to hydraulic capacity limitations at less than the 25-year 24-hour storm design standard is considered an intentional diversion of waste streams from a portion of the treatment facility and as such is subject to the reporting requirements of this part. Consistent with DEQ's Sanitary Sewer Overflow (SSO) Policy, WWTPs must be capable of treating wastewater to the design standard of the 25-year 24-hour storm event.

Be further advised that DEQ has determined any bypass of the sand filters, whether blended with fully treated final effluent or not, is considered a discharge of partially treated sewage as defined under Rule 324.3112a of Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, Act 451 of 1994, which states: "Partially treated sewage" means any sewage, sewage and storm water, or sewage and wastewater, from domestic or industrial sources that...is not treated to national secondary treatment standards for wastewater or that is treated to a level less than that required by the person's NPDES permit." Since the WWTP's sand filters are part of the permitted treatment process at this facility, any wastewater which bypasses the sand filters (or any other unit process) is considered a discharge of partially treated sewage and is subject to the sanitary sewer overflow (SSO) reporting requirements of Rule 324.3112a. A copy of Rule 324.3112a is attached for your information.

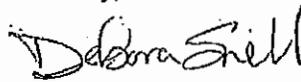
As a result of this determination please address the following action items:

1. Please indicate when bypassing of the sand filters due to hydraulic capacity issues first started to occur. Provide a list of bypass events which includes specific dates and volumes (if available), and any associated effluent violations which occurred while bypassing the sand filters.
2. Please describe under what conditions bypass of the sand filters occurs (i.e. what size rain event and/or what amount of flow results in a bypass?).
3. What actions have been taken or are planned to reduce and/or prevent future bypassing of the sand filters - both in the interim and long term?
4. Be advised that all future sand filter bypasses must be reported as per the bypass reporting requirements listed in Part II.C.9. of your NPDES Permit. This includes initial notification to the DEQ within 24 hours and a written report of bypass within 5 business days.

Please be advised that compliance with this Notice Letter does not constitute a release or waiver of liability for past or continuing violations of NPDES Permit No. MI0022829, or Part 31 of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Failure to adequately address the items list above will result in escalated enforcement action.

Please provide your written response to the items listed above by January 7, 2008. Should you have any questions or concerns please contact me at the number below.

Sincerely,



Debora Snell  
Environmental Quality Analyst  
Jackson District Office  
517-780-7929  
Water Bureau

DS/BVC

Enclosure

cc: Ms. Donna Detling, Village Manager, Village of Dexter  
Mr. Barry Selden, Enforcement Unit, WB

# VILLAGE OF DEXTER

PUBLIC SERVICES DEPT.

8360 HURON ST.

DEXTER MI 48130

(734) 426-4572 FAX (734)426-5466

January 7,2008

Ms. Debora Snell  
Environmental Quality Analyst  
Jackson District Office  
Water Bureau

Dear Ms. Snell

Subject: Notice letter - NL-003098

The following is sent as a response to your notice letter (NL-003098) sent November 30,2007. I will use the same numbers to respond to your letter.

- 1 - The temporary blending of effluent has resulted in no violations of our permit. There are no records of specific dates on which this has occurred. Although I do not recall the first time we blended effluent, we have blended effluent on a few occasions over the years.
- 2 - This is only done during a heavy rain event, & only as long as high flows exist. Usually during a rain rate at one inch an hour or more. This has not been done for quite some time. I attribute that to our manhole rehabilitation project.
- 3 - The Village is in the process of securing funding for an EQ basin. Also we are looking into the flow process hydraulically.
- 4 - Any future blending of effluent will be reported to the DEQ within 24 hours, with a written report to follow within 5 business days.

If you have any questions, please contact me at the above number.

Sincerely:

  
Ed Lobdell  
Public Services Supt.  
Village of Dexter

**Cale, Christine**

---

**From:** Debora Snell [snelld@michigan.gov]  
**Sent:** Tuesday, January 08, 2008 1:28 PM  
**To:** Gronevelt, Rhett  
**Cc:** Tiffany Myers; Jon Russell; Cale, Christine; Putala, Vicki; Donna Dettling; Ed Lobdell  
**Subject:** Re: Village of Dexter

Rhett:

Thank you for the update. Ed's interim response along with a formal response by the end of the month sounds reasonable to me. I'll advise Tiffany of the status of the wastewater system model as well.

Deb

Debora Snell  
Michigan Department of Environmental Quality Water Bureau Jackson District Office  
(517)780-7929  
email: snelld@michigan.gov

>>> "Gronevelt, Rhett" <rhett.gronevelt@ohm-advisors.com> 01/08/08 10:32  
>>> AM >>>  
Deb -

We have received your letter dated November 30, 2007 regarding bypassing the sand filters at the Village of Dexter Wastewater Treatment Plant during some rain events. We are working with the Village to provide a formal response to the letter by the end of January 2008. In the meantime, Ed Lobdell of the Village responded to the action items noted in the letter, and posted a letter response yesterday.

Also, we are currently working with the Village, using existing rainfall and sewage flow data, to create a wastewater system model to better understand the Village's wastewater system, including current wastewater treatment plant flow capacities. When this is completed, we will be sharing the results with the MDEQ, likely by the end of the month as well. Should you have any further questions or comments, feel free to contact us.

Thanks,

Rhett A. Gronevelt, PE  
Municipal Group Manager  
Orchard, Hiltz & McCliment, Inc.  
34000 Plymouth Road  
Livonia, MI 48150  
p. 734.522.6711  
f. 734.522.6427  
d. 734.466.4582  
www.ohm-advisors.com

Helping Build Better Communities for Tomorrow

This message, including attachments, is confidential and may be privileged. If you are not an intended recipient, please notify the sender then delete and destroy the original message and all copies. You should not copy, forward and/or disclose this message, in whole or in part, without permission of the sender.

AGENDA 2-11-08

ITEM I-3

Manager Report  
February 11, 2008  
Page 1 of 1

## VILLAGE OF DEXTER

[ddettling@villageofdexter.org](mailto:ddettling@villageofdexter.org)

8140 Main Street Dexter, MI 48130-1092

Phone (734)426-8303 ext 11 Fax (734)426-5614

### MEMO

**To:** President Keough and Council Members  
**From:** Donna Dettling, Village Manager  
**Date:** February 11, 2008  
**Re:** Village Manager Report

1. Meeting Review:

- January 24<sup>th</sup> – Utility Committee re: Sewer Update
- January 25<sup>th</sup> – Conference call re: Schulz Development Agreement
- January 28<sup>th</sup> – WCRC re: Main Street Bridge Guardrail
- January 30<sup>th</sup> and 31<sup>st</sup> – Work Shops at Manager's Conference
- February 6<sup>th</sup> – MEDC Robert Wilson re: CDBG RL Program

2. Upcoming Meeting Review:

- February 7<sup>th</sup> – Town Hall Meeting
- February 8<sup>th</sup> – OHM Project Updates
- February 11<sup>th</sup> - Pre-Construction UMRC
- February 13<sup>th</sup> – Tech Show
- February 14<sup>th</sup> – DDA Meeting

3. LED Project. Kurt Augustine is working with Dan Dapprich to bid an LED project for the village's "Metered" streetlight accounts. The CMAQ project replaced all the bulbs in the metered downtown traffic signals with LED's. It is our goal to budget to replace the streetlights with the LED's in the 2008-09 fiscal year budget. To demonstrate the cost effectiveness of the project, my plan is to track the changes in each of the metered accounts after the LED's are installed. I have historical metered data to compare and establish the effectiveness of the project. The "Unmetered" streetlight account will require collaboration with DTE, as the unmetered facilities are owned and maintained by DTE. The unmetered project can be proposed after we have verified the effectiveness of the metered project and can request a cost reduction in the charge for our monthly-unmetered streetlights and unmetered traffic signals. I'll keep you posted as the project proceeds.

4. City Process. Reminder that David Rutledge will be available for a work session with Council prior to the regular meeting on February 25, 2008. He will bring Council up to date on efforts to secure the appropriate level of survey work to complete the boundary map as well as provide detail on the process from Petition through Village vote on a City Charter. A proposal from OHM to complete the survey work will be presented for review and approval at the February 25<sup>th</sup> meeting.



AGENDA 2-11-08

ITEM I-4

**Donna Dettling**

---

**From:** Keough, Shawn [SKEOUGH@WadeTrim.com]  
**Sent:** Tuesday, February 05, 2008 7:35 AM  
**To:** Donna Dettling  
**Subject:** President's Report Update

Please include this in the packet for the February 11, 2008 Council meeting.

I attended the following meetings since January 28th  
January 28th - Meeting with Roy Townsend and Aaron Berkholz at the WCRC (with Donna Dettling, Jim Carson and Paul Cousins)  
January 29th - Meeting with Shashi Patel, Gas Station Owner (with Donna Dettling)  
January 30th - Meeting with Shashi Patel, Gas Station Owner  
January 30th - CAPT/DART meeting in Lyndon Twp (with Jim Carson)  
January 31st - Multiple phone conversations with Shashi Patel, Gas Station Owner  
February 1st - Meeting with Shashi Patel and his two partners (with Donna Dettling at the Village offices to sign purchase agreement)

Meetings/Action Items planned for Week of February 4th  
February 7th - Townhall meeting

I plan to call Gil Campbell to let him know that Ray Tell will be attending the next DHS meeting on behalf of the Council.

Please feel free to contact me with any questions.

Thanks - Shawn



AGENDA 2-11-08

ITEM 5-1

**SUMMARY OF BILLS AND PAYROLL** **11-Feb-08**

Payroll Check Register	01/30/08	34,144.00	Bi-weekly payroll processing
		<b>\$34,144.00</b>	
Account Payable Check Register	02/12/08	\$42,404.18	
		<b>\$76,548.18</b>	<b>TOTAL BILLS &amp; PAYROLL EXPENDED ALL FUNDS</b>
Summary Items from Bills & Payroll		Amount	Comments

**ALL PAYABLES ARE WITHIN ACCEPTABLE BUDGET LIMITS  
DETAIL VENDOR LIST AND ACCOUNT SUMMARY PROVIDED**

*"This is the summary report that will be provided with each packet. Approval of the total bills and payroll expended, all funds will be necessary."*

VENDOR APPROVAL SUMMARY REPORT

Date: 02/05/2008

Time: 11:23am

Page: 1

Village of Dexter

Vendor Name	Vendor Number	Description	Check Amount	Hand Check Amount
ALEXANDER CHEMICAL CORPORATION	ALEXANDER	CREDIT	509.00	0.00
ANN ARBOR TECHNICAL SERVICES	A2 TECHNIC	LAB WORK	2,048.00	0.00
ARBOR SPRINGS WATER CO.INC	ARBOR SPRI	OFFICE	23.00	0.00
AT&T	AT&T	734 426 4572	1,219.50	0.00
BOULLION SALES	BOULLION	DRIVELINE	499.60	0.00
BROWN EQUIPMENT CO INC	BROWN EQIP	TARCO	482.12	0.00
CARRIER & GABLE, INC.	CARRIER	ACCIDENT DAMAGE	564.00	0.00
CHAMPION WATER TREATMENT	CHAMPION W	WWTP	4.25	0.00
COMFORT ZONE MECHANICAL	COMFORT ZO	SUB STATION	661.54	0.00
DETROIT DOOR & HARDWARE	DETROIT DO	COIL CORD	139.50	0.00
DEXTER CARDS & GIFTS SHOP	DEX CARDS	NAME PLATES	30.90	0.00
DEXTER SENIOR CITIZENS CENTER	DEX SENIOR	RENT	200.00	0.00
DEXTER VILLAGE	DEXVIL	DPW	2,749.65	0.00
DIUBLE EQUIPMENT INCORPORATED	DIUBLE EQU	BOLT	430.71	0.00
DONNA DETTLING	DONNA D	CONFERENCE	402.69	0.00
DR. BARBARA WEHR	WEHR	PATIENT: CAROL AUGUSTINE	209.50	0.00
DYKEMA GOSSETT PLLC	DYKEMA	LEGAL FEES	7,121.46	0.00
GRISSOM JANITORIAL	GRISSOM	JAN 08'	320.00	0.00
HACKNEY HARDWARE	HACKNEY	BOLT CUTTER	545.25	0.00
J & R TRACTOR, LLC	J & R	PARTS	126.76	0.00
KLAPPERICH WELDING	KLAPPERICH	DRAIN GRATE	84.00	0.00
MCI	MCI	LONG DISTANCE SERVICE	13.84	0.00
MCNAUGHTON-MCKAY	MCNAUGHTON	FLOURESCENT FIXTURE	66.13	0.00
MICH. MUNICIPAL LEAGUE WORKER'	MML W C F	POLICY PREPIUM	8,284.00	0.00
MICHIGAN DEPT OF ENVIRONMENTAL	MI DEQ	DWL	18.00	0.00
MIDWESTERN CONSULTING	MIDWEST	TASK 0710	2,327.60	0.00
MORTON SALT	MORTON SAL	SALT	3,676.79	0.00
NATIONAL CITY BANK	NAT CITY P	FEB 08'	700.00	0.00
NEOPOST	NEOPOST	RIBBON	58.95	0.00
PARTS PEDDLER AUTO SUPPLY	PARTS PEDD	OIL	61.92	0.00
PRINTING SYSTEMS	PRINTING S	UTILITIES BILLS	668.82	0.00
RICHARD SCOTT DDS	R. SCOTT	PATIENT: ANN AIKEN	31.00	0.00
S.F. STRONG	SF STRONG	DISINFECTANT	91.56	0.00
MARIE A. SHERRY	SHERRY/MA	CONFERENCE	155.21	0.00
SPILLANE & REYNOLDS	SPILL & RE		3,500.00	0.00
UIS PROGRAMMABLE SERVICES INC	UIS PROGRA	SERVICES AT WWTP	1,214.48	0.00
VARNUM, RIDDERING, SCHMIDT	VARNUM, RI	JOINT REPRESENTATION CHARGES	266.25	0.00
WASHTENAW COUNTY TREASURERS	W TREAS AS	2008 DUES	10.00	0.00
WESTERN-WASH. AREA VALUE EXPR.	CATS	DOOR TO DOOR	1,583.33	0.00
WILLIAMS & WORKS, INC.	WILLIAMS &	EXPLORATORY DRILLING	1,304.87	0.00
Grand Total:			42,404.18	0.00

INVOICE APPROVAL LIST BY FUND

Date: 02/05/2008

Time: 11:25am

Page: 1

Village of Dexter

Fund						
Department Account	GL Number Abbrev	Vendor Name Invoice Description	Check Number	Invoice Number	Due Date	Amount
Fund: General Fund						
Dept: Village Council						
101-101.000-943.000	Council Ch	DEXTER SENIOR CITIZENS CENTER RENT	0	02/04/08	02/04/2008	150.00
101-101.000-955.000	Miscellaneous	DEXTER CARDS & GIFTS SHOP NAME PLATES	0	1173	02/04/2008	10.50
Total Village Council						160.50
Dept: Village Manager						
101-172.000-721.000	Health & L	RICHARD SCOTT DDS PATIENT: ANN AIKEN	0	02/05/08	02/05/2008	31.00
101-172.000-802.000	Profession	VARNUM, RIDDERING, SCHMIDT UNIFORM VIDEO FRANCHISE	0	750795	02/05/2008	93.75
101-172.000-861.000	Travel & M	DONNA DETTLING CONFERENCE	0	02/04/08	02/04/2008	402.69
Total Village Manager						527.44
Dept: Attorney						
101-210.000-810.000	Attorney F	DYKEMA GOSSETT PLLC LEGAL FEES	0	1197534	02/04/2008	7,121.46
101-210.000-810.000	Attorney F	VARNUM, RIDDERING, SCHMIDT JOINT REPRESENTATION CHARGES	0	750922	02/05/2008	172.50
Total Attorney						7,293.96
Dept: Village Treasurer						
101-253.000-721.000	Health & L	SPILLANE & REYNOLDS PATIENT: MATTHEW SHERRY	0	02/05/08	02/05/2008	3,500.00
101-253.000-861.000	Travel & M	MARIE A. SHERRY CONFERENCE	0	02/05/08	02/05/2008	155.21
101-253.000-958.000	Membership	WASHTENAW COUNTY TREASURERS 2008 DUES	0	02/05/08	02/05/2008	10.00
Total Village Treasurer						3,665.21
Dept: Buildings & Grounds						
101-265.000-727.000	Office Sup	DEXTER CARDS & GIFTS SHOP NAME PLATES	0	1173	02/04/2008	9.90
101-265.000-727.000	Office Sup	HACKNEY HARDWARE BATTERIES	0	K92446	02/04/2008	3.27
101-265.000-727.000	Office Sup	HACKNEY HARDWARE TRASH BAGS	0	793003	02/04/2008	7.99
101-265.000-727.000	Office Sup	HACKNEY HARDWARE BATTERY	0	793213	02/04/2008	9.49
101-265.000-727.000	Office Sup	HACKNEY HARDWARE KLEENEX	0	793343	02/04/2008	6.87
101-265.000-727.000	Office Sup	NEOPOST RIBBON	0	12362461	02/05/2008	58.95
101-265.000-920.000	Utilities	AT&T 734 426 8303	0	02/04/07	02/04/2008	345.55
101-265.000-935.001	Office Cle	GRISSOM JANITORIAL JAN 08'	0	101	02/04/2008	320.00
101-265.000-943.001	Office Spa	NATIONAL CITY BANK FEB 08'	0	02/05/08	02/05/2008	700.00
101-265.000-955.000	Miscellaneous	ARBOR SPRINGS WATER CO.INC OFFICE	0	1014395	02/04/2008	5.75
101-265.000-955.000	Miscellaneous	ARBOR SPRINGS WATER CO.INC OFFICE	0	1010980	02/05/2008	17.25
Total Buildings & Grounds						1,485.02
Dept: Law Enforcement						
101-301.000-920.000	Utilities	DEXTER VILLAGE DEXTER FIRE HALL	0	02/05/08	02/05/2008	72.88
101-301.000-935.000	Bldg Maint	COMFORT ZONE MECHANICAL SUB STATION	0	4981	02/05/2008	544.04
Total Law Enforcement						616.92
Dept: Fire Department						
101-336.000-920.000	Utilities	DEXTER VILLAGE DEXTER FIRE HALL	0	02/05/08	02/05/2008	145.76
101-336.000-935.000	Bldg Maint	COMFORT ZONE MECHANICAL 8140 MAIN	0	5001	02/04/2008	117.50
101-336.000-935.000	Bldg Maint	MCNAUGHTON-MCKAY FLOURESCENT FIXTURE	0	9591500-00	02/04/2008	66.13

INVOICE APPROVAL LIST BY FUND

Date: 02/05/2008  
 Time: 11:25am  
 Page: 2

Village of Dexter

Fund	Department	Account	GL Number Abbrev	Vendor Name Invoice Description	Check Number	Invoice Number	Due Date	Amount
Fund: General Fund								
Dept: Fire Department								
							Total Fire Department	329.39
Dept: Zoning Board of Appeals		101-410.000-955.000	Miscellaneous	DEXTER CARDS & GIFTS SHOP NAME PLATES	0	1173	02/04/2008	10.50
							Total Zoning Board of Appeals	10.50
Dept: Department of Public Works		101-441.000-721.000	Health & L	DR. BARBARA WEHR PATIENT: CAROL AUGUSTINE	0	02/05/08	02/05/2008	209.50
		101-441.000-740.000	Operating	HACKNEY HARDWARE FASTENERS	0	792364	02/04/2008	29.81
		101-441.000-740.000	Operating	HACKNEY HARDWARE TAPE	0	792463	02/04/2008	7.49
		101-441.000-740.000	Operating	HACKNEY HARDWARE BRASS HOSE	0	792635	02/04/2008	20.98
		101-441.000-740.000	Operating	HACKNEY HARDWARE SNOW PUSHER	0	792747	02/04/2008	20.98
		101-441.000-740.000	Operating	HACKNEY HARDWARE FASTENERS	0	793313	02/04/2008	3.19
		101-441.000-740.000	Operating	HACKNEY HARDWARE TRASH CAN	0	793352	02/04/2008	19.99
		101-441.000-740.000	Operating	HACKNEY HARDWARE BOLT CUTTER	0	793432	02/04/2008	129.82
		101-441.000-740.000	Operating	HACKNEY HARDWARE HARDWARE	0	793442	02/04/2008	11.97
		101-441.000-740.000	Operating	KLAPPERICH WELDING DRAIN GRATE	0	0085005	02/05/2008	84.00
		101-441.000-745.000	Uniform Al	PARTS PEDDLER AUTO SUPPLY SNAP RING PLIERS	0	372258	02/05/2008	29.97
		101-441.000-920.000	Utilities	DEXTER VILLAGE DEXTER FIRE HALL	0	02/05/08	02/05/2008	24.29
		101-441.000-920.000	Utilities	DEXTER VILLAGE DPW	0		02/05/2008	42.41
		101-441.000-935.000	Bldg Maint	DETROIT DOOR & HARDWARE COIL CORD	0	249142	02/04/2008	139.50
		101-441.000-935.000	Bldg Maint	HACKNEY HARDWARE CONCRETE MORTAR	0	792888	02/04/2008	36.92
		101-441.000-935.000	Bldg Maint	HACKNEY HARDWARE PAINTBRUSH	0	793031	02/04/2008	15.76
		101-441.000-935.000	Bldg Maint	HACKNEY HARDWARE PAINT THINNER	0	793049	02/04/2008	23.96
		101-441.000-935.000	Bldg Maint	HACKNEY HARDWARE PAINT FLOOR	0	793387	02/04/2008	22.99
		101-441.000-977.000	Equipment	BROWN EQUIPMENT CO INC TARCO	0	14887	02/04/2008	482.12
							Total Department of Public Works	1,355.65
Dept: Downtown Public Works		101-442.000-802.000	Profession	DEXTER SENIOR CITIZENS CENTER RENT	0	02/04/08	02/04/2008	50.00
							Total Downtown Public Works	50.00
Dept: Municipal Street Lights		101-448.000-970.000	Capital In	MIDWESTERN CONSULTING TASK 0710	0		02/05/2008	655.60
							Total Municipal Street Lights	655.60
Dept: Solid Waste		101-528.000-901.000	Printing &	PRINTING SYSTEMS UTILITIES BILLS	0	51106	02/05/2008	222.94
							Total Solid Waste	222.94
Dept: Insurance & Bonds		101-851.000-910.000	Work Comp	MICH. MUNICIPAL LEAGUE WORKER' COVERAGE PERIOD 7/1/06-6/30/07	0	11049200	02/05/2008	917.59
		101-851.000-910.000	Work Comp	MICH. MUNICIPAL LEAGUE WORKER' POLICY PREPIUM	0	8159200	02/05/2008	3,265.84
							Total Insurance & Bonds	4,183.43

INVOICE APPROVAL LIST BY FUND

Date: 02/05/2008  
 Time: 11:25am  
 Page: 3

Village of Dexter

Fund Department Account	GL Number Abbrev	Vendor Name Invoice Description	Check Number	Invoice Number	Due Date	Amount
<b>Fund: General Fund</b>						
Dept: Contributions						
101-875.000-965.001	CATS	WESTERN-WASH. AREA VALUE EXPR. PUBLIC SERVICES	0	02/05/08	02/05/2008	1,000.00
101-875.000-965.004	WAVE	WESTERN-WASH. AREA VALUE EXPR. DOOR TO DOOR	0		02/05/2008	583.33
Total Contributions						1,583.33
Fund Total						22,139.89
<b>Fund: Major Streets Fund</b>						
Dept: Routine Maintenance						
202-463.000-910.000	Work Comp	MICH. MUNICIPAL LEAGUE WORKER' COVERAGE PERIOD 7/1/06-6/30/07	0	11049200	02/05/2008	83.58
202-463.000-910.000	Work Comp	MICH. MUNICIPAL LEAGUE WORKER' POLICY PREPIUM	0	8159200	02/05/2008	297.48
Total Routine Maintenance						381.06
Dept: Traffic Services						
202-474.000-740.000	Operating	CARRIER & GABLE, INC. ACCIDENT DAMAGE	0	220859	02/04/2008	564.00
202-474.000-740.000	Operating	HACKNEY HARDWARE FASTENERS	0	792495	02/04/2008	64.77
202-474.000-802.000	Profession	MIDWESTERN CONSULTING TASK 0700	0	TASK 00700	02/05/2008	1,672.00
202-474.000-910.000	Work Comp	MICH. MUNICIPAL LEAGUE WORKER' COVERAGE PERIOD 7/1/06-6/30/07	0	11049200	02/05/2008	29.07
202-474.000-910.000	Work Comp	MICH. MUNICIPAL LEAGUE WORKER' POLICY PREPIUM	0	8159200	02/05/2008	103.47
Total Traffic Services						2,433.31
Dept: Winter Maintenance						
202-478.000-740.000	Operating	MORTON SALT SALT	0	479746	02/05/2008	3,676.79
202-478.000-910.000	Work Comp	MICH. MUNICIPAL LEAGUE WORKER' COVERAGE PERIOD 7/1/06-6/30/07	0	11049200	02/05/2008	42.70
202-478.000-910.000	Work Comp	MICH. MUNICIPAL LEAGUE WORKER' POLICY PREPIUM	0	8159200	02/05/2008	151.97
Total Winter Maintenance						3,871.46
Fund Total						6,685.83
<b>Fund: Local Streets Fund</b>						
Dept: Routine Maintenance						
203-463.000-910.000	Work Comp	MICH. MUNICIPAL LEAGUE WORKER' COVERAGE PERIOD 7/1/06-6/30/07	0	11049200	02/05/2008	25.44
203-463.000-910.000	Work Comp	MICH. MUNICIPAL LEAGUE WORKER' POLICY PREPIUM	0	8159200	02/05/2008	90.54
Total Routine Maintenance						115.98
Dept: Traffic Services						
203-474.000-910.000	Work Comp	MICH. MUNICIPAL LEAGUE WORKER' COVERAGE PERIOD 7/1/06-6/30/07	0	11049200	02/05/2008	9.09
203-474.000-910.000	Work Comp	MICH. MUNICIPAL LEAGUE WORKER' POLICY PREPIUM	0	8159200	02/05/2008	32.34
Total Traffic Services						41.43
Dept: Winter Maintenance						
203-478.000-910.000	Work Comp	MICH. MUNICIPAL LEAGUE WORKER' COVERAGE PERIOD 7/1/06-6/30/07	0	11049200	02/05/2008	19.99
203-478.000-910.000	Work Comp	MICH. MUNICIPAL LEAGUE WORKER' POLICY PREPIUM	0	8159200	02/05/2008	71.14
Total Winter Maintenance						91.13
Fund Total						248.54

Fund: Equipment Replacement Fund  
 Dept: Department of Public Works

INVOICE APPROVAL LIST BY FUND

Date: 02/05/2008

Time: 11:25am

Page: 4

Village of Dexter

Fund	Department	Account	GL Number Abbrev	Vendor Name Invoice Description	Check Number	Invoice Number	Due Date	Amount	
Fund: Equipment Replacement Fund									
Dept: Department of Public Works									
		402-441.000-939.000	Vehicle Ma	DIUBLE EQUIPMENT INCORPORATED BOLT	0	49119	02/05/2008	430.71	
		402-441.000-939.000	Vehicle Ma	J& R TRACTOR, LLC PARTS	0	32194	02/04/2008	126.76	
		402-441.000-939.000	Vehicle Ma	BOULLION SALES DRIVELINE	0	158072	02/05/2008	499.60	
								Total Department of Public Works	1,057.07
								Fund Total	1,057.07
Fund: Sewer Enterprise Fund									
Dept: Sewer Utilities Department									
		590-548.000-740.000	Operating	HACKNEY HARDWARE GLOVES	0	792366	02/04/2008	13.97	
		590-548.000-740.000	Operating	PARTS PEDDLER AUTO SUPPLY SOLVENT	0	372481	02/05/2008	4.78	
		590-548.000-740.000	Operating	S.F. STRONG DISINFECTANT	0	148454-00	02/05/2008	91.56	
		590-548.000-742.000	Chem Plant	ALEXANDER CHEMICAL CORPORATION CHEMICALS	0	0390596	01/22/2008	257.00	
		590-548.000-742.000	Chem Plant	ALEXANDER CHEMICAL CORPORATION CREDIT	0	0391414	02/04/2008	-615.00	
		590-548.000-742.000	Chem Plant	ALEXANDER CHEMICAL CORPORATION CHEMICALS	0	0391413	02/05/2008	867.00	
		590-548.000-802.000	Profession	UIS PROGRAMMABLE SERVICES INC SERVICES AT WWTP	0	530331926	02/05/2008	1,214.48	
		590-548.000-824.000	Testing &	ANN ARBOR TECHNICAL SERVICES FIELD & LAB SERVICES	0	2826	02/04/2008	1,788.00	
		590-548.000-824.000	Testing &	ANN ARBOR TECHNICAL SERVICES LAB WORK	0	2827	02/04/2008	260.00	
		590-548.000-824.000	Testing &	MICHIGAN DEPT OF ENVIRONMENTAL DWL	0	474147	02/04/2008	18.00	
		590-548.000-901.000	Printing &	PRINTING SYSTEMS UTILITIES BILLS	0	51106	02/05/2008	222.94	
		590-548.000-910.000	Work Comp	MICH. MUNICIPAL LEAGUE WORKER' COVERAGE PERIOD 7/1/06-6/30/07	0	11049200	02/05/2008	490.59	
		590-548.000-910.000	Work Comp	MICH. MUNICIPAL LEAGUE WORKER' POLICY PREPIUM	0	8159200	02/05/2008	1,746.09	
		590-548.000-920.000	Utilities	AT&T 734 426 4572	0	02/04/08	02/04/2008	576.80	
		590-548.000-920.000	Utilities	DEXTER VILLAGE WWTP	0		02/05/2008	2,464.31	
		590-548.000-920.001	Telephones	MCI LONG DISTANCE SERVICE	0	02/05/08	02/05/2008	13.84	
		590-548.000-937.000	Equip Main	PARTS PEDDLER AUTO SUPPLY WESTERN OIL	0	372242	02/05/2008	8.99	
		590-548.000-955.000	Miscellaneous	CHAMPION WATER TREATMENT WWTP	0	38215	02/04/2008	4.25	
								Total Sewer Utilities Department	9,427.60
								Fund Total	9,427.60
Fund: Water Enterprise Fund									
Dept: Water Utilities Department									
		591-556.000-740.000	Operating	HACKNEY HARDWARE CORD	0	793092	02/04/2008	7.49	
		591-556.000-740.000	Operating	HACKNEY HARDWARE FOM	0	793140	02/04/2008	11.78	
		591-556.000-740.000	Operating	HACKNEY HARDWARE GLOVE	0	793227	02/04/2008	12.99	
		591-556.000-740.000	Operating	HACKNEY HARDWARE ACE PIPE	0	793239	02/04/2008	62.77	
		591-556.000-740.000	Operating	PARTS PEDDLER AUTO SUPPLY OIL	0	372298	02/05/2008	18.18	
		591-556.000-901.000	Printing &	PRINTING SYSTEMS UTILITIES BILLS	0	51106	02/05/2008	222.94	
		591-556.000-910.000	Work Comp	MICH. MUNICIPAL LEAGUE WORKER' COVERAGE PERIOD 7/1/06-6/30/07	0	11049200	02/05/2008	198.95	

INVOICE APPROVAL LIST BY FUND

Date: 02/05/2008  
 Time: 11:25am  
 Page: 5

Village of Dexter

Fund	Department	Account	GL Number Abbrev	Vendor Name Invoice Description	Check Number	Invoice Number	Due Date	Amount
Fund: Water Enterprise Fund								
Dept: Water Utilities Department								
		591-556.000-910.000	Work Comp	MICH. MUNICIPAL LEAGUE WORKER' POLICY PREPIUM	0	8159200	02/05/2008	708.13
		591-556.000-920.000	Utilities	AT&T 734 426 4572	0	02/04/08	02/04/2008	297.15
Total Water Utilities Department								1,540.38
Dept: Capital Improvements CIP								
		591-901.000-974.000	CIP Capita	WILLIAMS & WORKS, INC. EXPLORATORY DRILLING	0	42766	02/05/2008	1,304.87
Total Capital Improvements CIP								1,304.87
Fund Total								2,845.25
Grand Total								42,404.18 ✓



AGENDA 2-11-08

ITEM K-1

REAL ESTATE AGREEMENT

THIS AGREEMENT ("Agreement") made and entered into as of this 1<sup>st</sup> day of February 2008, by and between Shreeji Vinayak Corp., a Michigan corporation ("Seller") whose address is 8135 Main Street, Dexter, Michigan and the Village of Dexter, a Michigan general laws village, whose address is 8140 Main Street, Dexter, Michigan ("Purchaser").

RECITALS:

A. Seller is the owner of certain real property located in the County of Washtenaw, Village of Dexter, State of Michigan, as legally described on the attached Exhibit A (the "Property");

B. Seller is desirous of selling and Purchaser is desirous of purchasing the Property; and

C. The parties hereto wish to set forth the consideration, terms and conditions upon which Seller shall sell and Purchaser shall purchase the Property.

NOW, THEREFORE, in consideration of the sums of money reflected herein, the mutual covenants herein contained, and other good and valuable consideration, the receipt and adequacy of which are hereby mutually acknowledged, the parties hereto agree as follows:

1. Property. Purchaser shall purchase from Seller and Seller shall sell to Purchaser the Property.

2. Purchase Price. The purchase price for the Property shall be One Hundred Thousand and 00/100 (\$100,000.00) Dollars (the "Purchase Price").

3. Deposit. Contemporaneous with the execution of this Agreement, Purchaser has delivered to Seller the sum of Five Hundred and NO/Dollars (\$500.00) representing the earnest money deposit hereunder ("Deposit"). The Deposit shall be non-refundable, but applicable to the Purchase Price.

4. Closing. The closing shall take place within one (1) day after Purchaser provides notice to Seller that it is prepared to close, but in no event later than February 15, 2008. The purchase and sale of the Property shall be consummated by the following:

(i) Execution and delivery by Seller to Purchaser of a Quit Claim D ed transferring fee simple ownership to the Property to Purchaser; and

(ii) Execution and delivery of such other documents and instruments as may be required by any other provision of this Agreement or as may reasonably be required by Purchaser's title insurance company to issue a title insurance policy for the Property (including a corporate good standing certificate and corporate authority documentation).

5. Default.

(a) If Purchaser defaults hereunder, then provided Seller is not in default hereunder, Seller's sole and exclusive remedy shall be to terminate this Agreement by giving written notice thereof to Purchaser, whereupon the Deposit shall be retained by Seller as liquidated damages, as Seller's sole and exclusive remedy on account of such default hereunder by Purchaser, and neither party shall have any further liability or obligation to the other.

(b) If Seller defaults hereunder, then provided Purchaser is not in default hereunder, Purchaser may elect in its discretion either to:

(i) Terminate this Agreement whereupon the Deposit shall be promptly returned to Purchaser, and Purchaser may seek judgment against Seller for damages; or

(ii) Seek judgment against Seller for specific performance of this Agreement.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed as of the day and year first above written.

**PURCHASER:**

Village of Dexter

By: Shawn Keough  
Shawn Keough  
Its: Village President  
Date: 2/1/2008

Accepted by Seller on this 1<sup>st</sup> day of February, 2008

**SELLER:**

Shreeji Vinayak Corp.

By: Kalpeshkumar Patel  
Kalpeshkumar Patel  
Its: President 02/01/2008

By: T. Raval  
Tarun Raval  
Its: Treasurer 02/01/2008

EXHIBIT A—LEGAL DESCRIPTION OF PROPERTY

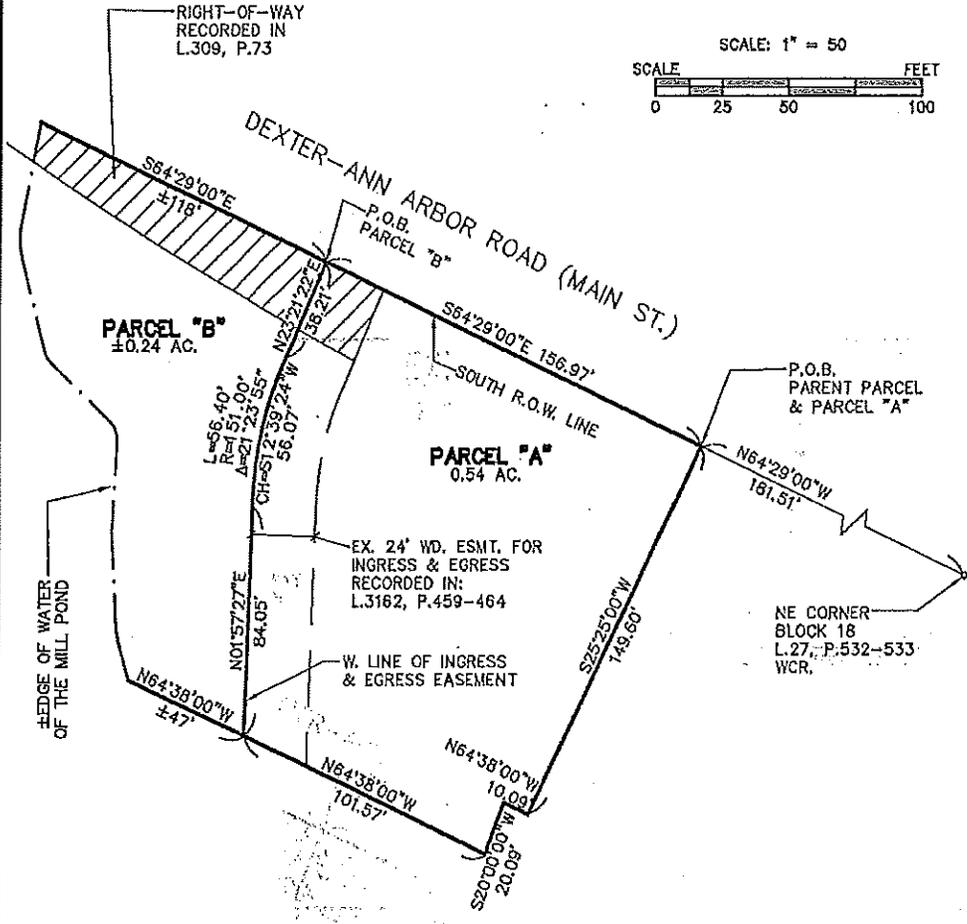
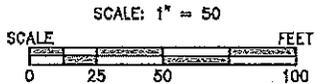
See Attached.

DET02269599.1  
ID/DJSC

27 A...

# EXHIBIT "A"

## PARCEL SKETCH



**REFERENCE SURVEYS:**  
 MIDWESTERN CONSULTING EASEMENT SURVEY RECORDED IN LIBER 3162, PAGES 459-464, WASHTENAW COUNTY RECORDS  
 MIDWESTERN CONSULTING PARCEL SKETCH FOR JOB NO. 06155, DATED 1/21/08  
 KEM-TEC WEST MORTGAGE SURVEY FOR JOB NO. 06-30200, DATED 12/04/05

<p style="font-size: small;">34000 Plymouth Road   Livonia, MI 48150 p (734) 622-6711   f (734) 622-6127</p> <p style="font-size: x-small;">Advancing Communities Engineering Solutions</p>	DRAWN BY	LAND IN BLOCK 18 IN THE VILLAGE OF DEXTER, T.2S., R.5E., WASHTENAW COUNTY
	AWS	
	DATE	
CLIENT: VILLAGE OF DEXTER	JOB NUMBER: 130-08-0021	SHEET: 3 OF 4

Drawing Path: P:\0105\_011810\33050021\_ML\_Pond\_Prog\_Survey\Map\Topo\ML\_Pond\_Permit.dwg

# EXHIBIT "B"

## PARCEL DESCRIPTIONS

PARENT PARCEL (PER INGRESS & EGRESS EASEMENT RECORDED IN LIBER 3162, PAGES 459-464, PREPARED BY MIDWESTERN CONSULTING)

COMMENCING AT THE NORTHEAST CORNER OF BLOCK 18, OF THE ORIGINAL PLAT OF THE VILLAGE OF DEXTER, AS RECORDED IN LIBER 27 OF DEEDS, PAGES 532 AND 533, WASHTENAW COUNTY RECORDS: THENCE N.64°29'00"W, 181.51 FEET ALONG THE SOUTHERLY RIGHT-OF-WAY LINE OF DEXTER-ANN ARBOR ROAD (MAIN STREET) TO THE POINT OF BEGINNING; THENCE S.25°25'00"W, 149.60 FEET; THENCE N.64°38'00"W, 10.09 FEET; THENCE S.20°00'00"W, 20.09 FEET; THENCE N.64°38'00"W, 108.00 FEET TO A POINT ON AN AUXILIARY TRAVERSE LINE, HEREINAFTER REFERRED TO AS POINT "A"; THENCE CONTINUING N.64°38'00"W, 43± FEET TO THE 843 CONTOUR AT THE EDGE OF THE MILL POND; THENCE NORTHWESTERLY ALONG THE 843 CONTOUR AT THE EDGE OF THE MILL POND, TO THE SOUTHERLY RIGHT-OF-WAY LINE OF DEXTER-ANN ARBOR ROAD; THENCE S.84°29'00"E, 132± FEET TO A POINT ON SAID AUXILIARY TRAVERSE LINE, SAID POINT BEING N.02°13'06"E, 105.06 FEET AND N.18°24'02"E, 73.99 FEET FROM SAID POINT "A"; THENCE CONTINUING S.64°29'00"E, 164.61 FEET ALONG THE SOUTHERLY RIGHT-OF-WAY LINE OF DEXTER-ANN ARBOR ROAD TO THE POINT OF BEGINNING. BEING A PART OF BLOCK 18 OF SAID ORIGINAL PLAT OF THE VILLAGE OF DEXTER.

PARCEL "A"

COMMENCING AT THE NORTHEAST CORNER OF BLOCK 18, OF THE ORIGINAL PLAT OF THE VILLAGE OF DEXTER, AS RECORDED IN LIBER 27 OF DEEDS, PAGES 532 AND 533, WASHTENAW COUNTY RECORDS: THENCE N.64°29'00"W, 181.51 FEET ALONG THE SOUTHERLY RIGHT-OF-WAY LINE OF DEXTER-ANN ARBOR ROAD (MAIN STREET) TO THE POINT OF BEGINNING; THENCE S.25°25'00"W, 149.60 FEET; THENCE N.64°38'00"W, 10.09 FEET; THENCE S.20°00'00"W, 20.09 FEET; THENCE N.64°38'00"W, 101.57 FEET TO A POINT ON THE WESTERLY LINE OF THE EXISTING INGRESS & EGRESS EASEMENT RECORDED IN LIBER 3162, PAGES 459-464, WASHTENAW COUNTY RECORDS; THENCE ALONG THE WESTERLY LINE OF SAID INGRESS & EGRESS EASEMENT THE FOLLOWING THREE (3) COURSES, N.01°57'27"E, 84.05 FEET; THENCE ALONG A CURVE TO THE RIGHT WITH RADIUS OF 151.00 FEET, A CENTRAL ANGLE OF 21°23'58" (CHORD BEARS N.12°39'24"E, 56.07 FEET) A DISTANCE OF 56.40 FEET; THENCE N.23°21'22"E, 38.21 FEET TO A POINT ON THE SOUTHERLY RIGHT-OF-WAY LINE OF DEXTER-ANN ARBOR ROAD; THENCE S.64°29'00"E, 166.97 FEET ALONG THE SOUTHERLY RIGHT-OF-WAY LINE OF DEXTER-ANN ARBOR ROAD TO THE POINT OF BEGINNING. BEING A PART OF BLOCK 18 OF SAID ORIGINAL PLAT OF THE VILLAGE OF DEXTER AND CONTAINING 0.54 ACRES OF LAND.

PARCEL "B"

COMMENCING AT THE NORTHEAST CORNER OF BLOCK 18, OF THE ORIGINAL PLAT OF THE VILLAGE OF DEXTER, AS RECORDED IN LIBER 27 OF DEEDS, PAGES 532 AND 533, WASHTENAW COUNTY RECORDS: THENCE N.64°29'00"W, 314.48 FEET ALONG THE SOUTHERLY RIGHT-OF-WAY LINE OF DEXTER-ANN ARBOR ROAD (MAIN STREET) TO THE POINT OF BEGINNING; THENCE ALONG THE WESTERLY LINE OF THE EXISTING INGRESS & EGRESS EASEMENT RECORDED IN LIBER 3162, PAGES 459-464, WASHTENAW COUNTY RECORDS THE FOLLOWING THREE (3) COURSES, S.23°21'22"W, 38.21 FEET; THENCE ALONG A CURVE TO THE LEFT WITH RADIUS OF 151.00 FEET, A CENTRAL ANGLE OF 21°23'58" (CHORD BEARS S.12°39'24"W, 56.07 FEET) A DISTANCE OF 56.40 FEET; THENCE N.64°38'00"W, 47± FEET TO THE WATER'S EDGE OF THE MILL POND; THENCE NORTHWESTERLY ALONG THE WATER'S EDGE OF THE MILL POND, TO THE SOUTHERLY RIGHT-OF-WAY LINE OF DEXTER-ANN ARBOR ROAD; THENCE S.64°29'00"E, 118± FEET TO THE POINT OF BEGINNING. EXCEPTING THAT PORTION OF THE ABOVE DESCRIBED LAND BEING DEDICATED FOR RIGHT-OF-WAY IN LIBER 309, PAGE 73. BEING A PART OF BLOCK 18 OF SAID ORIGINAL PLAT OF THE VILLAGE OF DEXTER AND CONTAINING APPROXIMATELY 0.24 ACRES OF LAND.

 <p><b>OHM</b> Advancing Communities Engineers &amp; Architects</p>	34000 Plymouth Road   Livonia, MI 48150 p (734) 672-6711   f (734) 672-6497	DRAWN BY AWS	LAND IN BLOCK 18 IN THE VILLAGE OF DEXTER, T.2S., R.5E., WASHTENAW COUNTY
		DATE	
		01-31-08	
	CLIENT: VILLAGE OF DEXTER	JOB NUMBER: 130-08-0021	

Drawing File: F:\UT\2008\0105\130080021\_Mat\_Pland\_Prog\_Survey\Map\_Village Mill Pond\_Permitting



# MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

## PERMIT

### ISSUED TO:

Washtenaw County Road Commission  
555 North Zeeb Road  
Ann Arbor, MI 48106

Permit No.	07-81-0070-P
Issued	February 1, 2008
Extended	
Revised	
Expires	December 31, 2010

This permit is being issued by the Michigan Department of Environmental Quality (MDEQ) under the provisions of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA) and specifically:

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Part 301 Inland Lakes and Streams             | <input checked="" type="checkbox"/> Part 315 Dam Safety                |
| <input type="checkbox"/> Part 325 Great Lakes Submerged Lands                     | <input type="checkbox"/> Part 323 Shorelands Protection and Management |
| <input checked="" type="checkbox"/> Part 303 Wetlands Protection                  | <input type="checkbox"/> Part 353 Sand Dune Protection and Management  |
| <input checked="" type="checkbox"/> Part 31 Floodplain/Water Resources Protection |  |

Permission is hereby granted, based on permittee assurance of adherence to State requirements and permit conditions to:

### Permitted Activity:

SEE PAGE TWO

**Water Course Affected:** Mill Creek

**Property Location:** Washtenaw County, Scio Township, Section 6  
Subdivision, Lot                      Town/Range 2S, 5E Property Tax No.

### Authority granted by this permit is subject to the following limitations:

- A. Initiation of any work on the permitted project confirms the permittee's acceptance and agreement to comply with all terms and conditions of this permit.
- B. The permittee, in exercising the authority granted by this permit, shall not cause unlawful pollution as defined by Part 31, Water Resources Protection, of the NREPA.
- C. This permit shall be kept at the site of the work and available for inspection at all times during the duration of the project, or until its date of expiration.
- D. All work shall be completed in accordance with the plans and the specifications submitted with the application and/or plans and specifications attached hereto.
- E. No attempt shall be made by the permittee to forbid the full and free use by the public of public waters at or adjacent to the structure or work approved herein.
- F. It is made a requirement of this permit that the permittee give notice to public utilities in accordance with Act 53 of the Public Act of 1974 and comply with each of the requirements of that act.
- G. This permit does not convey property rights in either real estate or material, nor does it authorize any injury to private property or invasion of public or private rights, nor does it waive the necessity of seeking federal assent, all local permits, or complying with other state statutes.
- H. This permit does not prejudice or limit the right of a riparian owner or other person to institute proceedings in any circuit court of this state when necessary to protect his/her rights.
- I. Permittee shall notify the MDEQ within one week after the completion of the activity authorized by this permit, by completing and forwarding the attached, preaddressed post card to the office addressed thereon.
- J. This permit shall not be assigned or transferred without the written approval of the MDEQ.
- K. Failure to comply with conditions of this permit may subject the permittee to revocation of permit and criminal and/or civil action as cited by the specific State Act, Federal Act and/or Rule under which this permit is granted.
- L. Work to be done under authority of this permit is further subject to the following special instructions and specifications:

**Permitted Activity:**

Remove the existing 75 foot long single span by 8.9 foot rise by 52 foot wide steel beam bridge at the Main Street crossing over Mill Creek, and replace with a 101 foot long single span by 8.5 foot rise by 62 foot wide concrete I-beam bridge. Place rock riprap erosion protection along the abutments and wingwalls.

Remove the existing 70 foot wide by 8 foot high concrete grouted rock dam by a gradual 7 foot drawdown breach method. The drawdown will take an estimated 6 weeks to complete. Removal of the dam will be done in phases as the drawdown occurs. When the dam is removed, an existing sheet pile backing will also be removed to below elevation 835.5. Install a rock sill in front of the sheet pile to an elevation of 836.00, and install another rock sill at the lower end of the existing grouted concrete apron to an elevation of 834.6.

Dredge 750 cubic yards of sediment within a distance of 78 feet upstream of the dam to allow for construction of a temporary access road, upstream rock control structure, and to initiate creation/restoration of a 500 lineal feet by 44 foot wide channel bottom. The temporary access road will be constructed 20 feet upstream of the dam. It will consist of 3 inch to 12 inch stone, with a maximum top elevation of 841.9, and gradually lowered to 836.5 as the dam breach progresses. The top of the access road will be maintained at one foot below water surface during this activity. The access road will have a top width of 15 feet, with 1 on 2 side slopes. A permanent rock control structure will be incorporated at the base of the temporary access road, with a top elevation of 836.5.

An additional rock grade control structure will be placed upstream of the temporary access road, with a top elevation of 837.6.

On the downstream side, construct a double throat cross rock vane. Top elevation of the upper cross rock vane will be at 833.5, and the lower rock vane top elevation of 832.5.

A total of 500 cubic yards of rock will be used to construct all of the grade control structures. Broken concrete from the demolition of the bridge and dam removal may be used as foundation beneath the natural rock riprap. It will not be used for part of the temporary access road.

Install a 36 inch diameter storm water outlet pipe to the Mill Creek in the southeast quadrant area of the bridge. Place riprap erosion protection at the outlet of the pipe.

An estimated 4,700 cubic yards of sediment will be mobilized due to head cutting up to 1,300 feet upstream of the dam. The mobilized sediment will be trapped by temporary access road and the grade control structures. This material and the 750 cubic yards of sediment dredged within the 78 feet of the dam (totaling 5,450 cubic yards) will be disposed of on the east side of Mill Creek, in the southeast quadrant of the bridge. The 1.14 acre spoil area will be capped with orange plastic mesh fencing, **8 inches of clean fill material, 8 inches of topsoil**, and seed and mulch. Armor the bank with rock riprap, and install reinforced silt fencing upslope of the riprap. Also, armor the west bank with rock riprap.

**Permit Conditions**

- 1) Prior to initiation of construction, a preconstruction meeting shall be held with the contractor, permittee or her/his representative(s), and representatives of the MDEQ. To arrange the required meeting, please contact Mr. Alex Sanchez at 517-335-3473, or email address at [sancheza@michigan.gov](mailto:sancheza@michigan.gov).
- 2) All work shall be completed in accordance with revised plans prepared by URS Corporation, received on January 24, 2008. Said plans are kept on file at the MDEQ's Land and Water Management Division, Transportation and Flood Hazard Unit.

- 3) In issuing this permit, the MDEQ has relied on the information and data which the permittee has provided in connection with the permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete, or inaccurate, the MDEQ may modify, revoke, or suspend the permit, in whole or in part, in accordance with the new information.
- 4) The permittee is responsible for acquiring all necessary easements or rights-of-way before commencing any work authorized by this permit. All construction operations relating to or part of this project shall be confined to the existing right-of-way limits or other acquired easements.
- 5) The authority to conduct the activity as authorized by this permit is granted solely under the provisions of the governing act as identified above. This permit does not convey, provide, or otherwise imply approval of any other governing act, ordinance, or regulation, nor does it waive the permittee's obligation to acquire any local, county, state or federal approval, or authorizations necessary to conduct the activity.
- 6) Noncompliance with these terms and conditions, and/or the initiation of other regulated activities not specifically authorized by this permit shall be cause for the modification, suspension, or revocation of this permit, in whole or in part. Further, the MDEQ may initiate criminal and/or civil proceedings as may be deemed necessary to correct project deficiencies, protect natural resource values, and secure compliance with statutes.
- 7) If any change or deviation from the permitted activity becomes necessary, the permittee shall request, in writing, a revision of the permitted activity and/or mitigation plan from the MDEQ. Such revision requests shall include complete documentation supporting the modification and revised plans detailing the proposed modification. Proposed modifications must be approved, in writing, by the MDEQ prior to being implemented.
- 8) This permit may be transferred to another person upon written approval of the MDEQ. The permittee must submit a written request to the MDEQ to transfer the permit to the new owner. The new owner must also submit a written request to accept transfer of the permit. The new owner must agree, in writing, to accept all conditions of the permit. A single letter signed by both parties which includes all the above information may be provided to the MDEQ. The MDEQ will review the request and if approved, will provide written notification to the new owner.
- 9) A permit may be extended for cause. To request an extension of a permit a written request must be submitted to the MDEQ before the expiration date of the permit. The request must indicate the reasons for the extension. The MDEQ will review the request, and if approved, will provide written notification to the permittee.
- 10) Authority granted by this permit does not waive compliance requirements under Part 91, Soil Erosion and Sedimentation Control, of the NREPA. Any discharge of sediment into waters of the state and/or off the road right-of-way is a violation of this permit, Part 91, and Part 31, Water Resources Protection, of the NREPA. A violation of these parts subjects the permittee to potential fines and penalties.
- 11) If the project, or any portion of the project, is stopped and lies incomplete for any length of time other than that encountered in a normal work week, every precaution shall be taken to protect the incomplete work from erosion, including the placement of temporary gravel bag riprap or other acceptable temporary protection.
- 12) No work shall be done in the stream during periods of above-normal flows except as necessary to prevent erosion.
- 13) Temporary soil erosion and sedimentation control measures shall be installed before commencement of the earth change and shall be maintained daily. Temporary soil erosion and sedimentation control measures shall be maintained until permanent soil erosion and sedimentation control measures are in place and the area is stabilized. Permanent soil erosion and sedimentation control measures for all

slopes, channels, ditches, or any disturbed area shall be installed within five (5) calendar days after final grading or the final earth change has been completed.

- 14) All raw areas resulting from the permitted construction activity shall be promptly and effectively stabilized with sod and/or seed and mulch (or other technology specified by this permit or project plans) in a sufficient quantity and manner so as to prevent erosion and any potential siltation to surface waters or wetlands.
- 15) All raw earth within 100 feet of a lake, stream, or wetland that is not brought to final stabilization by the end of the active growing season shall be temporarily stabilized with mulch blankets in accordance with the following dates: September 20<sup>th</sup> for the Upper Peninsula, October 1<sup>st</sup> for the Lower Peninsula north of US-10, and October 10<sup>th</sup> for the Lower Peninsula south of US-10. **If natural vegetation is not established by October 1, then exposed areas shall be seeded with a native seed mix and mulched by October 10.**
- 16) All slurry resulting from any dewatering operation shall be discharged through a filter bag or pumped to a sump located away from wetlands and surface waters and allowed to filter through natural upland vegetation, gravel filters, or other engineered devices for a sufficient distance and/or period of time necessary to remove sediment or suspended particles. The discharge of slurry water resulting from the hydrodemolition of concrete is not allowed to enter a lake, stream, or wetland.
- 17) During removal or repair of the existing structure, every precaution shall be taken to prevent debris from entering any watercourse. Any debris reaching the watercourse during the removal and/or reconstruction of the structure shall be immediately retrieved from the water. All material shall be disposed of in an acceptable manner consistent with local, state, and federal regulations.
- 18) The use of explosives for removal of the structure over the waterbody, including any abutments or piers, is strictly prohibited.
- 19) Prior to the removal of the existing structures, cofferdams of steel sheet piling, gravel bags, clean stone, coarse aggregate, or concrete barriers shall be installed to isolate all construction activities from the water. The cofferdam shall be maintained in good working order throughout the duration of the project. Upon project completion, the accumulated materials shall be removed and disposed of at an upland site. The cofferdam shall then be removed in its entirety.
- 20) The road fill side slopes shall not be steeper than 1-on-2 (1 vertical to 2 horizontal) except where headwalls of reinforced concrete, mortar masonry, dry masonry, or other acceptable methods are used.
- 21) Road fill side slopes terminating in the stream and any raw streambanks resulting from the construction shall be riprapped to three (3) feet above the ordinary high water mark. All raw slopes above this line and all other road fill slopes, ditches, and other raw areas draining directly to the stream shall be protected with riprap, sod and/or seed and mulch as may be necessary to provide effective erosion protection.
- 22) If the project, or any portion of the project, is stopped and lies incomplete for any length of time (other than that encountered in a normal work week) every precaution shall be taken to protect the incomplete work from erosion, including the placement of temporary gravel bag riprap or other acceptable temporary protection.
- 23) No work shall be done in the stream during periods of above-normal flows except as necessary to prevent erosion.
- 24) Unless specifically stated under the "Permitted Activity" of this permit, construction pads, haul roads, temporary structures, or other structural appurtenances to be placed in a wetland or on bottomland of the waterbody are not authorized and shall not be constructed unless authorized by a separate permit or

permit revision granted in accordance with the applicable law. A removable construction pad shall be used if construction equipment needs to enter the stream downstream of the dam.

- 25) It is advised that proper caution signs and/or buoys be placed at or near the bridge to prevent endangerment of recreational users.
- 26) All dredge/excavated spoils including organic and inorganic soils, vegetation, and other material removed shall be placed in such a manner so as to prevent and ensure against erosion of any material into any waterbody or wetland.
- 27) All fill/backfill shall consist of clean inert material which will not cause siltation nor contain soluble chemicals, organic matter, pollutants, or contaminants. All fill shall be CONTAINED in such a manner so as not to erode into any surface water, floodplain, or wetland. All raw areas associated with the permitted activity shall be STABILIZED with sod and/or seed and mulch, riprap, or other technically effective methods as necessary to prevent erosion.
- 28) Graded riprap consisting of clean stone or cut rock shall be placed in sufficient quantity over geotextile fabric so all voids are filled to provide adequate erosion protection. If broken concrete is used it shall be no larger than 24 inches in any dimension and free of protruding metal, contaminants, and other foreign material. Any broken concrete shall be covered with clean stone or cut rock. It shall be placed in layers with staggered joints and voids filled with smaller riprap. Broken asphalt is not authorized at this site.
- 29) Use or placement of the spoils shall be done in such a manner to prevent nuisance conditions and control the release of fugitive dust or visible emissions as required by Part 55, Air Pollution Control, of the NREPA, or the rules promulgated under this Act.
- 30) The spoils shall not be mixed with other waste or materials that are not inert as defined in Part 115, Solid Waste Management, of the NREPA.

The provisions of this permit do not preclude the permittee from disposal of the spoils in accordance with Part 115 at a properly licensed Type II solid waste disposal facility or at an out-of-state facility in accordance with the State's solid waste disposal regulations.

Within three (3) months after final placement of spoils, the permittee shall obtain a boundary survey of the area used as a disposal site, including the cover and side slopes thereof. The permittee shall enter said description on the enclosed Restrictive Covenant, have the Restrictive Covenant signed by the proper corporate officers, have the signatures properly witnessed and notarized, and record the Restrictive Covenant with the appropriate County Register of Deeds. A copy of the recorded document shall be submitted to the MDEQ, P.O. Box 30028, Lansing, MI 48909, Attention: Duane Roskoskey, within four (4) months after final placement of spoils.

In issuing this permit, the MDEQ has relied on the information and data, which the permittee has provided in connection with the permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete or inaccurate, or additional information demonstrates that the spoils are causing environmental contamination or that new State or Federal regulations are promulgated which cause this disposal to be inappropriate, the MDEQ may modify, revoke, or suspend the permit, in whole or in part, in accordance with the new information.

A licensed professional engineer of the permittee's choice shall certify to the MDEQ that the excavation and covering of contaminated soils was completed per MDEQ permit requirements. The permittee is responsible to insure the project is constructed in accordance with all drawings and specifications contained in this permit. Certification shall be provided no later than three (3) months after the spoils are placed on-site and covered.

- 31) The permittee shall indemnify and hold harmless the State of Michigan and its departments, agencies, officials, employees, agents and representatives for any and all claims or causes of action arising from acts or omissions of the permittee, or employees, agents, or representatives of the permittee, undertaken in connection with this permit. This permit shall not be construed as an indemnity by the State of Michigan for the benefit of the permittee or any other person.
- 32) All slurry resulting from any dewatering operation shall be discharged through a filter bag or pumped to a sump located away from wetlands and surface waters and allowed to filter through natural upland vegetation, gravel filters, or other engineered devices for a sufficient distance and/or period of time necessary to remove sediment or suspended particles.
- 33) No fill, excess soil, or other material shall be placed in any wetland or surface water area not specifically authorized by this permit, its plans, and specifications.

34) IDENTIFICATION OF NON-WORK AREAS

Prior to the start of construction, all non-work wetland areas shall be bounded by properly trenched filter fabric fence and orange construction fencing to prevent sediment from entering the wetland and to prohibit construction personnel from entering or performing work in these areas. Fence shall be maintained daily throughout the construction process. Upon project completion, the accumulated materials shall be removed and disposed of at an upland site. The erosion barrier shall then be removed in its entirety and the area restored to its original configuration and cover.

- 35) The owner and/or operator of the portion of the project that will receive the dredged materials has the following Due Care responsibilities under Section 20107a of Part 201 and Part 10 of Part 201 Rules, unless covered by the exemptions in Section 20107a(4) or (5):
  - Undertake measures as are necessary to prevent exacerbation of the existing contamination.
  - Exercise due care by undertaking response activity necessary to mitigate unacceptable exposure to hazardous substances, mitigate fire and explosion hazards due to hazardous substances, and allow for the intended use of the facility in a manner that protects the public health and safety.
  - Take reasonable precautions against the reasonably foreseeable acts or omissions of a third party, and the consequences that foreseeably could result from those acts or omissions.
  - Notify the MDEQ and adjacent property owners if contaminants are migrating off the property.

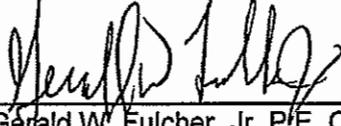
Rule 1003(5) requires a person who is subject to the provisions of Section 20107(a) to maintain documentation of compliance with these requirements and to provide such documentation to the MDEQ upon request. If the property use changes in the future, additional due care measures may be necessary. The property owner and operator must re-evaluate and document their continued compliance with Section 20107 (a).

- 36) All construction shall be in accordance with the plans and specifications prepared by Michael Tarazi, P.E., of URS, entitled "Main Street Bridge Replacement over Mill Creek" and last updated January 17, 2008.
- 37) Dam removal activity must be done under the supervision of a licensed professional engineer or an alternate professional with experience in geomorphology and stream stabilization.
- 38) Any modification or revision to the approved design plans and/or specifications must be approved in writing by the Department of Environmental Quality, Dam Safety Program.

- 39) The permittee shall provide passage of flow during and after construction. During periods of low stream flow, the permittee shall provide a minimum flow release approximately equivalent to the stream flow into the impoundment.
- 40) The permittee shall furnish a written statement from a professional engineer, certifying that he has supervised the removal of the dam and that it was removed in accordance with the plans and specifications approved by the Land and Water Management Division of the Department of Environmental Quality.
- 41) Final approval of the dam removal will not be granted until a site inspection by the Department of Environmental Quality has confirmed that the dam has been removed in accordance with the approved plans and specifications.
- 42) **Prior to the start of construction**, survey points shall be established to monitor headcutting of the channel. **One survey point shall be located on the main branch of the Mill Creek and one shall be located on the North Branch of the Mill Creek. The locations of these survey points shall be submitted to the MDEQ prior to construction. These points shall be closely monitored to ensure that head cutting does not extend beyond the area estimated in the plan. If head cutting does exceed the estimated limits then a corrective action plan shall implemented to prevent additional headcutting.**
- 43) **Wetland mitigation for 0.46 acres of impact will be required at a 1.5:1 ratio at a site to be identified within 6 months of this permit. A mitigation monitoring plan shall following DEQ guidelines shall also be provided within 6 months.**
- 44) **The clean out of the temporary sediment traps upstream of the dam and access road shall be closely monitored by someone other than the prime contractor. These temporary traps shall be cleaned out on a regular basis. Once the head cutting has stopped no more clean out will be required.**
- 45) **Mr. Alex Sanchez of the MDEQ shall be notified 72 hours prior to the start of the following construction activities:**
  - a) The start of the project.
  - b) The start of any dredging upstream of the dam.
  - c) The placement of the rock vane structures
  - d) The start of the dam breach.
- 46) **In order to avoid the direct discharge of stormwater to the Mill Creek, an aqua-swirl or similar water quality device shall be placed in the storm sewer outlet prior to the discharge of stormwater. The other option is to direct all stormwater to the west side which then goes through a vegetated ditch. A revised stormwater plan shall be submitted to and approved by the DEQ prior to the start of construction. The vegetated ditch shall be seeded with a native seed mix.**
- 47) **Prior to the start of construction a 3-year invasive species management plan shall be provide and approved by the MDEQ. This plan shall outline the steps that will be taken to prevent the spread of invasive species into the exposed bottomlands left behind after the drawdown of the impoundment.**

- 48) Sixteen inches of clean fill shall be placed over the spoil area. The area shall be seeded with a crop cover of native vegetation. This area shall be monitored for a period of 5 years to ensure that the site has been adequately protected and is not subject to any erosion.

Steven E. Chester, Director  
Department of Environmental Quality

By 

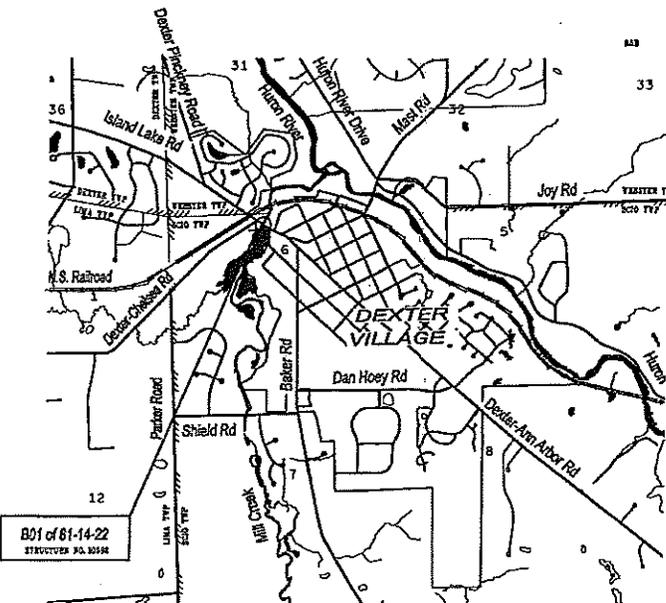
Gerald W. Fulcher, Jr. P.E. Chief  
Transportation and Flood Hazard Management Unit  
Land and Water Management Division

cc: Scio Township Clerk  
Washtenaw County Drain Commission  
Washtenaw County Public Health  
Mr. Roy Townsend, Washtenaw County Road Commission  
Ms. Donna Dettling, Manager, Village of Dexter  
Mr. Michael Donahue, URS Corporation  
Ms. Laura Rubin, Huron River Watershed Council  
Ms. Sue Elston, USEPA  
Ms. Barbara Hosler, US Fish & Wildlife Service  
Mr. Keith Cooper, MDOT – Local Agency Programs  
Ms. Sharon Hanshue, MDNR Fisheries  
Mr. Jeff Braunscheidel, MDNR Fisheries  
Mr. Daniel Rockafellow, MDEQ, Water Bureau  
Mr. Ralph Resnick, MDEQ, Water Bureau  
Ms. Debra Snell, MDEQ, Water Bureau, Jackson District  
Mr. Tom Torongo, MDEQ, Water Bureau, Jackson District  
Mr. Mitchell Adelman, MDEQ, RRD, Jackson District  
Ms. Vicki Katko, MDEQ, RRD, Jackson District  
Mr. Duane Roskoskey, MDEQ, WHMD  
Mr. James Sallee, MDEQ, LWMD, Jackson District  
Mr. Paul Wessel, MDEQ, LWMD

PLAN INDEX	
NO.	DESCRIPTION
1	TITLE SHEET
SECTION I - ROAD PLANS	
2-5	TYPICAL CROSS SECTIONS
6	NOTES & QUANTITIES SHEET
7	LEGEND SHEET
SECTION II - BRIDGE PLANS	
8	WITNESSES AND DIMENSIONS
9	SECTION-FINISHES REMOVE
10-25	CURTAIN-WALL CONSTRUCTION
11-15	DETAIL SHEETS
16-20	MAINTAINING TRAFFIC PLANS
21-24	STAGING PLANS
25	PAVEMENT MARKING PLANS
SECTION III - BRIDGE PLANS	
26	GENERAL PLAN OF SITE
27	SOIL BORING DATA
28-31	GENERAL PLAN OF STRUCTURE
32-35	EXISTING GENERAL PLAN OF SITE
36	EXISTING GENERAL PLAN OF STRUCTURE (INDUSTRIAL)
37	CONSTRUCTION STAGING
38-39	PILE LAYOUT & DETAILS
40-41	ABUTMENT DETAILS
42-43	BEAM DETAILS
44-45	SUPERSTRUCTURE DETAILS
46	SLAB & SCREEN
47-51	STEEL REINFORCEMENT
SECTION IV - SIGN REMOVAL	
52	GENERAL PLAN OF SITE
53	PLAN
54-55	STREAM PROFILES
56-61	STREAM CROSS SECTIONS
62-63	DETAILS
64	NOTES
65-67	SPECIAL DETAILS

**WASHTENAW COUNTY ROAD COMMISSION**  
 IN COOPERATION WITH  
 MICHIGAN DEPARTMENT OF TRANSPORTATION &  
 FEDERAL HIGHWAY ADMINISTRATION

**MAIN STREET BRIDGE REPLACEMENT OVER MILL CREEK**  
 SCIO TOWNSHIP & VILLAGE OF DEXTER  
 WASHTENAW COUNTY  
 MICHIGAN LOCAL BRIDGE REPLACEMENT  
 PROJECT NO. MCS 81014  
 CS 81014 JN 83942A



**MAIN STREET TRAFFIC INFORMATION**

TRAFFIC TYPE	YEAR 2004	YEAR 2005
A.D.T. (DIRECTIONAL)	11,688	10,423
P.M.V. (DIRECTIONAL)	1,426	1,470
ADMT. V.	9.5%	5.5%

**GENERAL NOTES**

THE RECONSTRUCTION DESIGN IS BASED ON CURRENT ADAPTED STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES (MS-44) LIVE LOAD FACTOR (LDF) SPECIFICATION DOES NOT EXCEED 1.75000. THE LOAD FACTOR METHOD WAS USED FOR THIS DESIGN.

DESIGN SPEED: 35 MPH  
 POSTER SPEED: 35 MPH / 30 MPH

DESIGN OF THE STRUCTURE MEMBERS IS BASED ON MATERIALS OF THE FOLLOWING GRADES AND STRESSES:

CONCRETE GRADE 57	f'c = 4,000 PSI
CONCRETE GRADE 40	f'c = 4,000 PSI
STEEL REINFORCEMENT	f'y = 60,000 PSI
PRESTRESSED CONCRETE	f'p = 2,000 PSI
PRESTRESSER STRANCH	f'p = 400,000 PSI

ALL EXPOSED CONCRETE CORNERS SHALL BE SQUARE ON THE PLANS AND SHALL BE REVEALED WITH 1/2" TRIANGULAR MOLDINGS (100% AS SHOWN IN DETAIL).

THE EXISTING BRIDGE BEAMS ARE COATED WITH LEAD BASED PAINT. THIS PROJECT IS NOT TO REMOVE THIS PAINT.

**GENERAL NOTES**

CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO ENSURE THAT THESE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.

PLAN ELEVATIONS REFER TO ANSAS DATUM.

WATER LEVEL IS SUBJECT TO CHANGE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING A DETERMINATION OF WATER LEVELS THAT MAY EXIST DURING CONSTRUCTION.

MEASURES SHALL BE TAKEN TO PREVENT DEBRIS FROM FALLING FROM THE STRUCTURE. IF DEBRIS FALLS INTO THE WATERWAY, IT SHALL BE REMOVED WITHIN 24 HOURS. SINCE DISTURBANCE OF THE EXISTING BOTTOM MAY BE AS HARMFUL AS THE DEBRIS ITSELF, THE PREVENTIVE MEASURES MUST BE EFFECTIVE.

IMMEDIATELY AFTER THE CONSTRUCTION OF AN ABUTMENT IS COMPLETED, SLOPE PROTECTION AND SEEDING OR SOILING SHALL BE PLACED ON THE ADJACENT EXISTING SLOPES.

CONTRACTOR'S RESPONSIBILITY STATEMENT

RECEIVED

JAN 28 2008

ENVIRONMENTAL QUALITY  
 LAND & WATER MANAGEMENT DIV.

NO.	DESCRIPTION	DATE
1	ISSUED FOR APPROVAL	1/16/08

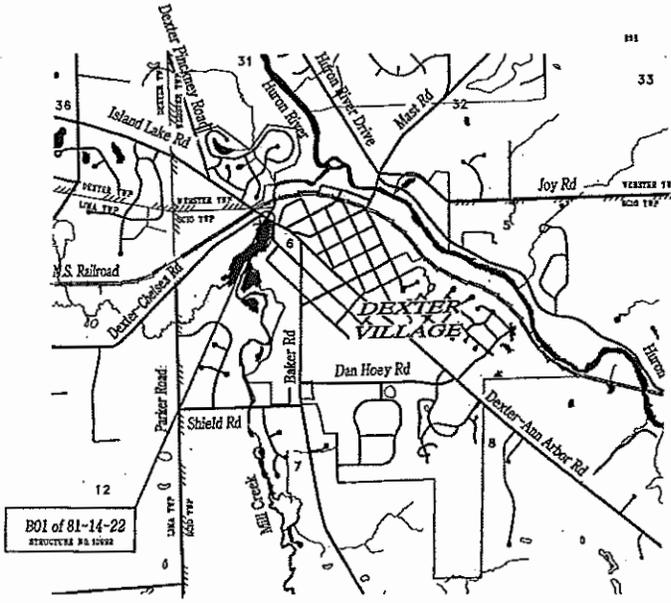
CONTROL SECTION	JOB NUMBER	DATE
81014	83942A	

DATE: 02/27/08  
 CONTROL SECTION - JOB NUMBER  
 CS 81014 - JN 83942A  
 DATE: 02/27/08  
 DATE: 02/27/08  
 DATE: 02/27/08

PLAN INDEX	
NO. OF	DESCRIPTION
1	TITLE SHEET
SECTION 1 - ROAD PLANS	
2-5	TYPICAL CROSS SECTIONS
6	NOTES & QUANTITIES SHEET
7	LEGEND SHEET
8	UTILITIES AND ENCUMBRANCES
9	DETERMINED PROPOSED CONSTRUCTION
10-13	DETAIL SHEETS
14-24	MAINTAINING TRAFFIC PLANS
25-28	STAGING PLANS
29	PAVEMENT MARKING PLANS
SECTION 2 - BRIDGE PLANS	
30	GENERAL PLAN OF SITE
31	SOIL BORING DATA
32-33	GENERAL PLAN OF STRUCTURE
34-35	EXISTING GENERAL PLAN OF SITE
36	EXISTING GENERAL PLAN OF STRUCTURE (SECTION 1)
37	CONSTRUCTION STAGING
38-39	PILE LAYOUT & DETAILS
40-42	ABUTMENT DETAILS
43-44	BEAM DETAILS
45-48	SUPERSTRUCTURE DETAILS
49	STEEL & WOOD
51-51A	STEEL REINFORCEMENT
SECTION 3 - SIGN REMOVAL	
52	GENERAL PLAN OF SITE
53	PLAN
54-55	STREAM PROFILE
56-58	STREAM CROSS SECTIONS
60-61	DETAILS
62	NOTES
63-67	SPECIAL DETAILS

**WASHTENAW COUNTY ROAD COMMISSION**  
 IN COOPERATION WITH  
 MICHIGAN DEPARTMENT OF TRANSPORTATION &  
 FEDERAL HIGHWAY ADMINISTRATION

**MAIN STREET BRIDGE REPLACEMENT OVER MILL CREEK**  
 SCIO TOWNSHIP & VILLAGE OF DEXTER  
 WASHTENAW COUNTY  
 MICHIGAN LOCAL BRIDGE REPLACEMENT  
 PROJECT NO. MCS 81014  
 CS 81014 JN 83942A



MAIN STREET TRAFFIC INFORMATION		
YEAR	2004	YEAR 2008
A.D.T. (DIRECTIONAL)	18,000	20,000
P.E.T. (DIRECTIONAL)	1,100	1,400
CONV. %	3.3%	3.5%
DESIGN SPEED	35 MPH	
POSTED SPEED	30 MPH / 20 MPH	

**GENERAL NOTES**

THE RECONSTRUCTION DESIGN IS BASED ON CURRENT MICHIGAN STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES WITH A LIVE LOAD PLUS IMPACT DEFLECTION DOES NOT EXCEED 1/1000 SPAN LENGTH. THE LOAD FACTOR METHOD WAS USED FOR THIS DESIGN.

EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS, OR IN THE PROPOSAL AND SUPPLEMENTAL SPECIFICATIONS CONTAINED HEREIN, ALL MATERIALS AND WORKMANSHIP SHALL BE ACCORDING TO THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION 2003 EDITION.

THE DESIGN OF THE STRUCTURAL MEMBERS IS BASED ON MATERIALS OF THE FOLLOWING GRADES AND STRENGTHS:

CONCRETE - GRADE 84	f'c = 3,000 PSI
CONCRETE - GRADE 8	f'c = 4,000 PSI
STEEL REINFORCEMENT	f'c = 60,000 PSI
PRESTRESSING CONCRETE	f'c = 5,000 PSI
PRESTRESSING STRANDS	f'c = 270,000 PSI

ALL EXPOSED CONCRETE SURFACES SHALL BE FINISHED WITH A TANGULAR HOLDING EXCEPT AS OTHERWISE NOTED.

THE EXISTING BRIDGE BEAMS ARE COATED WITH LEAD-BASED PAINT.

THE REGULATED WASTE IDENTIFICATION NUMBER FOR THIS PROJECT IS MCR 208124415.

PROJECT LENGTH	
DETERMINED PROPOSED ROADWAY STREET	DETERMINED PROPOSED ROADWAY STREET
STA 1+00 TO 1+00	STA 1+00 TO 1+00
STA 1+00 TO 1+00	STA 1+00 TO 1+00
STA 1+00 TO 1+00	STA 1+00 TO 1+00

CONTRACTOR TO BE RESPONSIBLE FOR THE MAIN STREET BRIDGE OVER MILL CREEK, MILL CREEK SIGN REMOVAL, DECONTAMINATION MANAGEMENT AND APPROVAL FOR

THIS PLAN SET PREPARED FOR THE  
**URS**  
 Surface Transportation  
 Grand Rapids - Farmington Hills  
 Traverse City

BY: \_\_\_\_\_  
 LICENSED PROFESSIONAL ENGINEER DATE \_\_\_\_\_

COUNTY ROAD COMMISSION APPROVALS

**RECEIVED**

JAN 24 2008

ENVIRONMENTAL QUALITY  
 LAND & WATER MANAGEMENT DIV.

CONTROL SECTION	JOB NUMBER	DESIGN ENGINEER	DATE

**GENERAL NOTES**

THE CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO SIGNING WORK AND SHALL CONTACT HIS SUPERVISOR IN SUCH A MANNER AS TO ENSURE THAT THESE UTILITIES NOT BEING REMOVED WILL NOT BE INTERRUPTED.

PLAN ELEVATIONS REFER TO MANSION DATUM.

WATER LEVEL IS SUBJECT TO CHANGE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING A DETERMINATION OF WATER LEVELS THAT MAY EXIST DURING CONSTRUCTION.

WEAPONS SHALL BE TAKEN TO PREVENT DAMAGE FROM FALLING FROM THE STRUCTURE. IF DEBRIS FALLS ONTO THE HIGHWAY, IT SHALL BE REMOVED WITHIN 24 HOURS. EXCESS DISTURBANCE OF THE WATERWAY BOTTOM MAY BE AS HARMFUL AS THE DEBRIS ITSELF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANUP.

IMMEDIATELY AFTER THE CONSTRUCTION OF AN ABUTMENT IS COMPLETED, SOIL PROTECTION AND STAGING OR STAGING SHALL BE PLACED ON THE ADJACENT ENGINEERING SLOPES.

**TITLE SHEET LEGEND**

EXISTING ROAD

PAVED

UNPAVED

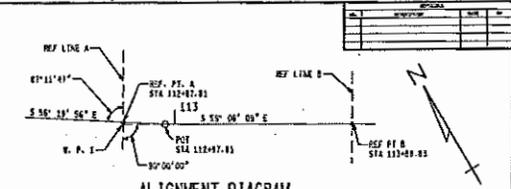
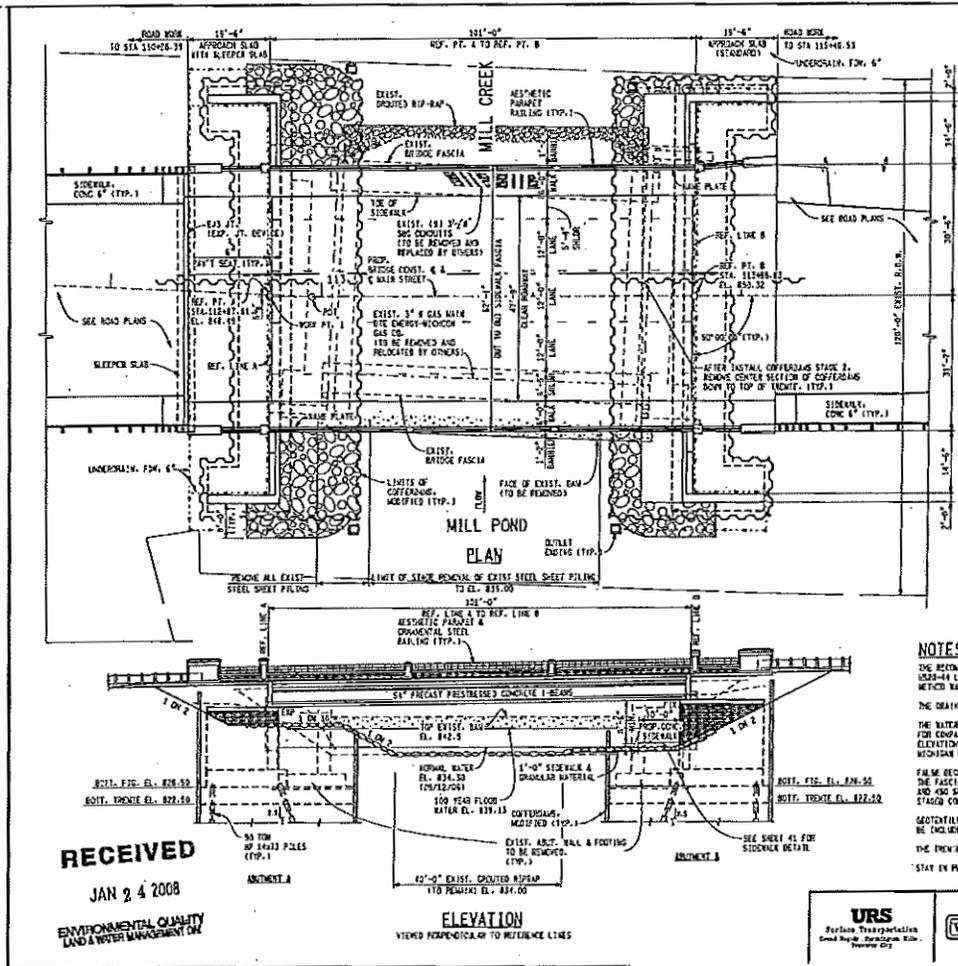
PAVEMENT

B01 of 81-14-22  
 STRUCTURE NO. 1008



CONTROL SECTION - JOB NUMBER CS 81014 - JN 83942A  
 DRAWN BY: J. T. TAYLOR  
 DATE: 02/22/07  
 CHECKED BY: J. TAYLOR  
 DATE: 02/22/07





**SUMMARY OF HYDRAULIC ANALYSIS**

EXISTING (WITH DAM IN PLACE)				PROPOSED (WITH DAM REMOVED)			
FLOOD DATA	DISCHARGE (CFS)	WATER SURFACE ELEV. AT FACE OF STRUCTURE	VELOCITY IN C/S CHANNEL (FPS)	WATER SURFACE ELEV. AT DOWN FACE OF STRUCTURE	VELOCITY IN WATERWAY (FPS)	WATERWAY AREA AT D/S FACE OF STRUCTURE (SQ. FT.)	CHANGE IN AREA VS. EL. (SQ. FT.)
50 YEAR	3,700	845.97	3.47 #	836.15	4.11	575.47	-7.12
100 YEAR	4,500	848.11	3.52 #	835.13	4.34	570.74	-7.18

WATERWAY BRIDGE AREA BEHIND LOW CHORD IS 815.45 SQUARE FEET

\* THE VELOCITY OF CHANNEL AT A DISTANCE OF 75 FT FROM DOWN STREAM FACE OF MILL CREEK BRIDGE

**MISCELLANEOUS QUANTITIES**

AMOUNT	UNIT	ITEM
1	EA	Structure, Box (2) of (11-12)
200	SQ	Concrete, CIP
1200	SQ	Formwork, CIP
200	SQ	Formwork, CIP
1	EA	Collar, Box (2) of (11-12)
2	EA	Truss, Box (2) of (11-12)
80	EA	Truss, Box (2) of (11-12)
80	EA	Truss, Box (2) of (11-12)
78	SQ	Formwork, Box, Modified
285	SQ	Underdrain, Box, 8\"/>

**NOTES:**

THE PROPOSED DESIGN IS BASED ON CURRENT AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES 1993-94 LEADING. LIVE LOAD PLUS IMPACT DEFLECTION DOES NOT EXCEED 1/3200 OF SPAN LENGTH. THE LOAD FACTOR METHOD WAS USED FOR THIS DESIGN.

THE DRAINAGE AREA CONTRIBUTORY TO THIS CROSSING IS 244 SQUARE MILES.

THE WATER SURFACE AND/OR ENERGY GRADE ELEVATIONS SHOWN ON THE ABOVE HYDRAULIC TABLE ARE TO BE USED FOR COMPARISON PURPOSES ONLY AND ARE NOT TO BE USED FOR ESTABLISHING A REGULAR FLOOD LINE. THE ELEVATIONS MAY BE USED PROVIDED THEY ARE VERIFIED WITH THE LAND AND WATER MANAGEMENT DIVISION, MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY.

FILL BE RECLAIMED SHALL INCLUDE THE AREA BOUNDED BY REFERENCE LINES A & B AND EXISTING PLANCE FASCIAS OF THE FASCIAS BEAMS. THE ESTIMATED AREA FOR PRE-PAVED CONSTRUCTION IS 450 SQUARE FEET DURING REMOVAL AND 400 SQUARE FEET DURING PROPOSED CONSTRUCTION. THE ESTIMATED AREA FOR THE BRIDGE REPLACEMENT STAGED CONSTRUCTION IS 4000 SQUARE FEET DURING REMOVAL AND 4000 SQUARE FEET DURING PROPOSED CONSTRUCTION.

GEOTEXTILE LINER SHALL BE PLACED ON ALL SLOPES PRIOR TO PLACING RIPRAP. PAYMENT FOR GEOTEXTILE LINER SHALL BE INCLUDED IN THE PAYMENT FOR RIPRAP.

THE PRECISE SEAL DESIGN WAS BASED ON A WATER SURFACE AT EL. 834.30.

STAY IN PLACE FORMS SHALL NOT BE ALLOWED ON THIS PROJECT.

**RECEIVED**  
 JAN 24 2008  
 ENVIRONMENTAL QUALITY  
 LAND & WATER MANAGEMENT DIV.

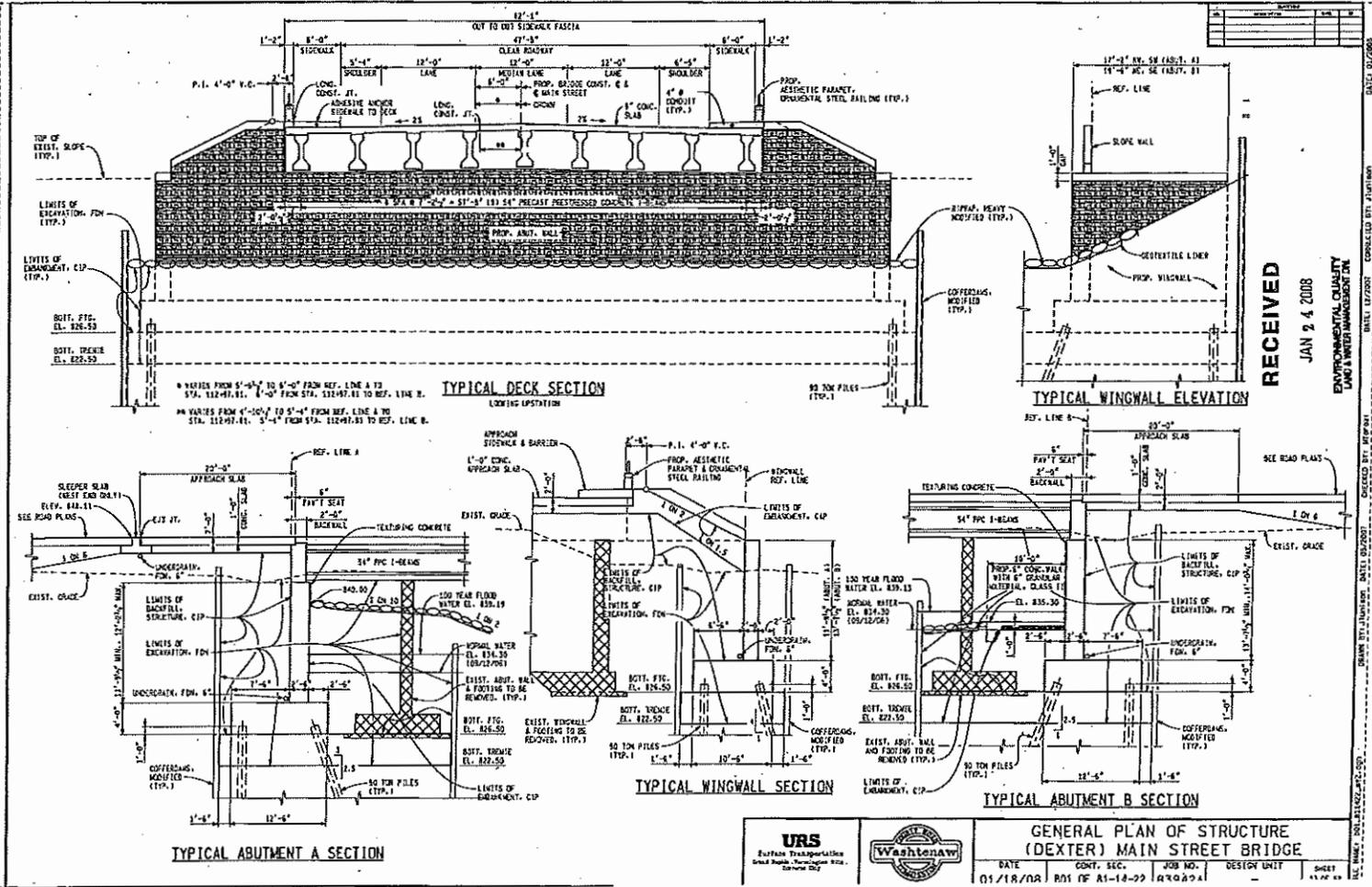
**ELEVATION**  
 VIEWED FROM (C/D) TO REFERENCE LINES

**GENERAL PLAN OF STRUCTURE (DEXTER) MAIN STREET BRIDGE**

DATE: 01/18/08    CONT. SEC.    JOB NO. 01-11-02    DESIGN UNIT    SHEET

URS  
 Pacific Transportation  
 2000 Ave. of the Sciences, Suite 200  
 Berkeley, CA 94704

Wastenhaw  
 10000 W. 11th Ave., Suite 100  
 Golden, CO 80601



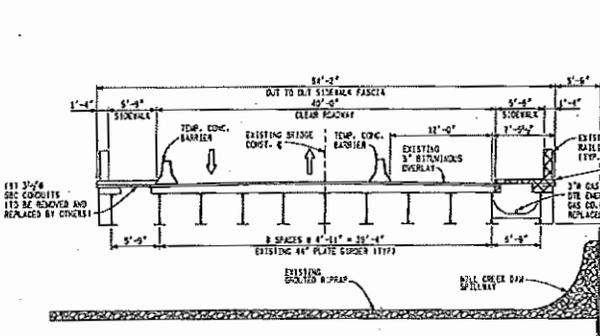
RECEIVED  
 JAN 24 2008

ENVIRONMENTAL QUALITY  
 PLAN & WATER MANAGEMENT

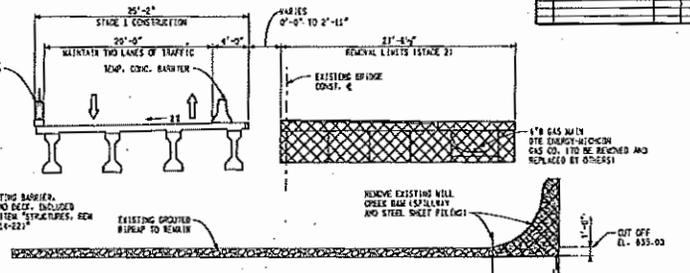


GENERAL PLAN OF STRUCTURE (DEXTER) MAIN STREET BRIDGE				
DATE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET
01/18/08	001 OF A1-18-02	0700001		11 OF 11

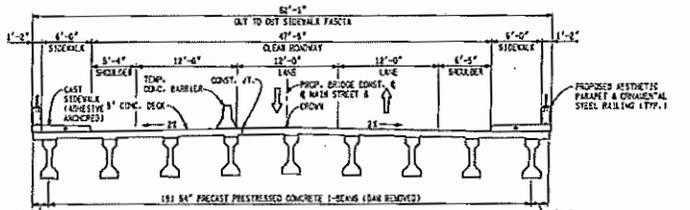
NO.	REVISION	DATE



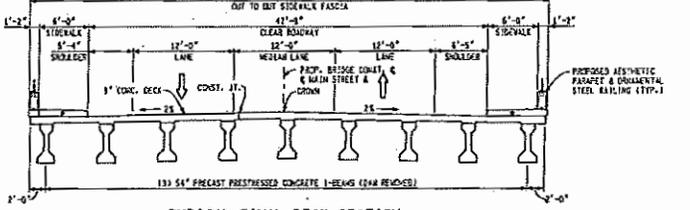
TYPICAL EXISTING DECK SECTION & PRE-STAGE REMOVAL  
(LOOKING UPSTATION)



STAGE 1 CONSTRUCTION & STAGE 2 REMOVAL  
(LOOKING UPSTATION)

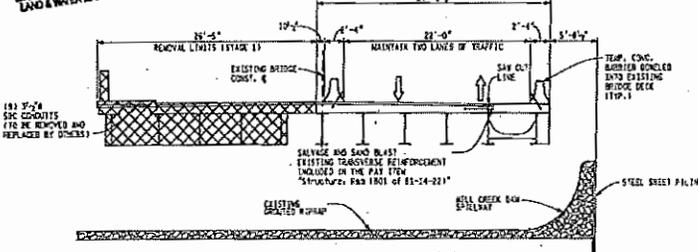


STAGE 2B NORTH SIDEWALK CONSTRUCTION  
(LOOKING UPSTATION)



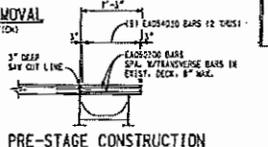
TYPICAL FINAL DECK SECTION  
(LOOKING UPSTATION)

RECEIVED  
JAN 24 2008  
ENVIRONMENTAL QUALITY  
LAND & WATER MANAGEMENT DIV.



STAGE 1 REMOVAL  
(LOOKING UPSTATION)

REMOVAL

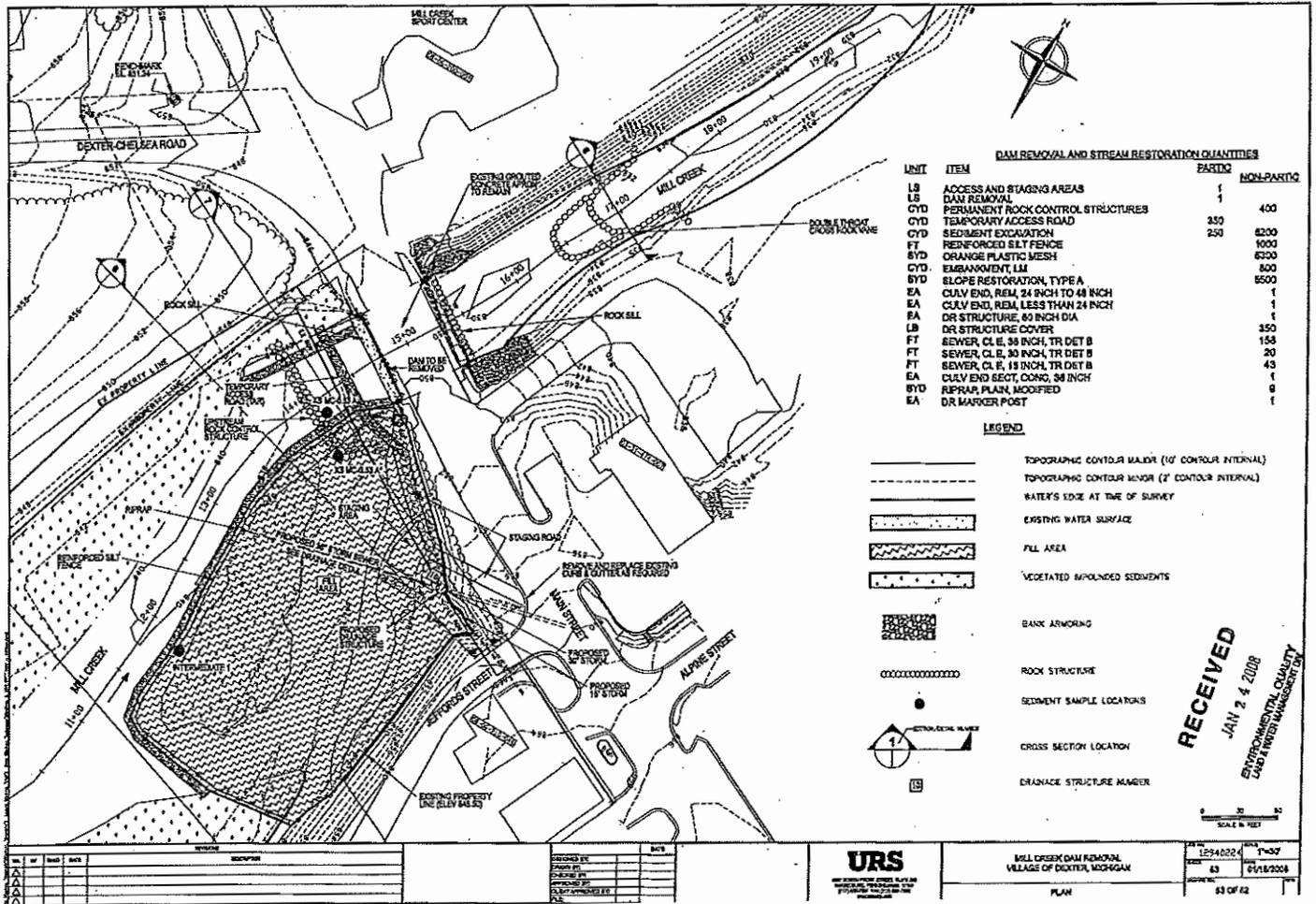


PRE-STAGE CONSTRUCTION

<b>URS</b> Southern Transportation 5400 Lytle Park Lane, Suite 100 Denver, CO 80202		<b>CONSTRUCTION STAGING (DEXTER) MAIN STREET BRIDGE</b>			
		DATE	CONTR. SEC.	JOB NO.	DESIGN UNIT
		01/18/08	R01 OF R1-14-22	R2022A	SHEET 11 OF 12

DRAWN BY: J. LAMSON  
 CHECKED BY: MICHAEL  
 DATE: 12/20/07  
 CANCELLED BY: J. LAMSON  
 DATE: 12/20/07  
 SCALE: 1/8" = 1'-0"  
 11. HONEYWELL INTERNATIONAL CORPORATION





**DAM REMOVAL AND STREAM RESTORATION QUANTITIES**

UNIT	ITEM	PARTIC	NON-PARTIC
LS	ACCESS AND STAGING AREAS	1	
LS	DAM REMOVAL	1	
CYD	PERMANENT ROCK CONTROL STRUCTURES		400
CYD	TEMPORARY ACCESS ROAD	250	
CYD	SEDIMENT EXCAVATION	250	8200
FT	REINFORCED SLY FENCE		1000
BYD	ORANGE PLASTIC MESH		8200
CYD	EEMBANKMENT LEM		800
BYD	SLOPE RESTORATION, TYPE A		8500
EA	CULV END, REM, 24 INCH TO 48 INCH		1
EA	CULV END, REM, LESS THAN 24 INCH		1
EA	DR STRUCTURE, 60 INCH DIA		1
LB	DR STRUCTURE COVER	350	
FT	SEWER, CL. E, 36 INCH, TR DET B		158
FT	SEWER, CL. E, 30 INCH, TR DET B		20
FT	SEWER, CL. E, 18 INCH, TR DET B		43
EA	CULV END SECT, CONC, 36 INCH		1
BYD	REPAIR PLAN, MODIFIED		8
EA	DR MARKER POST		1

**LEGEND**

- TOPOGRAPHIC CONTOUR MAJOR (10' CONTOUR INTERVAL)
- TOPOGRAPHIC CONTOUR MINOR (2' CONTOUR INTERVAL)
- WATER'S EDGE AT TIME OF SURVEY
- EXISTING WATER SURFACE
- FILL AREA
- VEGETATED BOUNDED SEDIMENTS
- BANK ARMORING
- ROCK STRUCTURE
- SEDIMENT SAMPLE LOCATIONS
- CROSS SECTION LOCATION
- DRAINAGE STRUCTURE NUMBER

**RECEIVED**  
 JAN 24 2008  
 ENVIRONMENTAL QUALITY  
 DIVISION  
 WATER MANAGEMENT

SCALE IN FEET  
 0 20 40

NO.	REV.	DATE	DESCRIPTION

DESIGNED BY	DATE

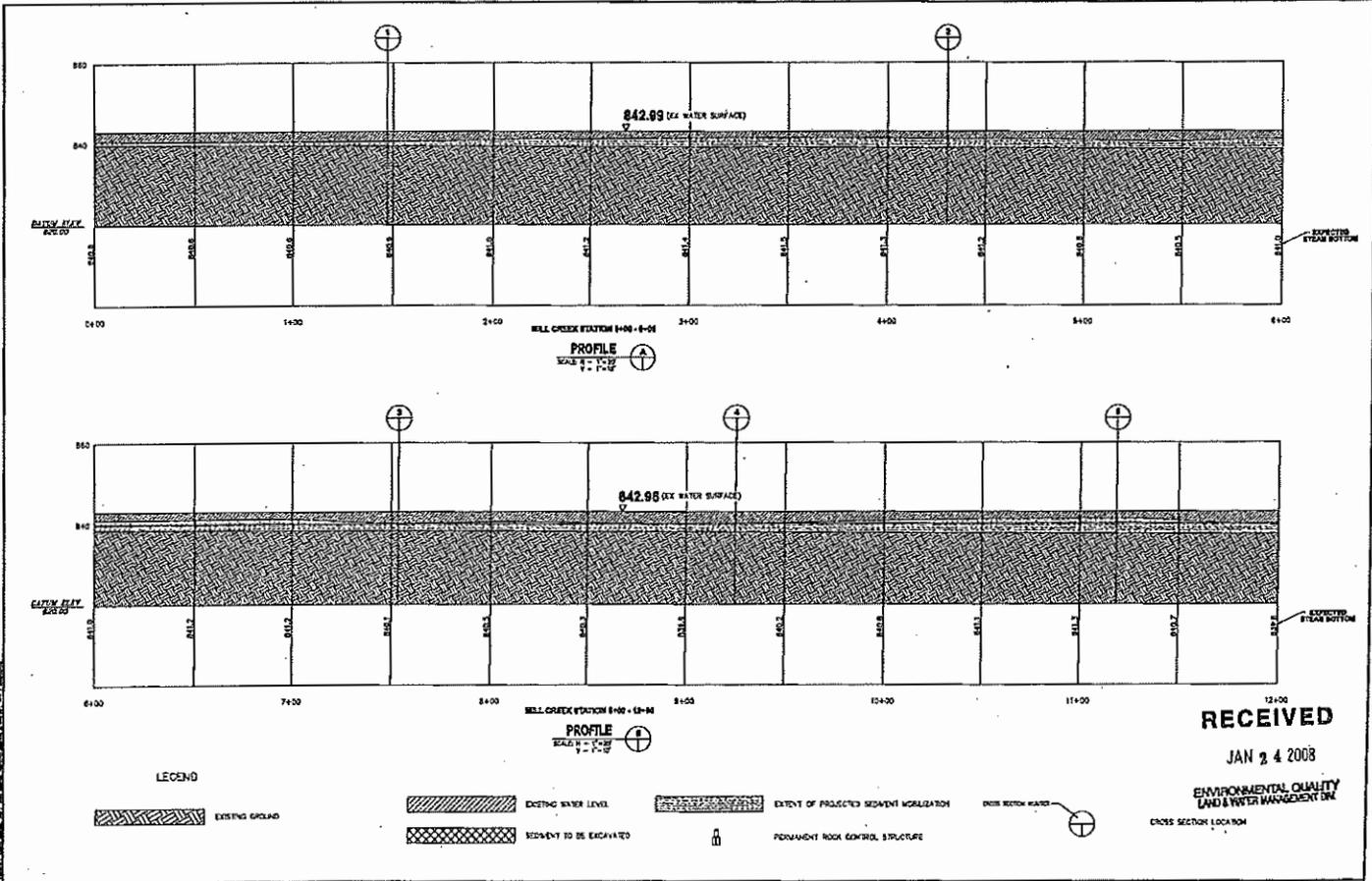


**MILL CREEK DAM REMOVAL**  
 VILLAGE OF DEXTER, MICHIGAN

DATE	NO.
12/4/07	1007
6/18/2008	

PLAN

83 OF 82



**RECEIVED**

JAN 24 2008

ENVIRONMENTAL QUALITY  
 LAND & WATER MANAGEMENT DIV.

NO.	REV.	DATE	DESCRIPTION

DATE	BY	DESCRIPTION

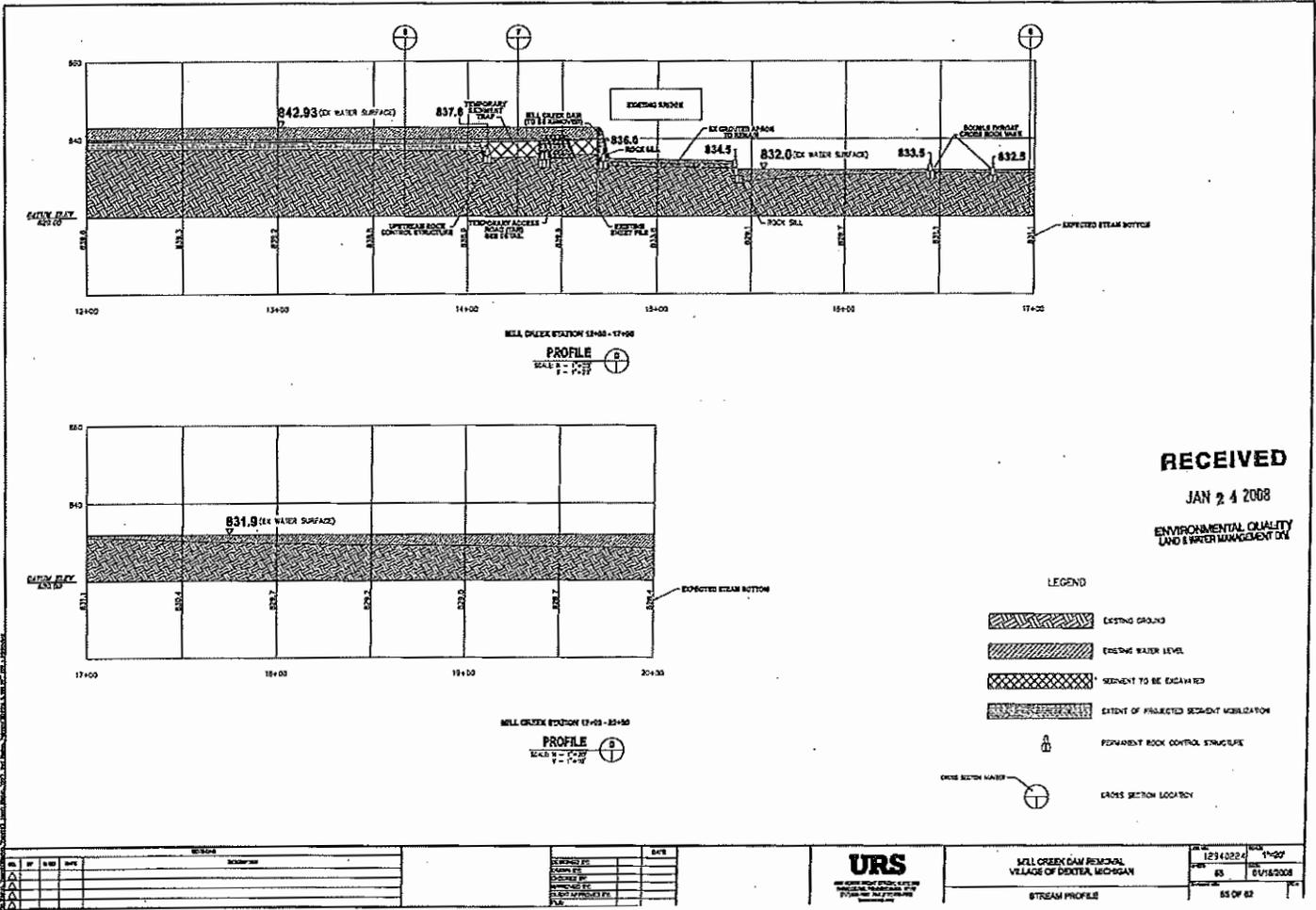


BELL CREEK DAM REMOVAL  
 VILLAGE OF DIXON, MID-MICHIGAN

STREAM PROFILE

DATE	SCALE
12/14/07	1" = 10'
01/16/2008	

14 OF 52



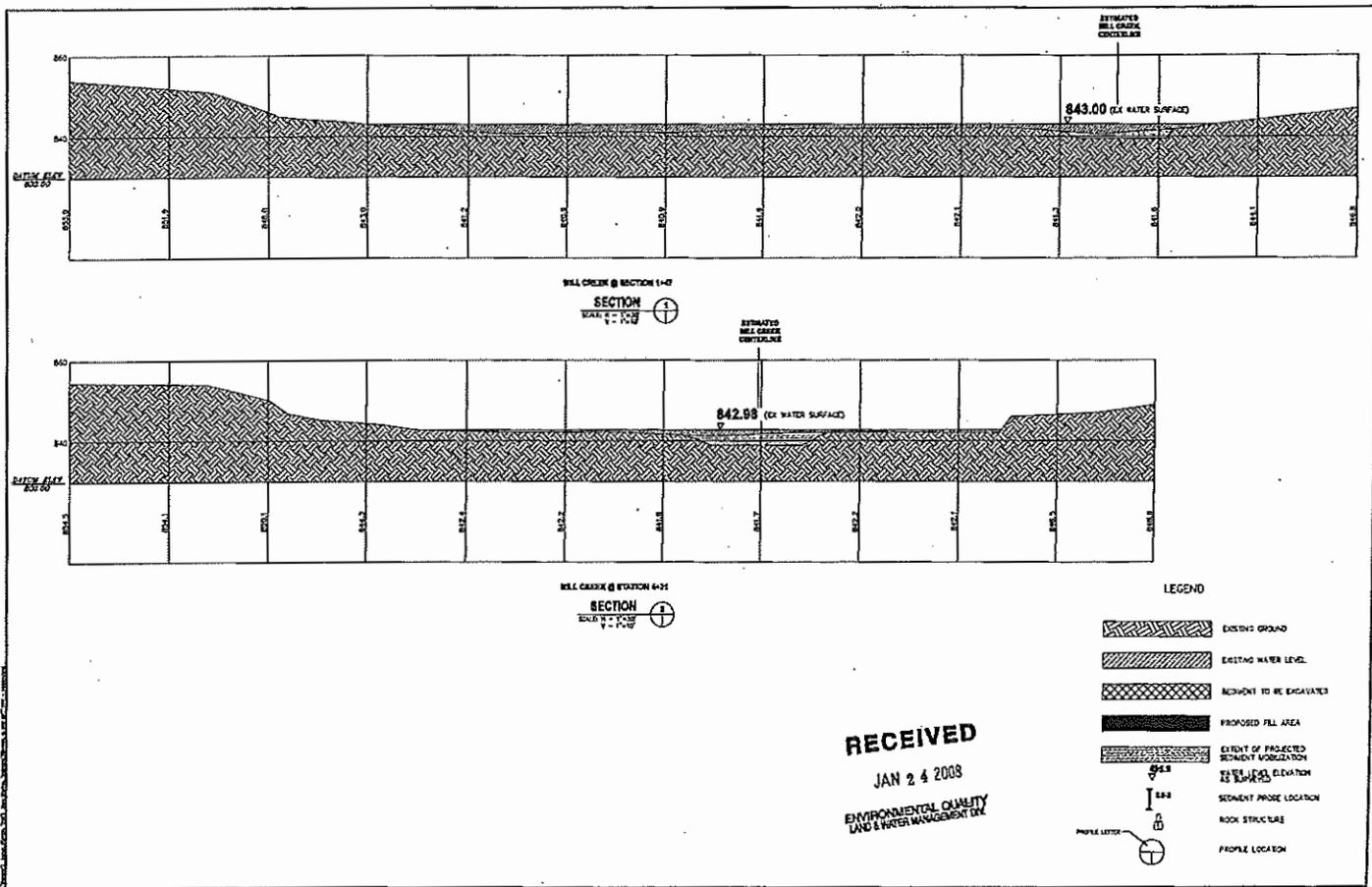
NO.	BY	DATE	REVISION

DATE	BY	DESCRIPTION

**URS**  
 ENVIRONMENTAL QUALITY GROUP  
 1000 WEST 10TH AVENUE  
 DENVER, CO 80202

MILL CREEK DAM REMOVAL  
 VILLAGE OF DEXTER, MICHIGAN  
 STREAM PROFILE

PROJECT NO.	12340224	DATE	11-07
SCALE	AS SHOWN	DRAWN BY	01/16/2008
PROJECT NAME		85 OF 82	



WILL CREEK @ SECTION 1-47  
SECTION  
SCALE 1" = 100'

WILL CREEK @ STATION 6+25  
SECTION  
SCALE 1" = 100'

- LEGEND
- EXISTING GROUND
  - EXISTING WATER LEVEL
  - AREA TO BE EXCAVATED
  - PROPOSED FILL AREA
  - EXTENT OF PROJECTED VEGETATION
  - ELEVATION
  - PROFILE LOCATION
  - ROCK STRUCTURE
  - PROFILE LOCATION

**RECEIVED**  
JAN 24 2003  
ENVIRONMENTAL QUALITY  
LAND & WATER MANAGEMENT DIV.

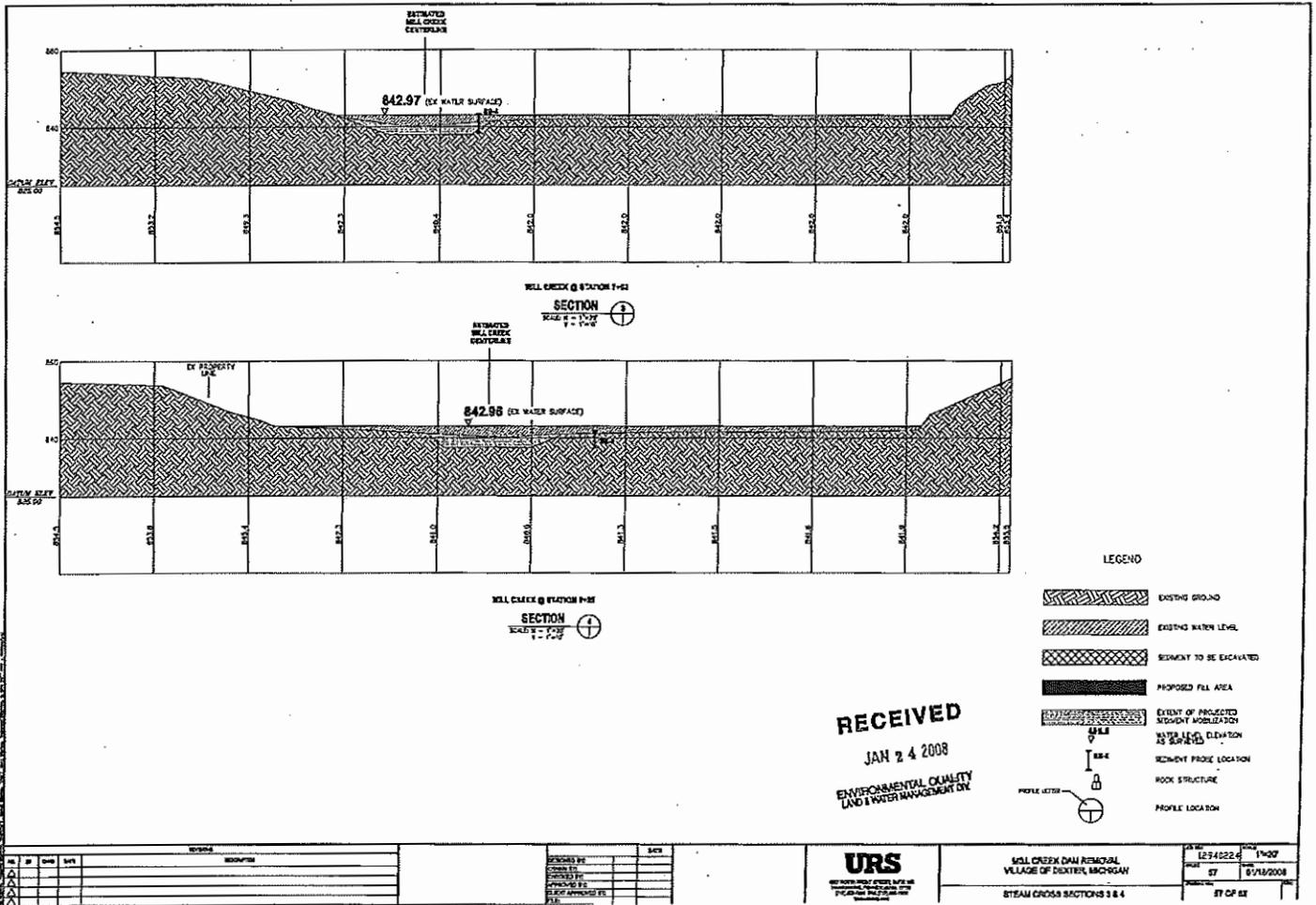
NO.	BY	DATE	REVISION	DESCRIPTION

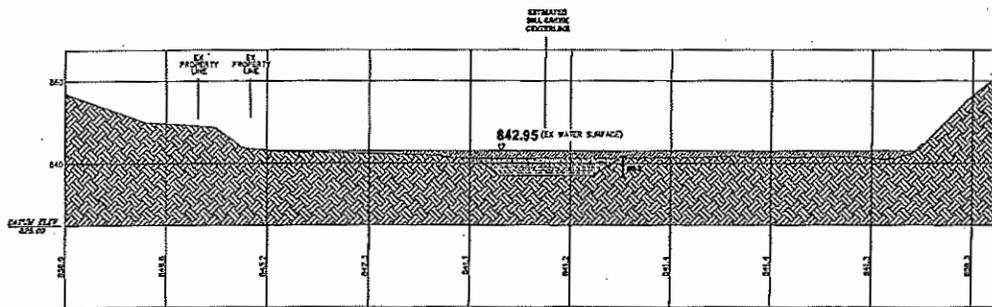
NO.	DATE	BY	DESCRIPTION



WILL CREEK DAM REMOVAL  
VILLAGE OF DEXTER, MICHIGAN

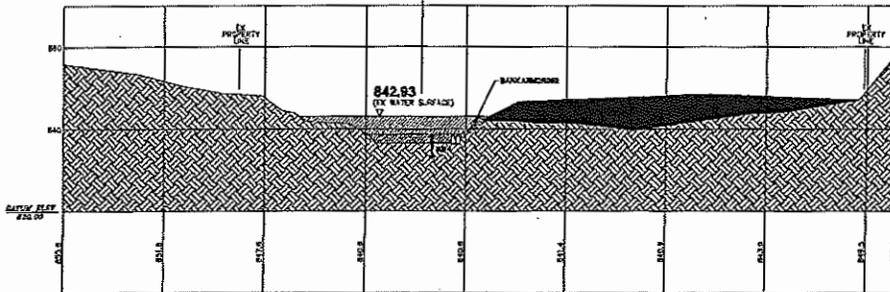
PROJECT NO.	1274122-4	DATE	1/20
ISSUE NO.	55	DATE	01/16/2008
CROSS SECTIONS 1-4		84 OF 82	





MILL CREEK @ STATION 11+42

SECTION  
SCALE: 1" = 10'



MILL CREEK @ STATION 12+17

SECTION  
SCALE: 1" = 10'

**RECEIVED**  
JAN 24 2008  
ENVIRONMENTAL QUALITY  
LAW & WATER MANAGEMENT INC.

LEGEND

- EXISTING GROUND
- EXISTING WATER LEVEL
- SEDIMENT TO BE EXCAVATED
- PROPOSED FILL AREA
- EXTENT OF PROPOSED SEDIMENT WORKIZATION
- WATER LEVEL ELEVATION AS SHOWN
- SEDIMENT PROBE LOCATION
- ROCK STRUCTURE
- PROFILE LOCATION

NO.	DATE	DESCRIPTION

NO.	DATE	DESCRIPTION

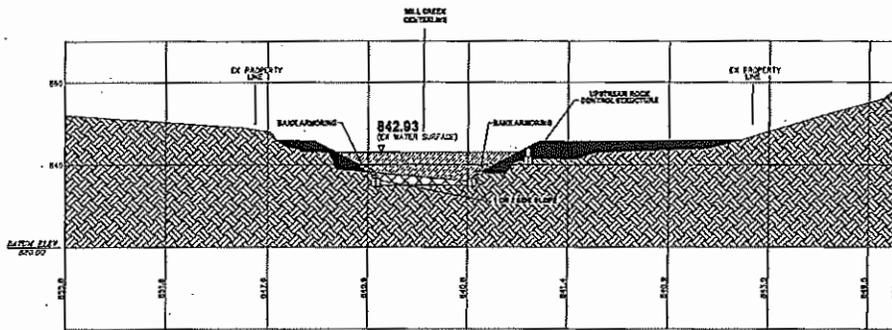


MILL CREEK DAM REMOVAL  
VILLAGE OF DEXTER, MICHIGAN

PROJECT NO.	12345678	DATE	11-09
SCALE	AS SHOWN	BY	01/18/2008

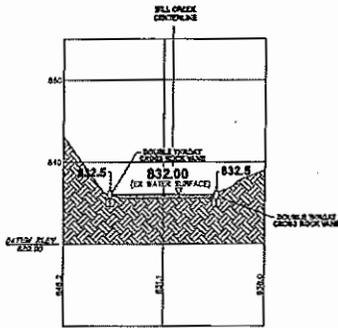
STEAM CROSS SECTION 8 & 6

58 OF 82



MILL CREEK @ STATION 14-22

SECTION  
SCALE: 1" = 10'



MILL CREEK @ STATION 14-47

SECTION  
SCALE: 1" = 10'

**RECEIVED**  
JAN 24 2008  
ENVIRONMENTAL QUALITY  
AND PERMITS MANAGEMENT

LEGEND

- EXISTING GROUND
- EXISTING WATER LEVEL
- SEDIMENT TO BE EXCAVATED
- PROPOSED FILL AREA
- EXTENT OF PROPOSED SEDIMENT MOBILIZATION
- WATER LEVEL ELEVATION AS SHOWN
- SEDIMENT FROM LOCATION
- ROCK STRUCTURE
- PROFILE LOCATION

NO.	REV.	DATE	DESCRIPTION

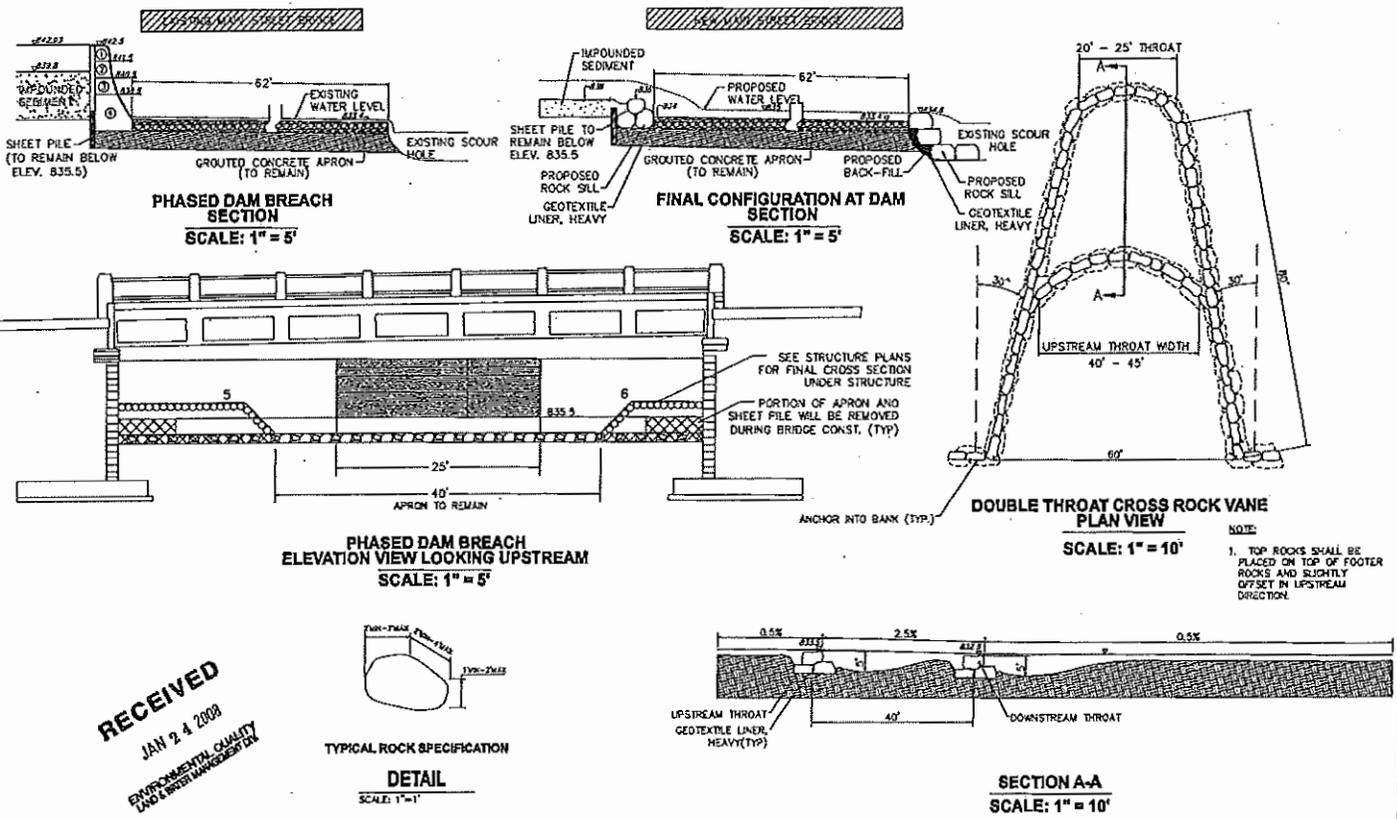
DATE	BY	DESCRIPTION



MILL CREEK DAM REMOVAL  
VILLAGE OF DIXON, MICHIGAN

PROJECT NO.	12940024	DATE	1/20/07
SCALE	AS SHOWN	DATE	01/18/2008
SHEET NO.		20 OF 62	

STEAM CROSS SECTIONS 7 & 8



NOTE:  
1. TOP ROCKS SHALL BE PLACED ON TOP OF FOOTER ROCKS AND SLIGHTLY OFFSET IN UPSTREAM DIRECTION.

RECEIVED  
JAN 24 2008  
ENVIRONMENTAL QUALITY  
LAND & WATER MANAGEMENT

NO.	REV.	DATE	DESCRIPTION

NO.	REV.	DATE	DESCRIPTION



WELL CREEK DAM REMEDIAL  
VILLAGE OF DEXTER, MICHIGAN

PROJECT NO.	12940224 AS SHOWN
DATE	05/14/2008
SCALE	AS SHOWN



**GENERAL NOTES**

1. REFERENCES TO LEFT AND RIGHT BANK IS FROM A PERSPECTIVE LOOKING DOWNSTREAM.
2. PLAN ELEVATIONS REFER TO NAVD83 DATUM.
3. ALL WORK IS TO BE CONDUCTED DURING PERIODS OF LOW FLOW. ALL WORK SHALL BE CONDUCTED IN ACCORDANCE WITH THE APPROVED SOIL EROSION AND SEDIMENT CONTROL PLAN.
4. A TEMPORARY ACCESS ROAD (TAR) SHALL BE CONSTRUCTED TO DAM ACCESS TO THE DAM AND WILL SERVE AS A TEMPORARY GRADE CONTROL STRUCTURE UNTIL SEDIMENT IS REMOVED.
5. THE TOP ELEVATION OF THE TAR SHALL BE MAINTAINED AT LEAST ONE FOOT BELOW WATER SURFACE DURING DAM BLEND AND DEMOLITION.
6. ENGINE CONCRETE PIERLINGS FROM THE BRIDGE AND DAM REMOVAL MAY BE USED IN LIEU OF NATURAL ROCK FOR THE LOWER LAYER OF ROCK IN EACH ROCK STRUCTURE. NATURAL ROCK ONLY SHALL BE USED ABOVE THE BOTTOM LAYER. ANY EXPOSED REBAR SHALL BE CUT FLUSH WITH THE FACE OF THE MATERIAL, AND DISPOSED OF OFF SITE. THE CONTRACTOR SHALL REMOVE FROM THE SITE, RECYCLE OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES (METAL, STEEL PILE, RUBBER, ETC).

**CONSTRUCTION NOTES**

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SOIL EROSION DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND THE PROPOSAL AND PLANS.
2. CONSTRUCTION IS ANTICIPATED TO REQUIRE HYDRAULIC EXCAVATOR WITH HYDRAULIC SHAFT, HYDRAULIC BUCKETS FOR CUTTING AND REMOVAL OF GREAT PILES, LONG REACH BOOM FOR THE REMOVAL OF IMPROVED SEDIMENT AND LOGS/WOODEN FOR GRADING SEDIMENT IN FILL AREAS. CONSTRUCTION WATER WILL BE REQUIRED TO WORK ON BOTH BANKS.
3. ONCE THE TEMPORARY ACCESS ROAD AND TEMPORARY SEDIMENT TRAP ARE CONSTRUCTED, ACCUMULATED SEDIMENT SHALL BE REMOVED AND PLACED IN DESIGNATED FILL AREA ON A REGULAR BASIS.
4. DAM RUBBLIZED MATERIAL GENERATED FROM REMOVAL OF THE TEMPORARY ACCESS ROAD SHALL BE USED FOR BANK AND CHANNEL STABILIZATION AFTER DAM HAS BEEN COMPLETELY REMOVED.
5. THE LOCATION AND SIZE OF GAPS IN THE ROCK BELL AND ROCK STRUCTURES SHALL BE AS DIRECTED BY THE ENGINEER DURING CONSTRUCTION.
6. SPACEL REMOVED FOR THE PLACEMENT OF FOOTER ROCKS SHALL BE USED AS BACKFILL BETWEEN ROCK IN THE PERMANENT ROCK STRUCTURES AS DIRECTED BY THE ENGINEER.

**SOIL EROSION AND SEDIMENT CONTROL NOTES**

1. TEMPORARY MEASURES
  - A. PLACE REINFORCED BELT FENCING AROUND PROPOSED FILL AREA PRIOR TO DEMOLITION OPERATIONS. REINFORCED BELT FENCING SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. SEDIMENT OR RUNOFF FROM THE SEDIMENT SHALL BE CONTAINED WITHIN THE REINFORCED BELT FENCING AT ALL TIMES AND NOT ALLOWED TO REENTER THE STREAM.
  - B. STAKE AND FLAG CONTRACTORS EXISTING STREAM ACCESS POINTS AND MATERIALS LAYDOWN/STORAGE AREAS. CLEAR AND GRASS AS REQUIRED.
  - C. ALL DISTURBED AREAS SHALL BE STABILIZED WITH TEMPORARY VEGETATION.
2. PERMANENT MEASURES
  - A. ALL DISTURBED AREAS SHALL BE FINAL GRADED, TOPSOILED, SEEDING, AND MULCHED ACCORDING TO THE SPECIFICATIONS. A MINIMUM OF 4 INCHES OF TOPSOIL SHALL BE USED FOR ALL AREAS.
  - B. UPON COMPLETION OF SEDIMENT PLACEMENT IN THE PROPOSED FILL AREA, THE SEDIMENT SHALL BE ALLOWED TO DRY SUFFICIENTLY TO ALLOW FOR FINAL GRADING OF THE SEDIMENT. THE REINFORCED BELT FENCING SHALL THEN BE REMOVED AND THE AREA FINAL GRADED. A LAYER OF ORANGE PILED RUBBLIZED MATERIAL SHALL THEN BE PLACED ON THE TOP SURFACE OF THE SEDIMENT. 8 INCHES OF IMPORTED CLEAN FILL MATERIAL SHALL THEN BE PLACED, GRADED, AND COMPACTED OVER THE ORANGE MESH FENCING MATERIAL. 4 INCHES OF TOPSOIL, SEEDING AND MULCH SHALL THEN BE PLACED OVER THE FILL AREA. UPON FINAL COMPLETION, ALL SEDIMENT REMOVED FROM THE STREAM SHALL BE COVERED WITH ORANGE PLASTIC MESH AND SHALL BE A MINIMUM OF 12 INCHES BELOW GRADE.
  - C. RUBBLE FROM DAM REMOVAL SHALL BE USED FOR STREAM BANK EROSION CONTROL AND ASHORE TO PROTECT THE TOE OF THE STREAM AS SHOWN ON THE PLANS AND AS SPECIFIED BY THE ENGINEER.
3. ACCESS TO THE STREAM WORK AREAS SHALL BE LIMITED TO REQUIRED EXCAVATION EQUIPMENT. EQUIPMENT SHALL ENTER AND LEAVE THE STREAM AT ONLY THE LOCATIONS SHOWN. NO REFUELING WILL BE PERMITTED IN THE STREAM. EQUIPMENT SHALL NOT LEAVE FLUSH. THE CONTRACTOR SHALL HAVE AN APPROVED SPILL PREVENTION, CONTINGENCY AND CONTINGENCY PLAN AND NOT CHECKS AT ALL TIMES.

**CONSTRUCTION SEQUENCE**

ACCESS TO THE DAM WILL BE MADE FROM THE RIGHT BANK AS SHOWN.

**DAM REMOVAL**

1. CONSTRUCT ENTRANCE ROAD AND STAGING AREA INCLUDING TREE REMOVAL AND GRADING AS REQUIRED. PLACE REINFORCED BELT FENCING AS REQUIRED IN THE DESIGNATED FILL AREA.
2. CONSTRUCT TEMPORARY ACCESS ROAD (TAR) FROM THE RIGHT BANK TO LEFT BANK. WORKING FROM TAR, EXCAVATE SEDIMENT FROM THE PROPOSED CHANNEL IN THE AREA BETWEEN THE TAR AND THE EXISTING DAM. REMOVE SEDIMENT FROM THE CHANNEL UPSTREAM OF THE TAR TO CREATE A DE TEMPORARY SEDIMENT TRAP. ALL EXCAVATED MATERIAL RESULTING FROM CONSTRUCTION OF THE TAR AND REMOVAL OF SEDIMENT FROM THE CHANNEL SHALL BE PLACED IN THE DESIGNATED FILL AREA.
3. WORKING FROM TAR, REMOVE DAM SECTION 1 AS SHOWN IN THE PLANS. AS DEMOLITION BEGINS, MAINTAIN TOP OF TAR ELEVATION AT ONE FOOT BELOW WATER SURFACE. REMOVE SEDIMENT AS IT ACCUMULATES UPSTREAM OF TAR AND UPSTREAM OF THE EXISTING DAM AND PLACE IN DESIGNATED FILL AREA. UPON REMOVAL OF A SECTION OF THE DAM, APPROVAL FROM THE ENGINEER SHALL BE OBTAINED BEFORE REMOVAL OF THE NEXT SEGMENT IS BEGUN.
4. CONTINUE REMOVING SEDIMENT AS NEEDED. UPON APPROVAL OF THE ENGINEER, REMOVE DAM SECTION 1 AS SHOWN ON THE PLANS.
5. AFTER THE SIDE CHANNEL ALONG RIGHT BANK IS DEMOLISHED, CONSTRUCT UPSTREAM ROBE CONTROL STRUCTURE ACROSS THE SIDE CHANNEL AND EXTEND ACROSS THE MAIN CHANNEL AS SHOWN. STRUCTURE SHALL BE KEYED INTO BOTTOM OF CHANNEL.
6. CONTINUE REMOVING SEDIMENT AS NEEDED AND PLACE IN DESIGNATED FILL AREA. CONTINUE REMOVING TOP OF DAM TO MAINTAIN TOP ELEVATION ONE FOOT BELOW WATER SURFACE.
7. UPON APPROVAL OF THE ENGINEER, REMOVE DAM SECTION 2 AS SHOWN IN THE PLANS AND PLACE RUBBLE ALONG CHANNEL EDGE FOR BANK PROTECTION.
8. CONTINUE REMOVING SEDIMENT AS IT ACCUMULATES AND PLACE IN DESIGNATED FILL AREA. UPON RECEIVING APPROVAL OF THE ENGINEER, REMOVE DAM SECTION 3 TO RUN DOWN 4 AND PLACE RUBBLE ALONG CHANNEL EDGE FOR BANK PROTECTION.
9. AFTER REMOVAL OF DAM SECTION 4 THE IMPROVEMENT SHOULD BE COMPLETELY DEMONSTRATED. UPON APPROVAL OF THE ENGINEER, REMOVE REMAINING PORTION OF THE DAM SECTION 4 AND 5 TO ELEV 116.6. USE DAM RUBBLE FOR BANK AND CHANNEL STABILIZATION. REMOVE ACCUMULATED SEDIMENT FROM TRAP AND PLACE IN DESIGNATED FILL AREA.
10. CONTINUE REMOVING SEDIMENT AS NEEDED AND PLACE IN DESIGNATED FILL AREA. WORKING TOWARD RIGHT BANK REMOVE TEMPORARY ACCESS ROAD TO THE FINAL GRADE. PLACE MATERIAL REMOVED FROM THE TAR ALONG BANKS AS DIRECTED.
11. COMPLETE FINAL GRADING AND REVEGETATION OF ALL DISTURBED AREAS.

**PERMANENT ROCK CONTROL STRUCTURES**

ACCESS TO VELL CREEK DOWNSTREAM OF THE BRIDGE AND APRON SHALL BE FROM THE EXISTING DAM SITE ONLY.

1. THE DOUBLE T-PIECE CROSS ROCK WALL STRUCTURE SHALL BE CONSTRUCTED PRIOR TO THE REMOVAL OF THE FIRST PORTION OF THE DAM AND KEYED TO THE STREAM BOTTOM.
2. THE ROCK BELL AT THE DOWNSTREAM END OF THE EXISTING GRouted APRON SHALL BE CONSTRUCTED PRIOR TO THE REMOVAL OF THE FIRST PORTION OF THE DAM. SEDIMENT SHALL BE REMOVED FROM THE SCOUR POOL DOWNSTREAM OF THE APRON PRIOR TO PLACING THE ROCK BELL STRUCTURE AND THE ROCK BELL KEYED TO THE CHANNEL BOTTOM. REMOVED SEDIMENT SHALL BE PLACED IN THE DESIGNATED FILL AREA.
3. UPSTREAM ROCK CONTROL STRUCTURE SHALL BE CONSTRUCTED AS OUTLINED ABOVE DURING THE DAM REMOVAL SEQUENCE.
4. ROCK BELL AT THE UPSTREAM FACE OF EXISTING GRouted APRON IS LOCATED AT THE EXISTING DAM STRUCTURE AND SHALL BE PLACED IMMEDIATELY AFTER THE DAM REMOVAL IS COMPLETED.
5. SEDIMENT WILL ACCUMULATE IN THE SCOUR POOL DOWNSTREAM OF THE ROCK BELL STRUCTURE AND AROUND THE DOUBLE T-PIECE CROSS ROCK WALL STRUCTURE AS THE DAM IS REMOVED. ALL SEDIMENT SHALL BE REMOVED AND PLACED IN THE DESIGNATED FILL AREA AS DIRECTED BY THE ENGINEER. ACCESS TO THESE AREAS SHALL BE MAINTAINED DURING THE LIFE OF THE CONTRACT TO FACILITATE SEDIMENT REMOVAL.
6. REVEGETATE ALL DISTURBED AREAS AS SOON AS POSSIBLE.

**RECEIVED**  
 JAN 24 2008  
 ENVIRONMENTAL QUALITY  
 AND WATER MANAGEMENT

NO.	BY	DATE	DESCRIPTION

NO.	BY	DATE	DESCRIPTION



HILL CREEK DAM REMOVAL  
 VILLAGE OF DEXTER, MICHIGAN

1294224  
 22  
 05/18/2008

NOTES

RD 101 80



**Donna Dettling**

**From:** Leo\_Davies@URSCorp.com  
**Sent:** Tuesday, February 05, 2008 9:53 AM  
**To:** Berkholz, Aaron  
**Cc:** Donna Dettling; Heath, Dan; Jones, Kelly; Keough, Shawn; Townsend, Roy; Tara\_Weise@URSCorp.com; Dana\_Burd@URSCorp.com; Mike\_Tarazi@URSCorp.com; Michael\_Donahue@URSCorp.com  
**Subject:** Aqua Swirl Chamber for Mill Creek Project

Aaron:

Regarding MDEQ Permit Condition Number 46: I am not certain that they are referring to the 36 inch storm sewer outlet. They may mean the 12 inch outlet just east of the bridge. Perhaps you can get a clarification from Alex Sanchez of MDEQ regarding which outlet they mean?

I understand that the project has been "turned in" to the MDOT Specs and estiamte unit for advertising and that it is now too late to change the package. Mike Tarazi informs me that the deadline for issuing an "addendum" is February 19. I believe adding a special drainage structure by addendum to the project, rather than as a negotiated change order, is what we want to do.

We created a Special Provision similar to the one you forwarded a few weeks ago for a project in Kalamazoo. In that Spec we allow the Contractor his choice of three different structures and provided the manufacturer and model number for the three options. Whether the structure goes on the 36 inch outlet or the smaller 12 inch outlet makes a difference in which "models" of the products would be appropriate. The larger pipe obviously has a larger flow and requires a larger structure.

The amount of the water treated and the amout allowed to bypass without treatment is an important consideration. Treating the "first flush" is generally what is done. Higher flows are generally cleaner and the cost for getting full treatment can become excessive compared to the benefits.

The options we have come up with include:

**12" Storm Outlet**

- Assumed 4 cfs peak flow
- Assumed 1 cfs treatment flow

Suntree Baffle Box (NSBB-2-4) \$ 9,000  
Vortechs (2000) \$17,000  
CDS (PMSU30\_20) \$24,000

**36" Storm Outlet**

- Assumed 46 cfs peak flow
- Assumed 11 cfs treatment flow

Suntree Baffle Box (51084) \$22,000  
Vortechs (9000) \$33,000  
CDS (PMSU20-30) \$31,000

Annual maintenance would be required for each of the structures, two or three cleanouts per year with a Vector truck. Although the smaller structures would have less sediment, the cost would be about the same for each of the structures, regardless of the size or model. We estimate this cost to be \$1800 per year. Aaron: You may have a better estimate of the annual maintenance cost based actual maintenance costs for similar structures you maintain now.

The Suntree Baffle Box is a relatively new product. According to the research we have completed, it functions just as well as the other

2/5/2008

structures, but at lower initial cost. Because it has lower cost, leaving this as an option will likely result in the Contractor selecting it.

Given the deadline for issuing an addendum is February 19, there may be other items listed in the Permit Conditions that you may want addressed as part of the addendum in addition to Item 46.

Please reply or call me with direction as to how to proceed regarding this.

Thank You

Leo N. Davies, P.E.  
Project Manager  
URS Corporation  
3950 Sparks Drive, SE  
Grand Rapids, MI 49546  
tel 616.574.8371 fax 616.222.4969 cell 616.560.3682

This e-mail and any attachments are confidential. If you receive this message in error or are not the intended recipient, you should not retain, distribute, disclose or use any of this information and you should destroy the e-mail and any attachments or copies.

## Donna Dettling

---

**From:** Berkholz, Aaron [berkholza@wroads.org]  
**Sent:** Monday, February 04, 2008 3:37 PM  
**To:** Keough, Shawn  
**Cc:** Donna Dettling; Leo\_Davies@URSCorp.com; Townsend, Roy; Jones, Kelly; Heath, Dan  
**Subject:** RE: Main Street Bridge / Mill Pond Dam - MDEQ Permit issued



SP for Water  
Quality.pdf

Shawn,

In addition to your comment regarding No. 43, please refer to the email below from Leo regarding his notes on the key conditions in the permit.

I agree that the wetland requirement was not expected. Certainly this condition should be reviewed further by URS. Even if wetlands are being impacted as part of the project, the Mill Creek is being returned to a "free flow" condition. It would seem that the improved health of the stream offsets the wetland impact that is necessary to achieve the end result ("the end justifies the means").

Regarding the other items noted by Leo and a few that I have highlighted:

#15 - If natural vegetation is not established by October 1, then exposed areas shall be seeded with a native seed mix and mulched by October 10. Is the seeding mixture specified in the proposal (special provision) considered a "native seed mix"?

#30 - extensive directions are provided regarding the timing for the preparation and submittal of a boundary survey and the "Restrictive Covenant" for the (sediment) disposal area. Also notes licensed PE certification to the MDEQ for the excavation/covering of contaminated soils (URS responsibility?).

#34 - identification of non-work areas, to be bounded by silt fence and orange construction fencing, to protect sediment/personnel/equipment from entering wetland

#37 - dam removal under the supervision of licensed PE (URS responsibility?)

#40 - written statement from a PE certifying supervision of dam removal (URS responsibility?)

#41 - final approval of the dam removal by MDEQ

#42 - establishing survey points to monitor headcutting of the channel, with locations of survey points submitted to the MDEQ prior to construction

#43 - clean out of the temporary sediment traps upstream of the dam and temporary access road closely monitored by non-contractor personnel (URS responsibility?)

#46 - installation of "aqua-swirl" type water quality device. This note applies to the 36-inch storm (it is the only one of the storm outlets specifically noted in the permit language). We should make an effort to add this as a bid item (through an addendum). I have attached a special provision from a WCRC 2007 road project. The cost on that project was

approximately \$20,000. I believe this would be a category 3 (non-participating, Village) cost since it relates to the sediment. I will follow up with Mark Harrison @ MDOT regarding the addition of this item during the advertisement.

#47 - invasive species management plan to be submitted and approved by the MDEQ.

#48 - sixteen inches of clean fill, seeded with a crop cover of native vegetation, area monitored for 5 years. The depth of the fill shouldn't be an issue. The reference to "native vegetation" - as asked previously, does the seeding mix specified in the proposal meet this requirement? Who will be monitoring the area for 5 years? It doesn't specifically note any requirement, but does the MDEQ expect regular updates during the monitoring period?

Certainly there are far more submittal/approval/notification requirements on this project than "typical". It will be important for us to keep these requirements in mind to avoid violating both the permit and the MDEQ trust.

I would welcome any comments or thoughts...

Thanks,

Aaron

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

From: Keough, Shawn [mailto:SKEOUGH@WadeTrim.com]  
Sent: Monday, February 04, 2008 11:14 AM  
To: Berkholz, Aaron; Leo\_Davies@URSCorp.com; Donna Dettling  
Cc: Townsend, Roy; Jones, Kelly  
Subject: RE: Main Street Bridge / Mill Pond Dam - MDEQ Permit issued

Hello Everyone - nice work last week getting everything in order to keep the March Bid Date.

I looked over the permit. Am I reading the permit correctly? Condition No. 43 indicates that we have to mitigate 0.46 acres (at 1.5:1 ratio) of wetlands. I don't believe anyone expected this condition to be in the permit. Is this a last minute add by the MDEQ/EPA? I thought we were creating wetlands equal to or greater than what we were disturbing. Can someone please illustrate on a drawing the area that has been identified as the 0.46 that we are impacting and also show where we believe we are creating them? My thought is that some of what we are creating should count toward the 0.69 that we need to mitigate.

Thank you,

Shawn

---

From: Leo\_Davies@URSCorp.com [mailto:Leo\_Davies@URSCorp.com]  
Sent: Friday, February 01, 2008 4:23 PM  
To: Mike\_Tarazi@URSCorp.com; Michael\_Donahue@URSCorp.com  
Cc: Berkholz, Aaron  
Subject: Fw: Main Street Bridge / Mill Pond Dam - MDEQ Permit issued

Attached is APPROVED PERMIT FROM MDEQ for the Mill Creek Project.

I have read the permit conditions. The key ones are at the end....boilerplate is at the beginning:

Item 48: The change in fill cover over the sediment disposal site from

12 inches to 16 inches is a probably a minor change that wouldn't require revised plans or changes to the estimate. We pay for this fill by the cubic yard. The quantity is very approximate because we don't really know how much sediment will be delivered and deposited in the traps.

Item 47: I don't know what an Invasive Species Management Plan is or what it entails, but I believe this is something that won't affect advertising the project for bids. Mike Donahue: I assume you can find out about this and discuss it with the Village.

Item 46: The "aqua swirl" or similar device they require is an issue I discussed with the Road Commission already. An addendum or a field change order will be needed if the Contractor is to install this. I assume we will want the Contractor to install this. From the wording, I am not certain which pipe they want this installed on. There is a 12 inch sewer that is just east of the bridge with minor flow. There also is a 36 inch that runs through the fill disposal area that would have much larger flow. We can ask MDEQ for clarification on which pipe next week. We then will size and site a structure for this. Whether MDOT will allow an addendum to add a pay item for this and include revised plans showing the location and details of the structure is something that will need to be discussed with MDOT.

Item 43: Wetland Mitigation is required. I assume this can be a separate project and not affect this project.

Item 42: Survey Monitoring points to monitor the "head cutting" upstream. I assume this also would be something that doesn't affect bids or advertising the project.

Thanks

Leo N. Davies, P.E.  
Project Manager  
URS Corporation  
3950 Sparks Drive, SE  
Grand Rapids, MI 49546  
tel 616.574.8371 fax 616.222.4969 cell 616.560.3682

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

From: Berkholz, Aaron [mailto:berkholza@wccroads.org]  
Sent: Friday, February 01, 2008 3:33 PM  
To: Leo\_Davies@URSCorp.com; Donna Dettling; Keough, Shawn  
Cc: Townsend, Roy; Jones, Kelly  
Subject: Main Street Bridge / Mill Pond Dam - MDEQ Permit issued

Leo, Donna, and Shawn:

Please refer to the email below from Jerry Fulcher and attached MDEQ permit. I have not yet had an opportunity to review the permit in detail, but I wanted to provide them to you immediately upon my receipt. As you can see, this was also submitted directly to Keith Cooper at the MDOT.

Thank you for all of your efforts in facilitating this permit.

- Aaron

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

From: Gerald Fulcher [mailto:fulcher@michigan.gov]  
Sent: Friday, February 01, 2008 3:27 PM  
To: Keith Cooper; Berkholz, Aaron  
Cc: Alexander Sanchez; Michael\_Donahue@URSCorp.com  
Subject: Dexter Permit

Aaron,

attached is your permit for this project. EPA sent us their draft approval letter. They indicated that the final letter would be sent out next week. If there were any additions between the draft and final versions we would have to address them. I don't anticipate that there will be any changes.

Please note permit conditions 42, 46 and 47 which require additional information before construction can begin.

The EPA also requested that the spoil area be covered with more than 12 inches of soil. I bumped it up to 16 inches (see paragraph 48).

Let me know if you have any questions.

Jerry Fulcher  
Land and Water Management Div-MDEQ  
Transportation and Flood Hazard Unit  
fulcherg@michigan.gov  
517-335-3172

AQUA SWIRL

"Joe" Email: p51joe@netzero.com

SPECIAL PROVISION  
FOR  
STORM WATER POLLUTION CONTROL DEVICE

WAGNER RD:MHM

1 of 2

11/06

a. Description - Construct a storm water pollution control device (SWPC) on proposed sewers at the location(s) specified in the plans.

b. Design Requirements - The SWPC shall treat storm water runoff from the 2-year, 3-hour storm event as shown in the table below, and have the hydraulic capacity to handle flows of the existing pipe capacity. The SWPC shall be capable of removing a minimum of 80 percent of the Total Suspended Solids (TSS) load based on US Silica OK 110 Sand at the water quality treatment flow rate. The SWPC shall trap and retain floatable free oil and floatable debris at the treatment capacity flow rate. The SWPC shall be installed underground as part of the storm sewer system and shall be structurally designed for HS-20 (OHBDC) traffic loading at the surface. The SWPC shall be maintainable from the surface via an access point and allow complete and unrestricted access to the entire bottom without requiring confined space entry into the SWPC.

No.	Location	Pipe Diameter	SWPC Treatment Capacity
1	Jackson Plaza/Sisters Lake Drain Outlet	18"	1.5 CFS

The SWPC shall be equipped with an internal high flow bypass that regulates the flow rate into the treatment chamber and conveys high flows directly to the outlet without causing scour and/or re-suspension of previously collected sediments and without causing re-entrainment of floatable contaminants. External bypasses will be permitted to handle flows greater than the 2-year 3-hour storm event but all materials and costs shall be included as part of the proposed SWPC. The bypass area shall be physically separated from the collection area to prevent mixing.

The SWPC design shall not raise the hydraulic grade line (HGL) more than 1 foot. The difference between the inlet pipe elevation to the SWPC and the outlet pipe elevation from the SWPC shall be 0.1 foot (minimum). The Engineer shall approve modified differences between the inlet pipe elevation to the SWPC and the outlet pipe elevation from the separator prior to construction. The SWPC shall be capable of being used as a bend structure in the storm sewer system. The access cover for the SWPC shall clearly indicate that it is an SWPC.

The SWPC shall be capable of containing spills of floatable substances such as free oil and not be compromised by temporary backwater conditions (i.e., trapped pollutants should not be re-suspended and scoured from the SWPC during backwater conditions). The SWPC shall have no points of constriction that may cause plugging or flooding.

**c. Materials** - The separator shall be constructed from fiberglass, HDPE, or precast concrete. The SWPC shall be designed and manufactured in accordance with ASTM C-478. The joints shall be oil resistant, water tight, and meet the design criteria according to ASTM C-443. If the oil storage chamber is constructed of concrete, the first 16 inches of oil storage shall be lined with fiberglass or sealed to prevent migration through the pores in the concrete.

**d. Construction** - The construction of the SWPC shall be in accordance with Section 403 of the MDOT 2003 Standard Specifications for Construction.

**e. Submittal** - The contractor shall include an operation and maintenance plan with their submittal. The capabilities of the selected SWPC must be documented with scientific studies, reports, and performance verification from independent lab and/or field tests. A list of local projects that have utilized the SWPC shall also be included with the submittal. The Contractor will submit four (4) copies of design specifications with the submittal from the manufacture for review and approval of the Engineer.

**f. Measurement and Payment** - The completed work will be paid for at the contract unit price for the following contract item (pay item).

<b>Contract Item (Pay Item)</b>	<b>Pay Unit</b>
Storm Water Pollution Control Device, __ Inch.....	Each

Payment for **Storm Water Pollution Device, \_\_ Inch** includes all labor, materials, and equipment necessary to complete the work specified including video inspection, site preparation, dewatering, maintaining flow and final clean up.

## Donna Dettling

---

**From:** Keough, Shawn [SKEOUGH@WadeTrim.com]  
**Sent:** Monday, February 04, 2008 11:14 AM  
**To:** Berkholz, Aaron; Leo\_Davies@URSCorp.com; Donna Dettling  
**Cc:** Townsend, Roy; Jones, Kelly  
**Subject:** RE: Main Street Bridge / Mill Pond Dam - MDEQ Permit issued

Hello Everyone - nice work last week getting everything in order to keep the March Bid Date.

I looked over the permit. Am I reading the permit correctly? Condition No. 43 indicates that we have to mitigate 0.46 acres (at 1.5:1 ratio) of wetlands. I don't believe anyone expected this condition to be in the permit. Is this a last minute add by the MDEQ/EPA? I thought we were creating wetlands equal to or greater than what we were disturbing. Can someone please illustrate on a drawing the area that has been identified as the 0.46 that we are impacting and also show where we believe we are creating them? My thought is that some of what we are creating should count toward the 0.69 that we need to mitigate.

Thank you,

Shawn

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

**From:** Berkholz, Aaron [mailto:berkholza@wcroads.org]  
**Sent:** Friday, February 01, 2008 3:33 PM  
**To:** Leo\_Davies@URSCorp.com; Donna Dettling; Keough, Shawn  
**Cc:** Townsend, Roy; Jones, Kelly  
**Subject:** Main Street Bridge / Mill Pond Dam - MDEQ Permit issued

Leo, Donna, and Shawn:

Please refer to the email below from Jerry Fulcher and attached MDEQ permit. I have not yet had an opportunity to review the permit in detail, but I wanted to provide them to you immediately upon my receipt. As you can see, this was also submitted directly to Keith Cooper at the MDOT.

Thank you for all of your efforts in facilitating this permit.

- Aaron

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

**From:** Gerald Fulcher [mailto:fulcherg@michigan.gov]  
**Sent:** Friday, February 01, 2008 3:27 PM  
**To:** Keith Cooper; Berkholz, Aaron  
**Cc:** Alexander Sanchez; Michael\_Donahue@URSCorp.com  
**Subject:** Dexter Permit

Aaron,

attached is your permit for this project. EPA sent us their draft approval letter. They indicated that the final letter would be sent out next week. If there were any additions between the draft and final versions we would have to address them. I don't anticipate that there will be any changes.

Please note permit conditions 42, 46 and 47 which require additional information before construction can begin.

The EPA also requested that the spoil area be covered with more than 12 inches of soil. I bumped it up to 16 inches (see paragraph 48.

Let me know if you have any questions.

---

Jerry Fulcher  
Land and Water Management Div-MDEQ  
Transportation and Flood Hazard Unit  
fulcherj@michigan.gov  
517-335-3172

**AGREEMENT FOR PROFESSIONAL SERVICES**  
**("Agreement")**

This Agreement between Village of Dexter, 8140 Main Street, Dexter, MI 48130, ("Client") and URS Corporation Great Lakes, ("URS"), a Michigan corporation; 34555 W. 12 Mile Road, Farmington Hills, MI 48331 (248) 553-9449 ("URS"), is effective as of May 21, 2007. The parties agree as follows:

It is the expressed intent of the parties that this Agreement shall be made available to the subsidiaries and affiliated companies of URS. For the purposes of this Agreement, as it applies to each Work Order, the term "URS" shall mean either, URS Corporation Great Lakes, or the affiliated company identified in the Work Order. The applicable Work Order shall clearly identify the legal name of the affiliate or subsidiary accepting the Work Order.

**ARTICLE I - Work Orders.** The Scope of Services ("Services"), the Time Schedule and the Charges are to be set forth in a written Work Order to this Agreement. The terms and conditions of this Agreement shall apply to each Work Order, except to the extent expressly modified by the Work Order. Where charges are "not to exceed" a specified sum, URS shall notify Client before such sum is exceeded and shall not continue to provide the Services beyond such sum unless Client authorizes an increase in the sum. If a "not to exceed" sum is broken down into budgets for specific tasks, the task budget may be exceeded without Client authorization as long as the total sum is not exceeded. Changes in conditions, including, without limitation, changes in laws or regulations occurring after the budget is established or other circumstances beyond URS control shall be a basis for equitable adjustments in the budget and schedule. However, changes which are necessary due to URS negligence or willful misconduct shall not be compensated by the Client.

**ARTICLE II - Payment.** Unless otherwise stated in an Work Order, payment shall be on a time and materials basis under the Schedule of Fees and Charges in effect when the Services are performed. Client shall pay undisputed portions of each progress invoice within thirty (30) days of the date of the invoice. If payment is not maintained on a thirty (30) day current basis, URS may after seven (7) days written notice suspend further performance until payments are current. Client shall notify URS of any disputed amount within fifteen (15) days from date of the invoice, give reasons for the objection, and promptly pay the undisputed amount. Client shall pay an additional charge of one and one-half percent (1½%) per month or the maximum percentage allowed by law, whichever is the lesser, for any past due amount. In the event of a legal action for invoice amounts not paid, reasonable attorneys' fees, court costs, and other related expenses shall be paid to the prevailing party.

**ARTICLE III - Professional Responsibility.** URS is obligated to comply with applicable standards of professional care in the performance of the Services. Client recognizes that opinions relating to environmental, geologic, and geotechnical conditions are based on limited data and that actual conditions may vary from those encountered at the times and locations where the data are obtained, despite the use of due professional care. URS is not responsible for designing or advising on or otherwise taking measures to prevent or mitigate the effect of any act of terrorism or any action that may be taken in controlling, preventing, suppressing or in any way relating to an act of terrorism.

**ARTICLE IV - Responsibility for Others.** URS shall be responsible to Client for URS Services and the services of URS subcontractors. URS shall not be responsible for the acts or omissions of other parties engaged by Client nor for their construction means, methods, techniques, sequences, or procedures, or their health and safety precautions and programs.

**ARTICLE V - Risk Allocation.** The liability of URS, its employees, agents and subcontractors (referred to collectively in this Article as "URS"), for Client's claims of loss, injury, death, damage, or expense, including, without limitation, Client's claims of contribution and indemnification, express or implied, with respect to third party claims relating to services rendered or obligations imposed under this Agreement, including all Work Orders, shall not exceed in the aggregate:

(1) The total sum of \$250,000 for claims arising out of professional negligence, including errors, omissions, or other professional acts, and including unintentional breach of contract; and any actual or potential environmental pollution or contamination, including, without limitation, any actual or threatened release of toxic, irritant, pollutant, or waste gases, liquids, or solid materials, or failure to detect or properly evaluate the presence of such substances, except to the extent such release, threatened release, or failure to detect or evaluate is caused by the willful misconduct of URS; or

(2) The total sum of \$1,000,000 for claims arising out of negligence, breach of contract, or other causes for which URS has any legal liability, other than as limited by (1) above.

**ARTICLE VI - Insurance.** URS agrees to maintain during the performance of the Services: (1) statutory Workers' Compensation coverage; (2) Employer's Liability; (3) General Liability; and (4) Automobile Liability insurance coverage each in the sum of \$1,000,000 per occurrence. General and Auto policies shall include Client as an additional insured and a certificate evidencing such coverage shall be delivered to Client prior to commencement of work.

**ARTICLE VII - Consequential Damages.** Neither Party shall be liable to the other for consequential damages, including, without limitation, loss of use or loss of profits, incurred by one another or their subsidiaries or successors, regardless of whether such damages are caused by breach of contract, willful misconduct, negligent act or omission, or other wrongful act of either of them.

**ARTICLE VIII - Client Responsibility.** Client shall: (1) provide URS, in writing, all information relating to Client's requirements for the project; (2) correctly identify to URS, the location of subsurface structures, such as pipes, tanks, cables and utilities; (3) notify URS of any potential hazardous substances or other health and safety hazard or condition known to Client existing on or near the project site; (4) give URS prompt written notice of any suspected deficiency in the Services; and (5) with reasonable promptness, provide required approvals and decisions. In the event that URS is requested by Client or is required by subpoena to produce documents or give testimony in any action or proceeding to which Client is a party and URS is not a party, Client shall pay URS for any time and expenses required in connection therewith, including reasonable attorney's fees.

Client shall reimburse URS for all taxes, duties and levies such as Sales, Use, Value Added Taxes, Deemed Profits Taxes, and other similar taxes which are added to or deducted from the value of URS Services. For the purpose of this Article such taxes shall not include taxes imposed on URS net income, and employer or employee payroll taxes levied by any United States taxing authority, or the taxing authorities of the countries or any agency or subdivision thereof in which URS subsidiaries, affiliates, or divisions are permanently domiciled. It is agreed and understood that these net income, employer or employee payroll taxes are included in the unit prices or lump sum to be paid URS under the respective Work Order.

**ARTICLE IX - Force Majeure.** An event of "Force Majeure" occurs when an event beyond the control of the Party claiming Force Majeure prevents such Party from fulfilling its obligations. An event of Force Majeure includes, without limitation, acts of God (including floods, hurricanes and other adverse weather), war, riot, civil disorder, acts of terrorism, disease, epidemic, strikes and labor disputes, actions or inactions of government or other authorities, law enforcement actions, curfews, closure of transportation systems or other unusual travel difficulties, or inability to provide a safe working environment for employees.

In the event of Force Majeure, the obligations of URS to perform the Services shall be suspended for the duration of the event of Force Majeure. In such event, the schedule shall be extended by a like number of days as the event of Force Majeure. If Services are suspended by Client for thirty (30) days or more, URS may, in its sole discretion, upon 5 days prior written notice, terminate this Agreement or the affected Work Order, or both. In the case of such termination, in addition to the compensation and time extension set forth above, URS shall be compensated for all services performed to the date of termination.

**ARTICLE X - Right of Entry.** Client grants to URS, and, if the project site is not owned by Client, warrants that permission has been granted for, a right of entry from time to time by URS, its employees, agents and subcontractors, upon the project site for the purpose of providing the Services. Client recognizes that the use of investigative equipment and practices may unavoidably alter the existing site conditions and affect the environment in the area being studied, despite the use of reasonable care.

**ARTICLE XI - Documents.** Provided that URS has been paid for the Services, Client shall have the right to use the documents, maps, photographs, drawings and specifications resulting from URS efforts on the project. Reuse of any such materials by Client on any extension of this project or any other project without the written authorization of URS shall be at Client's sole risk. URS shall have the right to retain copies of all such materials. URS retains the right of ownership with respect to any patentable concepts or copyrightable materials arising from its Services.

**ARTICLE XII - Termination.** Client may terminate all or any portion of the Services for convenience, at its option, by sending a written Notice to URS. Either party can terminate this Agreement or a Work Order for cause if the other commits a material, uncured breach of this Agreement or becomes insolvent. Termination for cause shall be effective twenty (20) days after receipt of a Notice of Termination, unless a later date is specified in the Notice. The Notice of Termination for cause shall contain specific reasons for termination and both parties shall cooperate in good faith to cure the causes for termination stated in the Notice. Termination shall not be effective if reasonable action to cure the breach has been taken before the effective date of the termination. Client shall pay URS upon invoice for Services performed and charges incurred prior to termination, plus reasonable termination charges. In the event of termination for cause, the parties shall have their remedies at law as to any other rights and obligations between them, subject to the other terms and conditions of this Agreement.

**ARTICLE XIII - No Third Party Rights.** This Agreement shall not create any rights or benefits to parties other than Client and URS. No third party shall have the right to rely on URS opinions rendered in connection with the Services without the written consent of URS and the third party's agreement to be bound to the same conditions and limitations as Client.

**ARTICLE XIV - Assignments.** Neither party to this Agreement shall assign its duties and obligations hereunder without the prior written consent of the other party.

**ARTICLE XV - Hazardous Substances.** All nonhazardous samples and by-products from sampling processes in connection with the Services shall be disposed of by URS in accordance with applicable law; provided, however, that any and all such materials, including wastes, that cannot be introduced back into the environment under existing law without additional treatment, and all hazardous wastes, radioactive wastes, or hazardous substances ("Hazardous Substances") related to the Services, shall be packaged in accordance with the applicable law by URS and turned over to Client for appropriate disposal. URS shall not arrange or otherwise dispose of Hazardous Substances under this Agreement. URS, at Client's request, may assist Client in identifying appropriate alternatives for off-site treatment, storage or disposal of the Hazardous Substances, but URS shall not make any independent determination relating to the selection of a treatment, storage, or disposal facility nor subcontract such activities through transporters or others. Client shall sign all necessary manifests for the disposal of Hazardous Substances. If Client requires: (1) URS agents or employees to sign such manifests; or (2) URS to hire, for Client, the Hazardous Substances transportation, treatment, or disposal contractor, then for these two purposes, URS shall be considered to act as Client's agent so that URS will not be considered to be a generator, transporter, or disposer of such substances or considered to be the arranger for disposal of Hazardous Substances, and Client shall indemnify URS against any claim or loss resulting from such signing.

**ARTICLE XVI - Venue.** In the event of any dispute between the parties to this Agreement, the venue for the dispute resolution shall be any state or federal court in the United States having jurisdiction over the parties. The foregoing notwithstanding, if the project is located outside the United States, the laws of the State of California shall govern and in such event, any dispute under the Agreement not resolved amicably shall be resolved under the binding rules of the American Arbitration Association.

**ARTICLE XVII - Integrated Writing and Enforceability.** This Agreement constitutes the final and complete repository of the agreements between Client and URS relating to the Services and supersedes all prior or contemporaneous communications, representations, or agreements, whether oral or written. Modifications of this Agreement shall not be binding unless made in writing and signed by an Authorized Representative of each party. The provisions of this Agreement shall be enforced to the fullest extent permitted by law. If any provision of this Agreement is found to be invalid or unenforceable, the provision

shall be construed and applied in a way that comes as close as possible to expressing the intention of the parties with regard to the provisions and that saves the validity and enforceability of the provision.

**THE PARTIES ACKNOWLEDGE** that there has been an opportunity to negotiate the terms and conditions of this Agreement and agree to be bound accordingly.

CLIENT

Donna Detting  
Signature

Donna Detting, Village Manager  
Typed Name/Title

7/12/07  
Date of Signature

URS

Michael J. Ohe  
Signature

Michael J. Donahue, PhD Vice President, Water Resources and Environmental Services  
Typed Name/Title

July 12, 2007  
Date of Signature

Approved by VC 6-25-07

TIME AND MATERIALS WORK ORDER NO. 1

In accordance with the Agreement for Professional Services between Village of Dexter ("Client"), and URS Corporation Great Lakes ("URS"), a Michigan corporation, dated July 10, 2007, this Work Order describes the Services, Schedule, and Payment Conditions for URS Services on the Project known as:

Mill Creek Dam Removal and Stream Restoration

**Client Authorized**

Representative: Donna Detting  
Address: 8140 Main Street  
Dexter, MI 48130  
Telephone No.: \_\_\_\_\_

**URS Authorized**

Representative: Michael Donahue  
Address: 34555 W. 12 Mile Road  
Farmington Hills, MI 48331  
Telephone No.: 248.553.9449

**SERVICES.** The Services shall be described in Attachment A to this Work Order.

**SCHEDULE.** The Estimated Schedule shall be set forth in Attachment A to this Work Order. Because of the uncertainties inherent in the Services, Schedules are estimated and are subject to revision unless otherwise specifically described herein.

**PAYMENT.** Payment of \$0 is due upon signature of this Work Order and will be applied against the final invoice for this Work Order. URS charges shall be on a "time and materials" basis and shall be in accordance with the URS Schedule of Fees and Charges in effect at the time the Services are performed. Payment provisions and the URS current Schedule of Fees and Charges are attached to this Work Order as Attachment A.

**TERMS AND CONDITIONS.** The terms and conditions of the Agreement referenced above shall apply to this Work Order, except as expressly modified herein.

**ACCEPTANCE** of the terms of this Work Order is acknowledged by the following signatures of the Authorized Representatives.

**CLIENT**

Donna Detting  
Signature

Donna Detting, Village Manager  
Typed Name/Title

7/12/07  
Date of Signature

**URS**

Michael J. Donahue  
Signature

Michael J. Donahue, PhD Vice President, Water Resources and Environmental Services  
Typed Name/Title

July 12, 2007  
Date of Signature



May 10, 2007

Ms. Donna Dettling  
Village Manager  
8140 Main Street  
Dexter, MI 48130

Subject: **Proposal for Professional Services  
Mill Creek Dam Removal and Stream Restoration  
URS Proposal No. 1549-07-043**

Dear Ms. Dettling:

URS Corporation (URS) is pleased to provide the Village of Dexter with a proposal for professional services associated with Mill Creek Dam removal and stream restoration. This proposal involves the collection of additional field data required to complete the design and permit application, and address comments provided by the Michigan Department of Environmental Quality (MDEQ) in a letter dated April 25, 2007. It also provides a comprehensive suite of services that includes final design and permitting of the dam removal and stream restoration, bidding assistance, construction oversight, project management, and assistance with intergovernmental coordination and stakeholder relations. Presented below is our understanding of the project, scope of services, estimated costs, schedule, and deliverables.

#### **1.0 PROJECT BACKGROUND AND UNDERSTANDING**

URS understands that the project consists of the necessary investigation, design and permitting work to breach and remove the Mill Creek Dam with the goal of restoring the affected segments of Mill Creek to their natural, free flowing state.

The dam is located on Mill Creek in the Village of Dexter and immediately upstream of the Main Street Bridge. This bridge is planned to be replaced and, although separate projects, coordination of bridge replacement with dam removal/ stream restoration will be important.

URS has completed conceptual design plans that have been reviewed and commented upon by MDEQ. Additional design and minimal field investigation is required to respond adequately to those comments, and to complete a design and permit package for the project to move forward. Following completion of the design plans and narrative, the permit application and plans will be submitted for approval as part of the larger bridge



replacement/road realignment permit application package. Once approval is received, URS will assist the Village in procuring a qualified contractor to complete the dam removal and stream restoration, and will provide qualified, full-time oversight of the project. URS will also assist in intergovernmental coordination and stakeholder relations needs associated with the project.

URS will rely upon its extensive familiarity with the project, as well as its technical expertise and experience with similar dam removal/ stream restoration projects, to provide the Village with timely, efficient and cost-effective services. Wherever possible, URS will utilize existing information in the interest of controlling costs. URS is prepared to promptly implement the following technical approach to achieve dam removal and stream restoration objectives upon authorization by Village of Dexter.

## **2.0 TECHNICAL APPROACH**

The following sections discuss, in detail, the technical approach proposed by URS to successfully complete the project.

### **Task 1. Conceptual Design Engineering**

In order to keep the project moving along its critical path, URS has already completed some of the final design and permitting components, including submittal of a preliminary design to MDEQ for comment; several meetings with MDEQ; and responses to comments received. In addition, URS prepared cost estimates to assist with project planning. Costs associated with these activities are identified in the project cost estimate presented in this proposal.

### **Task 2. Field Data Collection**

This task will involve an examination of Mill Creek upstream of the dam beyond the influence of the dam impoundment. Typically, regional curve data is used to assist in stream restoration and the proper sizing of stream channels, when a more natural channel design is being proposed. Due to the lack of current information pertaining to regional curve data for the Mill Creek watershed, URS proposes at least three cross section surveys on stable reaches of stream with consistent stream features (i.e. bankfull features, channel width, depth and cross sectional area). At each of these locations, a channel cross section survey will be completed to define channel size and shape. A limited channel profile will also be surveyed to determine channel slope at each cross section location. This information will then be entered into stream restoration software to determine consistency in channel size as related to drainage area. The drainage area for each cross section will be determined, and the survey information will be plotted on



regional curve tables. These steps are needed to obtain watershed specific information related to channel morphology.

The field survey will also include a more detailed examination of the dam and impoundment to examine site conditions related to access to the dam and also the development of a detailed breaching/dewatering plan. During this task, a pre-application meeting will be held with the permitting agencies to discuss information related to the preparation of permitting and erosion and sediment control plan requirements. This meeting should also include appropriate MDOT representatives.

### **Task 3. Engineering Design**

The field survey data will be processed to develop a site-specific regional curve. Upon completion of the necessary design calculations, URS will prepare separate design sheets and permit applications for each dam consisting of a cover sheet, a plan sheet including a narrative of the breaching process, a longitudinal profile, cross sections, a details sheet, and an erosion and sedimentation control plan. The plans will include the necessary dimensions for the breach, channel dimensions and erosion protection, staging areas, and areas for spoils. In addition, URS will provide sufficient detail to address temporary channeling of water during the construction effort, excavation of impounded sediment, placement of impounded sediment including clay capping where required, final grading, and riparian restoration along the restored stream corridor.

Finally, a hydraulic analysis of the proposed channel using HEC-RAS software will be completed to ensure that the restored stream channel will adequately convey storm flows, and will not adversely affect the proposed replacement bridge. The analysis will also include any in-stream rock structures proposed in the design. Following the completion of the design, a detailed design report will be prepared and submitted with the permit application.

### **Task 4. Permitting**

URS will complete all required permitting applications to MDEQ and appropriate county and federal agencies. This will include technical input into, and coordination with the combined bridge replacement/ road realignment/ dam removal permit application to the state of Michigan.



### **Task 5. Specifications and Bidding Assistance**

URS will provide all necessary technical specifications on the drawings, and submit them to MDEQ with the permit application so that a separate specifications document is not required. URS will also provide a brief separate narrative report to support the drawings. URS will provide assistance to the Village to advertise, bid and review bids for a qualified contractor to work under contract to the Village to complete the project.

### **Task 6. Construction and Construction Oversight**

Once the contractor is selected and the contract signed, URS will conduct an on-site pre-construction meeting with MDEQ and the contractor at least seven days prior to initiation of construction activities.

URS will provide construction observation for the project (up to 20 full days) in order to verify construction, document time and materials, provide reviews of contractor's invoices, and provide post-dam removal drawings to MDEQ. URS will conduct a final site walkover following completion of the project to document that all critical design features have been properly and adequately constructed. URS will note deficiencies and work with the contractor to remedy identified deficiencies. URS will also review the contractor's invoice(s) for accuracy.

Finally, URS will prepare the project certification and final report once the project has been completed. This will consist of markups made to the design drawings of any significant changes made during the project, with an explanation in the report, along with photo documentation. This task does not include physical survey, as this is not expected to be required.

URS will prepare multiple copies of the drawing(s) and report for submittal to the Village, MDEQ, County, and other parties, as appropriate.

### **Task 7. Intergovernmental Coordination and Stakeholder Relations**

URS will assist the Village in intergovernmental coordination and stakeholder relations, including presentations to Village Council, meetings with other governmental entities, the development of materials for public outreach, and the conduct of meetings/ workshops for public information/ education purposes.

### **Task 8. Project Administration and Meetings**

The URS project manager will provide necessary project administration to maintain project budgets, schedule, complete timely invoicing, and maintain open and continuous



communication with the Village and other interested parties. URS will participate in meetings at the project site or at local offices, as needed. URS will also participate, as requested, in any meetings with other units of government that may be useful in advancing project goals.

### **Scope of Work Assumptions**

In developing our proposal and associated cost estimate, URS based the scope of work and level of effort on review of available information and discussion with stakeholders. Our proposal is based upon the following assumptions:

- The estimated cost of dam removal (\$40,000) will be covered through an existing contract with the Washtenaw County Road Commission. That figure is included in the construction estimate presented below.
- Deliverables include multiple sets of design drawings and narrative reports for each project task, as appropriate.
- The cost estimate does not include costs associated with preparation of a client-specific or AIA (or similar) specification package, or contract conditions, should the construction work be publicly bid.
- The HEC-RAS analysis requested by MDEQ can be completed using existing survey data; and
- No permit application fees are expected and, therefore, are not included in the cost estimate.

### **3.0 COMPENSATION AND PAYMENT TERMS**

The total value of this proposed project is estimated not to exceed \$365,264. This includes a comprehensive suite of URS professional services described above (\$90,264) on a time and materials basis; with the balance (\$275,000) covering all costs associated with project construction. (URS proposes that the Village engage the construction contractor directly in the interest of saving the Village markup fees. Should the Village desire to have URS perform this function, however, an addendum to this proposal can be prepared.)

This cost estimate represents our best estimate of the required level of effort to meet project objectives. Should the scope of work change by virtue of MDEQ permit requirements, changes made by others, field conditions or other considerations, we will notify and provide the Village of Dexter with revised cost figures for approval prior to conducting the additional work.



Estimated costs (project labor and other direct costs) for the eight proposed project tasks are as follows:

- Task One: Conceptual Design- \$17,804
- Task Two: Field Data Collection- \$4,229
- Task Three: Engineering Design- \$17,973
- Task Four: Permitting- \$6,947
- Task Five: Specifications and Bidding- \$4,509
- Task Six: Construction and Construction Oversight- \$297,755
- Task Seven: Intergovernmental Coordination and Stakeholder Relations- \$10,347
- Task Eight: Administration- \$5,700

A cost estimate spreadsheet will be prepared to provide additional detail on both URS professional services and construction costs.

#### *Client's Responsibilities*

This Proposal is made with the understanding that the Village of Dexter will perform the following items:

1. Designate a person to act as the client's representative.
2. Secure written access to the project area to allow URS to enter the subject properties as needed for the duration of the project.

#### *Cost Provisions*

The costs included in this proposal are valid for 90 days from the date of submittal. If the proposal is accepted after said period, URS reserves the right to review and retain or modify the figures stated herein in order to appropriately reflect changing costs and salaries and similar economic considerations.

#### *Additional Services*

URS shall provide Additional Services not otherwise included in this Proposal or not customarily furnished in accordance with services of the scope described herein, if authorized by Village of Dexter in writing, and such shall be paid for by Village of Dexter.



#### 4.0 SCHEDULE

URS is prepared to begin work within two weeks of notice to proceed, weather and access permitting. We anticipate scheduling and completing the fieldwork within two weeks. We will notify Village of Dexter in the event the proposed schedule changes. Preparation of the design documents for review by the Village of Dexter, regulators and other stakeholders will be completed within five weeks of completion of field work, assuming that there are no significant weather delays or other delays beyond the control of URS.

#### AUTHORIZATION

To authorize URS to proceed, a work order will be prepared for signature. URS appreciates the opportunity to submit this Proposal and looks forward to assisting the Village of Dexter with this project. Should you have any questions relating to this proposal, please contact Mike Donahue at 248.994.7431.

Sincerely,

#### URS CORPORATION

A handwritten signature in black ink that reads "Mike Donahue".

Michael J. Donahue, Ph.D.  
Vice President, Water Resources  
And Environmental Services

A handwritten signature in black ink that reads "Mark D. Pennell".

Mark D. Pennell, Principal  
Branch Manager



## VILLAGE OF DEXTER - PARKS COMMISSION

8140 Main Street • Dexter, Michigan 48130-1092 • (734) 426-8303 • Fax (734) 426-5614

AGENDA 2-11-08  
ITEM L-1

### Memorandum

To: Village Council  
Donna Dettling  
From: Allison Bishop  
Parks Commission  
Re: Community Park Play Court  
ADDITIONAL FUNDING REQUEST  
Date: February 11, 2008

The Parks Commission would like to request additional funding to complete improvements needed at Community Park in order to focus future efforts and funding on the redevelopment of the Mill Pond Park.

#### GOAL –

Complete Community Park (with the exception of improvements to Ryan Drive for traffic calming and parking, and the permanent bathrooms planned for 2013-14).

#### OBJECTIVE –

Obtain \$9,810 additional funding to complete park. Detailed budget for requested items attached.

#### IMPLEMENTATION –

Equipment has been selected and will be ordered upon Village Council approval and installed in the summer of 2008. Park development, excluding general maintenance, will be complete.

#### ACTION REQUESTED –

On January 15<sup>th</sup> the Parks Commission made a motion to request that Council amend the budget to include an amount not to exceed \$9,000 to fully implement the play court and other improvements to Community Park. Following the motion a new quote was obtained for the basketball court equipment, changing the budget to \$9,810. The Parks Commission therefore requests that the Village Council make a budget amendment to authorize an amount not to exceed \$9,810 in additional funding for the completion of park development at Community Park.

Possible funding could come from the Restricted Park Fund (101.000.000.004.001). Available funding in this restricted account is \$22,728.47.

Please feel free to contact me prior to the meeting if you have questions.  
Thank you.

**APPROXIMATE COSTS**

SITE WORK/RESTORATION	\$15,000
COURT INSTALLATION (CONCRETE)	\$20,000
EQUIPMENT (6 HOOPS, FENCING, PAINTING)	\$16,000
SPRING TOYS x 4 (\$1000 site work/woodchips)	\$3500
TEETER SAW x 1	\$700
FUN HOOPS x 2	\$1400
GRILLS x 2	\$500
LANDSCAPING	\$2000
4-SQUARE (12x12 concrete pad)	\$1000
TENNIS BACKBOARD (plywood)	\$1000
SIGNAGE (rules and hours)	\$1000
TOTAL	\$62,100
10% contingency	\$2,710
<b>TOTAL</b>	<b>\$64,810</b>
<b>BUDGET</b>	<b>\$55,000</b>
<b>OVER BUDGET (Does not include parking)</b>	<b>\$9,810</b>

**PARKING COSTS/ TRAFFIC ISLANDS**

Jim Valenta getting cost estimates for traffic calming measures

Traffic study indicated a speeding problem on Ryan Dr.

Parking needed for park and play court

**Budget Amendment Form - Council Approval Required**  
**Fiscal Year 2007/2008**

Line #	Description	Original Budget	Amended Budget	Difference	Reason for Amendment
101-901.000-974.005	CIP Community Park	\$ 55,000	\$ 65,000	\$ 10,000	Increase budget per Allison Bishop Memo 2-11-08
101-890.000-955.000	Contingencies-Miscellaneous	\$ 50,000	\$ 40,000	\$ (10,000)	Reduce contingencies for above budget increase
<i>Net change in budget</i>				\$ -	

Approved by Council on February 11, 2008

---

David Boyle, Village of Dexter Clerk



# VILLAGE OF DEXTER

8140 Main Street Dexter, MI 48130-1092

[ddettling@villageofdexter.org](mailto:ddettling@villageofdexter.org)

Phone (734)426-8303 Fax (734)426-5614

## MEMO

**To: President Keough and Council**  
**From: Donna Dettling, Village Manager**  
**Date: February 11, 2008**  
**Re: Bond Authorizing Resolutions-DDA Projects**  
**Items L-2 and L-3**

AGENDA 2-11-08  
ITEM L-2 + L-3

Included in your packet are two Bond Authorizing Resolutions for DDA Projects.

**Item L-2** is a Resolution authorizing Downtown Development Bonds, series 2008A (Limited Tax General Obligation) in a Taxable Bond not to exceed \$1,600,000.

**Item L-3** is a Resolution authorizing Downtown Development Bonds, series 2008B (Limited Tax General Obligation) in a Tax-exempt Bond not to exceed \$2,000,000.

A copy of the Resolution adopted by the DDA requesting issuance of Bonds is included in your packet. This resolution was adopted after a properly noticed public hearing held at a regular DDA meeting on October 11, 2007.

The 2008 Bond Projects list is included for your review.

Tom Traciak of ACI Finance prepared a "Forecast-Real" schedule for both the taxable and tax-exempt bond issue.

DDA members, Tom Traciak and Miller Canfield attorneys will be at the meeting to answer questions.

Village of Dexter  
DOWNTOWN DEVELOPMENT AUTHORITY  
REVENUE FORECAST JULY 1, 2007 through JUNE 30, 2008  
REAL & PERSONAL PROPERTY

	Available for Debt Coverage [1]	Interest November 1	25 Year TAXABLE Bond Issue [2]		Annual Debt Service
			Principal May 1	Interest May 1	
2008 - 9	198,552	38,792	0	33,250	72,042
2009 - 10	233,857	33,250	25,000	33,250	91,500
2010 - 11	203,149	32,375	25,000	32,375	89,750
2011 - 12	205,851	31,500	25,000	31,500	88,000
2012 - 13	212,834	30,625	30,000	30,625	91,250
2013 - 14	215,907	29,575	30,000	29,575	89,150
2014 - 15	219,337	28,525	35,000	28,525	92,050
2015 - 16	223,018	27,300	35,000	27,300	89,600
2016 - 17	244,380	26,075	40,000	26,075	92,150
2017 - 18	252,509	24,675	40,000	24,675	89,350
2018 - 19	260,688	23,275	45,000	23,275	91,550
2019 - 20	264,919	21,700	45,000	21,700	88,400
2020 - 21	333,418	20,125	50,000	20,125	90,250
2021 - 22	338,744	18,375	55,000	18,375	91,750
2022 - 23	344,124	16,450	60,000	16,450	92,900
2023 - 24	349,557	14,350	65,000	14,350	93,700
2024 - 25	355,045	12,075	75,000	12,075	99,150
2025 - 26	360,587	9,450	80,000	9,450	98,900
2026 - 27	366,185	6,650	90,000	6,650	103,300
2027 - 28	371,839	3,500	100,000	3,500	107,000
2028 - 29	377,549		110,000		
2029 - 30	383,317		120,000		
2030 - 31	389,142		130,000		
2031 - 32	395,026		140,000		
2032 - 33	400,968		150,000		
2033 - 34	406,970				
2034 - 35	413,031				
2035 - 36	419,154				
2036 - 37	457,337				
		448,642	1,600,000	443,100	1,841,742

**BOND SIZE**

[1] See "Forecast-Real" schedule.  
[2] Estimated net interest rate 7.00%  
[2] Estimated net interest rate 4.75%  
Assumes Bonds are issued March 1, 2008.

<u>20 Year Bond TAX-EXEMPT Issue [2]</u>					INFO
<u>Interest</u> <u>November 1</u>	<u>Principal</u> <u>May 1</u>	<u>Interest</u> <u>May 1</u>	<u>Annual</u> <u>Debt Service</u>	<u>Cash</u> <u>Flow</u>	<u>Existing</u> <u>Principal</u>
57,633	0	49,400	107,033	19,477	80,000
49,400	10,000	49,400	108,800	33,557	45,000
49,163	10,000	49,163	108,325	5,074	50,000
48,925	15,000	48,925	112,850	5,001	55,000
48,569	20,000	48,569	117,138	4,447	55,000
48,094	25,000	48,094	121,188	5,569	60,000
47,500	30,000	47,500	125,000	2,287	65,000
46,788	35,000	46,788	128,575	4,843	70,000
45,956	55,000	45,956	146,913	5,317	70,000
44,650	70,000	44,650	159,300	3,859	70,000
42,988	80,000	42,988	165,975	3,163	70,000
41,088	90,000	41,088	172,175	4,344	75,000
38,950	160,000	38,950	237,900	5,268	
35,150	175,000	35,150	245,300	1,694	
30,994	185,000	30,994	246,988	4,236	
26,600	200,000	26,600	253,200	2,657	
21,850	210,000	21,850	253,700	2,195	
16,863	225,000	16,863	258,725	2,962	
11,519	235,000	11,519	258,038	4,848	
5,938	250,000	5,938	261,875	2,964	
758,615	2,080,000	750,381	3,588,996		
	<b>BOND SIZE</b>				

ONLY

Combined

Principal

80,000	
80,000	
85,000	
95,000	1:5 to later maturity *
105,000	
115,000	
130,000	
140,000	
165,000	
180,000	
195,000	
210,000	
210,000	
230,000	
245,000	
265,000	
285,000	
305,000	
325,000	
350,000	3.68 *
110,000	
120,000	
130,000	
140,000	
150,000	
0	
0	
0	

**RESOLUTION REQUESTING ISSUANCE OF BONDS AND  
DECLARING PROJECTED TAX INCREMENT REVENUES**

Dexter Downtown Development Authority  
County of Washtenaw, State of Michigan

Minutes of a regular meeting of the Board of the Dexter Downtown Development Authority, County of Washtenaw, State of Michigan, on the 11<sup>th</sup> day of October, 2007, at 7:30 o'clock p.m., prevailing Eastern Time.

PRESENT: Members Steve Brouwer, Gary Gochanour, Carol Jones, Fred Model, Dan O'Haver, Jim Seta

ABSENT: Members MIH Campbell, Steve Gergely, Dick Lundy, Fred Schmid + Gary Vander Haagen

The following preamble and resolution were offered by Member Steve Brouwer and supported by Member Gary Gochanour:

WHEREAS, the Board of the Dexter Downtown Development Authority (the "Authority") pursuant to Act 197, Public Acts of Michigan, 1975, as amended (the "Act"), and pursuant to the provisions of the Development Plan and Tax Increment Financing Plan, as amended (the "Plan"), of the Authority approved by the Village Council of the Village of Dexter (the "Village"), has determined that it is necessary and expedient to acquire and construct certain improvements in the Development Area described in the Plan (the "Project"); and

WHEREAS, in order to obtain the lowest financing cost for the Project, it is necessary that the Village issue its limited tax general obligation bonds pursuant to Section 16 of the Act;

WHEREAS, the Authority is required to provide to the Village Council a statement of the anticipated tax increment revenues for the period during which moneys must be set aside for the

repayment of the Village's Downtown Development Bonds (General Obligation Limited Tax) (the "Bonds") which the Village is requested to issue on behalf of the Authority to finance the Project; and

NOW, THEREFORE, BE IT RESOLVED AS FOLLOWS:

1. Authority's Request for Village to Issue Bonds. The Authority hereby requests the Village to issue the Bonds, in one or more series, in an aggregate amount not to exceed \$4,000,000, pursuant to Section 16 of the Act and the Authority hereby agrees to pay to the Village from tax increment revenues received by the Authority the amounts necessary to pay principal of and interest on the Bonds as they come due; provided, however, that to the extent the Village Council determines that it is in the best interest of the Village to redeem all or any portion of the Bonds prior to maturity the Authority may, but shall not be required to, prepay its obligations authorized herein. In the event the funds of the Authority are insufficient to pay the principal of and interest on any Bonds as they become due and the Village pays such sums from its own funds, the Authority agrees to reimburse the Village in whole for such payments from funds of the Authority as the same are received. The Authority further agrees to reimburse the Village in whole for any costs of the Project not financed from the proceeds of the Bonds, including, if necessary, the costs of issuance of the Bonds, and any publication costs or other costs incurred by the Village associated with the design and acquisition of the Project to the extent that there are available tax increment revenues. Title to the Project shall remain with the Village.

2. Acknowledgement of Projected Tax Increment Revenues. The Board hereby declares that the projected tax increment revenues anticipated to be available to the Authority for

the period beginning July 1, 2007 through June 30, 2037 are as shown on Exhibit A attached hereto and made a part hereof.

3. Establishment of Project Fund; Approval of Depository. The Treasurer of the Authority has heretofore established a separate fund (the "Project Fund") kept in a depository bank account or accounts in a bank or banks established or approved by the Treasurer of the Village. All moneys received by the Authority pursuant to the Plan are deposited in the Project Fund. All moneys in the Project Fund and earnings thereon shall be used only in accordance with the Plan.

4. Payment of Tax Increments to Authority. The Village Treasurer and the County Treasurer shall, as ad valorem taxes and specific taxes are collected on the property in the Development Area, pay that proportion of the taxes, except for penalties and collection fees, that the Captured Assessed Value (as defined in Act 197) bears to the Initial Assessed Value (as defined in Act 197) to the Treasurer of the Authority for deposit in the Project Fund, excluding therefrom such taxes as are excluded by Act 197 or the Plan. The payments shall be made on the date or dates on which the Village Treasurer and the County Treasurer are required to remit taxes to each of the taxing jurisdictions.

5. Use Moneys in the Project Fund. The moneys credited to the Project Fund and on hand therein from time to time shall be used annually in the following manner and following order of priority:

First, to pay to the Village for its payment of debt service on, or to pay into the debt retirement fund or funds for, all outstanding series of bonds issued pursuant to the Plan including without limitation the proposed Bonds, or any other series of bonds or other obligations pledging or committing the use of tax increment revenues of the Authority as a source of debt service payments, an amount equal to the interest and principal coming due (in the case of principal whether by maturity or mandatory redemption) prior to the next collection

of taxes from the same taxing jurisdiction, less any credit for sums on hand in the debt retirement fund.

Second, to establish a reserve account for payment of principal of and interest on bonds issued pursuant to the Plan to the extent required by any resolution authorizing bonds.

Third, to pay the administrative, auditing and operating costs of the Authority and the Village pertaining to the Plan, including planning and promotion to the extent provided in the annual budget of the Authority.

Fourth, to repay amounts advanced by the Village for Project costs, including costs for preliminary plans, and fees for other professional services.

Fifth, to pay, to the extent determined desirable by the Authority and approved by the Village, the cost of completing the remaining public improvements as set forth in the Plan, to the extent those costs are not financed from other sources.

Sixth, to pay the cost of any additional improvements to the Plan that are determined necessary by the Authority and approved by the Village in accordance with the Act.

6. Refund of Surplus Tax Increments. Any surplus money (as defined in Act 197) in the Project Fund at the end of a year, as shown by the annual report of the Authority, shall be paid by the Authority to the Village Treasurer or the County Treasurer, as shown by the annual report of the Authority, and rebated by each to the appropriate taxing jurisdiction; provided, however, that it is the intention of the Authority to the extent stated in the Plan to retain and accumulate unexpended tax increment revenues until the purposes of the Plan have been met or the Authority declares that it will not require such revenues.

7. Deliver Resolution to Village Clerk. The Secretary of the Authority is directed to deliver a certified copy of this resolution to the Village Clerk.

8. Repealer. All resolutions and parts of resolution in conflict with the provisions of this resolution are hereby repealed or amended to the extent of such conflict.

AYES: Steve Brouwer, Gary Cochanour, Carol Jones, Fred Model, Dan O'Haver and Jim Jeta

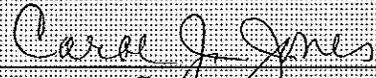
NAYS: \_\_\_\_\_

RESOLUTION DECLARED ADOPTED.

Carol Jones  
Secretary

MILLER, CANFIELD, PADDOCK AND STONE, P.L.C.

I hereby certify that the foregoing is a true and complete copy of a resolution adopted by the Board of the Dexter Downtown Development Authority, County of Washtenaw, State of Michigan, at a regular meeting held on October 11, 2007, and that said meeting was conducted and public notice of said meeting was given pursuant to and in full compliance with the Open Meetings Act, being Act 267, Public Acts of Michigan, 1976, and that the minutes of said meeting were kept and will be or have been made available as required by said Act.

  
Secretary

MILLER, CANFIELD, PADDOCK AND STONE, P.L.C.

DELIB:2888906.11022911-00022

PUBLIC HEARING  
Village of Dexter  
Downtown Development Authority

October 11, 2007  
7:30 p.m.  
Dexter Senior Center  
7720 Dexter Ann Arbor Road  
Dexter, Michigan

The Village of Dexter Downtown Development Authority (DDA) is considering action to request the Village Council to sell on their behalf up to \$4,000,000 in bonds to implement several public improvement projects. The bonds would be paid by the DDA from its tax increment revenues.

The following projects under consideration by the DDA are:

- Improvements to the Jeffords / Main Street intersection in conjunction with the new bridge construction project.
- Improvement to bridge approach between Jeffords Street and the new bridge, and between the new bridge and Dexter Chelsea Road.
- Reconstruction of Jeffords Street between Main Street and Forest Avenue.
- Mill Creek Pond improvements between Main Street and Grand Street to include bank clearance and stabilization, and recreation amenities.
- Reconstruction of Forest Street between Jeffords and Broad Streets.
- Improvement to the alley behind Main Street from Jeffords Street to Broad Street.
- Land acquisition, if required to complete approved projects.

The public is invited to attend the meeting.

Dan O'Haver  
Chairperson, Dexter DDA

Publish: October 4, 2007



RESOLUTION AUTHORIZING  
DOWNTOWN DEVELOPMENT BONDS, SERIES 2008A  
(LIMITED TAX GENERAL OBLIGATION) (TAXABLE)

Village of Dexter  
County of Washtenaw, State of Michigan

Minutes of a regular meeting of the Village of Dexter, County of Washtenaw, State of Michigan,  
on the 11<sup>th</sup> day of February 2008, at 7:30 p.m., Eastern Standard Time.

PRESENT: Members \_\_\_\_\_  
\_\_\_\_\_

ABSENT: Members \_\_\_\_\_

The following preamble and resolution were offered by Member \_\_\_\_\_ and  
supported by Member \_\_\_\_\_:

WHEREAS, pursuant to a resolution previously adopted (the "Resolution"), the Village Council  
approved a Development Plan and Tax Increment Financing Plan, as amended (the "Plan") for the  
Development Area ("Development Area") as proposed by the Dexter Downtown Development  
Authority (the "DDA") pursuant to Act 197, Public Acts of Michigan, 1975, as amended (the "Act");  
and

WHEREAS, the DDA has advised the Village that the DDA anticipates that it will have  
available the projected tax increment revenues set forth on Exhibit A hereto; and

WHEREAS, the DDA has requested the Village to issue its limited tax general obligation bonds  
in one or more series to finance the cost of public improvements in the Development Area consisting of  
the acquisition and construction of certain improvements as more fully described in the Plan (the  
"Project"); and

WHEREAS, this Village Council determines that it is necessary and appropriate at this time to  
issue a series of limited tax general obligation bonds pursuant to Section 16 of the Act to finance the  
costs of the Project;

WHEREAS, it is the determination of the Village Council that at this time limited tax general obligation bonds in the principal amount of not to exceed One Million Six Hundred Thousand Dollars (\$1,600,000) should be issued for the purpose of paying part of the project costs of the Project;

WHEREAS, the Village has determined that, because of the issue size and the complexities of the structure of the Bonds, it will be most economical and efficient to sell the Bonds pursuant to a negotiated sale as authorized by Act 34, Public Acts of Michigan 2001, as amended; and

AND WHEREAS, the Village desires to negotiate the sale of the Bonds with Fifth Third Securities, Inc. (the "Underwriter").

NOW, THEREFORE, BE IT RESOLVED THAT:

1. The DDA has estimated that the estimated tax increment revenues of the Development Area will be as shown on Exhibit A attached hereto and by this reference made a part hereof, which estimate is hereby approved and adopted by this Village Council.

2. The Village Council hereby finds that the accomplishment and completion of the Project is in the best interest of the health and welfare of the Village and is in furtherance of the purposes of the Act, and the Council expressly approves obtaining and using funds derived from the proceeds of the Bonds to finance the Project.

3. Bonds of the Village, designated DOWNTOWN DEVELOPMENT BONDS, SERIES 2008A (LIMITED TAX GENERAL OBLIGATION) (TAXABLE) (the "Bonds") are authorized to be issued in the aggregate principal sum of not to exceed One Million Six Hundred Thousand Dollars (\$1,600,000) for the purpose of paying part of the costs of the Project, including the costs incidental to the issuance, sale and delivery of the Bonds. The Bonds shall be issued in fully-registered form of the denomination of \$5,000, or multiples thereof not exceeding for each maturity the maximum principal amount of that maturity, numbered in order of registration, dated as of the date of delivery, or such other date as determined by the Village Manager at the time of sale, numbered as determined by the Transfer

MILLER, CANFIELD, PADDOCK AND STONE, P.L.C.

Agent (as hereinafter defined) and maturing on May 1<sup>st</sup> in the years 2009 to 2033, inclusive, or such other dates and/or years as shall be determined at the time of sale and in the amounts as determined by the Village Manager. The Bonds shall bear interest at a rate or rates to be determined at the time of sale thereof, but in any event not exceeding 8% per annum, payable on November 1, 2008, and semi-annually thereafter on May 1<sup>st</sup> and November 1<sup>st</sup> of each year, or such other first and subsequent interest payment dates as determined by the Village Manager. The principal amount of the Bonds may be reduced by the Village Manager at the time of sale.

The Bonds shall be subject to redemption prior to maturity in the manner and at the times and prices set forth in the Bond Purchase Agreement (as defined herein) to be entered into with the Underwriter.

Interest on the Bonds shall be payable to the registered owner of record as of the 15th day of the month preceding each interest payment date. The record date of determination of registered owner for purposes of payment of interest as provided in this paragraph may be changed by the Village to conform to market practice in the future. Interest shall be payable by check or draft drawn on the Transfer Agent (as hereinafter defined) mailed to the registered owner at the registered address, as shown on the registration books of the Village maintained by the Transfer Agent. The principal of the Bonds shall be payable upon presentation and surrender to the Transfer Agent.

A bank or trust company located in Michigan and qualified to act as bond registrar, paying agent and transfer agent shall be appointed to serve as bond registrar, paying agent and transfer agent (the "Transfer Agent") for the issue. The Village Manager is hereby authorized to select and appoint the Transfer Agent. The Village Manager is hereby authorized to execute one or more agreements with the Transfer Agent on behalf of the Village. The Village reserves the right to replace the Transfer Agent at any time upon written notice to the registered owners of record of the Bonds not less than sixty (60) days prior to an interest payment date.

The Bonds may be issued in book-entry-only form through The Depository Trust Company in New York, New York ("DTC"). So long as the Bonds are in the book-entry-only form, the Transfer Agent shall comply with the terms of the Letter of Representations to be entered into among the Village, the Transfer Agent and DTC, which provisions shall govern registration, notices and payment, among other things, and which provisions are incorporated herein with the same effect as if fully set forth herein. The Village Manager is hereby authorized and directed to enter into the Letter of Representations with DTC in such form as determined by the Village Manager, in consultation with bond counsel, to be necessary and appropriate. The Transfer Agent is hereby authorized and directed to also enter into the Letter of Representations with DTC as agent for the Village. In the event the Village determines that the continuation of the system of book-entry-only transfer through DTC (or successor securities depository) is not in the best interest of the DTC participants, beneficial owners of the Bonds, or the Village, the Village will notify the Transfer Agent, whereupon the Transfer Agent will notify DTC of the availability through DTC of the bond certificates. In such event, the Village shall issue and the Transfer Agent as transfer agent shall transfer and exchange bonds as requested by DTC of like principal amount, series and maturity, in authorized denominations to the identifiable beneficial owners in replacement of the beneficial interest of such beneficial owners in the Bonds.

6. The Bonds shall be executed in the name of the Village with the manual or facsimile signatures of the Village President and the Village Clerk and shall have the seal of the Village, or a facsimile thereof, printed or impressed on the Bonds. No Bond shall be valid until authenticated by an authorized officer or representative of the Transfer Agent. The Bonds shall be delivered to the Transfer Agent for authentication and be delivered by the Transfer Agent to the purchaser or other person in accordance with instructions from the Village Manager upon payment of the purchase price for the Bonds in accordance with the bid therefor when accepted.

7. The Transfer Agent shall keep the books of registration for this issue on behalf of the Village. Any Bond may be transferred upon such registration books by the registered owner of record, in person or by the registered owner's duly authorized attorney, upon surrender of the Bond for cancellation, accompanied by delivery of a duly executed written instrument of transfer in a form approved by the Transfer Agent. Whenever any Bond or Bonds shall be surrendered for transfer, the Village shall execute and the Transfer Agent shall authenticate and deliver a new Bond or Bonds, for like aggregate principal amount. The Transfer Agent shall require the payment by the bondholder requesting the transfer of any tax or other governmental charge required to be paid with respect to the transfer.

8. The Bonds shall be issued in anticipation of and payable in the first instance from payments required to be made by the DDA from tax increment revenues (the "Tax Increment Revenue Payments") pursuant to the Plan and a resolution adopted by the DDA (the "DDA Resolution"), which Tax Increment Revenue Payments are anticipated to be in amounts sufficient to pay principal of and interest on the Bonds. In addition, the Village hereby pledges its full faith and credit for the prompt payment of the Bonds. Should the Tax Increment Revenue Payments together with the Village contribution at any time be insufficient to pay principal of and interest on the Bonds as the same become due, then the Village shall advance as a first budget obligation from any funds available therefor, or, if necessary, levy taxes upon all taxable property in the Village subject to applicable constitutional and statutory tax limitations, such sums as may be necessary to pay said principal and interest. The Village shall be reimbursed for any such advance by the DDA from tax increment revenues of the DDA as provided in the DDA Resolution. The Bonds shall be of equal standing and priority of lien as to the Tax Increment Revenue Payments.

The Village Treasurer is authorized and directed to open a separate depository accounts to be known as DOWNTOWN DEVELOPMENT BONDS, SERIES 2008A DEBT RETIREMENT FUND

(the "Debt Retirement Fund"), the moneys to be deposited into the Debt Retirement Fund to be specifically earmarked and used solely for the purpose of paying principal of and interest on the Bonds as they came due. Into the Debt Retirement Fund there shall be placed the accrued interest and premium, if any, received at the time of delivery of the Bonds. In addition, there shall be paid into the Debt Retirement Fund the Tax Increment Revenue Payments as received from the DDA each year until the amount on hand in the Debt Retirement Fund, together with other deposits to the Debt Retirement Fund and any amounts on hand in the Debt Retirement Fund available for payment of current principal of and interest on the Bonds, is equal to all payments of principal and interest coming due on the Bonds prior to the next collection of taxes.

9. The Village Treasurer is authorized and directed to open a separate depository account for the Bonds to be known as the DOWNTOWN DEVELOPMENT BONDS, SERIES 2008A CONSTRUCTION FUND (the "Construction Fund"). The Village Treasurer shall deposit the accrued interest and premium, if any, received upon sale of the Bonds in the Debt Retirement Fund and shall deposit the balance of the proceeds of the Bonds in the Construction Fund. Money in the Construction Fund shall be used by the Village solely for payment of costs of the Project or for payment or redemption of the Bonds.

10. In the event cash or trust obligations of the United States or obligations the principal of and interest on which are guaranteed by the United States, or a combination thereof, the principal of and interest on which without reinvestment come due at times and in amounts sufficient to pay at maturity or irrevocable call for earlier optional redemption, the principal of, premium, if any, and interest on the Bonds, shall be deposited in trust, this resolution shall be defeased and the owners of the Bonds shall have no further rights under this resolution except to receive payment of the principal of, premium, if any, and interest on the Bonds from the cash or securities deposited in trust and the interest and gains thereon and to transfer and exchange Bonds as provided in this resolution.

11. The Bonds shall be in substantially the following form:

UNITED STATES OF AMERICA  
STATE OF MICHIGAN  
COUNTY OF WASHTENAW

VILLAGE OF DEXTER  
DOWNTOWN DEVELOPMENT BOND, SERIES 2008A  
(LIMITED TAX GENERAL OBLIGATION) (TAXABLE)

<u>Interest Rate</u>	<u>Maturity Date</u>	<u>Date of Original Issue</u> _____, 2008	<u>CUSIP</u>
----------------------	----------------------	--	--------------

Registered Owner:

Principal Amount: \_\_\_\_\_ Dollars

The VILLAGE OF DEXTER, County of Washtenaw, State of Michigan (the "Village"), for value received, acknowledges itself to owe and for value received hereby promises to pay to the Registered Owner specified above, or registered assigns, the Principal Amount specified above, in lawful money of the United States of America, on the Maturity Date specified above, with interest thereon (computed on the basis of a 360-day year consisting of twelve 30-day months) from the Date of Original Issue specified above or such later date to which interest has been paid, until paid, at the Interest Rate per annum specified above, first payable on November 1, 2008 and semiannually thereafter. Principal of this bond is payable upon presentation and surrender of this bond at the corporate trust office of \_\_\_\_\_, \_\_\_\_\_, Michigan, or such other transfer agent as the Village may hereafter designate by notice mailed to the registered owner not less than sixty (60) days prior to an interest payment date (the "Transfer Agent"). Interest on this bond is payable to the person or entity which is registered owner of record as of the 15th day of the month preceding the interest payment date as shown on the registration books of the Village kept by the Transfer Agent, by check or draft mailed by the Transfer Agent to the registered owner of record at the registered address. Principal of and interest on this bond are payable in the first instance from tax increment revenue payments received by the Village from the Dexter Downtown Development Authority (the "Authority"). In addition, for prompt payment of this bond, both principal and interest, the full faith, credit and resources of the Village are hereby irrevocably pledged. In case of insufficiency of the tax increment revenue payments for the payment of the principal of and interest on this bond, the Village is obligated to pay the same as a first budget obligation from its general funds or from any taxes which it may levy within applicable constitutional, statutory and charter tax rate limitations.

This bond is one of a series of bonds of even Date of Original Issue aggregating the principal sum of \$ \_\_\_\_\_, issued pursuant to Act 197, Public Acts of Michigan, 1975, as amended ("Act 197"), and a resolution duly adopted by the Village Council of the Village for the purpose of paying part of the costs of public improvements in the Downtown Development Area in the Village as described in the Development Plan and Tax Increment Financing Plan, as amended, of the Authority. The Bonds are

MILLER, CANFIELD, PADDOCK AND STONE, P.L.L.C.

of equal standing and priority of lien as to the tax increment revenues. The Village reserves the right to issue additional bonds pledging and payable from tax increment revenues received from the Authority to the extent permitted by law.

Bonds of this issue maturing in the years 20\_\_ to 20\_\_, inclusive, shall not be subject to redemption prior to maturity. Bonds or portions of bonds of this issue in multiples of \$5,000 maturing in the year 20\_\_ and thereafter, shall be subject to redemption prior to maturity, at the option of the Village, in any order of maturity and by lot within any maturity, on any date on or after May 1, 20\_\_, at par and accrued interest to the date fixed for redemption.

Notice of redemption shall be given to the registered owner of any bond or portion thereof called for redemption by mailing of such notice not less than thirty (30) days prior to the date fixed for redemption to the registered address of the registered owner of record. A bond or portion thereof so called for redemption shall not bear interest after the date fixed for redemption provided funds are on hand with the Transfer Agent to redeem said bond or portion thereof.

In case less than the full amount of an outstanding bond is called for redemption, the Transfer Agent, upon presentation of the bond called in part for redemption, shall register, authenticate and deliver to the registered owner of record a new bond in the principal amount of the portion of the original bond not called for redemption.

This bond is transferable only upon the registration books of the Village kept by the Transfer Agent by the registered owner of record in person, or by the registered owner's attorney duly authorized in writing, upon the surrender of this bond together with a written instrument of transfer satisfactory to the Transfer Agent duly executed by the registered owner or the registered owner's attorney duly authorized in writing, and thereupon a new registered bond or bonds in the same aggregate principal amount and of the same maturity shall be issued to the transferee in exchange therefor as provided in the resolution authorizing this bond, and upon the payment of the charges, if any, therein prescribed.

It is hereby certified and recited that all acts, conditions and things required by law to be done, precedent to and in the issuance of this bond and the series of bonds of which this is one, exist and have been done and performed in regular and due form and time as required by law, and that the total indebtedness of the Village, including this bond and the series of bonds of which this is one, does not exceed any constitutional, statutory or charter debt limitation.

This bond is not valid or obligatory for any purpose until the Transfer Agent's Certificate of Authentication on this bond has been executed by the Transfer Agent.

IN WITNESS WHEREOF, the Village of Dexter, County of Washtenaw, State of Michigan, by its Village Council, has caused this bond to be signed in the name of the Village by the facsimile signatures of its Village President and Village Clerk and a facsimile of its corporate seal to be printed hereon, all as of the Date of Original Issue.

VILLAGE OF DEXTER  
County of Washtenaw  
State of Michigan

By \_\_\_\_\_  
Its Village President

(SEAL)  
Countersigned

\_\_\_\_\_  
Village Clerk

MILLER, CANFIELD, PADDOCK AND STONE, P.L.C.

(Form of Transfer Agent's Certificate of Authentication)

DATE OF REGISTRATION:

CERTIFICATE OF AUTHENTICATION

This bond is one of the bonds described in the within-mentioned resolution.

\_\_\_\_\_, Michigan,  
Transfer Agent

By \_\_\_\_\_  
Authorized \_\_\_\_\_

[Bond printer to insert form of assignment]

12. The Village has considered the option of selling the Bonds through a competitive sale and has determined to negotiate the sale of the Bonds with the Underwriter due to the issue size and the complexities of the bond structure, including the early redemption of the Bonds.

13. The estimated period of usefulness of the proposed Project is hereby declared to be not less than twenty-five (25) years and its total cost is estimated to be not less than One Million Six Hundred Thousand Dollars (\$1,600,000).

14. The Village Manager is authorized to negotiate the terms of and execute a bond purchase agreement (the "Bond Purchase Agreement") for the sale of the Bonds with the Underwriter on behalf of the Village on the terms set forth in this Resolution. The Village Manager is further authorized to exercise the authority and make any determinations with respect to the Bonds, including interest rates, prices, discounts, maturities, principal amounts, denominations, dates of issuance, interest payment dates, redemption rights and other matters for the Bonds within the parameters established by this Resolution.

15. The Village agrees to enter into a continuing disclosure undertaking for the benefit of the holders and beneficial owners of the Bonds in accordance with the requirements of Rule 15c2-12 promulgated by the Securities and Exchange Council, and the Village Manager and Treasurer are each hereby authorized to execute such undertaking prior to delivery of the Bonds.

16. The Village President, Manager, Village Clerk, Treasurer and other officers, agents and employees of the Village each is authorized and directed to cause the preparation and circulation of a preliminary and final Official Statement with respect to the Bonds; to procure a policy of municipal bond insurance with respect to the Bonds or cause the qualification of the Bonds therefor if, upon the advice of the financial advisor to the Village, the acquisition of such insurance would be of economic benefit to the Village; to obtain ratings on the Bonds; and to take all other actions necessary or advisable, and to make such other filings, applications or request for waivers with the Michigan

Department of Treasury or with other parties, to enable the sale and delivery of the Bonds as contemplated herein.

17. All resolutions and parts of resolutions insofar as they conflict with the provisions of this resolution be and the same hereby are rescinded.

AYES: Members \_\_\_\_\_

NAYS: Members \_\_\_\_\_

RESOLUTION DECLARED ADOPTED.

\_\_\_\_\_  
Village Clerk

MILLER, CANFIELD, PADDOCK AND STONE, P.L.C.

I hereby certify that the foregoing is a true and complete copy of a resolution adopted by the Village Council of the Village of Dexter, County of Washtenaw, State of Michigan, at a regular meeting held on February 11, 2008, and that said meeting was conducted and public notice of said meeting was given pursuant to and in full compliance with the Open Meetings Act, being Act 267, Public Acts of Michigan, 1976, and that the minutes of said meeting were kept and will be or have been made available as required by said Act.

---

Village Clerk

EXHIBIT A

ESTIMATED TAX INCREMENT REVENUES

Fiscal Year	Estimated Revenues
07-08	\$ 479,159
08-09	\$ 492,879
09-10	\$ 497,368
10-11	\$ 461,915
11-12	\$ 467,942
12-13	\$ 474,030
13-14	\$ 480,178
14-15	\$ 486,388
15-16	\$ 492,660
16-17	\$ 485,794
17-18	\$ 492,192
18-19	\$ 498,654
19-20	\$ 505,181
20-21	\$ 511,773
21-22	\$ 518,431
22-23	\$ 525,155
23-24	\$ 531,947
24-25	\$ 538,806
25-26	\$ 545,734
26-27	\$ 552,731
27-28	\$ 559,799
28-29	\$ 566,937
29-30	\$ 574,146
30-31	\$ 581,428
31-32	\$ 588,782
32-33	\$ 596,210
33-34	\$ 603,712
34-35	\$ 611,289
35-36	\$ 618,942
36-37	\$ 626,672

MILLER, CANFIELD, PADDOCK AND STONE, P.L.C.

DELIB:2934557.2\022911-00022



RESOLUTION AUTHORIZING  
DOWNTOWN DEVELOPMENT BONDS, SERIES 2008B  
(LIMITED TAX GENERAL OBLIGATION)

Village of Dexter  
County of Washtenaw, State of Michigan

Minutes of a regular meeting of the Village of Dexter, County of Washtenaw, State of Michigan,  
on the 11<sup>th</sup> day of February 2008, at 7:30 p.m., Eastern Standard Time.

PRESENT: Members \_\_\_\_\_  
\_\_\_\_\_

ABSENT: Members \_\_\_\_\_

The following preamble and resolution were offered by Member \_\_\_\_\_ and  
supported by Member \_\_\_\_\_:

WHEREAS, pursuant to a resolution previously adopted (the "Resolution"), the Village Council  
approved a Development Plan and Tax Increment Financing Plan, as amended (the "Plan") for the  
Development Area ("Development Area") as proposed by the Dexter Downtown Development  
Authority (the "DDA") pursuant to Act 197, Public Acts of Michigan, 1975, as amended (the "Act");  
and

WHEREAS, the DDA has advised the Village that the DDA anticipates that it will have  
available the projected tax increment revenues set forth on Exhibit A hereto; and

WHEREAS, the DDA has requested the Village to issue its limited tax general obligation bonds  
in one or more series to finance the cost of public improvements in the Development Area consisting of  
the acquisition and construction of certain improvements as more fully described in the Plan (the  
"Project"); and

WHEREAS, this Village Council determines that it is necessary and appropriate at this time to  
issue a series of limited tax general obligation bonds pursuant to Section 16 of the Act to finance the  
costs of the Project;

MILLER, CANFIELD, PADDOCK AND STONE, P.L.C.

WHEREAS, it is the determination of the Village Council that at this time limited tax general obligation bonds in the principal amount of not to exceed Two Million Dollars (\$2,000,000) should be issued for the purpose of paying part of the project costs of the Project;

WHEREAS, the Village has determined that, because of the issue size and the complexities of the structure of the Bonds, it will be most economical and efficient to sell the Bonds pursuant to a negotiated sale as authorized by Act 34, Public Acts of Michigan 2001, as amended; and

AND WHEREAS, the Village desires to negotiate the sale of the Bonds with Fifth Third Securities, Inc. (the "Underwriter").

NOW, THEREFORE, BE IT RESOLVED THAT:

1. The DDA has estimated that the estimated tax increment revenues of the Development Area will be as shown on Exhibit A attached hereto and by this reference made a part hereof, which estimate is hereby approved and adopted by this Village Council.

2. The Village Council hereby finds that the accomplishment and completion of the Project is in the best interest of the health and welfare of the Village and is in furtherance of the purposes of the Act, and the Council expressly approves obtaining and using funds derived from the proceeds of the Bonds to finance the Project.

3. Bonds of the Village, designated DOWNTOWN DEVELOPMENT BONDS, SERIES 2008B (LIMITED TAX GENERAL OBLIGATION) (the "Bonds") are authorized to be issued in the aggregate principal sum of not to exceed Two Million Dollars (\$2,000,000) for the purpose of paying part of the costs of the Project, including the costs incidental to the issuance, sale and delivery of the Bonds. The Bonds shall be issued in fully-registered form of the denomination of \$5,000, or multiples thereof not exceeding for each maturity the maximum principal amount of that maturity, numbered in order of registration, dated as of the date of delivery, or such other date as determined by the Village Manager at the time of sale, numbered as determined by the Transfer Agent (as hereinafter defined) and

maturing on May 1<sup>st</sup> in the years 2009 to 2028, inclusive, or such other dates and/or years as shall be determined at the time of sale and in the amounts as determined by the Village Manager. The Bonds shall bear interest at a rate or rates to be determined at the time of sale thereof, but in any event not exceeding 8% per annum, payable on November 1, 2008, and semi-annually thereafter on May 1<sup>st</sup> and November 1<sup>st</sup> of each year, or such other first and subsequent interest payment dates as determined by the Village Manager. The principal amount of the Bonds may be reduced by the Village Manager at the time of sale.

The Bonds shall be subject to redemption prior to maturity in the manner and at the times and prices set forth in the Bond Purchase Agreement (as defined herein) to be entered into with the Underwriter.

Interest on the Bonds shall be payable to the registered owner of record as of the 15th day of the month preceding each interest payment date. The record date of determination of registered owner for purposes of payment of interest as provided in this paragraph may be changed by the Village to conform to market practice in the future. Interest shall be payable by check or draft drawn on the Transfer Agent (as hereinafter defined) mailed to the registered owner at the registered address, as shown on the registration books of the Village maintained by the Transfer Agent. The principal of the Bonds shall be payable upon presentation and surrender to the Transfer Agent.

A bank or trust company located in Michigan and qualified to act as bond registrar, paying agent and transfer agent shall be appointed to serve as bond registrar, paying agent and transfer agent (the "Transfer Agent") for the issue. The Village Manager is hereby authorized to select and appoint the Transfer Agent. The Village Manager is hereby authorized to execute one or more agreements with the Transfer Agent on behalf of the Village. The Village reserves the right to replace the Transfer Agent at any time upon written notice to the registered owners of record of the Bonds not less than sixty (60) days prior to an interest payment date.

The Bonds may be issued in book-entry-only form through The Depository Trust Company in New York, New York ("DTC"). So long as the Bonds are in the book-entry-only form, the Transfer Agent shall comply with the terms of the Letter of Representations to be entered into among the Village, the Transfer Agent and DTC, which provisions shall govern registration, notices and payment, among other things, and which provisions are incorporated herein with the same effect as if fully set forth herein. The Village Manager is hereby authorized and directed to enter into the Letter of Representations with DTC in such form as determined by the Village Manager, in consultation with bond counsel, to be necessary and appropriate. The Transfer Agent is hereby authorized and directed to also enter into the Letter of Representations with DTC as agent for the Village. In the event the Village determines that the continuation of the system of book-entry-only transfer through DTC (or successor securities depository) is not in the best interest of the DTC participants, beneficial owners of the Bonds, or the Village, the Village will notify the Transfer Agent, whereupon the Transfer Agent will notify DTC of the availability through DTC of the bond certificates. In such event, the Village shall issue and the Transfer Agent as transfer agent shall transfer and exchange bonds as requested by DTC of like principal amount, series and maturity, in authorized denominations to the identifiable beneficial owners in replacement of the beneficial interest of such beneficial owners in the Bonds.

6. The Bonds shall be executed in the name of the Village with the manual or facsimile signatures of the Village President and the Village Clerk and shall have the seal of the Village, or a facsimile thereof, printed or impressed on the Bonds. No Bond shall be valid until authenticated by an authorized officer or representative of the Transfer Agent. The Bonds shall be delivered to the Transfer Agent for authentication and be delivered by the Transfer Agent to the purchaser or other person in accordance with instructions from the Village Manager upon payment of the purchase price for the Bonds in accordance with the bid therefor when accepted.

7. The Transfer Agent shall keep the books of registration for this issue on behalf of the Village. Any Bond may be transferred upon such registration books by the registered owner of record, in person or by the registered owner's duly authorized attorney, upon surrender of the Bond for cancellation, accompanied by delivery of a duly executed written instrument of transfer in a form approved by the Transfer Agent. Whenever any Bond or Bonds shall be surrendered for transfer, the Village shall execute and the Transfer Agent shall authenticate and deliver a new Bond or Bonds, for like aggregate principal amount. The Transfer Agent shall require the payment by the bondholder requesting the transfer of any tax or other governmental charge required to be paid with respect to the transfer.

8. The Bonds shall be issued in anticipation of and payable in the first instance from payments required to be made by the DDA from tax increment revenues (the "Tax Increment Revenue Payments") pursuant to the Plan and a resolution adopted by the DDA (the "DDA Resolution"), which Tax Increment Revenue Payments are anticipated to be in amounts sufficient to pay principal of and interest on the Bonds. In addition, the Village hereby pledges its full faith and credit for the prompt payment of the Bonds. Should the Tax Increment Revenue Payments together with the Village contribution at any time be insufficient to pay principal of and interest on the Bonds as the same become due, then the Village shall advance as a first budget obligation from any funds available therefor, or, if necessary, levy taxes upon all taxable property in the Village subject to applicable constitutional and statutory tax limitations, such sums as may be necessary to pay said principal and interest. The Village shall be reimbursed for any such advance by the DDA from tax increment revenues of the DDA as provided in the DDA Resolution. The Bonds shall be of equal standing and priority of lien as to the Tax Increment Revenue Payments.

The Village Treasurer is authorized and directed to open a separate depository accounts to be known as DOWNTOWN DEVELOPMENT BONDS, SERIES 2008B DEBT RETIREMENT FUND

(the "Debt Retirement Fund"), the moneys to be deposited into the Debt Retirement Fund to be specifically earmarked and used solely for the purpose of paying principal of and interest on the Bonds as they came due. Into the Debt Retirement Fund there shall be placed the accrued interest and premium, if any, received at the time of delivery of the Bonds. In addition, there shall be paid into the Debt Retirement Fund the Tax Increment Revenue Payments as received from the DDA each year until the amount on hand in the Debt Retirement Fund, together with other deposits to the Debt Retirement Fund and any amounts on hand in the Debt Retirement Fund available for payment of current principal of and interest on the Bonds, is equal to all payments of principal and interest coming due on the Bonds prior to the next collection of taxes.

9. The Village Treasurer is authorized and directed to open a separate depository account for the Bonds to be known as the DOWNTOWN DEVELOPMENT BONDS, SERIES 2008B CONSTRUCTION FUND (the "Construction Fund"). The Village Treasurer shall deposit the accrued interest and premium, if any, received upon sale of the Bonds in the Debt Retirement Fund and shall deposit the balance of the proceeds of the Bonds in the Construction Fund. Money in the Construction Fund shall be used by the Village solely for payment of costs of the Project or for payment or redemption of the Bonds.

10. In the event cash or trust obligations of the United States or obligations the principal of and interest on which are guaranteed by the United States, or a combination thereof, the principal of and interest on which without reinvestment come due at times and in amounts sufficient to pay at maturity or irrevocable call for earlier optional redemption, the principal of, premium, if any, and interest on the Bonds, shall be deposited in trust, this resolution shall be defeased and the owners of the Bonds shall have no further rights under this resolution except to receive payment of the principal of, premium, if any, and interest on the Bonds from the cash or securities deposited in trust and the interest and gains thereon and to transfer and exchange Bonds as provided in this resolution.

11. The Bonds shall be in substantially the following form:

UNITED STATES OF AMERICA  
STATE OF MICHIGAN  
COUNTY OF WASHTENAW

VILLAGE OF DEXTER  
DOWNTOWN DEVELOPMENT BOND, SERIES 2008B  
(LIMITED TAX GENERAL OBLIGATION)

<u>Interest Rate</u>	<u>Maturity Date</u>	<u>Date of Original Issue</u> _____, 2008	<u>CUSIP</u>
----------------------	----------------------	--	--------------

Registered Owner:

Principal Amount: \_\_\_\_\_ Dollars

The VILLAGE OF DEXTER, County of Washtenaw, State of Michigan (the "Village"), for value received, acknowledges itself to owe and for value received hereby promises to pay to the Registered Owner specified above, or registered assigns, the Principal Amount specified above, in lawful money of the United States of America, on the Maturity Date specified above, with interest thereon (computed on the basis of a 360-day year consisting of twelve 30-day months) from the Date of Original Issue specified above or such later date to which interest has been paid, until paid, at the Interest Rate per annum specified above, first payable on November 1, 2008 and semiannually thereafter. Principal of this bond is payable upon presentation and surrender of this bond at the corporate trust office of \_\_\_\_\_, \_\_\_\_\_, Michigan, or such other transfer agent as the Village may hereafter designate by notice mailed to the registered owner not less than sixty (60) days prior to an interest payment date (the "Transfer Agent"). Interest on this bond is payable to the person or entity which is registered owner of record as of the 15th day of the month preceding the interest payment date as shown on the registration books of the Village kept by the Transfer Agent, by check or draft mailed by the Transfer Agent to the registered owner of record at the registered address. Principal of and interest on this bond are payable in the first instance from tax increment revenue payments received by the Village from the Dexter Downtown Development Authority (the "Authority"). In addition, for prompt payment of this bond, both principal and interest, the full faith, credit and resources of the Village are hereby irrevocably pledged. In case of insufficiency of the tax increment revenue payments for the payment of the principal of and interest on this bond, the Village is obligated to pay the same as a first budget obligation from its general funds or from any taxes which it may levy within applicable constitutional, statutory and charter tax rate limitations.

This bond is one of a series of bonds of even Date of Original Issue aggregating the principal sum of \$ \_\_\_\_\_, issued pursuant to Act 197, Public Acts of Michigan, 1975, as amended ("Act 197"), and a resolution duly adopted by the Village Council of the Village for the purpose of paying part of the costs of public improvements in the Downtown Development Area in the Village as described in the Development Plan and Tax Increment Financing Plan, as amended, of the Authority. The Bonds are

MILLER, CANFIELD, PADDOCK AND STONE, P.L.C.

of equal standing and priority of lien as to the tax increment revenues. The Village reserves the right to issue additional bonds pledging and payable from tax increment revenues received from the Authority to the extent permitted by law.

Bonds of this issue maturing in the years 20\_\_ to 20\_\_, inclusive, shall not be subject to redemption prior to maturity. Bonds or portions of bonds of this issue in multiples of \$5,000 maturing in the year 20\_\_ and thereafter, shall be subject to redemption prior to maturity, at the option of the Village, in any order of maturity and by lot within any maturity, on any date on or after May 1, 20\_\_, at par and accrued interest to the date fixed for redemption.

Notice of redemption shall be given to the registered owner of any bond or portion thereof called for redemption by mailing of such notice not less than thirty (30) days prior to the date fixed for redemption to the registered address of the registered owner of record. A bond or portion thereof so called for redemption shall not bear interest after the date fixed for redemption provided funds are on hand with the Transfer Agent to redeem said bond or portion thereof.

In case less than the full amount of an outstanding bond is called for redemption, the Transfer Agent, upon presentation of the bond called in part for redemption, shall register, authenticate and deliver to the registered owner of record a new bond in the principal amount of the portion of the original bond not called for redemption.

This bond is transferable only upon the registration books of the Village kept by the Transfer Agent by the registered owner of record in person, or by the registered owner's attorney duly authorized in writing, upon the surrender of this bond together with a written instrument of transfer satisfactory to the Transfer Agent duly executed by the registered owner or the registered owner's attorney duly authorized in writing, and thereupon a new registered bond or bonds in the same aggregate principal amount and of the same maturity shall be issued to the transferee in exchange therefor as provided in the resolution authorizing this bond, and upon the payment of the charges, if any, therein prescribed.

It is hereby certified and recited that all acts, conditions and things required by law to be done, precedent to and in the issuance of this bond and the series of bonds of which this is one, exist and have been done and performed in regular and due form and time as required by law, and that the total indebtedness of the Village, including this bond and the series of bonds of which this is one, does not exceed any constitutional, statutory or charter debt limitation.

This bond is not valid or obligatory for any purpose until the Transfer Agent's Certificate of Authentication on this bond has been executed by the Transfer Agent.

IN WITNESS WHEREOF, the Village of Dexter, County of Washtenaw, State of Michigan, by its Village Council, has caused this bond to be signed in the name of the Village by the facsimile signatures of its Village President and Village Clerk and a facsimile of its corporate seal to be printed hereon, all as of the Date of Original Issue.

VILLAGE OF DEXTER  
County of Washtenaw  
State of Michigan

By \_\_\_\_\_  
Its Village President

(SEAL)  
Countersigned

\_\_\_\_\_  
Village Clerk

MILLER, CANFIELD, PADDOCK AND STONE, P.L.C.

(Form of Transfer Agent's Certificate of Authentication)

DATE OF REGISTRATION:

CERTIFICATE OF AUTHENTICATION

This bond is one of the bonds described in the within-mentioned resolution.

\_\_\_\_\_, Michigan,  
Transfer Agent

By \_\_\_\_\_  
Authorized \_\_\_\_\_

[Bond printer to insert form of assignment]

12. The Village has considered the option of selling the Bonds through a competitive sale and has determined to negotiate the sale of the Bonds with the Underwriter due to the issue size and the complexities of the bond structure.

13. The estimated period of usefulness of the proposed Project is hereby declared to be not less than twenty (20) years and its total cost is estimated to be not less than Two Million Dollars (\$2,000,000).

14. The Village Manager is authorized to negotiate the terms of and execute a bond purchase agreement (the "Bond Purchase Agreement") for the sale of the Bonds with the Underwriter on behalf of the Village on the terms set forth in this Resolution. The Village Manager is further authorized to exercise the authority and make any determinations with respect to the Bonds, including interest rates, prices, discounts, maturities, principal amounts, denominations, dates of issuance, interest payment dates, redemption rights and other matters for the Bonds within the parameters established by this Resolution.

15. The Village agrees to enter into a continuing disclosure undertaking for the benefit of the holders and beneficial owners of the Bonds in accordance with the requirements of Rule 15c2-12 promulgated by the Securities and Exchange Council, and the Village Manager and Treasurer are each hereby authorized to execute such undertaking prior to delivery of the Bonds.

16. The Village President, Manager, Village Clerk, Treasurer and other officers, agents and employees of the Village each is authorized and directed to cause the preparation and circulation of a preliminary and final Official Statement with respect to the Bonds; to procure a policy of municipal bond insurance with respect to the Bonds or cause the qualification of the Bonds therefor if, upon the advice of the financial advisor to the Village, the acquisition of such insurance would be of economic benefit to the Village; to obtain ratings on the Bonds; and to take all other actions necessary or advisable, and to make such other filings, applications or request for waivers with the Michigan

Department of Treasury or with other parties, to enable the sale and delivery of the Bonds as contemplated herein.

17. The Village shall, to the extent permitted by law, take all actions within its control necessary to maintain the exclusion of the interest on the Bonds from gross income for federal income tax purposes under the Internal Revenue Code of 1986, as amended (the "Code"), including, but not limited to, actions relating to any required rebate of arbitrage earnings and the expenditure and investment of Bond proceeds and moneys deemed to be Bond proceeds. The Village hereby designates the Bonds as "qualified tax exempt obligations" for purposes of deduction of interest expense by financial institutions pursuant to the Code.

18. All resolutions and parts of resolutions insofar as they conflict with the provisions of this resolution be and the same hereby are rescinded.

AYES: Members \_\_\_\_\_  
\_\_\_\_\_

NAYS: Members \_\_\_\_\_  
\_\_\_\_\_

RESOLUTION DECLARED ADOPTED.

\_\_\_\_\_  
Village Clerk

MILLER, CANFIELD, PADDOCK AND STONE, P.L.C.

I hereby certify that the foregoing is a true and complete copy of a resolution adopted by the Village Council of the Village of Dexter, County of Washtenaw, State of Michigan, at a regular meeting held on February 11, 2008, and that said meeting was conducted and public notice of said meeting was given pursuant to and in full compliance with the Open Meetings Act, being Act 267, Public Acts of Michigan, 1976, and that the minutes of said meeting were kept and will be or have been made available as required by said Act.

---

Village Clerk

EXHIBIT A

ESTIMATED TAX INCREMENT REVENUES

Fiscal Year	Estimated Revenues
07-08	\$ 479,159
08-09	\$ 492,879
09-10	\$ 497,368
10-11	\$ 461,915
11-12	\$ 467,942
12-13	\$ 474,030
13-14	\$ 480,178
14-15	\$ 486,388
15-16	\$ 492,660
16-17	\$ 485,794
17-18	\$ 492,192
18-19	\$ 498,654
19-20	\$ 505,181
20-21	\$ 511,773
21-22	\$ 518,431
22-23	\$ 525,155
23-24	\$ 531,947
24-25	\$ 538,806
25-26	\$ 545,734
26-27	\$ 552,731
27-28	\$ 559,799
28-29	\$ 566,937
29-30	\$ 574,146
30-31	\$ 581,428
31-32	\$ 588,782
32-33	\$ 596,210
33-34	\$ 603,712
34-35	\$ 611,289
35-36	\$ 618,942
36-37	\$ 626,672

MILLER, CANFIELD, PADDOCK AND STONE, P.L.C.

DELIB:2937229.1\022911-00022



AGENDA 2-11-08

ITEM 1-4

**Donna Dettling**

**From:** Keough, Shawn [SKEOUGH@WadeTrim.com]  
**Sent:** Tuesday, January 29, 2008 12:58 PM  
**To:** Donna Dettling  
**Cc:** Courtney Nicholls  
**Subject:** FW: Police cooperation?

Donna - I received this email from Charlie Nielsen at Scio Twp. Please include it for discussion at our next Council meeting.

Thanks - Shawn

2-11-08

---

**From:** Charles D. Nielsen [mailto:CNielsen@twp.scio.mi.us]  
**Sent:** Tuesday, January 29, 2008 12:48 PM  
**To:** Pat Kelly; Ken Unterbrink; John Kingsley; Keough, Shawn  
**Subject:** Police cooperation?

At last Monday's Public Safety Committee meeting we discussed Scio's participation in the Regional Police Study with several other townships and the City of Ypsilanti. Someone stated that it would seem to make more sense, at least geographically, to have Scio participate in something like this with more western townships. It was pointed out that Lodi has just engaged with Saline and Manchester so the membership thought I should leave that alone, at least for now. However they did ask if I would contact Webster, Lima, and the Village and Township of Dexter. There are two questions:

- 1.) Would you have an interest in exploring some type of authority or regional arrangement with Scio Township?
- 2.) If Scio formed our own Police Department, would you be interested in contracting with us, in a similar (but fairer) manner as some of us currently do with the County Sheriff?

I appreciate your responses, and I will report back to the committee.

Respectfully,  
*Charles Nielsen*  
Supervisor, Scio Township



# VILLAGE OF DEXTER

8140 Main Street Dexter, MI 48130-1092

[ddettling@villageofdexter.org](mailto:ddettling@villageofdexter.org)

Phone (734)426-8303 Fax (734)426-5614

## MEMO

**To:** President Keough and Council  
**From:** Donna Dettling, Village Manager  
**Date:** February 11, 2008  
**Re:** Discussion-Formula Prohibitions a.k.a Form Based Codes

AGENDA 2-11-08  
ITEM L-5

Attached is an email chain relating to the question of "Formula Prohibitions a.k.a. Form Based Zoning" between Joe Semifero and Allison Bishop. Form based zoning is a method of regulating building forms as opposed to conventional zoning that regulates uses.

Listed below are documents provided for background on this issue in addition to the emails between Allison and Joe.

Memo dated April 13, 2007 re: Form Based Zoning  
Definition form based codes 2/4/2008  
Michigan Association of Planning – December 2006

This is a discussion item requested by Joe Semifero. Council is being asked to recommend this item for further examination by the Planning Commission for its appropriateness in the Village Zoning Code of Ordinances.

## Donna Dettling

---

**From:** Allison Bishop  
**Sent:** Monday, February 04, 2008 12:26 PM  
**To:** 'Joe Semifero'  
**Cc:** Donna Dettling; Shawn Keough (skeough@wadetrim.com); Shawn Keough (sckeough@comcast.net)  
**Subject:** RE: Formula Prohibitions

Joe,

Based on the website attached to the email, the second paragraph says, "Several communities have banned certain types of formula businesses. These laws do not prevent a chain store from coming in, but they do require that the incoming chain not look or operate like any other branch in the country."

The article goes on to say that the specific design requirements require that franchises change their cookie cutter buildings which discourages them from locating in certain places with specific, often to strict, design standards for the franchise.

We must be very careful with prohibiting specific uses, it is not within what enabling legislation permits us to do. We can regulate, which may discourage a corporation to locate somewhere, but we cannot prohibit.

Please let me know how to proceed. A conversation never hurts. I am not completely familiar with these types of codes and Doug said that he would be willing to do a presentation to the Planning Commission on the issue. If that is not what Council wants, if Council has specific questions then I can do some research to get them answered.

Hope that helps.

*Allison J. Bishop, AICP*

Community Development Manager

Village of Dexter

734.426.8303 ext. 15

---

**From:** Joe Semifero [mailto:jsemifero@yahoo.com]  
**Sent:** Monday, February 04, 2008 12:06 PM  
**To:** Allison Bishop  
**Cc:** Donna Dettling; sckeough@comcast.net; skeough@wadetrim.com  
**Subject:** Re: Formula Prohibitions

Allison - Thanks for the update. I guess what my question is, "Are the prohibitions, as enacted and referenced in the articles, possible here? If not, then why can we not prohibit franchises for certain uses, and what more does Michigan law allow a Village to do?" You said in your email, "You cannot prohibit uses such as franchises or drive thru's..." but that is EXACTLY what the communities referenced are doing. So has there already been case law decided in Michigan on this topic? If so, I'd prefer to not waste PC's time reviewing. I guess the other option would be, as you said, to try to improve the current form based codes. Then the question might be, "Is it possible to change our form based codes to do what other communities are doing with their formula prohibitions, or some portion of the formula prohibitions?" (It sounds like you are saying we are partially there already.) Additionally, "If the Master Plan were to specifically state these types of uses (for instance, formula restaurants or pharmacies, to pick two) were not desired and contrary to the overall community goals, how would the zoning ordinance be changed to implement this desired goal?"

This seemed an interesting topic and a tool, if available, that would be useful to the Village based on discussions with developers in the past.

**Joe Semifero**

*"Forgiveness does not mean condoning what has been done. Forgiving means abandoning your right to pay back the perpetrator in his own coin, but it is a loss that liberates the victim."*

- Desmond Tutu, Anglican archbishop of Johannesburg, and Nobel laureate

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

From: Allison Bishop <abishop@villageofdexter.org>  
To: Joe Semifero <jrsemifero@yahoo.com>  
Cc: Donna Dettling <ddettling@villageofdexter.org>; sckeough@comcast.net; skeough@wadetrim.com  
Sent: Monday, February 4, 2008 11:45:05 AM  
Subject: RE: Formula Prohibitions

Joe,

In Michigan we call this Form Based Codes. Basically the codes regulate aesthetics as opposed to use (that's VERY general). The codes focus on design and architecture and less on type of use, meaning mixed use is promoted. You cannot prohibit uses such as franchises or drive thru's, you focus on how franchises or drive thru's meet the architectural design standards.

I think that in the CBD, VC, Ann Arbor Road and soon to be Baker Road Corridor we have architectural standards that are somewhat form based codes, but things can always be improved.

I have asked Carlisle Wortman if they have experience with Form Based Codes and Doug said that they could do a presentation to the Planning Commission at the March meeting. He said that they would be able to address some of the common misconceptions and questions.

I am in the process of pulling together some information that I have in the office for the packet which I think will help explain things. A workshop that I went to over a year ago talked about Form Based Codes, but at the time they suggested that smaller communities in Michigan wait to adopt these ordinances until they were challenged in larger communities, which they said would definitely happen.

Please let me know if that helps or if there are any specific questions that I can answer or try to get answered.

Thanks,

Allison J. Bishop, AICP  
Community Development Manager  
Village of Dexter  
734.426.8303 ext. 15

---

**From:** Joe Semifero [mailto:jrsemifero@yahoo.com]  
**Sent:** Monday, February 04, 2008 10:43 AM  
**To:** Allison Bishop  
**Subject:** Re: Formula Prohibitions

Is it encouraging that this is possible? Can you give me an idea of what it is?

**Joe Semifero**

*"Forgiveness does not mean condoning what has been done. Forgiving means abandoning your right to pay back the perpetrator in his own coin, but it is a loss that liberates the victim."*

- Desmond Tutu, Anglican archbishop of Johannesburg, and Nobel laureate

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

From: Allison Bishop <abishop@villageofdexter.org>  
To: Joe Semifero <jrsemifero@yahoo.com>; Donna Dettling <ddettling@villageofdexter.org>  
Cc: Shawn Keough <skeough@wadetrim.com>  
Sent: Monday, February 4, 2008 10:28:39 AM  
Subject: RE: Formula Prohibitions

I will present some information that I have on the topic at the meeting on the 11th.

Allison J. Bishop, AICP  
Community Development Manager  
Village of Dexter  
734.426.8303 ext. 15

---

**From:** Joe Semifero [mailto:jrsemifero@yahoo.com]  
**Sent:** Saturday, February 02, 2008 1:02 PM  
**To:** Donna Dettling  
**Cc:** Allison Bishop; Shawn Keough  
**Subject:** Re: Formula Prohibitions

One of the ways that the Zoning Ordinance can change is if Council requests the PC to review, hold a public hearing, and make a recommendation. I cannot unilaterally ask the PC to consider a zoning ordinance change and would not be comfortable with the PC discussing this based solely on my request. If Council thinks it is an idea worth pursuing, then we, as a body, can send it to the PC. In addition, there are other "legs" to this proposal. Everything I saw in my brief research indicated this was a California (or at least a West Coast) initiative. I am not sure how the State of Michigan might view this, or if it has already been reviewed in Michigan. I think it has a lot of potential and might help us to drive the image of the Village the people of the Village want (or at least what I believe they want, based on "master plan"-type meeting comments) but that doesn't mean the lawyers and courts might not strike it down. As such, I would like to review with Council first, see if there is interest, determine what, if any, other "opinions" we might want to request from Planning or Legal consultants, and then determine if it should go to PC.

### Joe Semifero

*"Forgiveness does not mean condoning what has been done. Forgiving means abandoning your right to pay back the perpetrator in his own coin, but it is a loss that liberates the victim."*

- Desmond Tutu, Anglican archbishop of Johannesburg, and Nobel laureate

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

From: Donna Dettling <ddettling@villageofdexter.org>  
To: Joe Semifero <jrsemifero@yahoo.com>  
Cc: Allison Bishop <abishop@villageofdexter.org>  
Sent: Friday, February 1, 2008 5:54:48 PM  
Subject: RE: Formula Prohibitions

Joe,  
I would like to recommend that this go to the Planning Commission first.

Donna Dettling  
Village Manager  
8140 Main Street  
Dexter, MI 48130  
Ph# 734-426-8303 X11  
Fax# 734-426-5614

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

**From:** Joe Semifero [mailto:jrsemifero@yahoo.com]

**Sent:** Friday, February 01, 2008 4:13 PM

**To:** Paul Cousins; Ray Tell; Jim Carson; Donna Fisher; Shawn Keough; Shawn Keough; Jim Smith; Donna Dettling; Allison Bishop

**Subject:** Formula Prohibitions

Formula Prohibitions is another topic I would like to discuss for consideration as an addition to our Zoning Ordinance. I am wondering if this would be applicable in Michigan and what changes would be needed to our Master Plan and Zoning Ordinance if enacted. Essentially, it would be an ordinance that would prohibit "formula" retail establishments in some or all of the Village. One item I read said typically grocery stores, movie theaters, and service/gas stations are exempted, or they can be focused on certain business. For example, what if we had a formula ordinance prohibiting formula drive through restaurants and pharmacies?

Shawn, Donna - Please add for discussion at the next Council meeting. Thanks.

### **Joe Semifero**

*"Forgiveness does not mean condoning what has been done. Forgiving means abandoning your right to pay back the perpetrator in his own coin, but it is a loss that liberates the victim."*

- Desmond Tutu, Anglican archbishop of Johannesburg, and Nobel laureate

---

---

## MEMORANDUM

---

**DATE:** April 13, 2007

**TO:** Council Members

**FROM:** Council Member Jill Love

**SUBJECT:** Legislative Action -- request to create a "formula free business" and "form based" commercial zoning classification or regulations that may be applied to small-scale, unique commercial areas within the City

**CC:** Mayor Ross C. Anderson, Sam Guevara, DJ Baxter, Lyn Creswell, Alison McFarlane, Edward Butterfield, Ed Rutan, Lynn Pace, Louis Zunguze, Chris Shoop, George Shaw, Orion Goff, Cheri Coffey, Doug Wheelwright, Larry Butcher, Joel Paterson, Craig Spangenberg, Kevin LoPiccolo, Valda Tarbet, Jan Aramaki, Marge Harvey, Sylvia Jones, Lehua Weaver, Cindy Rockwood, Russell Weeks, Jennifer Bruno, Barry Esham, Michael Stott, Gwen Springmeyer

---

---

I would appreciate the Council's support for a Legislative Action requesting that the Administration develop a "formula free business" and "form based" commercial zoning classification to be applied to small-scale, unique commercial areas within the City. I am aware of a recent trend where some cities have taken proactive steps by establishing formula free/form based business zoning regulations to support and strengthen local businesses and preserve the unique character of the community. A major objective in implementing this type of zoning regulation is to establish a more equitable playing field for locally-owned and operated businesses to compete in the market place.

Potential areas that could be considered in Salt Lake City include 1500 East and 1500 South, 900 East and 900 South, 1300 South and 1700 East, 2100 South and 2100 East, the Kmart/WalMart property at 2705 Parley's Way and the Sugar House Business District. Mayor Anderson has mentioned application of this type of zoning along 300 South. Depending upon the outcome of initial efforts, locations in the Avenues, Capitol Hill, RosePark/Faripark, Poplar Grove/Glendale, and People's Freeway communities could be considered in the future.

Formula businesses, generally known as "chain stores", include retail stores, restaurants, hotels and other establishments that are required by contract to adopt standardized services, methods of operation, décor, uniforms, and architecture including interior and exterior design, signage or other features virtually identical to businesses located in other communities or nationwide. Formula restaurants include businesses that are devoted to the preparation and offering of food and beverages for sale to the public for consumption either on or off the premises and which is required by contractual or other arrangements to offer any of the following: standardized menus, ingredients, food preparation, décor, uniforms, architecture including interior and exterior design, signage or other similar standardized features. Typically movie theaters, hotels, motels, grocery stores and automobile service stations are excluded from formula business regulations.

Form based zoning regulations typically address building size, design, scale and massing, traffic, parking, and commercial district character through community design guidelines. In some cases, a maximum overall district size is established for the commercial zoning classification.

The intent would not be to preclude a formula business or chain store from locating in a specific location but to require the business to establish a unique establishment that does not conform according to a centralized formula. The scale and design of improvements to existing development is an important factor in the overall aesthetic character of certain commercial areas. Refinements in the Zoning Ordinance would ensure that new development is in scale and consistent with the surrounding neighborhood. I believe that regulating formula businesses is necessary to preserve the unique and historic character of smaller commercial areas in the City.

An article in the March 2003 Zoning News entitled *Combating 'Sameness' with a Formula Business Ordinance* written by Stephen Svete, AICP, quotes the following statistics from Stacy Mitchell, a researcher for the Minneapolis-based Institute for Local Self-Reliance (ILSR) and the author of *The Hometown Advantage*. "According to Mitchell, more than 13,000 local pharmacies have closed their doors since 1990. As of 2002, independent bookstores accounted for less than 15 percent of book sales, a decline from 58 percent in 1972."

Information obtained from the American Planning Association Planning Advisory Service includes the following examples of formula free/form based businesses zoning regulations and cities that have currently implemented them.

- Examples of formula free/form based business zoning regulations include a variety of options:
  - A. Use of special use permits or conditional use with specific criteria and a public process for new and the expansion of existing businesses.
  - B. Limiting the number of formula businesses allowed in a district or citywide.
  - C. Total prohibition of formula businesses citywide.
  - D. Regulations applied to a specific geographic area through use of an overlay or creation of a specific zoning classification.
  - E. Expedited permit processes for non-formula businesses.
  - F. Limiting the total size of buildings, lots or the zoning district.
  - G. Assessing community impacts both locally and regionally.
  - H. Establishing design guidelines that allow for formula businesses as long as they meet scale, character, etc. of the area.
  
- Examples of cities that have established formula free/form based business zoning regulations include:
  - A. Bainbridge Island, Washington – prohibits formula take-out food restaurants in all zones
  - B. Sanibel, Florida – prohibits formula restaurants
  - C. Port Jefferson, New York – prohibits formula fast food restaurants from the historic commercial and waterfront districts
  - D. Arcata, California – limits the number of formula restaurants
  - E. California:
    - 1. Calistoga – prohibits formula restaurants and visitor accommodations and requires that other formula businesses undergo review and apply for a special use permit
    - 2. Carmel-by-the-Sea – prohibits formula fast food, drive-in and restaurants in the city
    - 3. Coronado – limits both formula retail and restaurant businesses - regulates the number, location and operation of formula fast food restaurants, requires formula retail businesses obtain a special use permit
    - 4. Pacific Grove – prohibits formula fast food/take-out restaurants

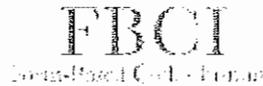
5. San Francisco – formula businesses require neighborhood notification and review, public hearing, prohibited in certain areas, use of conditional use in other instances
  - North Beach Neighborhood Commercial District – does not permit retail coffee stores (coffeehouses) without conditional use authorization
6. Sausalito – formula retail businesses (new and expansion of existing businesses) require conditional use process
7. Solvang – prohibits formula restaurants

I would like to emphasize that the intent is to preserve the unique character of smaller, distinct commercial areas. I believe this action would assist in maintaining the long-term economic health of the City as a whole through promoting a balanced mix of local, regional and national-based businesses and small and medium sized businesses. I would appreciate the support of Council Members in asking the Administration to develop formula free and form based business zoning regulations and provide the Council with options or recommendations.

The result I would like to see is an evaluation, analysis and recommendations that address at a minimum:

- A. Potential legal issues. (Please note - Coronado's formula retail ordinance was upheld by a California Appeals Court decision in June 2003)
- B. Zoning regulations.
- C. Master plan amendments, if necessary.
- D. Other issues that may be identified by the Council or the Administration.

Thank you for your consideration of this Legislative Action request.

[Home](#)[In The News](#)[Board Members](#)[Resources](#)[Courses](#)

## Definition of a Form-Based Code

Draft Date: January 29, 2008

A method of regulating development to achieve a specific urban form. Form-based codes create a predictable public realm primarily by controlling physical form, with a lesser focus on land use, through city or county regulations.

Form-based codes address the relationship between building facades and the public realm, the form and mass of buildings in relation to one another, and the scale and types of streets and blocks. The regulations and standards in Form-based codes, presented in both diagrams and words, are keyed to a *regulating plan* that designates the appropriate form and scale (and therefore, character) of development rather than only distinctions in land-use types. This is in contrast to conventional zoning's focus on the micromanagement and segregation of land uses, and the control of development intensity through abstract and uncoordinated parameters (e.g., FAR, dwellings per acre, setbacks, parking ratios, traffic LOS) to the neglect of an integrated built form. Not to be confused with design guidelines or general statements of policy, Form-based codes are regulatory, not advisory.

Form-based codes are drafted to achieve a community vision based on time-tested forms of urbanism. Ultimately, a Form-based code is a tool; the quality of development outcomes is dependent on the quality and objectives of the community plan that a code implements.

Form-based codes commonly include the following elements:

- *Regulating Plan.* A plan or map of the regulated area designating the locations where different building form standards apply, based on clear community intentions regarding the physical character of the area being code.
- *Public Space Standards.* Specifications for the elements within the public realm (e.g., sidewalks, travel lanes, on-street parking, street trees, street furniture, etc.).
- *Building Form Standards.* Regulations controlling the configuration, features, and functions of buildings that define and shape the public realm.
- *Administration.* A clearly defined application and project review process.
- *Definitions.* A glossary to ensure the precise use of technical terms.

Form-based codes also sometimes include:

- *Architectural Standards.* Regulations controlling external architectural materials and quality.
- *Landscaping Standards.* Regulations controlling landscape design and plant materials on private property as they impact public spaces (e.g. regulations about parking lot screening and shading, maintaining sight lines, insuring unobstructed pedestrian movements, etc.).
- *Signage Standards.* Regulations controlling allowable signage sizes, materials, illumination, and placement.
- *Environmental Resource Standards.* Regulations controlling issues such as storm water drainage and infiltration, development on slopes, tree protection, solar access, etc.
- *Annotation.* Text and illustrations explaining the intentions of specific code provisions.

### Related Resources:

- [Checklist for Identifying and Evaluating Form-Based Codes](#)
- [Eight Advantages to Form-Based Codes](#)
- [More...](#)


[Home](#)
[In The News](#)
[Board Members](#)
[Resources](#)
[Courses](#)

### Eight Advantages to Form-Based Codes

1. Because they are prescriptive (they state what you want), rather than proscriptive (what you don't want), form-based codes (FBCs) can achieve a more predictable physical result. The elements controlled by FBCs are those that are most important to the shaping of a high quality built environment.
2. FBCs encourage public participation because they allow citizens to see what will happen where—leading to a higher comfort level about greater density, for instance.
3. Because they can regulate development at the scale of an individual building or lot, FBCs encourage independent development by multiple property owners. This obviates the need for large land assemblies and the megaprojects that are frequently proposed for such parcels.
4. The built results of FBCs often reflect a diversity of architecture, materials, uses, and ownership that can only come from the actions of many independent players operating within a communally agreed-upon vision and legal framework.
5. FBCs work well in established communities because they effectively define and codify a neighborhood's existing "DNA." Vernacular building types can be easily replicated, promoting infill that is compatible with surrounding structures.
6. Non-professionals find FBCs easier to use than conventional zoning documents because they are much shorter, more concise, and organized for visual access and readability. This feature makes it easier for nonplanners to determine whether compliance has been achieved.
7. FBCs obviate the need for design guidelines, which are difficult to apply consistently, offer too much room for subjective interpretation, and can be difficult to enforce. They also require less oversight by discretionary review bodies, fostering a less politicized planning process that could deliver huge savings in time and money and reduce the risk of takings challenges.
8. FBCs may prove to be more enforceable than design guidelines. The stated purpose of FBCs is the shaping of a high quality public realm, a presumed public good that promotes healthy civic interaction. For that reason compliance with the codes can be enforced, not on the basis of aesthetics but because a failure to comply would diminish the good that is sought. While enforceability of development regulations has not been a problem in new growth areas controlled by private covenants, such matters can be problematic in already-urbanized areas due to legal conflicts with first amendment rights.

~ Peter Katz, President, Form-Based Codes Institute

#### Related Resources:

- [Definition of a Form-Based Code](#)
- [Checklist for Identifying and Evaluating Form-Based Codes](#)
- [More...](#)

[Home](#)
[In The News](#)
[Board Members](#)
[Resources](#)
[Courses](#)

Web Site by [Opticos Design, Inc.](#)

# Smart Growth Tactics

Putting the MLULC Recommendations into Action—A How to Series for Local Leaders

## Form-based codes – new approach to zoning

### FORM-BASED CODES AN EFFECTIVE TOOL FOR SMART GROWTH

As part of Smart Growth strategies, communities are examining development regulations to determine the extent to which the existing regulations may be posing an obstacle to Smart Growth. A great deal of attention is paid towards how development regulations have shaped our communities.

An evaluation of development trends and the zoning requirements of many communities identified serious problems associated with uncontrolled urban sprawl and the loss of community character in suburban communities. In many instances, conventional zoning regulations are the major contributors towards creating the sprawling, automobile-oriented environment that dominates many Michigan communities.

Zoning was created in the early 20th century as a response to problems associated with overcrowding in central cities and the intrusion of heavy industry into retail and residential areas. Developed in the later years of the industrial revolution, zoning sought



Communities such as Grand Rapids are using form-based codes to document the urban fabric of their community and develop regulations that ensure that the most valuable qualities of the community are not only retained, but that new development fits into the character of the neighborhood, as well.

to address these problems through separating incompatible uses and limiting residential density. However, the evolution of zoning in concert with rapid suburbanization has had the effect of dispersing suburban development over large areas of land and creating a host of problems such as loss of farmland, increased environmental impacts, greater auto-dependency, inefficient provision of public services, and loss of community character within the suburbs. While there is a resurgence of interest in older, more traditional urban communities, existing zoning regulations make redevelopment of urban communities more difficult by applying suburban zoning standards.



**A new urbanist development in Beverly Hills, Michigan includes traditional homes on small lots and pedestrian-oriented streetscape.**

Larger setbacks and excessive parking requirements make many cherished urban buildings and spaces nonconforming.

Form-based codes focus land use regulation towards creating more livable communities. The approach uses traditional community character to create and maintain a more human-scale environment. Unlike conventional zoning that focuses on separating land uses, form-based code focuses on building form as it relates to streetscape and adjacent uses. Form-based codes allow for a mixture of land uses based upon the context of building form. As a result, compatibility of uses is achieved through design and orientation, instead of strict land use separation. Where conventional zoning focuses on use and development of an individual lot, form-based codes focus on the role that individual buildings serve in shaping the public streetscape. Form-based codes rely on design concepts and patterns intended to preserve the assets of a community, creating more livable environments and spaces.

### **PROBLEMS WITH EUCLIDEAN ZONING**

The conventional form of zoning currently used throughout Michigan and the United States is what is commonly referred to as Euclidean

zoning. This name is derived from the 1926 United States Supreme Court decision in *Euclid v. Ambler Realty Co.* (272 U.S. 365) to uphold the constitutional validity of zoning. Euclidean zoning has been in place in Michigan since 1921 with the City and Village Zoning Act, Public Act 207 of 1921. Enabling legislation for townships and counties soon followed in 1943.

When the city of Detroit adopted its first zoning ordinance in 1920, the city sought to address different problems than those of today. In 1920, overcrowded tenement housing and the intrusion of heavy industrial uses into commercial and light industrial areas created serious public health and welfare problems. These problems are at the root of land use separation and density limits which are the core of virtually all zoning ordinances today.

Michigan communities have experienced many changes over the past 80 years. With this, a new set of challenges in how to regulate development resurrects. Instead of concerns with overcrowding in cities, the focus is now on the negative impacts that uncontrolled sprawl has on the landscape of Michigan. And while the need to separate housing from heavy industry is still a valid concern, planners are now concerned with use-segregated

suburbs, where it is not possible to walk to the corner store or for children to walk to school.

The New Urbanism movement (1980 to present) has attracted a great deal of interest in re-creating walkable, mixed-use neighborhoods. As an outgrowth of this movement, form-based codes are the latest technique to re-examine the underlying zoning principle of separating uses and instead provide new means to develop vibrant mix-use communities. This is accomplished by placing a strong focus on the creation of proper urban form, wherein a mixture of uses can flourish.

### **DESIGN STANDARDS AND OTHER ATTEMPTS TO IMPROVE LAND USE REGULATION**

In response to the limitation of Euclidean zoning, a number of zoning techniques have been created with varied levels of success. These include mixed-use planned unit developments, cluster development, performance zoning, and design standards.

Planned unit developments (PUD) have been used for many years as an effective means of developing coordinated larger sites. (The first evidence of a PUD was created in 1949 in Prince Georges County, Maryland.) However, in many instances, what is intended to be a "mixed-use" development actually ends up being "multiple-use," where there are separate and distinct areas of land uses that are not truly integrated into a mixed-use development. The other limitation of a PUD is that it is designed primarily for the development of larger sites, and with few exceptions, is not well suited for use on individual lots in an urban environment.

Clustered open space developments have had success in preserving open space and natural features. This type of development tends to offer recreational amenities not available in conventional subdivisions. While open space developments are a significant improvement



**Design standards can improve the appearance of the building and site landscaping, but are not effective in changing the underlying form.**

from conventional zoning, the developments still tend to be separated, single-use tracts of land.

Many communities have adopted design standards in a variety of forms. Some have adopted separate design guidelines or relied on the guidelines contained within the master plan. However, recent court decisions have held that a community cannot enforce requirements that are not specified in the ordinance.

Instead of guidelines, design standards for architectural and landscaping requirements are now becoming more common place within zoning ordinances. Some communities have adopted architectural regulations that require use of high-quality building materials. Others include discretionary standards whose result can be unpredictable and run the risk of inconsistent application. While these design standards have been effective in improving the appearance of buildings and landscaping, the standards fail to create meaningful change in the urban form - the end result is usually aesthetically-pleasing sprawl.

### **PRINCIPLES ASSOCIATED WITH FORM-BASED CODES**

The Form-Based Codes Institute defines form-based codes as “[a] method of regulating development to achieve a specific urban form. Form-based codes create a predictable public realm by controlling physical form primarily, and land uses secondarily.” Form-based codes go beyond conventional zoning

by addressing the relationship of the building to the streetscape and the proper relationship between buildings in order to define a desired urban form.

First and foremost, form-based codes are place-based. The codes are adapted to fit the unique characteristics of a community and intended to require that new development fit within the context of the existing community and reinforce a unique sense of place.

Next, form-based codes allow for the unique ecology of a community by permitting a mixture of uses. The codes reflect the importance of the relationship between various uses

and building types to one-another, as part of an integral neighborhood and overall community.

Form-based codes are purposeful and not reactive. Conventional zoning tends to be reactive in that it restricts and focuses on preventing development that would be damaging to neighboring properties or the community (i.e. zoning tells you what you cannot do). Form-based codes, on the other hand, document the desired form of development and prescribe building form requirements to achieve the desired community vision.

Form-based codes connect the urban form and land use by providing for specific building types that are suited for the appropriate land use. They also relate the use and building type to the streetscape to comprehensively address the desired urban form for the neighborhood.

Form-based codes provide for development that is compact, mixed-use, and pedestrian friendly to create livable neighborhoods and healthy vibrant communities.



**Farmington has adopted a form-based code as part of the central business district that reflects the traditional urban fabric that the community values.**

And finally, form-based codes are graphic and designed to be easy to use and understand.

## KEY DIFFERENCES BETWEEN CONVENTIONAL ZONING AND FORM-BASED CODES

1. Conventional zoning is use-based, with a community divided into zoning districts which segregate land uses. Form-based codes de-emphasize use and divide a community into neighborhoods or specific street corridors, that have a distinct and consistent character, while allowing a mixture of compatible uses.
2. Conventional zoning attempts to create uniformity throughout a district by applying uniform intensity parameters such as setback, height, density, and floor area ratios. Form-based codes embrace diversity in neighborhoods by reflecting different standards for different types of buildings. Because use and building type are tied together, the standards ensure the building form relates properly to the streetscape and adjacent uses.
3. Where conventional zoning focuses on use and dimensional requirements, form-based codes focus more on the building form and how it relates to the public streetscape. In order to define the streetscape, form-based codes often prescribe build-to-lines where buildings are required to be set a specific distance from the front



Example of a mixed-use building with retail on the first floor and residential on the upper floors. Specific design elements for retail along the sidewalk include window articulation and treatment at the corner.

lot line. Conventional zoning uses minimum setbacks to create building envelopes; however, the ultimate location and form of the building within the envelope is unpredictable. As a result, conventional zoning has a primary focus on the lot and pays little to no attention to the streetscape. Form-based codes take a more holistic approach by considering the building form as it relates to the streetscape.

4. Conventional zoning has limited ability to effect change, as it tends to prohibit development that is determined to be inappropriate. Form-based codes are more

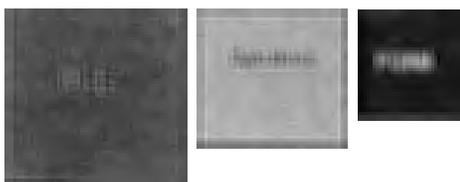
prescriptive and do a better job of describing the desired urban form. The result is the development of a neighborhood that encourages pedestrian activity, social interaction, and local investment.

## WHAT IS REGULATED

An underlying premise of form-based codes is that the public realm (i.e. the streetscape) is defined by the buildings that line it. Because of this, building placement and site orientation are paramount in the form-based code. The front building line location is based upon the type of street frontage. In a traditional downtown setting, there would be a “zero front lot line” or “build-to” requirement with all parking required to be at the rear of the building. In a residential neighborhood, there would be a requirement that the front of a residence be placed at a specific setback from the front lot line.

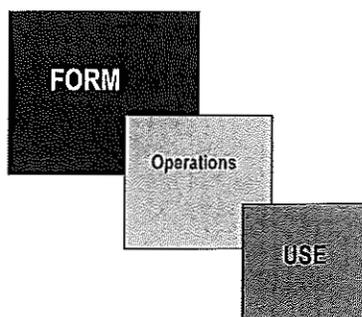
Once the streetscape has been defined by the building placement, the building elements can be considered to ensure that the building relates properly to the streetscape and adjacent buildings. In a business district, this would include requirements for doors and windows

### Conventional Zoning



Focused on use

### Form-Based Codes



More focus on design and form

along the sidewalk, window articulation on upper floors, building expression lines; and other details such as cornices. In residential areas these may be requirements for front porches or a limitation on front-loaded garages.

While uses are secondary to building form, they are nonetheless still important. Similar to a conventional zoning ordinance, different uses are allowed in each zone or district. Form-based codes allow a greater mixture of uses, but tie the use to the required building form. Unlike most conventional zoning ordinances, form-based codes also regulate use on the vertical plane. In a downtown setting, there may be a requirement for retail uses on the first floor and an allowance for residential or office on upper floors. There may also be a requirement along a downtown "Main Street" for mandatory retail frontages on the first floor to create a strong synergy between retail uses and an interesting environment for shoppers.

Form-based codes also contain regulations for accessory structures and uses. This includes specific requirements for the placement and design of parking lots. Other elements such as accessory buildings, loading areas, waste receptacles, screening walls, landscaping, and lighting are also addressed.

Another major improvement in the form-based code approach is that it goes beyond just regulating the site, by tying together the site and the public realm (i.e. the streetscape). Building regulations relate to design requirements for streets, sidewalks, on-street parking, street trees, and public spaces such as plazas.

An important aspect of a form-based code is that all of the regulations be tied together. The use is tied directly to the building type. The building type in-turn dictates form and building elements. The building form also relates to the street frontage, tying all of the elements together.

## HOW FORM-BASED CODES ARE STRUCTURED

The form-based code is based upon a regulating plan. A regulating plan is analogous with and functions similarly to a zoning map, except that it provides a greater amount of specificity to the street types, block dimensions, and building lines. Regulating plans may also indicate the locations for parks, squares, and plazas. For downtown shopping districts, the regulatory plan may indicate a mandatory retail frontage.

The zone on the regulating plan permits specific uses and corresponding building types. Building types may include single family dwellings, townhouses, live-work units, retail buildings, and others. The underlying principle is that the use, building, and street are interrelated.

Based upon the zone and the building type proposed, there are specific placement and building envelope requirements. These graphically depict building lines, setbacks, building height, and parking lot location. These requirements can be compared to the schedule of area and bulk requirements in a conventional zoning ordinance, except that they rely more on graphics to depict requirements and tend to be more prescriptive (e.g., building lines state exactly where the front of the building is required to be placed, instead of stating minimum setbacks). Building height is often defined in both minimum and maximum measurements to ensure that the building is tall enough to define the streetscape, but not so tall that they overwhelm other buildings.

Building elements are required relative to the type of building proposed. These include standards for building materials, doors and windows, building expression lines, front porches, etc. Note that most form-based codes do not regulate architecture – if the building has the proper form, then the architectural style of the building is less important. However, it may be appropriate to include architectural regulations in a

## POTENTIAL PITFALLS WITH FORM-BASED CODES

While form-based codes are effective tools that can help realize a community's vision, they are not a panacea that will cure all problems. There are some limitations of form-based codes and some problems that the codes may present to local communities:

Form-based codes tend to cost two to four times that of a conventional zoning ordinance. This is because of the upfront effort required to complete a detailed inventory of the community's existing urban form, the additional public involvement, and design work that goes into creating the regulating plan and the code.

Form-based codes require an illustrative regulating plan that is often based upon some form of urban design plan. This type of plan tends to be more involved than a zoning map.

Since Michigan streets are often regulated by separate authorities, there may be limited ability for a form-based code to regulate existing public streets. This may be more of a problem in townships, where all of the roads fall under the jurisdiction of the road commission, and less of a problem in cities that control their own city streets.

Form-based codes are prescriptive and very rigid, which may be viewed by developers as a limitation on what they can do with their property and a limitation on an architect's creativity.

There is a lack of specific enabling legislation as the Michigan Zoning Enabling Act (Public Act 110 of 2006) does not specifically provide for form-based codes. However, these types of codes are being developed throughout the United States and in other states, without specific enabling legislation.

A criticism of new-urbanism (which form-based codes are closely tied to) is that it is not environmentally sensitive; however, by developing more compact communities, the amount of land consumed by urban sprawl and dependence on the automobile is reduced. And unlike much of the new-urbanist developments that are "new towns," advocates of form-based codes have used form-based codes more as a tool to facilitate infill and redevelopment within existing urban communities.

# How do form-based codes work in the real world?

Form-based codes have been adopted by communities throughout the country. Some applications in Michigan are as follows:

**Downtown Farmington:** As part of the City of Farmington's Downtown Development Plan, there is a detailed urban design plan that includes specific downtown design standards. The city wanted to promote redevelopment within the existing downtown while ensuring that the zoning regulations would be reflective of the existing community character and the recommendations of the plan.

A form-based code was prepared for the Downtown Zoning District to encourage redevelopment that embraces the historic character of Farmington, including traditional storefronts and a pedestrian scale environment. The form-based code requires buildings be built to the front lot line and parking lots be located in the rear. In order to maintain a well-defined streetscape, maximum and minimum building heights are included. Detailed building design standards to ensure that buildings relate properly to the streetscape at a pedestrian scale are included. Not only does the ordinance permit a vertical mixture of uses, but it builds in incentives to encourage mixed-use developments.

**Genoa Town Center:** As part of its master plan, Genoa Township identified a location for a new Genoa Town Center. The new town center location was centered on one



A form-based code was developed for Downtown Farmington to encourage infill development while preserving the traditional pedestrian-friendly character of the city.

of the few remaining large vacant areas along the Grand River Avenue corridor between Brighton and Howell. The township wanted to see a high quality, mixed-use development for this site that would create a new town center and also serve as a catalyst for redevelopment of the older commercial properties in the immediate area. As part of the master plan process, the township developed a detailed urban design plan for the new town center area.

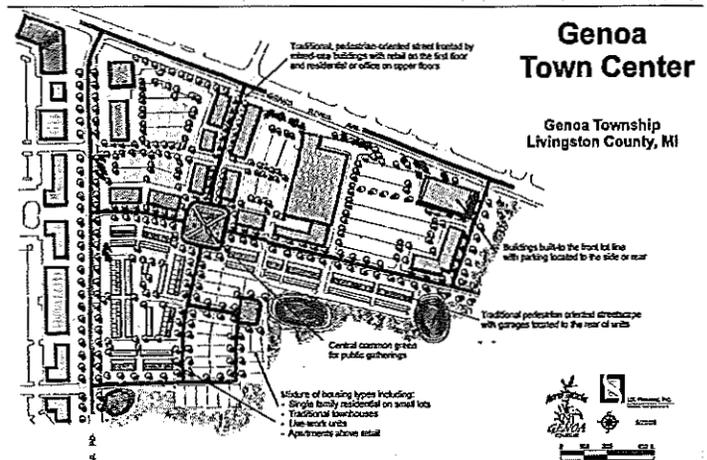
The Genoa Town Center is planned to become a mixed-use town center with local businesses, neighborhood service establishments, and traditional residential neighborhoods. Residential uses will provide a variety of housing types including apartments on upper floors above commercial uses, traditional townhouses, and single family homes on smaller lots. This area will be integrated into a pedestrian-friendly, walkable area with sidewalks connecting all uses and community parks and plazas.

To implement the Genoa Town Center, a form-based code overlay zoning district was adopted that requires all new development to follow strict requirements for a more traditional form of development that is more characteristic of a small town. The overlay zone not only allows for a mixture of uses, but has incentives to encourage truly integrated mixed-use development. The overlay zone includes building placement requirements that create traditional, pedestrian-friendly streetscapes and reduce the dominance of the automobile. It also includes detailed design standards for buildings, streetscapes, and public open spaces.

**Grand Rapids:** The City of Grand Rapids is nearing completion of an ambitious project to convert its 1967 zoning ordinance to a modern form-based code. It was clear that simply updating the original ordinance would not further the goals of the city's new Master Plan: a Plan that emphasizes neighborhood preservation while transforming the landscape

in critical areas.

An extensive public outreach effort revealed the desire of neighborhood groups, business associations, and others, to develop flexible, user-friendly land use regulations. Accordingly, the code includes a number of unique elements: increased use of administrative approvals, flexible nonconforming use and building regulations,



and incentives for quality design and development.

The language of form-based codes is developed with an eye toward the specific physical plan. This includes a broad range of regulations that encompass building alignment toward the street (setbacks, building orientation), spaces between buildings (side setbacks, separation between disparate uses), and heights, each of which can be described in ranges of acceptable values.

This effort represents the most significant attempt to introduce form-based codes for a city the size of Grand Rapids in the state of Michigan, and in much of the country as well.

## IS A FORM-BASED CODE RIGHT FOR YOUR COMMUNITY?

Form-based codes can be an effective tool that can be used in most communities. Some communities are appropriate for a community-wide form-based code, while others should utilize this new technique for certain subareas. Most importantly, the community must have a commitment to create a better place and undergo the process of gaining consensus on the desired urban form of the community. Form-based codes can be an effective tool in

form-based code for a historic district.

Because building form and streetscape are interrelated, form-based codes include requirements for the streetscape, such as on-street parking, sidewalk width, and street trees.

Form-based codes also include many of the other regulations of conventional zoning ordinances such as definitions, administrative procedures, zoning board of appeals, nonconforming, etc.

## HOW APPROVALS ARE PROCESSED

Because the regulating plan sets forth detailed and predictable building form requirements, approvals that are in accordance with the regulating plan can be approved administratively. This is possible because the unpredictability and greater discretion typically involved with conventional zoning does not exist with form-based codes. The idea is that if a developer is willing to follow all of the detailed requirements of the regulating plan and the form-based code, there should be little, if any, room for discretion, and the approval should be handled administratively. However, if the developer wants to deviate, then approval is required before the planning commission. Essentially, form-based codes make it easy to do the right thing, and harder to deviate from the code and regulating plan.

## GENOA TOWNSHIP ZONING ORDINANCE

9.04.03 Neighborhood Street Frontage. Sites with frontage along Neighborhood Streets shall meet the following dimensional requirements:

<b>Lot Area/Density</b>	Single family: Minimum 5,000 square foot lot area; minimum 4,500 square feet for lots with rear alley. Townhouses: Up to 14 units per acre permitted-by-right; the Township Board may grant special land use approval for up to 28 units per acre.	
<b>Lot Width</b>	Single family: Minimum 50-foot lot width; minimum 45 foot lot width for lots with driveway access to a rear alley. Townhouses: No minimum.	
<b>Front Yard Requirements</b>	Single family: Minimum 20-foot front yard setback. Townhouses: Minimum 5-foot front yard setback.	
<b>Building length</b>	Maximum 180 feet.	
<b>Side Yard</b>	Single family: Minimum 5-foot side yard setback with a total of 15 feet on both sides; a total of 10 feet on both sides where garage access is from a rear alley. Townhouses: No side yard between units. Minimum 15-foot setback from single family lot and 15 foot spacing between groups of buildings.	
<b>Rear Yard</b>	Minimum 25-foot rear yard setback for principal buildings.	
<b>Building Height</b>	Minimum 2 stories. Maximum 3 stories – not including 1/4 stories. Maximum 35-foot building height.	
<b>Accessory Buildings</b>	Detached garages and other accessory buildings shall be located in the rear yard only and shall be setback a minimum of 3 feet from the rear and side lot lines. Attached garages shall be permitted; provided the garage is setback at least 5 feet behind the front building line of the living portion of the dwelling and the garage wall facing the street is less than 50% of the total length of the street-facing building façade. Accessory buildings shall be subject to the regulations of section 11.04; except accessory buildings may be up to 2 stories, and 20 feet in height and may include an accessory apartment in the second floor.	
<b>Parking Lot Location</b>	On-street parking shall be permitted and may be credited towards meeting off-street parking requirements. Parking shall be in the side or rear yard. For single family residential, parking shall be permitted in a front yard driveway; provided the garage does not project into the front yard.	

Genoa Town Center Overlay District

9-9

Because the regulating plan and form-based code are so detailed, the code must also anticipate situations that don't fit requirements or where unique development forms are proposed. Typically, a form-based code can allow for three levels of departure. Administrative departures would be minor in nature and can be approved as part of the administrative approval process. The authority for administrative departures needs to be specifically spelled out in the code, such as allowing the planning director to substitute landscaping in place of a screening wall. Major departures that deviate from the regulating plan would require approval by the planning commission, such as allowing a front façade that does not meet the building design requirements. This could be evaluated by the planning commission based upon a set of standards that relate to the regulatory intent. A third level of deviation should also be built into the code that requires a variance from the zoning board of appeals, such as departures from the build-to line or exceeding height

limits. The variances would have to be reviewed based upon the standard tests of practical difficulty.

## PROCESS IN DEVELOPING A FORM-BASED CODE

When embarking on a significant change in how a community regulates development, the first step is to have a commitment to creating better places. This should go beyond just a desire for change – the desires of the community should be articulated through the master plan or other document, such as a downtown plan, so that there is an underlying basis to move forward.

A determination needs to be made on the type of code desired and the geographic area to be covered. The form-based code could be integrated into a community-wide ordinance, or perhaps applied to a specific corridor, neighborhood, or business district.

Next, there needs to be an inventory and analysis of existing conditions to document the existing "forms" of

the community. This inventory can be fairly labor intensive and involves detailed analysis of lot widths, setbacks, building heights, etc. With a good understanding of the existing "forms" of the community, a public process should then be conducted to gain a consensus on the existing community quality that should be maintained or new ones to be achieved. This is often done through a design charrette or workshop.

From the inventory, analysis, and public process, detailed urban standards are developed for features such as streets, blocks, building placement, and land use. Building form standards will also be developed for the various building types within the community. These standards are then developed into an ordinance and applied to a regulating plan.

## APPLICATIONS OF FORM-BASED CODE

Form-based codes can be applied to a variety of geographic areas, from a specific subarea, such as a downtown, to the entire community. Form-based codes can also be used as tools to preserve the character

of an area or as mechanisms of change to transform an area.

The most common application of form-based codes has been to subareas. The codes are used in existing downtowns and historic districts in order to preserve and enhance the traditional character. They are also used to preserve the character of specific neighborhoods and insure that new infill development is compatible with existing homes. Additionally, they are being used as effective tools to transform outdated strip commercial corridors into new town centers.

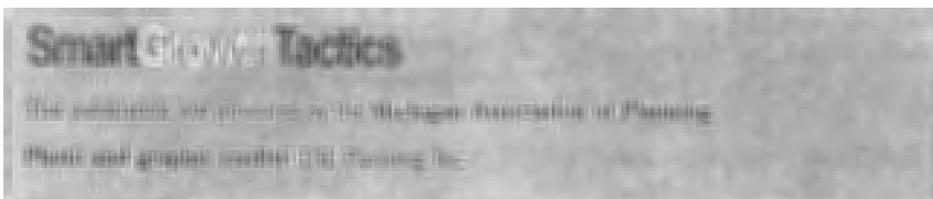
While form-based codes have been applied most often to specific subareas, more communities are looking to adopt form-based codes on a community-wide basis. National experts in form-based code have recognized that a pure form-based approach is not going to be the best application in all areas of a community - there will still need to be zoning districts for industrial uses such as truck terminals, foundries, and

hazardous uses. There may also be areas within the community that are more appropriate for automobile-oriented uses such as dealerships and fast-food restaurants. For this reason, community-wide form-based codes are going to be a hybrid, with some areas regulated by form-based zoning districts and other areas by more conventional zoning districts.

## Conclusion

Form-based codes are land development regulatory tools that places primary emphasis on the physical form of the built environment with the end goal of producing a specific type of 'place.' The codes assert more control over a community's form and lead to improvements in the way the community functions. For more information on form-based codes visit [www.formbasedcodes.org](http://www.formbasedcodes.org).

*By Jeffrey R. Purdy, AICP, Partner at LSL Planning, Inc.*



**LSL PLANNING, INC.**  
COMMUNITY PLANNING CONSULTANTS



phone: 734-913-2000 fax: 734-913-2061 web: [www.planningmi.org](http://www.planningmi.org)

219 South Main Street, Suite 300  
Ann Arbor, MI 48104

Non-Profit  
Organization  
U.S. Postage  
PAID  
Permit 388  
Detroit, MI

AGENDA 2-11-08

ITEM L-6

**Village of Dexter  
Treasurer/Finance  
Director's Office**

# Memo

**To:** Village Manager and Council  
**From:** Marie Sherry, Village Treasurer *MS*  
**Date:** 2/4/2008  
**Re:** OPEB Valuation

---

Attached to this memo are two quotes for an OPEB valuation, as well as an email declining to bid. Thank you to the Assistant Village Manager for securing these bids.

After reviewing the bids and contacting references, I would like to recommend that we hire Rodwan Consulting Company to perform the valuation. Their price of \$4,800 is well within our budget of \$6,500 (included in professional services in the Finance Department).

The next step after receiving the completed valuation would be to decide how much to fund, and choose a vehicle to maximize this investment. The Municipal Employees Retirement System will provide this service for a fee, using the same rules and regulations that they use to oversee their pension investments. I expect that these decisions will be made during with the Fiscal Year 2008/2009 budget process.

If you have any questions, please do not hesitate to contact me.



January 22, 2008

Q: 2 Rates (ie 1 thru  
Mers 1 w/out) extra?  
(No)

Ms. Courtney L. Nicholls  
Assistant Village Manager  
Village of Dexter  
8140 Main Street  
Dexter, Michigan 48130-1092

Q: references  
yes - last page

Dear Ms. Nicholls:

Thank you very much for contacting us regarding an actuarial study of liabilities and computed contributions related to retiree health benefits provided for employees of the Village of Dexter.

We understand that the Scope of the Project would include the following.

- Actuarial Valuation to determine:
  - Actuarial liability, and
  - Annual required contribution (GASB 45)

Q: Extra to meet w/  
Council if needed?

Hourly Rate  
225/hour  
no travel  
time

The study would be based on methods and assumptions in compliance with Statements 43 and 45 of the Governmental Accounting Standards Board.

Our fee for the Actuarial Valuation would be \$4,800. Our understanding is that the retiree coverage is not self-insured.

We anticipate that we would issue the report of the study within 6 to 8 weeks of receipt of the necessary data.

Rodwan Consulting Company is very well qualified to provide your actuarial services. We are confident you would be pleased with our service.

A biography is attached.

A summary of the data we would need to perform the actuarial valuation is also attached, some of which you have already furnished.

Thank you again for contacting us. We would certainly be pleased to perform this study for the Village. If you have any questions or need any additional information, please do not hesitate to call us at (248) 399-8760.

Sincerely,



Sandra W Rodwan

## Biography

### **Sandra W. Rodwan**

Sandy Rodwan has provided actuarial and consulting services to public employee retirement benefit plans across the country for over 30 years. She specializes in the design and funding of retirement programs, including post-retirement health insurance, analysis of retirement objectives and income adequacy, and education regarding retirement issues.

Sandy has served as the primary actuarial consultant to large and small public retirement plans in Arizona, Florida, Indiana, Kansas, Michigan, Minnesota, New Mexico and Oklahoma.

Sandy has extensive experience clearly presenting actuarial reports before associations of employees and employers, retirement boards and legislative bodies. She has appeared before committees of state legislatures and testified about retirement issues on numerous occasions. She has often reported on federal legislation and affecting retirement at the semiannual conference of the Michigan Association of Public Employee Retirement Systems (MAPERS). She has spoken regarding post-retirement health insurance funding at conferences of MAPERS, the Michigan Public Employees Labor Relations Association and educational meetings sponsored by the Government Finance Officers Association.

Sandy is an Enrolled Actuary as specified by ERISA. She has a Master of Actuarial Science degree from the University of Michigan and a Bachelor of Arts degree with a major in mathematics from the University of Detroit. She is a Member of the American Academy of Actuaries and a Fellow of the Conference of Consulting Actuaries. Sandy is also a Certified Financial Planner.<sup>™</sup>



*Sandy Rodwan along with Buckfire, her Golden Retriever.*

**Sandra W. Rodwan, President  
Rodwan Consulting Company**

*Sandy Rodwan is an Enrolled Actuary as specified by ERISA. She has a Master of Actuarial Science degree from the University of Michigan and a Bachelor of Arts degree with a major in mathematics from the University of Detroit. She is a member of the American Academy of Actuaries and a Fellow of the Conference of Consulting Actuaries. Sandy is also a Certified Financial Planner.*

*For more than three decades, Sandy has specialized in providing actuarial consulting services to public employee benefit plans. She has served public employee retirement systems in nine states across the country with as many as 70,000 participants.*

**Mary Reeds-Mortensen  
City of Ludington, Michigan**

*"Even though we are a relatively small retirement system, you would not know it by the way we are serviced by Rodwan Consulting Company. They are always very responsive, timely, and reasonable with their fees."*

# Your Future is our Prime Commitment

## What We do

Rodwan Consulting Company specializes in providing actuarial consulting services to public employee benefit plans.

Our expertise includes the designing and funding of retirement programs, including post-retirement health insurance, analysis of retirement objectives and income adequacy and education regarding retirement issues.

We provide a full range of actuarial consulting services for employee retirement programs. Examples of our services are actuarial valuations, projections of future cash flows and funding levels, experience studies, administrative assistance, employee communications, and preparation of information to comply with accounting standards.

We have extensive experience presenting actuarial reports to employees, employers, retirement boards, and legislative bodies.

## Client Service

At Rodwan Consulting Company, we serve clients that are large to small - plans with tens of thousands of participants to ones with very few.

Whether the client is big or small, we provide personal client service with easy access to our consultants. With Rodwan Consulting Company, you know that customer service will always be our first priority.

## Resources

The right tools are essential in getting any job done. At Rodwan Consulting Company, leading-edge software and hardware enable us to provide sophisticated actuarial calculations for the most complex plan as well as more basic scenarios. This powerful software makes Rodwan Consulting Company more efficient and subsequently more affordable.

**Jack Cross, Administrator  
Arizona Public Safety Personnel Retirement System**

*"Rodwan Consulting Company provides excellent service for our Retirement System and Plans which are large and complex. We have personally worked with Sandy Rodwan and Claudia Scott for over 20 years."*

**Christine Cassani  
City of Warren, Michigan**

*"Rodwan Consulting Company's talented staff responds quickly to our needs and presents complex results in easy-to-understand language."*

## Vision

When I started my own company, I had a clear vision of the underlying principles upon which the business would be based. These principles that continue to guide us today are:

- 1 Clients must always come first.
- 2 We shall provide quality service to all of our clients at reasonable fees.
- 3 Information shall be presented in a way that is clear, understandable, and objective.
- 4 We must maintain a high level of responsiveness and timeliness.
- 5 Everyone in our organization must be guided by these principles on a daily basis.



2310 E. Eleven Mile Road  
Royal Oak, Michigan 48067  
Phone: (248) 399-8760  
Fax: (248) 399-8790

**Marie Sherry**

---

**From:** Srodwan@aol.com  
**Sent:** Wednesday, January 30, 2008 4:48 PM  
**To:** msherry@villageofdexter.org  
**Subject:** References

Ms. Sherry,

We are currently retained by 31 Public Employee retirement plans in the State of Michigan and 4 plans in Arizona (one of which covers virtually all of the police/fire personnel in Arizona). In addition to these plans, some of which include post retirement health benefits, we have also been hired to perform actuarial valuations of retiree health benefits for other non-retainer clients.

In response to your request, here are several references:

Charlene Studstill  
City of Livonia Retirement System and VEBA  
(734) 466-2530

*→ wonderful highly recommend speaks in layman terms.*

Susan Gross, Treasurer  
Commerce Township  
(248) 960-7040

*left message → very satisfied w/ Rodwan*

Carmella O'Neill/Christine Cassani, Chairman  
City of Warren Employees Retirement System and VEBA  
(586) 751-6833

*referred left message - assistant said had long standing relationship*

We would be happy to provide more references if you would like.

Sandy Rodwan

Sandra W. Rodwan  
Rodwan Consulting Company  
248-399-8760

---

Start the year off right. Easy ways to stay in shape in the new year.



January 10, 2008

Ms. Courtney Nicholls  
Assistant Manager  
Village of Dexter  
8140 Main  
Dexter, MI 48130

**Re: Proposed Fees for the Actuarial Valuation of the Village of Dexter Retiree  
Health Care Plan**

Dear Ms. Nicholls:

Gabriel, Roeder, Smith & Company (GRS) would be pleased to provide actuarial and consulting services for the Village of Dexter Retiree Health Care Plan. This engagement letter describes the scope of services and fees for preparing an actuarial valuation of the retiree health care benefits. Also included is a list of data items that will be needed to complete this project.

**GABRIEL, ROEDER, SMITH & COMPANY (GRS) BACKGROUND IN HEALTH CARE CONSULTING**

GRS specializes in assessing complex health care and benefit issues. GRS has extensive experience in the design, evaluation, pricing, financing, and implementation of retiree health care benefit programs, particularly retiree health care plans sponsored by state and local governments. We have a thorough, hands-on understanding and experience with the health care marketplace, both nationally and regionally. Our expertise and insight into public employee retirement systems are highlighted by the fact that our consultants and actuaries have experience in benefit design, managed care strategies, plan administration and legislative issues, as well as valuation related services.

**SCOPE OF SERVICES**

We will prepare an actuarial valuation of the retiree health care benefits for the Village of Dexter Retiree Health Care Plan as of December 31, 2006. This valuation will be in compliance with Governmental Accounting Standards Board (GASB) Statement No. 45.

The actuarial valuation encompasses the phases indicated below.

#### **ADJUST BLENDED FULLY-INSURED PREMIUM RATE**

In fully-insured ratings, actives and non-Medicare retirees are often assigned the same rate. Since health risk and utilization of medical services increases with age, this practice produces an implied subsidy to the retiree population. The Governmental Accounting Standards Board (GASB) and the Society of Actuaries' Actuarial Standards of Practice require the use of "true" retiree cost in retiree health care valuations. GRS will develop the retiree premiums associated with each individual age by adjusting the blended fully-insured rates with the ratio of the expected cost at that age and the expected cost at the average age of the blended active and non-Medicare eligible population.

#### **PREPARE THE VALUATION**

We will prepare an actuarial valuation of the retiree health care benefits. Liabilities will be developed for present and future retirees. The valuation will provide:

- A measurement of the actuarial liability as of the valuation date.
- The estimated accounting expense for the fiscal years beginning July 1, 2008, July 1, 2009, and July 1, 2010.

The valuation will be based on assumptions and methods that are consistent with GASB Statement No. 45 for Other Postemployment Benefits (OPEB) plans.

#### **WORK PLAN**

Our recommended work plan to complete the actuarial assessment would include the following steps:

- 1) Define data requirements and request information. Also, provide any preliminary recommendations relating to assumptions or methods.
- 2) Collect census and asset information and review for reasonableness.
- 3) Specifically, review the assumptions, methods, and funding policy.
- 4) Gather information required to determine the per capita health care rates.
- 5) Select other economic, demographic, and long-term health care assumptions.
- 6) Select actuarial funding and asset smoothing methods.
- 7) Develop the retiree premium associated with each individual age.
- 8) Perform an actuarial valuation of the retiree health plan, which would develop the Annual Required Contribution (ARC).
- 9) Perform a benefit projection and sensitivity, if the Village decides on these options.
- 10) Prepare a report of the actuarial valuation.
- 11) Serve as a technical advisor on matters of an actuarial nature.

**PROFESSIONAL CONSULTING STAFF**

The GRS team assigned to the actuarial valuation of the retiree health care benefits for the Village has extensive experience and expertise in retirement plans, health care benefits, and their associated costs.

**CONSULTING FEES**

Gabriel, Roeder, Smith & Company's professional consulting fees are based on the time spent by our associates in performing these services for you. The following tables show our proposed fees for a valuation of the retiree health care plan:

Valuation Project Element	Fee Schedule for December 31, 2006 Valuation
Actuarial Valuation: <ul style="list-style-type: none"> <li>• Full Price</li> <li>• 20% MERS Discount</li> <li>• Price After MERS Discount</li> </ul>	\$ 7,688 <u>1,538</u> \$ 6,150
Alternate interest rate calculation	1,000

The actuarial retiree health care valuation is based on an "intermediate" health care trend assumption, and includes the following:

- Two OPEB benefit groups: employees hired before March 2005, and employees hired after March 2005.
- One contribution rate without assets.
- One set of initial per capita costs based on up to six distinct retiree medical plans.
- The retiree health plan is fully insured with Blue Care Network as the health care provider.
- We will prepare our calculations using two sets of interest rate assumptions as shown below. The interest rate assumption should be discussed and approved by your auditors prior to beginning work on the actuarial valuation.
  - A higher interest rate such as 8.0% - these results will show the magnitude of the liabilities and the Annual Required Contribution (ARC) if the benefits are pre-funded and assets are held in a trust.
  - A lower interest rate such as 4.5% - these results will show the magnitude of the liabilities and the ARC if the benefits are not pre-funded.
- Our fees do not include any meetings, additional studies for changes in benefits, or any other items not detailed in the letter. If the Village would like to meet to discuss the results of the valuation, GRS will charge for the meetings based on time and expense. The standard hourly rate for this would range from \$266-\$380 per hour.

Ms. Courtney Nicholls  
January 10, 2008  
Page 4

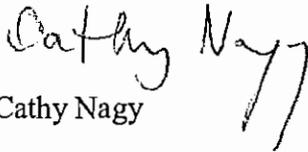
Determining OPEB Benefit Groups is an important step, as an understanding of "who gets what" is integral to producing appropriate liabilities and costs. Categorizing plan membership correctly initially would save costly time and expenses from having to redo the valuation should it later be determined that an incorrect set of benefits had been used.

**PROJECT TIMING**

We are prepared to initiate the valuation upon receipt of the data and following your approval of the proposal. We project that a valuation will be delivered ten to twelve weeks after receipt of clean and complete data.

Please do not hesitate to contact us at 1-248-799-9000 should you need additional information or clarification. We look forward to assisting the Village of Dexter in the valuation of its retiree health care benefits.

Respectfully submitted,

A handwritten signature in cursive script that reads "Cathy Nagy". The signature is written in black ink and is positioned to the right of the typed name.

Cathy Nagy

CN:lr  
Enclosures

**Courtney Nicholls**

---

**From:** Kimberly A. Rhodes [krhodes@ascpc.com]  
**Sent:** Friday, January 04, 2008 3:55 PM  
**To:** Courtney Nicholls  
**Subject:** RE: Quote Request

Courtney,

Thank you for considering our firm in your quest to find an actuary. Our firm specializes in valuing pension liabilities. We are not experts in valuing medical liabilities. Therefore, at this time, we decline to bid.

Thank you,

Kim

Kimberly A. Rhodes  
Plan Administration Supervisor  
Actuarial Service Company, P.C.  
575 E. Big Beaver, Suite 180  
Troy, Michigan 48083  
phone: (248) 680-1690  
direct dial: (248) 526-7325  
fax: (248) 680-8956

**From:** Courtney Nicholls [mailto:Cnicholls@villageofdexter.org]  
**Sent:** Friday, January 04, 2008 3:39 PM  
**To:** Kimberly Rhodes  
**Subject:** Quote Request

I would like to request information on receiving a quote for the actuarial valuation of the Village of Dexter's retiree benefits (OPEB compliance). Please contact me either via e-mail or phone with any information you may need to complete this quote.

Thanks,

Courtney L. Nicholls  
Village of Dexter  
Assistant Village Manager  
734-426-8303 ext. 17

\_\_\_\_\_ NOD32 2765 (20080104) Information \_\_\_\_\_

This message was checked by NOD32 antivirus system.  
<http://www.eset.com>

**P212**

1/4/2008



[About ASC](#) ♦ [Private Sector Actuarial](#) ♦ [Public Sector Actuarial](#) ♦ [Fiduciary & Administrative](#) ♦ [Contact Us](#)

*"Actuarial Service Company is always able to answer my questions and I never have to wait to get a response."*

*Sandy LaVioletta  
Human Resources  
Tri-State Hospital Supply Co.  
Howell, MI*

## Contact Us

If you'd like to learn more about how Actuarial Service Company can help keep your organization's retirement plan on track, call us toll-free at (866) 9-ACTUARY or email us at [info@ascpc.com](mailto:info@ascpc.com).



575 East Big Beaver  
Suite 180  
Troy, MI 48083  
Phone (248) 680-1690  
Toll-Free (866) 9-ACTUARY  
Fax (248) 680-8956

[About ASC](#) | [Private Sector Actuarial](#) | [Public Sector Actuarial](#)  
[Fiduciary & Administrative](#) | [Contact Us](#)

©2004 Actuarial Service Company

