

Charter Township of Bloomfield LONG TERM CORRECTIVE ACTION PLAN

Administrative Consent Order: SW05 – 003



DATE: July 1, 2014

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I. INTRODUCTION AND PURPOSE

Bloomfield Township is a part of the Evergreen-Farmington Sewage Disposal System (EFSDS), a regional wastewater collection system operated by the Oakland County Water Resources Commissioner's office (WRC) that serves 15 communities prior to discharge to the Detroit Water and Sewerage Department (DWSD) system for transport and treatment. Both the EFSDS and Bloomfield Township are currently under separate Administrative Consent Orders (ACO) to perform specific actions to reduce the frequency of sanitary sewer overflows (SSO). Bloomfield Township's ACO did not identify SSO. However, Bloomfield Township was required to reduce flows as the WRC indicated that the Township Outlet Capacity (TOC) was exceeded, which may have contributed to downstream SSOs.

The Michigan Department of Environmental Quality's (MDEQ) Administrative Consent Order (ACO) SW05-003 and AFO SW09-003 (refer to Appendices B and C) mandated that Bloomfield Township submit a Long Term Corrective Action Plan (LTCAP) on or before July 1, 2014. This Long Term Corrective Action Plan followed the Township's Short Term Corrective Action Plan (STCAP) which has been underway since 2005. The purpose of the STCAP was to identify sources of excess flows, and prioritize the sources for field investigations and any subsequent remedial action. The LTCAP is intended to follow the STCAP in order to construct projects to address remaining areas where excess flows still occur, after remedial actions identified in the STCAP such as manhole repairs, joint grouting, and sewer lining are undertaken.

According to the ACO, following the STCAP, Bloomfield Township was to evaluate its sanitary sewer system with flow monitoring to determine the effects of the improvements. This was done using primarily County meter data. Exhibit 1 shows the Bloomfield Township sewer system, as well as a summary of the work that has been completed on the system since 2005. Additional work is required to reduce excess flows, and as such Bloomfield Township has prepared this LTCAP.

The goal of this LTCAP is to address Bloomfield Township’s remaining contribution of excess flows to the Evergreen-Farmington Sanitary Sewerage Disposal System (EFSDS). The goal will be accomplished by participating in regional projects with the Oakland County Water Resources Commissioner’s office (WRC) and the other EFSDS communities. These projects are described herein. However, additional detail and history regarding these projects can also be found in the WRC LTCAP. The LTCAP also includes additional cost information and figures. A copy of the overall WRC LTCAP map is included as Exhibit II. WRC worked with the EFSDS communities in order to prioritize projects and develop a LTCAP that will reduce the frequency of SSO on the EFSDS in order to protect the environment. The determination of flows was established by WRC efforts and a model that has been developed and refined by their office. Therefore, close collaboration with their office was needed to assure compliance with the ACO.

The WRC LTCAP identifies five (5) Phase I projects. Of these, Bloomfield Township will participate in the four listed below. The costs identified are the total costs for the projects. Bloomfield Township will contribute to the costs of these projects based on their tributary flow. These costs are currently at the planning level. The cost allocations for Bloomfield Township will be determined during the design phase.

Project	Project Name	SSO(s) Impacted	Cost Estimate
B2/B3	Wattles Road Linear Storage	Troy SSOs, MH BLT 096006	\$4,626,000
B4	NEI Hydraulic Improvements	MH BLT 096006	\$966,000
C2	Stonycroft Relief & Amy PS Upgrades	Kingsley/Kensington	\$1,729,000
C4	Quarton Road Storage	MH BLT 101012	\$6,271,000
TOTAL			\$13,592,000

The WRC LTCAP also identified numerous Phase II projects. Once the Phase I projects are completed, the Township will continue to work with the County to determine whether any of the Phase II projects are necessary. If so, Bloomfield Township will participate in those projects as well.

II. HISTORY

The Charter Township of Bloomfield, incorporated in 1827, was the first Township to be established in Oakland County, Michigan. Primarily a residential community with limited commercial and industrial zoned areas, the Township consists of 26 square miles of land with a population of approximately 42,000 people (SEMCOG). The Township started to develop in the 1950s as a result of the growing industry occurring in the Detroit area. By the late 1980s, the majority of the Township was developed. In 1958, the Township became a member of Oakland County's Evergreen Sewage Disposal System, which was an extension of the Detroit Water and Sewerage Department (DWSD) regional wastewater collection system. The Evergreen District has since been modified to include the area served by the Farmington Interceptor and is now known as the Evergreen-Farmington Sewage Disposal System (EFSDS).

Bloomfield Township is responsible for providing public sanitary sewer service to the Township's residents and property owners. Approximately 12,000 parcels of land within the Township are connected to the public sanitary sewer. While the County operates and maintains the EFSDS interceptor sewers, the Township operates and maintains over 220 miles of lateral sewers and local interceptors.

Both older combined sewers and many homes with footing drains legally connected to the separate sewer system (built before 1967) are connected to the EFSDS. As a result, the EFSDS has had a long history of combined sewer overflows (CSOs); sanitary sewer overflows (SSOs) and basement flooding. Since the late 1970s several studies have been conducted to determine the cause and effect of excess flows, and how to remediate them. The studies determined that for the majority of the communities within the EFSDS, the primary source of excess flows, overflows, and basement flooding were footing drains/sump pumps connected to the sanitary sewer system. This was published in the 1979 *Evergreen-Farmington Pollution Control Facilities – Local Facilities Planning Report*. The 1989 *Sanitary Sewer Evaluation Survey* was conducted as a result of the recommendations in the Facilities Plan Report. The study consisted of a variety of field investigations throughout the EFSDS such as manhole inspections, sanitary

sewer smoke testing, and inspection of homes for footing drain connections. It was determined for Bloomfield Township that manhole rehabilitation was ranked the highest remediation measure. Consequently, 813 manholes were rehabilitated in the early 1990s.

Due to the fact that many communities in southeast Michigan were regularly experiencing basement flooding and sanitary sewer overflows, the MDEQ issued Abatement Orders to several Oakland County communities in 1988, including Bloomfield Township. As a mandated requirement of the Abatement Orders, the County had to implement the Evergreen-Farmington Performance Certification Program. The purpose of the program was to certify that the corrective actions taken to reduce peak sanitary wastewater flows and provide relief capacity as part of the Evergreen-Farmington Pollution Control Facilities were successful in controlling excessive infiltration/inflow. The results of the study, which included flow metering, indicated that system as a whole was no longer experiencing widespread overflow and back up issues. However, this may have been due to drier conditions during this time, and additional flooding occurred during major rain events in 1996, which led to additional studies.

In 1999, the Oakland County Water Resources Commissioner's Office (WRC) published the first phase of the Evergreen Farmington Sewage Disposal System (EFSDS) study, entitled *1999 Phase I Study* (dated March 1999). The study evaluated the history of the EFSDS, the system's reaction to intense rainfall events, town outlet capacity, necessity of sanitary retention and treatment basins (RTBs), and potential infiltration/inflow reduction. The study was initiated by WRC in response to claims of increased basement flooding, system surcharging, sanitary sewer overflows (SSOs) and other operational deficiencies within the EFSDS. While the Township was able to receive a positive certification in 1994, the results from the 1999 study indicated that the Township exceeded their TOC four (4) out of the six (6) rain events investigated. There were no known SSOs on the Township system. Consequently, the MDEQ has issued the second and third amended draft ACO (refer to Appendix B and C), which required a Short Term Corrective Action Plan and, if certification could not be achieved, the submittal of a Long Term Corrective Action Plan. Since 2005, the Township has been working diligently on their STCAP and has performed many programs aimed to reduce excess flows as outlined in the next section.

Based on WRC data, Bloomfield Township is still exceeding its current TOC and is therefore required to participate in projects to reduce excess flow and prevent downstream SSOs. There are no known SSOs on the Township-owned lateral sewer system.

In addition, the Township has been working closely with the WRC to eliminate CSOs, SSOs, and basement backups on the EFSDS downstream of the Township. Because the WRC report is what originally identified the Township as needing an abatement order, close collaboration is required to assure that the Township meets the requirements of its ACO. As such, several extensions have been granted for the submittal of the LTCAP in order for the County to complete additional studies. The original deadline for submittal was March 1, 2009, but due to the additional study and work that was being completed at the County-wide level, that deadline was ultimately extended until July 1, 2014. In addition, the County has broken the LTCAP into two phases. The first phase is defined as meeting the following criteria:

- Observations have validated the existence of an SSO
- The need for and sizing of the project can be determined based on available information.

For Phase 2 projects, there are two primary types of projects:

- Known SSOs that cannot be sized now because they will be impacted by Phase 1 projects.
- Model-predicted projects only which have not been field verified.

The Phase I LTCAP is due July 1, 2014. Once these projects are completed, additional studies will be performed and if needed, a LTCAP for the second phase projects will be due on April 1, 2019. The Township will continue to work closely with the County once the Phase I projects are implemented.

The Township's Abatement Order was originally based on the Township's Town Outlet Capacity (TOC) exceeding its allowable outlet flow of 21.09 cfs for four of the six storm events outlined in the 1999 report. Based on that report, it was determined that the Township's

maximum Town Outlet Flow was approximately 43.61 cfs. The updated 2007 Town Outlet Flow was identified as 29 cfs. Based on a review of the meter data for the Township meters, it has been determined that based on the current meter data, the Township has removed approximately 2-3 cfs from their total during peak events with the work that has been completed to date, based on the baseline flow of 29 cfs. However, additional flow must still be removed to assure that the Township does not contribute to downstream SSOs on the EFSDS. It has been demonstrated in the past that without going after private sources of I/I, that significant reductions of I/I through rehabilitation methods cannot be achieved.

III. HISTORICAL WORK AND SHORT TERM CORRECTIVE ACTION PLAN

Over the past 25 years, the Township has participated in numerous studies and improvement projects. However, based on the 1999 EFSDS study and more recent modeling and metering, Bloomfield Township is estimated to be producing sanitary flows over its TOC. Consequently, the Township has undertaken many projects, studies, and field investigations, in a proactive effort to address the concerns outlined in the 1999 Study. Between 2000 and 2004, the Township has completed the following:

- Manhole Inspections in floodplains, adjacent to lakes and rivers, and other low lying areas
- Internal Videotape Inspections of 180,740 linear feet in the older sewers of the Township.
- Relining over 10,000 lineal feet of deteriorating sewer.
- Point repairs of over 200 feet of sewer runs with potential of failing.
- Multi-phased meter/investigation study (refer to Appendix B for Meter Summary Map):
 - **2000** Phase 1: metering/field investigations/remedial action in WRC Meter District 3340 and 3630.
 - **2002** Phase 2: metering/field investigations/remedial action in sub districts of WRC Meter District 3340 and 3630.
Phase 3: metering/field investigations/remedial action in WRC Meter District 3500.
Phase 4: metering/field investigations/remedial action in WRC Meter District 3640.
 - **2003** Phase 5: metering/field investigations/remedial action in WRC Meter District 4810.
 - **2004** Phase 6: metering/field investigations/remedial action in sub districts of WRC Meter District 3500.
Phase 7: metering/field investigations/remedial action in WRC Meter District 4840.

In 2005, Bloomfield Township prepared a Short Term Corrective Action Plan (STCAP) and submitted this to MDEQ. The following programs were included in the STCAP and have been

completed since the approval of that document. A copy of the STCAP which outlines all tasks in more detail is included in Appendix A, and per the STCAP requirements, Annual Updates have been provided to the MDEQ each year. In addition to the specific work listed below, each year the Township has performed sanitary sewer televising and manhole inspections.

- **2005** Phase 4 Part II: additional metering/field investigations/remedial action in WRC Meter District 3640.
Phase 7: continued metering/field investigations/remedial action in WRC Meter District 4840.
Updated Sanitary Sewer Operation and Maintenance Program (SSOM)
- **2006** Phase 8: metering/field investigations/remedial action in WRC Meter District 3430 and 3450.
- **2007** Phase 9: metering/field investigations/remedial action in WRC Meter District 3420.
Phase 10: metering/field investigations/remedial action in WRC Meter District 3440.
- **2008** Charing Cross Houselead and Sanitary Sewer Rehabilitation: The Township worked with WRC to rehabilitate houseleads and the mainline sewer in one subdivision on the east end of the Township. The project consisted of grouting 263 joints, installing 23 spot liners, and rehabilitating 90 houseleads.
2008 Sanitary Sewer Rehabilitation Program: The Township identified areas where rehabilitation was necessary and lined 1,400 lft of pipe, grouted three joints, and installed a point repair sleeve.
- **2009** Forest Lake Country Club Sanitary Sewer Repair: The Township identified and repaired a collapsed fifteen (15”) inch diameter sewer along the edge of Forest Lake which was allowing significant groundwater into the sanitary sewer system.
Lahser Road Sanitary Sewer Repair: The Township identified and repaired a sanitary sewer line which had a pile driven through. This sewer was repaired.
2009 Maintenance Sewer Rehab: Chemical grouting and point repairs on 18 maintenance sewer sections as shown in Appendix D.

- **2010** Supplemental Metering: metering/field investigations/remedial action in WRC Meter Districts 3470, 3530, and 3610.
Telegraph Road Sewer Repair: The Township identified and repaired a deteriorating sewer under Telegraph Road with a point repair and the installation of a sewer liner.
- **2011** Hickory Heights Sanitary Sewer Investigation and Rehabilitation: Township completed a program which consisted of the lining of over 27,000 lineal feet of sanitary sewers and rehabilitation of over 100 manholes. Many of these sewers and manholes were located in floodprone areas.
CSO District Investigation and Rehabilitation: The Township undertook a project which involved the rehabilitation of the combined sewers at the south end of the Township. In 2011, the Township lined approximately 30,000 lft of sewer and rehabilitated 130 manholes.
- **2012** CSO District Investigation and Rehabilitation: The Township undertook a project which involved the rehabilitation of the combined sewers at the south end of the Township. In 2012, the Township lined approximately 14,000 lft of sewer and rehabilitated 45 manholes.
- **2013** Section 24 and 25 Mainline and Manhole Rehabilitation: Township completed a program which consisted of the lining of over 15,000 lineal feet of sanitary sewers and rehabilitation of over 100 manholes. Many of these sewers and manholes were located in floodprone areas.
- **2014** Wing Lake Shores Sanitary Sewer Investigation and Rehabilitation: This work consists of the rehabilitation of the sanitary sewer and manholes around Wing Lake. This project consisted of the lining of approximately 6,400 lft of sewer and rehabilitation of 34 manholes.
- **On-going Projects**
 - CSO District Investigation and Rehabilitation: The Contractor is still working on several more sewer lines and manhole rehabilitation.

The attached Exhibit identifies all work that has been completed in the Township throughout the STCAP.

IV. ACO TIMELINE

The EFSDS is a regional sanitary sewer service district that serves most of the communities in southeastern Oakland County. The Oakland County Water Resources Commissioner (WRC), who is responsible for the operation and maintenance of the EFSDS sanitary sewer interceptor system, has been monitoring the flow in the EFSDS district in response to reports of sanitary sewer overflows (SSOs), basement floodings, and surcharges which have occurred in the district during rain events. Studies, modeling, and metering analyses were conducted on the system to determine which areas had the greatest inflow and infiltration (I/I) problems and to establish potential relief options. According to the ACO, the communities with excess flows are required to reduce wet weather flows to the outlet, construct storage tanks to store the excess flow or provide other means to relieve the system from the excess flows. The following is the current ACO scheduled timeline for compliance for all upcoming tasks:

ACO ITEM	PREVIOUS DEADLINE	UPDATED DEADLINE
Use of wet weather connection to Bloomfield Village RTB	11/1/2017	11/1/2022
Submittal of LTCAP- Phase 1	3/1/2014	7/1/2014
Additional Data Collection- Phase 1	11/1/2013	4/1/2014
Completion of projects to address known upstream untreated SSOs in system- Phase 1	12/31/2017	11/1/2017
Submittal of LTCAP- Phase 2	3/1/2014**	4/1/2019
Additional Data Collection- Phase 2	11/1/2013**	4/1/2018
Completion of projects - Phase 2	12/31/2017**	11/1/2022
Submittal of Work Plan for PPC- Phase 2	12/31/2018**	8/1/2022
Submittal of PPC Program Report- Phase 2	12/31/2018**	12/31/2023

**Existing ACO does not include two construction Phases, therefore existing Phase 2 deadlines are the same as Phase 1 deadlines.

V. LONG TERM CORRECTIVE ACTION PLAN

Since 2000, Bloomfield Township has performed many tasks as outlined in the Short Term Corrective Action Plan in order to reduce or eliminate sources of excess flow. While the Township has reduced the amount of excess flow in the system, excess flow is still being contributed and therefore the Township must complete a Long Term Corrective Action Plan (LTCAP). The Township has explored several different options for completing the LTCAP as outlined below. Based on the review, it was determined that the most cost effective and collaborative manner for the Township to address excess flow problems is to contribute to regional systems to be constructed by the County. An overview of these projects is included herein, however, more detailed information is included in the County's LTCAP. The following is a list of all options that were considered for the Township's LTCAP.

1. Continued I/I Removal

As the first option to removing excess flow, the Township could consider continuing with work similar to that outlined in the Short Term Corrective Action Plan, and removing excess flow from the system. However, the Township only has jurisdiction over the public sanitary sewers. As previously discussed, much of the inflow and infiltration in the sewer comes from footing drains or private house leads. The costs associated with this removal would be prohibitive, and access issues would make it difficult to achieve the required removal goals prior to the deadlines outlined herein. As discussed in a previous section, the Township would still need to remove another 6 to 7 cfs of flow from the system. It is estimated that a connected footing drain contributes approximately 10,000-11,000 gallons per year to the sanitary sewer system. Therefore, the Township does not even have enough homes to remove this level of I/I, and the costs would be prohibitive. The costs to remove footing drains range from \$5,000-\$10,000 per home, which is extremely cost ineffective.

The I/I removed to date has been completed using lining and the Township has spent more than \$4,500,000 to remove the 2-3 cfs already removed. In order to remove another 6-7 cfs, that number would likely have to be at least doubled or more, and costs could be \$10,000,000 or more.

Although the Township cannot cost effectively address all of the excess flows using only removal of additional I/I, the Township will continue to perform rehabilitation projects on its lateral sanitary sewer system in order to remove excess flow and maintain the structural integrity of the sanitary sewer system.

2. Township Storage

The Township has removed some excess flow from the system through use of storage facilities, and has the option to construct an additional series of storage tanks to detain the remaining excess flow. While the construction costs of this approach may be similar to the costs for participating in a collaborative project with Oakland County, the collaboration will save money long term by sharing operation and maintenance costs. In addition, the Township would have to construct numerous tanks upstream of the SSOs on the County interceptor, and would not be able to construct one large tank to address its excess flow.

3. Use of Township CSO Basin

The Township contributes to the Bloomfield Village CSO Basin located at Cranbrook Road and Lincoln Road. By constructing the Robert Reid Drain in the late 1990s which separated a portion of the road drainage from the basin, the Township was able to free up additional flow in the basin. The Township's ACO has language regarding using this additional storage for short term relief. It has been discussed whether this could be utilized as a long term solution. However, negotiations between WRC and MDEQ/EPA to use co-mingling as a long term solution have not been successful. The County and communities will continue to work with the regulatory agencies regarding using this basin in the future. However, since currently it is not permissible, the Township did not investigate this solution in detail.

4. Collaboration with County Projects – *Selected Alternative*

The final option that the Township has, and the option that was deemed to be the most cost effective, would be to collaborate with Oakland County on their projects. These

projects are described in detail in the County's LTCAP. An exhibit showing the WRC LTCAP projects is included as Exhibit II. As discussed earlier the Phase I projects will be constructed at this time to address known SSOs. The County will then continue to study the system to determine what additional Phase II projects are required. A brief synopsis of the Phase I projects that will affect Bloomfield Township are described herein:

a. Wattles Road Linear Storage and NEI Hydraulic Improvements

The Troy branch of the system consists of the main branch of the County Interceptor starting at Adams Road, a half mile north of I-75 (at the border of Bloomfield Township), continuing downstream to Maple Road, where the Troy branch joins with the Quarton branch. Portions of Bloomfield Hills, Bloomfield Township and City of Troy are tributary to this reach. The interceptor sewer ranges in size from 15-inch to 27-inch through this reach and services a 9.5-square mile area.

The Troy branch experiences high wet weather flows and related surcharging that necessitates the City of Troy to perform relief pumping from the interceptor to the Rouge River during significant events, creating SSOs at three locations. Troy performs pumping in these locations in order to protect adjacent properties from basement flooding. Since 2005 there have been 11 events where Troy has implemented relief pumping.

While I/I has been identified as a contributing source of excess flow, the primary cause of relief pumping is due to the interceptor surcharging and elevated hydraulic grade (HG). This was initially identified by Troy staff who indicated that during large rain events the level in the manhole rises much more rapidly than expected. Flow metering data indicated that the system experiences much higher depths and higher levels of surcharging during large rain events than would be expected based on generally-accepted hydraulic modeling parameters. During events where the hydraulic grade line (HGL) should be within the pipe, the hydraulic discrepancy has

been as much as four feet (i.e. the system surcharges by four feet more than is expected from normal hydraulic losses).

The Township contributes flow to the subject interceptor. The proposed project consists of the construction of two linear storage tanks on Wattles Road on the east and west side of Adams Road. The tank on the west side of Adams Road will be located completely in the Township. The project will consist of a 0.51 million gallon storage tank which will remove approximately 6.1 cfs of peak flow from the interceptor line. This is described in more detail in the County's LTCAP which is incorporated by reference.

In addition to the storage tank, the interceptor line will be upgraded to address hydraulic discrepancies. This will include raising the benches on square manholes, addressing a hydraulic restriction at the Woodward Avenue crossing, and the replacement of the "zig zag" area in Birmingham.

The total costs for the Phase I Troy Arm Projects is \$5,592,000. These costs will be shared by Bloomfield Township, Bloomfield Hills, and the City of Troy.

b. Quarton Arm Improvements

The Quarton branch of the system consists of the main branch of the EFSDS Interceptor upstream starting at Maple Road near Southfield Road and extends north to South Boulevard and northwest to Telegraph Road. Portions of the City of Auburn Hills, City of Birmingham, Bloomfield Hills and Bloomfield Township are tributary to this reach. The interceptor sewer ranges in size from 15-inch to 27-inch through this reach and services a 15-square mile area.

The Quarton Branch experiences high wet weather flows and related surcharging that creates observed SSOs near the intersection of Kingsley Trail and Kensington Road and on Lakeside Drive south of Quarton Road near the intersection with Redding

Road. In addition, the model shows significant surcharging with HGLs above the acceptable limit on three arms of this section.

i. Stonycroft Relief Sewer and Amy PS Improvements

The Phase I projects along the Quarton Arm include a relief sewer and improvements to the Amy Pump Station near and on Stonycroft Hills Golf Course. This improvement will be made to address a known SSO upstream of this station where two twenty-one (21”) inch sewer lines come together into another twenty-one (21”) inch line. Relief and pumping upgrades are necessary to pass this flow downstream.

ii. Quarton Road Storage

Downstream of the Stonycroft project, a 0.4 MG storage tank will be constructed at the northwest corner of Quarton Road and Woodward Avenue. This tank will remove approximately 4.0 cfs of peak flow and will address a known SSO downstream of this site.

The total cost for the Phase I Quarton Arm Projects is \$8,000,000. This cost will be shared by Bloomfield Township, Bloomfield Hills, and Auburn Hills.

The total cost for all projects that Bloomfield Township is tributary to is \$13,592,000.

Once these projects are completed and the WRC is able to study the system further, there is a potential for additional Phase II projects (as shown on Exhibit II) throughout the system to address surcharging in the system. Several of these areas are located in Bloomfield Township and if necessary will be funded by the tributary communities.

VI. FUNDING

The Township's sanitary sewer operation, maintenance, and debt service is funded through sewer rates. The work completed under the STCAP to date has similarly been funded by the Township's sewer rate or by bonds.

The County projects will be funded by the system users. The County developed a cost allocation committee. Based on findings of this committee, it was determined that the tributary communities would pay for the improvements on the system, with some analysis to determine if any downstream communities were "benefitting". The County will be performing allocation analyses for all upcoming projects. The County is likely going to develop a debt service schedule for each community with anticipated billings to the communities on a semi-annual basis for the proposed work. Once these cost allocations are known, the Township will revisit the current debt service charge, rates and/or other funding mechanisms and adjust as necessary.

SUMMARY

The Township has spent millions of dollars over the past 20 years to eliminate excess flows in the public sewer system. There still remain some excess flows within the Township's sanitary sewer system. Many older house leads allow infiltration through open joints, cracks or openings created by tree roots. Also footing drains, roof downspouts, and sump pump connections are major direct excess inflow contributors to the sanitary sewer system and are considered the primary source of the remaining excess flows within the Township. The Township sanitary sewer system must comply with many regulated mandates to satisfy State and Federal environmental laws that control the pollution of waterways. The new Administrative Consent Order mandates the separate sanitary sewer system to reduce excess flows to an acceptable rate, to reduce the total peak flow to be within the Township's TOC and to eliminate all Sanitary Sewer Overflows (SSOs) for rain events up to and including the design event. Excess flows are typically located in sewers that were constructed along with the Evergreen-Farmington Sewage disposal System in 1958, or those prior to the Clean Water Act in 1974. However there are areas of newer sanitary sewers where I/I sources have been identified. This may be attributable to the fact that not all excess flows are generated in public sanitary sewers; there are private sanitary sewers throughout the Township that deteriorate the same as the public sewers. However, these private sewers do not receive the same operation and maintenance treatment as the public sanitary sewers.

The Township has followed a routine maintenance program for many years. The public sewer system serves as a conduit for transporting wastewater from the property owners that generate the waste. There is no accountability for the maintenance of the private sewer lines that connect to the public system.

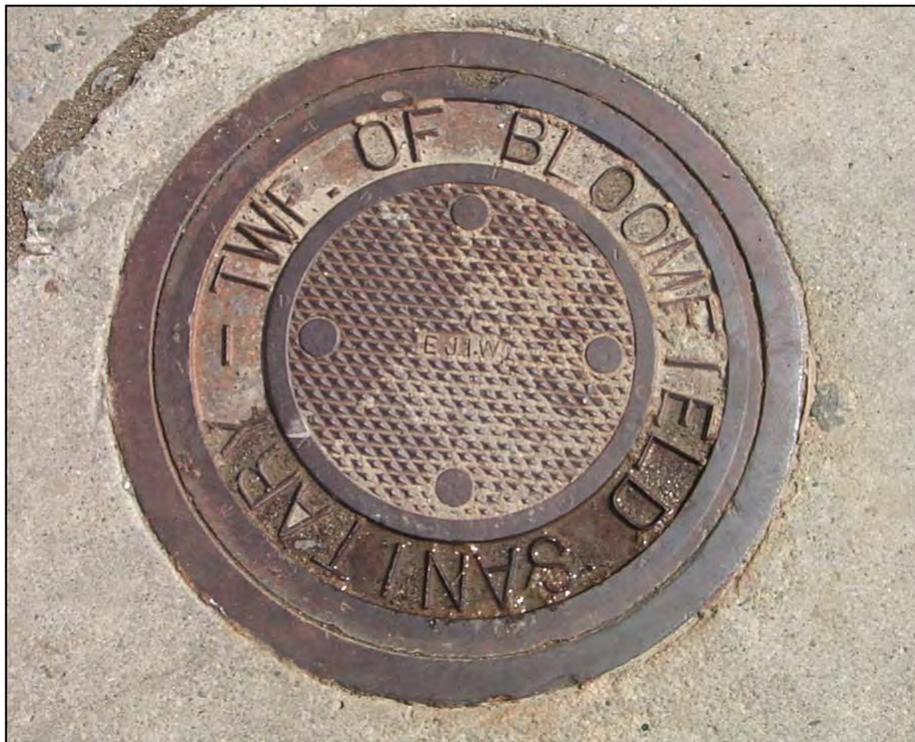
The Township's sewer rate will need to maintain a component for ongoing sewer rehabilitation that will be utilized for annual maintenance operations as well as to address the need to pay for County-wide projects which the Township will be part of. This could be as part of the Township's sewer rate or as a debt service payment for a bond sale.

APPENDIX A

Short Term Corrective Action Plan

Charter Township of Bloomfield SHORT TERM CORRECTIVE ACTION PLAN

Administrative Consent Order: SW05 – 003



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WATER DEPARTMENT

MISSION STATEMENT

The Mission of the Bloomfield Township Water Department is to operate and maintain all aspects of the public water and sewer system in a manner, which safeguards the health and well being of our residents.

Work performed by the Department shall be completed with an emphasis on providing professional, courteous, and efficient customer service, all at a reasonable cost.

To accomplish our Mission, the Water Department pledges to uphold the following objectives:

- Provide our customers with a safe, secure and reliable supply of drinking water as provided by the Detroit Water and Sewerage Department (DWSD);
- Operate adequate pressures for fire protection and other public safety uses;
- Convey wastewater in an environmentally safe manner, preventing and eliminating illicit discharges from entering our waterways;
- Participate in Rouge River and Clinton River watershed programs and educational outreach efforts; and
- Provide programs to the public to facilitate water conservation and promote greater awareness of the Department and its activities.



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I. PURPOSE

The Michigan Department of Environmental Quality's (MDEQ) Administrative Consent Order (ACO) SW05-003 (refer to Appendix A) mandates that a Short Term Corrective Action Plan (STCAP) be submitted before January 1, 2005. The purpose of this STCAP is to determine the sources of excess flows, and prioritize the sources for field investigations and any subsequent remedial action.

The goal of this STCAP is to reduce Bloomfield Township's contribution of excess flows to the Evergreen-Farmington Sanitary Sewerage Disposal System (EFSDS). The goal will be accomplished by first studying the sanitary areas within the Township using flow meters that collect sanitary sewer data for the purpose of determining the source(s) of excess flows and prioritizing those sources for the next phase of corrective action, known as field investigation. Field investigations may include manhole inspections, sanitary sewer televising, smoke testing and visual observation of downspouts and sump pump connections. The third phase of the STCAP, if necessary, is to remediate the priority areas with projects such as manhole repairs, joint grouting, sewer lining, public education, downspout disconnections and sump pump disconnections.

According to the ACO, following these improvements, Bloomfield Township will evaluate its sanitary sewer system with flow monitoring to determine the affects of the improvements. Should the improvements not be significant enough to reduce excess flows, Bloomfield Township will submit a Long Term Corrective Action Plan (LTCAP) on or before December 1, 2009.

II. HISTORY

The Charter Township of Bloomfield, incorporated in 1827, was the first Township to be established in Oakland County, Michigan. Primarily a residential community with limited commercial and industrial zoned areas, the Township consists of 26 square miles of land with a population of approximately 43,000. The Township started to grow in the 1950s as a result of the growing industry occurring in the Detroit area. By the late 1980s, the majority of the Township was developed. In 1958, the Township became a member of Oakland County's Evergreen Sewage Disposal System, which was an extension of the Detroit Water and Sewerage Department (DWSD) regional wastewater collection system. The Evergreen District has since been modified to include the area served by the Farmington Interceptor and is now known as the Evergreen-Farmington Sewage Disposal System (EFSDS).

Bloomfield Township is responsible for providing public sanitary sewer service to the Township's residents and property owners. Approximately 12,000 parcels of land within the Township are connected to the public sanitary sewer. While the County operates and maintains the EFSDS interceptor sewers, the Township Water Department operates and maintains over 220 miles of lateral sewers and local interceptors.

Both older combined sewers and many homes with footing drains and sump pumps connected to the separate sewer system (built before 1967) are connected to the EFSDS. As a result, the EFSDS has had a long history of combined sewer overflows (CSOs), sanitary sewer overflows (SSOs) and basement flooding. Since the late 1970s several studies have been conducted to determine the cause and effect of excess flows, and how to remediate them. The studies determined that for the majority of the communities within the EFSDS, the primary source of excess flows, overflows, and basement flooding, were footing drains/sump pumps connected to the sanitary sewer system. This was published in the 1979 *Evergreen-Farmington Pollution Control Facilities – Local Facilities Planning Report*. The 1989 *Sanitary Sewer Evaluation Survey* was conducted as a result of the recommendations in the Facilities Plan Report. The study consisted of a variety of field investigations throughout the EFSDS such as manhole inspections, sanitary sewer smoke testing, and inspection of homes for footing drain

connections. It was determined for Bloomfield Township that manhole rehabilitation was ranked the highest remediation measure. Consequently, 813 manholes were rehabilitated in the early 1990s.

Due to the fact that many communities in southeast Michigan were regularly experiencing basement flooding and sanitary sewer overflows, the MDEQ issued Abatement Orders to several Oakland County communities in 1988, including Bloomfield Township. As a mandated requirement of the Abatement Orders, the County had to implement the Evergreen-Farmington Performance Certification Program. The purpose of the program was to certify that the corrective actions taken to reduce peak sanitary wastewater flows and provide relief capacity as part of the Evergreen-Farmington Pollution Control Facilities were successful in controlling excessive infiltration/inflow. The results of the study, which included flow metering, indicated that Bloomfield Township's Anticipated Design Flow was less than their Town Outlet Capacity (TOC) thereby providing positive certification for the Township.

In 1999, the Oakland County Drain Commissioner's Office (OCDC) published the first phase of the Evergreen Farmington Sewage Disposal System (EFSDS) study, entitled *1999 Phase 1 Study* (dated March 1999). The study evaluated the history of the EFSDS, the system's reaction to intense rainfall events, town outlet capacity, necessity of sanitary retention and treatment basins (RTBs), and potential infiltration/inflow reduction. The study was initiated by OCDC in response to claims of increased basement flooding, system surcharging, sanitary sewer overflows (SSOs) and other operational deficiencies within the EFSDS. While the Township was able to receive a positive certification in 1994, the results from the 1999 study indicated that the Township exceeded their TOC five (5) out of the six (6) rain events investigated. Consequently, the MDEQ has issued the second amended draft ACO (refer to Appendix A).

III. CURRENT CORRECTIVE ACTION PROGRAM

Over the past 25 years, the Township has participated in numerous studies and improvement projects. However, based on the most recent EFSDS study (*2001 Supplemental to EFSDS 1999 Phase 1 Study*), Bloomfield Township is estimated to be producing sanitary flows over its TOC. Consequently, the Township has undertaken many projects, studies, and field investigations, in a proactive effort to address the concerns outlined in the 1999 Study. Since 2000, the Township Water Department has completed the following:

- Manhole Inspections in floodplains, adjacent to lakes and rivers, and other low lying areas
- Internal Videotape Inspections of 180,740 linear feet in the older sewers of the Township.
- Relining over 10,000 lineal feet of deteriorating sewer.
- Point repairs of over 200 feet of sewer runs with potential of failing.
- Multi-phased meter/investigation study (refer to Appendix B for Meter Summary Map):
 - **2000** Phase 1: metering/field investigations/remedial action in OCDC Meter District 3340 and 3630.
 - **2002** Phase 2: metering/field investigations/remedial action in sub districts of OCDC Meter District 3340 and 3630.
Phase 3: metering/field investigations/remedial action in OCDC Meter District 3500.
Phase 4: metering/field investigations/remedial action in OCDC Meter District 3640.
 - **2003** Phase 5: metering/field investigations/remedial action in OCDC Meter District 4810.
 - **2004** Phase 6: metering/field investigations/remedial action in sub districts of OCDC Meter District 3500.
Phase 7: metering/field investigations/remedial action in OCDC Meter District 4840.

The Township continues to proceed with flow metering studies by metering the high I/I districts that were identified in the 1999 EFSDS Phase 1 Report. The Township is currently reviewing

the Phase 6 results and will follow with field investigations and remedial actions, if necessary. Additionally, to supplement the Department's remedial action efforts, the Township, in a proactive manner, has contracted with a specialty private contractor to work with the Department on remedial projects such as sewer lining.

IV. ACO TIMELINE

The EFSDS is a regional sanitary sewer service district that serves most of the communities in southeastern Oakland County. The Oakland County Drain Commissioner (OCDC), who is responsible for the operation and maintenance of the EFSDS sanitary sewer interceptor system, has been monitoring the flow in the EFSDS district in response to reports of sanitary sewer overflows (SSOs), basement floodings, and surcharges which have occurred in the district during rain events. Studies, modeling, and metering analyses were conducted on the system to determine which areas had the greatest inflow and infiltration (I/I) problems and to establish potential relief options. According to the ACO, the communities with excess flows are required to reduce wet weather flows to the outlet, construct storage tanks to store the excess flow or provide other means to relieve the system from the excess flows. The following is the ACO scheduled timeline for compliance:

- 01/01/2005 Short Term Corrective Action Plan due
- 12/01/2009 Long Term Corrective Action Plan due (if necessary)
- 05/01/2013 Project Performance Certification Work Plan due
- 12/01/2013 All Long Term Corrective Action Plan work complete
- 12/02/2013 Start Project Performance Certification
- 01/01/2015 Project Performance Certification Report due
- 05/01/2015 Corrective Action Plan due (if necessary)
- January 15 Annual Progress Report due

V. SHORT TERM CORRECTIVE ACTION PLAN

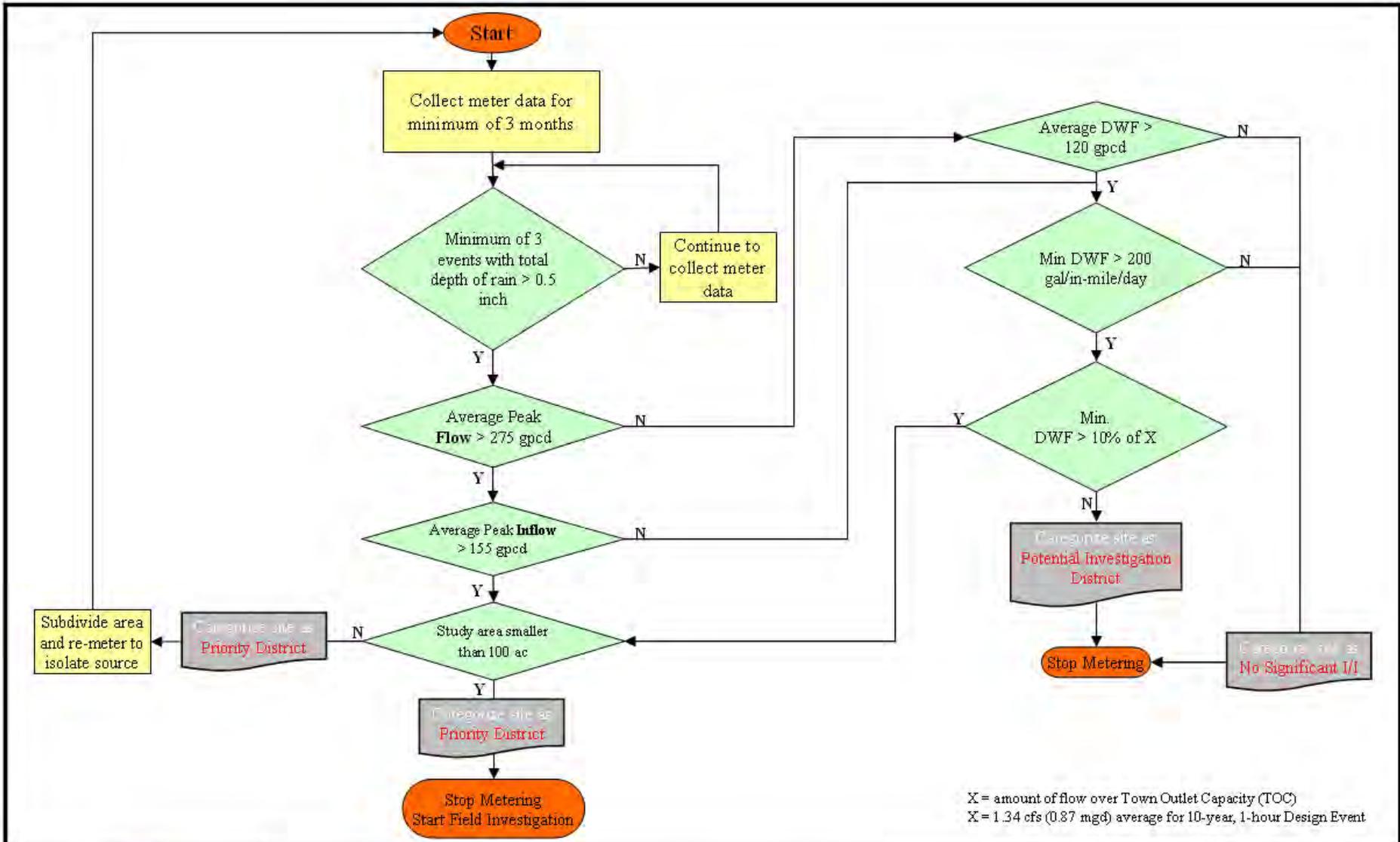
Since 2000, Bloomfield Township has instituted a continual metering program that consists of metering areas suspected of contributing excess flows in order to isolate the source. The metering follows the flow chart presented in Figure 1. Following each metering phase, Township staff has been investigating the identified priority areas through manhole inspections and sewer televising. The field investigations to-date have proven to be successful as the Township has corrected several adverse sanitary sewer conditions thereby removing excess flows from their system.

For this STCAP, the Township plans to continue with its metering program as outlined in Figure 1 with field investigations and remedial actions to follow. The following schedule is anticipated:

- January 2005 – December 2005
Research and update Township Ordinances to address private sources. Update the Township's Sewer System Operation and Maintenance Program.
- March 2005 – June 2006
Phase 4, Part II: metering/field investigations/remedial action in OCDC Meter District 3640, update Township GIS mapping and database, and revise STCAP as necessary.
- July 2005 – December 2006
Phase 7: metering/field investigations/remedial action in OCDC Meter District 4840, update Township GIS mapping and database, and revise STCAP as necessary.
- January 2006 – December 2006
Implement updated Township Ordinances and Sewer System Operation and Maintenance Program
- March 2006 – June 2007
Phase 8: metering/field investigations/remedial action in OCDC Meter District 3500 (along the Rouge River), update Township GIS mapping and database, and revise STCAP as necessary.

- July 2006 – December 2007
Phase 9: metering/field investigations/remedial action, update Township GIS mapping and database, and revise STCAP as necessary. Location currently unknown.
- March 2007 – June 2008
Phase 10: metering/field investigations/remedial action, update Township GIS mapping and database, and revise STCAP as necessary. Location currently unknown.
- July 2007 – July 2008
12 months of continuous metering (per ACO requirements). Metering may extend to July 2009 if necessary.

The anticipate STCAP schedule is detailed in Table 1 and metering locations are shown in Figure 2.



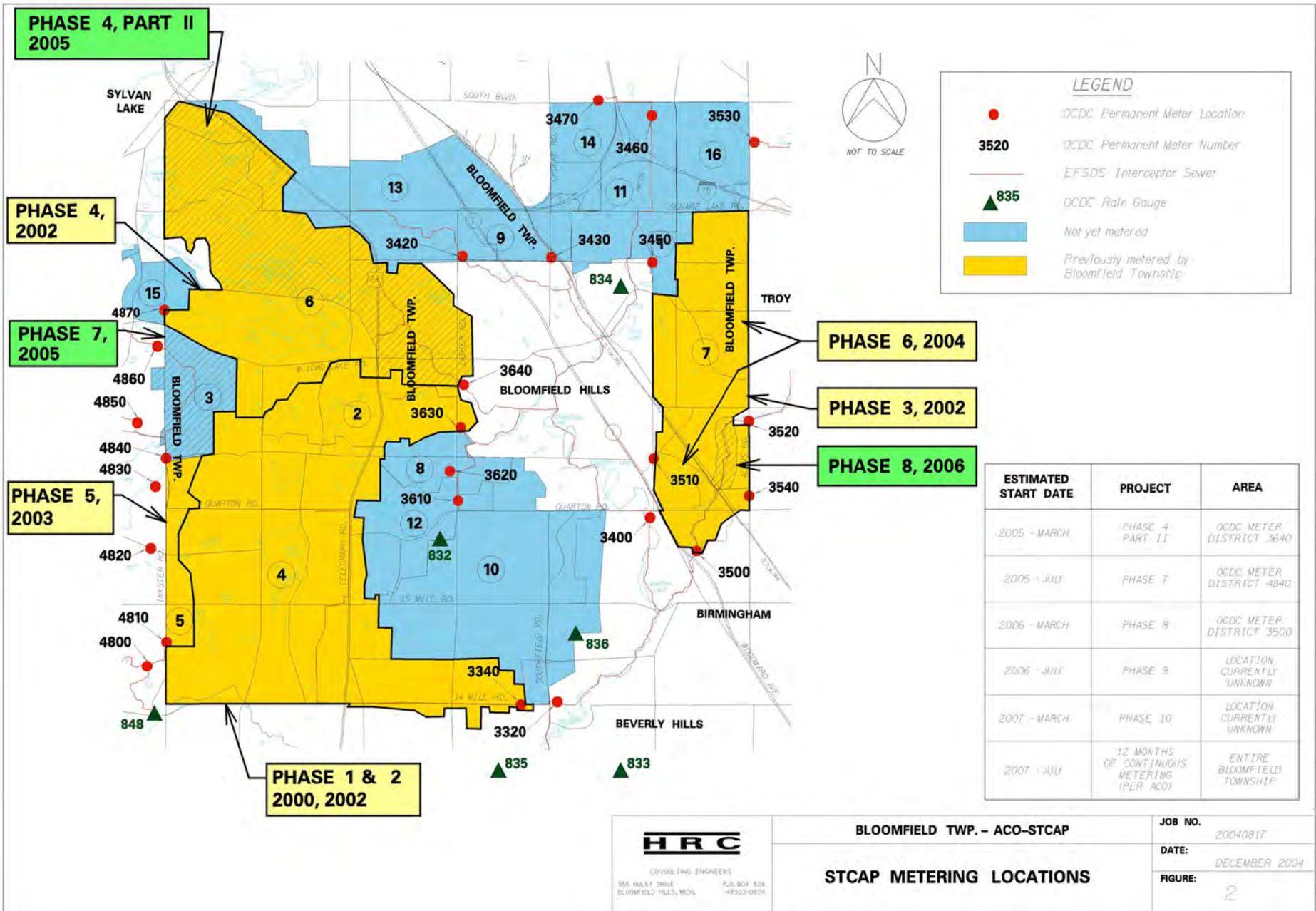
X = amount of flow over Town Outlet Capacity (TOC)
 X = 1.34 cfs (0.87 mgd) average for 10-year, 1-hour Design Event



Bloomfield Township – ACO-STCAP

Flow Metering Flow Chart Process

Job No. 20040817
Date November 2004
Figure No. 1



CONSULTING ENGINEERS
 995 HULET DRIVE P.O. BOX 838
 BLOOMFIELD HILLS, MICH. 48303-0838

BLOOMFIELD TWP. - ACO-STCAP

STCAP METERING LOCATIONS

JOB NO. 20040817
 DATE: DECEMBER 2004
 FIGURE: 2

VI. FUNDING

The Water Department's sanitary sewer system operation and maintenance program is funded through the sewer rates. Manhole inspection, cleaning and staff video inspections have been funded by the department's operating component of the rate. Sewer rehabilitation, metering of sewage flows and large area video inspections have been funded by the rehabilitation component of the sewer rate.

Current Sewer Rate	Current Rate	Percentage of Total Rate (%)
Evergreen-Farmington	\$ 1.59	69 %
CSO Basin	\$ 0.11	5 %
Rehabilitation	\$ 0.12	5 %
Operation and Maintenance	\$ 0.48	21 %
Retail	\$ 2.30	100 %

The current rehabilitation component of \$0.12 will generate approximately \$240,000 annually. The required program to manage the goals of the Amended Consent Order to the Abatement Order #2099 is estimated to require \$500,000 annually. Therefore the rate should be increased by \$0.13 per 1000 gallons or 5.6% to meet this desired funding goal.

Future Sewer Rate	Proposed Rate	Percentage of Total Rate (%)
Evergreen-Farmington	\$ 1.59	65 %
CSO Basin	\$ 0.11	5 %
Rehabilitation	\$ 0.25	10 %
Operation and Maintenance	\$ 0.48	20 %
Retail	\$ 2.43	100 %

The sewer rate has not been increased since 2001; therefore such an increase is justified to meet the regulatory compliance schedules. Much of the reason for this was due to the Environmental Infrastructure Fund that Oakland County allocated to the Township from 2000 to 2004 for water quality projects. Over this time period \$765,000 was used towards the evaluation, monitoring, inspection, and rehabilitation of the sanitary sewer system. This amount equates to approximately \$0.08 per 1000 gallons of the sewer rate that was not charged to the sewer customer.

VII. SUMMARY

The Township has spent millions of dollars over the past 20 years to eliminate excess flows in the public sewer system but yet there are still excess flows within the Township's sanitary sewer system. Many house leads from the sewer allow infiltration through open joints, cracks or openings created by tree roots. Also footing drains, roof downspouts, and sump pump connections are major direct excess inflow contributors to the sanitary sewer system and are considered the primary source of excess flows within the Township. The Township sanitary sewer system must comply with many regulated mandates to satisfy State and Federal environmental laws that control the pollution of the waterways. The new Administrative Consent Order mandates the separate sanitary sewer system to reduce excess flows to an acceptable rate, to reduce the total peak flow to be within the Township's TOC and to eliminate all Sanitary Sewer Overflows (SSOs) for rain events up to and including the design event. Excess flows are typically located in sewers that were constructed along with the Evergreen-Farmington Sewage disposal System in 1958, or those prior to the Clean Water Act in 1974. However there are areas of newer sanitary sewers where I/I sources have been found. This may be attributable to the fact that not all excess flows are generated in public sanitary sewers; there are private sanitary sewers throughout the Township that deteriorate the same as the public sewers. However, these private sewers do not receive the same operation and maintenance treatment as the public sanitary sewers.

The Water Department has followed a routine maintenance program for several years. The public sewer system serves as a conduit for transporting wastewater from the property owners that generate the waste. There is no accountability for the maintenance of the private sewer lines that connect to the public system. A combination of public education and ordinance enforcement needs to be implemented to make the homeowners aware of their individual contributions towards SSOs.

The Township's sewer rate will need to maintain a component for ongoing sewer rehabilitation that will be used toward annual maintenance operations as well as build a reserve fund for the future long-term measures. Consideration of commingling sanitary sewer flows with combined

sewer flows in the existing CSO Basins may be more economically feasible to keep future costs for these long-term solutions at a minimum. A long-term measure could also include the extension of storm sewers to convey the footing drain or sump pumps in older subdivisions that do not have a separate storm sewer as required under today's standard.

APPENDIX B

Second Administrative Consent Order (SW05-002)



ENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



STEVEN E. CHESTER
DIRECTOR

December 14, 2004

CERTIFIED MAIL 7002 3150 0003 3281 8238

Mr. Dave Payne, Supervisor
Charter Township of Bloomfield
4200 Telegraph Road
PO Box 489
Bloomfield Hills, Michigan 48303-0489

Dear Mr. Payne:

SUBJECT: Administrative Consent Order ACO-SW05-003

Enclosed please find a fully executed Administrative Consent Order (Consent Order) for Bloomfield Township (Township). This Consent Order was entered into between the Department of Environmental Quality and the Township on December 10, 2004. Payment of the cost reimbursement, as required in paragraph 9.1 of the Consent Order, is due within 30 days.

Thank you for your assistance and cooperation in this matter. If you have any questions, please contact me at the number below.

Sincerely,

Jodie N. Taylor, Enforcement Specialist
Enforcement Unit
Field Operations Division
Water Bureau
517-373-8545
FAX: 517-373-2040

Enclosures

cc: Mr. John McCullough, Oakland County Drain Commissioner
Mr. Steven E. Chester, Director, DEQ
Mr. Barry H. Selden, DEQ
Mr. Thomas Knueve, DEQ

**STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER BUREAU**

In the matter of:

ACO-SW05- 003
Date Entered: 12/10/2004

Charter Township of Bloomfield
4200 Telegraph Road
PO Box 489
Bloomfield Hills, Michigan 48303-0489

SECOND AMENDED ADMINISTRATIVE CONSENT ORDER

This proceeding results from the need to amend Final Order of Abatement Number 2099 in order to meet the statutory requirements of state and federal law. The Water Bureau (WB) of the Department of Environmental Quality (DEQ) has determined that the Charter Township of Bloomfield (Township), which owns and operates a separate and combined sanitary sewer collection system discharges its sanitary wastewater to the Evergreen-Farmington Sewage Disposal System (EFSDS), which is tributary to the Detroit Water and Sewerage Department Interceptor System (DWSDIS) and Wastewater Treatment Plant (WWTP) needs to perform further corrective actions to the sewerage system in order to fully comply with Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, (NREPA) MCL 324.3101 et seq.; and the rules promulgated under Part 31. The Township and the DEQ agree to resolve the sewer capacity issues set forth in the Findings section of this Second Amended Consent Order and to terminate this proceeding by entry of this Second Amended Consent Order.

I. STIPULATIONS

The Township and the DEQ stipulate as follows:

- 1.1 The NREPA MCL 324.101 et seq., is an act that controls pollution to protect the environment and natural resources in the state.
- 1.2 Article II, Pollution Control, Part 31, Water Resources Protection, of the NREPA (Part 31), MCL 324.3101 et seq., and rules promulgated pursuant thereto, provides for

the protection, conservation, and the control of pollution of the water resources of the state.

- 1.3 The DEQ is authorized by Section 3112(2) of Part 31 of the NREPA to enter orders requiring persons to abate pollution and, therefore, the Director has authority to enter this Second Amended Consent Order with the Township.
- 1.4 The Township stipulates to the issuance and entry of this Second Amended Consent Order to comply by consent and stipulates that the termination of this matter by a final order to be entered as a Second Amended Consent Order is proper and acceptable. The Township further agrees not to contest the issuance of this Second Amended Consent Order. This Second Amended Consent Order, thus, shall be considered a final order of the DEQ and shall become effective on the date it is signed by the Chief of the WB, delegee of the Director, pursuant to Section 301(b) of the NREPA.
- 1.5 The Township and the DEQ agree that the signing of this Second Amended Consent Order is for settlement purposes only and does not constitute an admission by the Township that the law has been violated.
- 1.6 The Township shall achieve compliance with the aforementioned regulations in accordance with the requirements contained in Section III, Compliance Program, of this Second Amended Consent Order.

II. FINDINGS

- 2.1 On September 8, 1988, the Township and the Michigan Department of Natural Resources (now known as the DEQ), entered into a Final Order of Abatement Number 2099 requiring the Township to complete construction of a regional portion of the EFSDS.
- 2.2 On August 21, 1992, the Township and the Michigan Department of Natural Resources (now known as the DEQ), entered into a First Amended Final Order of Abatement

Number 2099A modifying the construction schedule for the EFSDS Project in order to coincide with the completion of the local municipality sewer projects.

- 2.3 On May 10, 2000, the DEQ issued its "Strategy for the Regulatory Control and Correction of Illegal Overflows from Separate Sanitary Sewer Systems in Michigan." Under the Strategy, the DEQ required Michigan municipalities to report all known Sanitary Sewer Overflows (SSOs) that have occurred in the past five years, and requested that the communities promptly report all future SSOs.
- 2.4 The Town Outlet Capacity (TOC) for the Township is 21.09 cfs. The Township has exceeded their TOC in the EFSDS regional system on numerous occasions which has resulted in the Township contributing to downstream SSOs.

III. COMPLIANCE PROGRAM

IT IS THEREFORE AGREED AND ORDERED THAT the Township will take the following actions to prevent further violations of Part 31 of NREPA:

- 3.1 The Township shall complete an evaluation of the feasibility of sanitary sewer projects that will remove excess wastewater flow from their sanitary sewer system, and submit an approvable **short term corrective action plan** and schedule to the DEQ on or before **January 1, 2005**. The **short term corrective action plan** shall include a detailed description of the projects, and a schedule for each project to; 1) submit the basis of design, 2) submit complete plans and specifications, 3) start construction, and 4) complete construction. Construction of the projects shall be completed in sufficient time to support submittal of an approvable **long term corrective action plan** by December 1, 2009. The approved short term corrective action plan and schedule will become part of this modified order by reference.
- 3.2 The Township shall collect and evaluate flow monitoring data for a period of 12 consecutive months, following completion of construction of the projects specified in the

approved short term corrective action plan. Based on these results, if the Township has not certified the TOC (as defined below) or has had SSOs due to capacity issues during events less than the remedial design standard (as defined below), the Township shall submit an approvable **long term corrective action plan** to the DEQ for review and approval no later than **December 1, 2009**. The long term corrective action plan shall include; a) projects and schedules that will ensure that TOC as previously established and defined in the Final Order of Abatement Number 2099, and b) appropriate engineering and structural improvements to the sewer system with corresponding schedules, to meet applicable state and federal law regulating SSOs using as guidance the remedial design standard as defined below.

The remedial design standard as defined in the DEQ SSO Policy Guidance dated December 27, 2002, is a 25 year, 24 hour storm using growth conditions and normal soil moisture. This remedial design standard will remain the goal of all projects described in this Consent Order. A ten year, one hour storm under dormant and growth conditions will be considered a comparable alternative remedial design standard as defined in the MDEQ SSO Clarification Statement dated October 23, 2003. All SSO events that result from events that exceed this "comparable alternative remedial design standard" will be considered for enforcement discretion. To document the appropriateness of the use of the "comparable alternative remedial design standard", the County is completing by December 1, 2006, a hydrologic and hydraulic modeling analysis comparing the system response (at the EFSDS outlet and agreed to representative system locations) to both the ten year, one hour storm under dormant and growth conditions and the 25 year, 24 hour storm using growth conditions and normal soil moisture. Any revised remedial design standard that is effective on December 1, 2009, shall take precedence if current state and federal SSO requirements are changed to allow for its use during lesser events.

Such "projects" and "appropriate engineering and structural improvements" may include storage (or participation with County regional storage), and/or additional removal of I/I as realistically documented during the short term corrective action plan (by Township, the County and member communities).

The Township, in cooperation with the County, may also elect to provide a wet weather connection from its sanitary sewer system to the Bloomfield Village RTB (subject to Part 41 permit review). Capacity for this connection, if warranted to meet town outlet flow requirements has been made available by the Township's construction of the Robert Reid Storm Relief Drain in 1998 and 1999. The Robert Reid Storm Relief Drain (construction cost +/- \$2.5 million) diverted approximately fifteen (15%) percent of the tributary acreage and storm water flow from the Bloomfield Village CSO District directly to the Rouge River, effectively bypassing the Bloomfield Village CSO basin and providing for excess storage in the basin beyond the original design capacity. Operation of this system shall be in accordance with an approved County operation plan. After **December 1, 2013**, this wet weather sanitary connection to the Bloomfield Village RTB is only authorized, in accordance with an approved County operation plan, for use during events that exceed the remedial design standard (defined above) to protect public health and water quality, unless current state and federal SSO requirements are changed to allow for its use during lesser events.

- 3.3 Following review and approval of the **long term corrective action plan** and schedules by the DEQ, the approved schedules will become part of this modified order by reference. However final compliance with paragraph 3.2 shall be completed by no later than **December 1, 2013**.
- 3.4 On or before **May 1, 2013**, the Township shall submit to the DEQ for review and approval, a work plan for conducting a year long Project Performance Certification Program (PPC) to certify that the **long term corrective action plan** meets TOC as previously established and defined in the Final Order of Abatement Number 2099, and all applicable state and federal laws regulating SSOs using as guidance the remedial design standard as defined in the DEQ SSO Policy Statement dated December 27, 2002, or a comparable alternative remedial design standard as defined in the DEQ SSO Clarification Statement dated October 23, 2003, (or a revised remedial design standard as effective on December 1, 2009).

- 3.5 On or before **January 1, 2015**, the Township shall submit to the DEQ for review and approval, the PPC Program report. If the Township does not certify that the **long term corrective action plan** meets TOC as previously established and defined in the Final Order of Abatement Number 2099, and all applicable state and federal laws regulating SSOs using as guidance the remedial design standard as defined in the DEQ SSO Policy Statement dated December 27, 2002, or a comparable alternative remedial design standard as defined in the DEQ SSO Clarification Statement dated October 23, 2003, (or a revised remedial design standard as effective on December 1, 2009), then the Township shall submit an approvable Corrective Action Program work plan to the DEQ on or before **May 1, 2015**.
- 3.6 Progress reports shall be submitted to the DEQ beginning upon the entry date of this amended order on an annual basis, and shall be due on or before January 15 of each calendar year. The submittal of progress reports shall cease upon termination of this order.
- 3.7 The Township shall submit all reports, work plans, specifications, schedules, or any other writing required by this Section to the District Supervisor, WB, DEQ, 38980 West Seven Mile Road, Livonia, Michigan 48152 or other relevant address as determined by the DEQ. The cover letter with each submittal shall identify the specific paragraph and requirement of this Second Amended Consent Order that the submittal is intended to satisfy.

IV. DEQ APPROVAL OF SUBMITTALS

- 4.1 For any work plan, proposal, or other document, excluding applications for permits or licenses, that are required by this Consent Order to be submitted to the DEQ by the Township, the following process and terms of approval shall apply.
- 4.2 All work plans, proposals, and other documents required to be submitted by this Second Amended Consent Order shall include all of the information required by the applicable

statute and/or rule, and all of the information required by the applicable paragraph(s) of this Second Amended Consent Order.

- 4.3 In the event the DEQ disapproves a work plan, proposal, or other document, it will notify the Township, in writing, specifying the reasons for such disapproval. The Township shall submit, within thirty (30) days of receipt of such disapproval, a revised work plan, proposal, or other document which adequately addresses the reasons for the DEQ's disapproval. If the reviewed work plan, proposal, or other document is still not acceptable to the DEQ, the DEQ will notify the Township of this disapproval.
- 4.4 In the event the DEQ approves with specific modifications, a work plan, proposal, or other document, it will notify the Township, in writing, specifying the modifications required to be made to such work plan, proposal, or other document prior to its implementation and the specific reasons for such modifications. The DEQ may require the Township to submit, prior to implementation and within thirty (30) days of receipt of such approval with specific modifications, a revised work plan, proposal, or other document which adequately addresses such modifications. If the reviewed work plan, proposal, or other document is still not acceptable to the DEQ, the DEQ will notify the Township of this disapproval.
- 4.5 Upon DEQ approval, or approval with modifications, of a work plan, proposal, or other document, such work plan, proposal, or other document shall be incorporated by reference into this Second Amended Consent Order and shall be enforceable in accordance with the provisions of this Second Amended Consent Order.
- 4.6 Failure by the Township to submit an approvable work plan, proposal, or other document, within the applicable time periods specified above, constitutes a violation of this Second Amended Consent Order and shall subject the Township to the enforcement provisions of this Second Amended Consent Order, including the stipulated penalty provisions specified in paragraph 9.2.

- 4.7 Any delays caused by the Township's failure to submit an approvable work plan, proposal, or other document when due shall in no way affect or alter the Township's responsibility to comply with any other deadline(s) specified in this Second Amended Consent Order.
- 4.8 No informal advice, guidance, suggestions, or comments by the DEQ regarding reports, work plans, plans, specifications, schedules or any other writing submitted by the Township will be construed as relieving the Township of its obligation to obtain written approval, if and when required by this Second Amended Consent Order.

V. EXTENSIONS

- 5.1 The Township and the DEQ agree that the DEQ may grant the Township a reasonable extension of the specified deadlines set forth in this Second Amended Consent Order. Any extension shall be preceded by a written request in duplicate to the DEQ, WB Enforcement Unit Chief, Constitution Hall, 525 W. Allegan, P.O. Box 30273, Lansing, Michigan, 48909-7773, and the Southeast Michigan District Supervisor at the address in paragraph 3.7, no later than ten (10) business days prior to the pertinent deadline, and shall include:
- a. Identification of the specific deadline(s) of this Second Amended Consent Order that will not be met.
 - b. A detailed description of the circumstances which will prevent the Township from meeting the deadline(s).
 - c. A description of the measures the Township has taken and/or intends to take to meet the required deadline.
 - d. The length of the extension requested and the specific date on which the obligation will be met.

The District Supervisor, in consultation with the Enforcement Unit Chief, shall respond in writing to such requests. No change or modification to this Second Amended Consent Order shall be valid unless in writing from the DEQ, and if applicable, signed by both parties.

VI. REPORTING

- 6.1 The Township shall verbally report any violation(s) of the terms and conditions of this Second Amended Consent Order to the Southeast Michigan District Supervisor by no later than the close of the next business day following detection of such violation(s) and shall follow such notification with a written report within five (5) business days following detection of such violation(s). The written report shall include a detailed description of the violation(s), as well as a description of any actions proposed or taken to correct the violation(s). The Township shall report any anticipated violation(s) of this Second Amended Consent Order to the above-referenced individual in advance of the relevant deadlines whenever possible.

VII. RETENTION OF RECORDS

- 7.1 Upon request by an authorized representative of the DEQ, the Township shall make available to the DEQ all records, plans, logs, and other documents required to be maintained under this Second Amended Consent Order or pursuant to Part 31 of the NREPA or its rules. All such documents shall be retained by the Township for at least a period of three (3) years from the date of generation of the record unless a longer period of record retention is required by Part 31 of the NREPA, or its rules.

VIII. RIGHT OF ENTRY

- 8.1 The Township shall allow any authorized representative or contractor of the DEQ, upon presentation of proper credentials, to enter upon the premises of the Facility at all reasonable times for the purpose of monitoring compliance with the provisions of this

Second Amended Consent Order. This paragraph in no way limits the authority of the DEQ to conduct tests and inspections pursuant to the NREPA and the rules promulgated there under, or any other applicable statutory provision.

IX. PENALTIES

- 9.1 The Township agrees to pay to the State of Michigan **TWENTY-FIVE HUNDRED (\$2,500) DOLLARS** as compensation for the cost of investigations and enforcement activities arising from the violations specified in Section II of this Second Amended Consent Order. Payment shall be made within 30 days of the effective date of this Second Amended Consent Order in accordance with paragraph 9.6.
- 9.2 For each failure to comply with the provisions of Section III and IV of this Second Amended Consent Order, The Township shall pay stipulated penalties of **\$500** per violation per day for one (1) to seven (7) days of violation, **\$1,500** per violation per day for eight (8) to fourteen (14) days of violation, and **\$2,500** per violation per day for each day of violation thereafter. Failure to perform any of the following requirements shall be considered separate violations of this Second Amended Consent Order and are subject to stipulated penalties under this paragraph:
- a. Failure to submit an approvable work plan, proposal, or other document by the required dates in accordance with Section III.
 - b. Failure to implement, complete, or comply with any activity or condition required by Section III, including those contained in any approved work plan or other document required to be implemented and completed by Section III.
 - c. Failure to submit approvable revised work plans, proposals or other documents addressing a DEQ disapproval or approval with modifications by the required dates in accordance with paragraphs 4.3 or 4.4.

- 9.3 For each failure to comply with any other provision of this Second Amended Consent Order not specified in paragraph 9.2, the Township shall pay stipulated penalties of **\$1,500** per violation per day for each day of violation. Failure to perform any of the following requirements shall be considered separate violations of this Second Amended Consent Order and are subject to stipulated penalties under this paragraph:
- a. Failure to verbally report violations and submit written reports by the required dates in accordance with paragraph 6.1.
 - b. Failure to retain records on site in accordance with paragraph 7.1.
 - c. Failure to pay civil fines, costs, or stipulated or interest penalties by the required dates in accordance with this Section.
 - d. Any other requirement of this Second Amended Consent Order.
- 9.4 Stipulated penalties accruing under paragraphs 9.2 or 9.3 shall be paid within thirty (30) days after written demand by the DEQ in accordance with paragraph 9.6.
- 9.5 To ensure timely payment of the above civil fine, costs, and stipulated penalties, the Township shall pay an interest penalty to the General Fund of the State of Michigan each time it fails to make a complete or timely payment. This interest penalty shall be based on the rate set forth at MCL 600.6013(6), using the full increment of amount due as principal, and calculated from the due date for the payment until the delinquent payment is finally made in full.
- 9.6 The Township agrees to pay all funds due pursuant to this agreement by check made payable to the State of Michigan and delivered to the Michigan Department of Environmental Quality, Revenue Control Unit, P.O. Box 30657, 525 West Allegan Street, 5th floor south, Lansing, Michigan 48909-8157. To ensure proper credit, all payments made pursuant to this Order must include the **Payment Identification Number**

WTR2009.

- 9.7 The Township agrees not to contest the legal basis of the civil fine or costs paid pursuant to Paragraph 9.1, above. The Township further agrees not to contest the legal basis of any stipulated penalties or interest penalties assessed pursuant to Paragraphs 9.2, 9.3 and 9.5, above, but reserves the right to dispute the factual basis upon which a demand by the DEQ for stipulated penalties or interest penalties is made.

X. DISPUTE RESOLUTION

- 10.1 Unless otherwise provided in this Second Amended Consent Order, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Second Amended Consent Order. However, the procedures set forth in this Section shall not apply to actions by the State to enforce obligations of the Township that are not disputed in accordance with this Section. Initiation of dispute resolution shall not be cause for the Township to delay the performance of any compliance requirements or response activity.
- 10.2 Any dispute that arises under this Second Amended Consent Order shall in the first instance be the subject of informal negotiations between the Township and the DEQ (Parties). The period of negotiations shall not exceed twenty (20) days from the date of written notice by any Party that a dispute has arisen, unless the time period for negotiations is modified by written agreement between the Parties. A dispute under this section shall occur when one party sends the other party a written notice of dispute. If agreement cannot be reached on any issue within this twenty (20)-day period, the DEQ shall provide a written statement of its decision to the Township and, in the absence of initiation of formal dispute resolution by the Township under Paragraph 10.3, the DEQ's position as outlined in its written informal decision, shall be binding on the Parties.
- 10.3 If the Township and the DEQ cannot informally resolve a dispute under Paragraph 10.2, the Township may initiate formal dispute resolution by requesting review of the disputed

issues by the DEQ, WB Chief. This written request must be filed with the DEQ, WB Chief within fifteen (15) days of the Township's receipt of the DEQ's informal decision that is issued at the conclusion of the informal dispute resolution procedure set forth in Paragraph 10.2. The Township's request shall state the issues in dispute; the relevant facts upon which the dispute is based; any factual data, analysis, or opinion supporting its position; and all supporting documentation upon which the Township bases its position. Within twenty-one (21) days of the WB Chief's receipt of the Township's request for a review of disputed issues, the WB Chief will provide a written statement of decision to the Township, which will include a statement of his/her understanding of the issues in dispute; the relevant facts upon which the dispute is based; any factual data, analysis, or opinion supporting her/his position; and all supporting documentation relied upon by the WB Chief's review of the disputed issues. The WB Chief's time period for review of the disputed issues may be extended by written agreement of the Parties.

- 10.4 The written statement of the WB Chief issued under paragraph 10.3 shall be a final decision and is binding on the parties unless, in accordance with applicable law, after receipt of DEQ's written statement of decision, the Township files a petition for judicial review in a court of competent jurisdiction that shall set forth a description of the matter in dispute, the efforts made by the Parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of this Second Amended Consent Order.
- 10.5 An administrative record of the dispute shall be maintained by DEQ. The administrative record shall include all of the information provided by the Township pursuant to paragraph 10.3, as well as any other documents relied upon by DEQ in making its final decision pursuant to paragraph 10.3. DEQ shall allow submission of supplemental statements of position by the parties to the dispute that are timely submitted and do not unreasonably prejudice the DEQ.
- 10.6 A final decision of DEQ issued pursuant to paragraph 10.3 may be challenged by the Township pursuant to applicable law.

10.7 Notwithstanding the invocation of dispute resolution procedures under this Section, stipulated penalties shall accrue from the first day of any failure or refusal to comply with any term or condition of this Second Amended Consent Order, but payment shall be stayed pending resolution of the dispute. Stipulated penalties shall be paid within 30 days after resolution of the dispute. The Township shall pay that portion of a demand for payment of stipulated penalties that is not subject to dispute resolution procedures in accordance with and in the manner provided in Section IX (Penalties).

XI. FORCE MAJEURE

11.1 The Township shall perform the requirements of this Second Amended Consent Order within the time limits established herein, unless performance is prevented or delayed by events that constitute a "Force Majeure." Any delay in the performance attributable to a "Force Majeure" shall not be deemed a violation of the Township's obligations under this Second Amended Consent Order in accordance with this Section.

11.2 For the purpose of this Second Amended Consent Order, "Force Majeure" means an occurrence or non-occurrence arising from causes not foreseeable, beyond the control of, and without the fault of the Township, such as: an Act of God, untimely review of permit applications or submissions by the DEQ or other applicable authority, and acts or omissions of third parties that could not have been avoided or overcome by the Township's diligence and that delay the performance of an obligation under this Second Amended Consent Order. "Force Majeure" does not include, among other things, unanticipated or increased costs, changed financial circumstances, or failure to obtain a permit or license as a result of the Township's actions or omissions.

11.3 The Township shall notify the DEQ, by telephone, within forty-eight (48) hours of discovering any event which causes a delay in its compliance with any provision of this Second Amended Consent Order. Verbal notice shall be followed by written notice within ten (10) calendar days and shall describe, in detail, the anticipated length of delay, the

precise cause or causes of delay, the measures taken by the Township to prevent or minimize the delay, and the timetable by which those measures shall be implemented. The Township shall adopt all reasonable measures to avoid or minimize any such delay.

- 11.4 Failure of the Township to comply with the notice requirements and time provisions under Paragraph 11.3, shall render this Section XI void and of no force and effect as to the particular incident involved. The DEQ may, at its sole discretion and in appropriate circumstances, waive in writing the notice requirements of Paragraph 11.3, above.
- 11.5 If the parties agree that the delay or anticipated delay was beyond the control of the Township, this may be so stipulated, and the parties to this Second Amended Consent Order may agree upon an appropriate modification of this Second Amended Consent Order. If the parties to this Second Amended Consent Order are unable to reach such agreement, the dispute shall be resolved in accordance with Section X (Dispute Resolution) of this Second Amended Consent Order. The burden of proving that any delay was beyond the reasonable control of the Township, and that all the requirements of this Section XI have been met by the Township, rests with the Township.
- 11.6 An extension of one compliance date based upon a particular incident does not necessarily mean that the Township qualifies for an extension of a subsequent compliance date without providing proof regarding each incremental step or other requirement for which an extension is sought.

XII. GENERAL PROVISIONS

- 12.1 With respect to any violations not specifically addressed and resolved by this Second Amended Consent Order, the DEQ reserves the right to pursue any other remedies to which it is entitled for any failure on the part of the Township to comply with the requirements of the NREPA and its rules.

- 12.2 The DEQ and the Township consent to enforcement of this Second Amended Consent Order in the same manner and by the same procedures for all final orders entered pursuant to Part 31, MCL 324.3101 et seq.; and enforcement pursuant to Part 17, Michigan Environmental Protection Act, of the NREPA, MCL 324.1701 et seq.
- 12.3 This Second Amended Consent Order in no way affects the Township's responsibility to comply with any other applicable state, federal, or local laws or regulations.
- 12.4 The WB, at its discretion, may seek stipulated fines or statutory fines for any violation of this Second Amended Consent Order. However, the WB is precluded from seeking both a stipulated fine under this Second Amended Consent Order and a statutory fine for the same violation.
- 12.5 Nothing in this Second Amended Consent Order is or shall be considered to affect any liability the Township may have for natural resource damages caused by the Township's ownership and/or operation of the Facility. The State of Michigan does not waive any rights to bring an appropriate action to recover such damages to the natural resources.
- 12.6 In the event the Township sells or transfers the facility, it shall advise any purchaser or transferee of the existence of this Second Amended Consent Order in connection with such sale or transfer. Within 30 calendar days, the Township shall also notify the WB Southeast Michigan District Supervisor, in writing, of such sale or transfer, the identity and address of any purchaser or transferee, and confirm the fact that notice of this Second Amended Consent Order has been given to the purchaser and/or transferee. The purchaser and/or transferee of this Second Amended Consent Order must agree, in writing, to assume all of the obligations of this Second Amended Consent Order. A copy of that agreement shall be forwarded to the WB Southeast Michigan District Supervisor within 30 days of assuming the obligations of this Second Amended Consent Order.
- 12.7 The provisions of this Second Amended Consent Order shall apply to and be binding upon the parties to this action, and their successors and assigns.

XIII. TERMINATION

13.1 This Second Amended Consent Order shall remain in full force and effect until terminated by a written Termination Notice issued by the DEQ. Prior to issuance of a written Termination Notice, The Township shall submit a request consisting of a written certification that the Township has fully complied with the requirements of this Second Amended Consent Order and has made payment of any fines, including stipulated penalties, required in this Second Amended Consent Order. Specifically, this certification shall include:

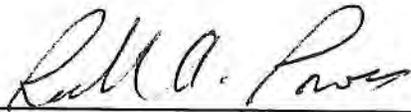
- a. The date of compliance with each provision of the compliance program in Section, and the date any fines or penalties were paid.
- b. A statement that all required information has been reported to the district supervisor.
- c. Confirmation that all records required to be maintained pursuant to this Second Amended Consent Order are being maintained at the Facility.

The DEQ may also request additional relevant information. The DEQ shall not unreasonably withhold issuance of a Termination Notice.

Signatories

The undersigned CERTIFY they are fully authorized by the party they represent to enter into this Second Amended Consent Order to comply by consent and to EXECUTE and LEGALLY BIND that party to it.

DEPARTMENT OF ENVIRONMENTAL QUALITY



Richard A. Powers, Chief
Water Bureau

12/10/04

Date

TOWNSHIP OF BLOOMFIELD



By: David Payne, Township Supervisor

12/23/04

Date

APPROVED AS TO FORM:



By: Alan Hoffman, Assistant Attorney General

For: Mark Matus

Assistant Attorney General in Charge
Environment, Natural Resources, and Agriculture Division
Michigan Department of Attorney General

APPENDIX C

Third Administrative Consent Order (SW05-003)



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

Re-sending per request



STEVEN E. CHESTER
DIRECTOR

March 25, 2009

CERTIFIED MAIL 7007 2560 0001 4601 6494

Mr. David Payne
Township Supervisor
Charter Township of Bloomfield
4200 Telegraph Road
P.O. Box 489
Bloomfield Hills, Michigan 48303-0489

Dear Mr. Payne:

SUBJECT: Administrative Consent Order (Consent Order) for the Charter Township of Bloomfield (Township) Third Amended Consent Order AFO-SW09-003

Please find enclosed the executed copy of the Consent Order AFO-SW09-003 which is between the Township and the Department of Environmental Quality (DEQ). This Consent Order modifies paragraphs 3.1 through 3.5 in Section III of ACO-SW05-003 and became effective on March 24, 2009.

The DEQ appreciates your cooperation in resolving this matter. Please contact me should further questions arise on the Consent Order.

Sincerely,

Ronda Wuycheck, Enforcement Specialist
Enforcement Unit
Field Operations Division
Water Bureau
517-241-7832

Enclosure

cc: Mr. Barry H. Selden, DEQ
Mr. Philip Argiroff, DEQ
Mr. Thomas Knueve, DEQ

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER BUREAU

In the matter of:

AFO-SW09-003
Date Entered: 3-24-09

Charter Township of Bloomfield
4200 Telegraph Road
PO Box 489
Bloomfield Hills, Michigan 48303-0489

ACO-SW05-003
_____ /

THIRD AMENDED ADMINISTRATIVE CONSENT ORDER

Second Amended Administrative Consent Order, ACO-SW05-003, entered on December 10, 2004, between the Department of Environmental Quality (DEQ), Water Bureau (WB), and the Charter Township of Bloomfield (Township), which owns and operates a separate and combined sanitary sewer collection system, discharges its sanitary wastewater to the Evergreen-Farmington Sewage Disposal System (EFSDS), is hereby amended as follows. Upon the consent of the parties and by the authority granted to the DEQ by the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, it is hereby AGREED AND ORDERED:

III. COMPLIANCE PROGRAM

Paragraphs 3.1 through 3.5 of ACO-SW05-003 shall be amended as specified below:

- 3.1 The Township shall complete an evaluation of the feasibility of sanitary sewer projects that will remove excess wastewater flow from their sanitary sewer system, and submit an approvable **short term corrective action plan** and schedule to the DEQ on or before **January 1, 2005** (completed and submitted). The **short term corrective action plan** shall include a detailed description of projects, and a schedule for each project to; 1) submit the basis of design, 2) submit complete plans and specifications, 3) start construction, and 4) complete construction. Construction of the projects shall be completed in sufficient time to support submittal of an approvable **long term corrective action plan** by March 1, 2011. The approved short term corrective action plan and schedule will become part of this modified order by reference.
- 3.2 The Township shall collect and evaluate flow monitoring data from permanently installed flow meters, for a period of 12 consecutive months, following completion of construction of the projects specified in approved short term corrective action plan. Based on these

results, if the Township has not certified the TOC (as defined below), or has had SSOs due to capacity issues during events that are less than the remedial design standard (as defined below), the Township shall submit an approvable **long-term corrective action plan** to the DEQ for review and approval no later than **March 1, 2011**. The long-term corrective action plan shall include; a) projects and schedules that will ensure that TOC will be certified as previously established and defined in Final Order of Abatement 2099; and b) appropriate engineering and structural improvements to the sewer system with corresponding schedules, to meet applicable state and federal law regulating SSOs using as guidance the remedial design standard defined below.

The remedial design standard as defined in the SSO Policy Guidance dated December 27, 2002, is a 25 year, 24 hour storm using growth conditions and normal soil moisture. This remedial design standard will remain the goal of all projects described in this Consent Order. A ten year, one hour storm under dormant and growth conditions will be considered a comparable alternative remedial design standard as defined in the MDEQ SSO Clarification Statement dated October 23, 2003. All SSO events that result from events that exceed this "comparable alternative remedial design standard" will be considered for enforcement discretion. To document the appropriateness of the use of the "comparable alternative remedial design standard", the County is completing by March 1, 2007 (report completed and submitted on 2/26/07), a hydrologic and hydraulic modeling analysis comparing the system response (at the EFSDS outlet and agreed to representative system locations) to both the ten year, one hour storm under dormant and growth conditions and the 25 year, 24 hour storm using growth conditions and normal soil moisture. Any revised remedial design standard that is effective on **March 1, 2011**, shall take precedent if current state and federal SSO requirements are changed to allow for its use during lesser events.

Such "projects" and "appropriate engineering and structural improvements" may include storage (or participation with County regional storage), and/or additional removal of infiltration and inflow (I/I) as realistically documented during the short-term corrective action plan (by the Township, the County and member communities).

The Township, in cooperation with the County, may also elect to provide a wet weather connection from its sanitary sewer system to the Bloomfield Village RTB (subject to Part 41 permit review). Capacity for this connection, if warranted to meet town outlet flow requirements, has been made available by the Township's construction of the Robert Reid Storm Relief Drain in 1998 and 1999. The Robert Reid Storm Relief Drain (construction cost +/- \$2.5 million) diverted approximately fifteen (15%) percent of the tributary acreage and storm water flow from the Bloomfield Village CSO District directly to the Rouge River, effectively bypassing the Bloomfield Village CSO basin and providing for excess storage in the basin beyond the original design capacity. Operation of this system shall be in accordance with an approved County operation plan. After **March 1, 2016**, this wet weather sanitary connection to the Bloomfield Village RTB is only authorized, in accordance with an approved County operation plan, for use during events that exceed the remedial design standard (defined above) to protect public health and water quality, unless current state and federal SSO requirements are changed to allow for its use during lesser events.

- 3.3 Following review and approval of the **long term corrective action plan** and schedules by the DEQ, the approved schedules will become part of this modified order by reference. However, final compliance with paragraph 3.2 shall be completed no later than **March 1, 2016**.
- 3.4 On or before **August 1, 2015**, the Township shall submit to the DEQ for review and approval, a work plan for conducting a year long Project Performance Certification Program (PPC) to certify that the **long-term corrective action plan** meets TOC as previously established and defined in the Final Order of Abatement 2099, and all applicable state and federal laws regulating SSOs using as guidance the remedial design standard as defined in SSO Policy Guidance dated December 27, 2002, or a comparable alternative remedial design standard as defined in the MDEQ SSO Clarification Statement dated October 23, 2003 (or a revised remedial design standard as effective on March 1, 2011).

- 3.5 On or before **April 1, 2017**, the Township shall submit to the DEQ for review and approval, the PPC Program report. If the Township does not certify that the **long-term corrective action plan** meets TOC as previously established and defined in the Final Order of Abatement Number 2099, and all applicable state and federal laws regulating SSOs using as guidance the remedial design standard as defined in the SSO Policy Guidance dated December 27, 2002, or a comparable alternative remedial design standard as defined in the MDEQ SSO Clarification Statement dated October 23, 2003 (or a revised remedial design standard as effective on March 1, 2011), then the Township shall submit an approvable Corrective Action Program work plan to the DEQ on or before **August 1, 2017**.

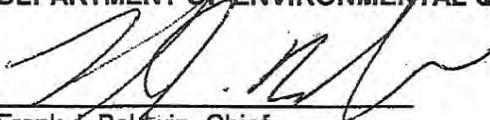
GENERAL PROVISIONS

All other terms and conditions of ACO-SW05-003 shall remain in full force and effect and are not altered by this Third Amended Administrative Consent Order, except as specifically prescribed in this document. The effective date of this Third Amended Administrative Consent Order shall be the date upon which the chief of the DEQ, WB, Field Operations Division signs this document.

Signatories

The undersigned CERTIFY they are fully authorized by the party they represent to enter into this Amended Consent Order to comply by consent and to EXECUTE and LEGALLY BIND that party to it.

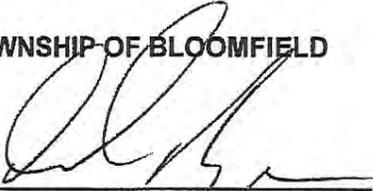
DEPARTMENT OF ENVIRONMENTAL QUALITY



Frank J. Baldwin, Chief
Field Operations Division
Water Bureau

3/24/09
Date

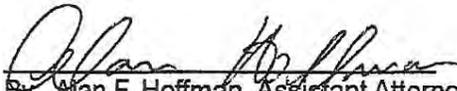
TOWNSHIP OF BLOOMFIELD



By: David Payne, Township Supervisor

3/11/09
Date

APPROVED AS TO FORM:



By: Alan F. Hoffman, Assistant Attorney General
For: S. Peter Manning, Chief
Environment, Natural Resources, and Agriculture Division
Michigan Department of Attorney General

3/20/09
Date

APPENDIX D

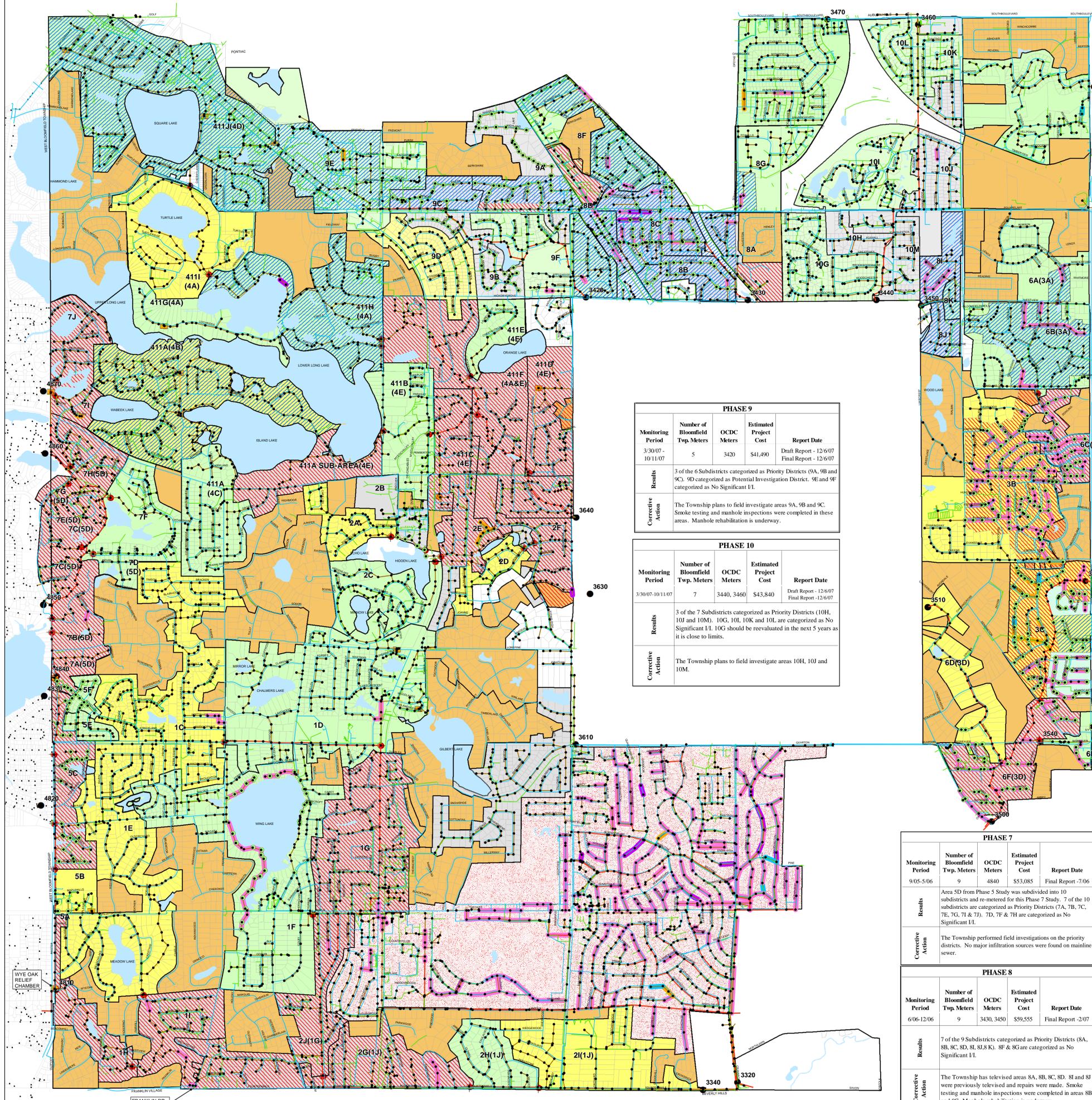
2009 Sanitary Sewer Rehabilitation List

2009 Sanitary Maintenance Sewer Rehabilitation Project

Location	MH ID	MH ID	Method
Phase I - Sections 1-25 (2009)			
35980 WOODWARD	N25032	N25033	Lining
769 SHADY HOLLOW	S24002	S24001	Lining
5345 HICKORY BEND	S24050	S24049	Lining
5431 FOREST WAY	S20049	S20050	Lining
5431 FOREST WAY	S20049	S20059	Lining & Grout
1903 RAYMOND PLACE	N19034		Lining
909 ROCK SPRING	N13003	N13004	Lining
1022 TOPVIEW	N13054	N13051	Lining & Grout
PATCH/NORTHOVER	S12091	S12089	Lining
259 WENDY LN	N09170	N09203	Lining
2241 LANCASTER	S03027	S03026	Lining
HUNTER RIDGE/BOOTMAKER	N02068	N02025	Lining
BIRMINGHAM FARMS	N32004	N32005	Lining
BIRMINGHAM FARMS	N32005	N32007	Lining
BIRMINGHAM FARMS	N32007	N32009	Lining
6672 TIMBER RIDGE	N32040	N32107	Lining
2146 LOST TREE	S01009	S01010	Lining
1443 RAVIENVIEW CT	N01005	N01006	Lining

EXHIBIT I

Bloomfield Township STCAP Map



PHASE 9				
Monitoring Period	Number of Bloomfield Twp. Meters	OCDC Meters	Estimated Project Cost	Report Date
3/30/07 - 10/11/07	5	3420	\$41,490	Draft Report - 12/6/07 Final Report - 12/6/07
Results	3 of the 6 Subdistricts categorized as Priority Districts (9A, 9B and 9C). 9D categorized as Potential Investigation District. 9E and 9F categorized as No Significant I/L.			
Corrective Action	The Township plans to field investigate areas 9A, 9B and 9C. Smoke testing and manhole inspections were completed in these areas. Manhole rehabilitation is underway.			

PHASE 10				
Monitoring Period	Number of Bloomfield Twp. Meters	OCDC Meters	Estimated Project Cost	Report Date
3/30/07-10/11/07	7	3440, 3460	\$43,840	Draft Report - 12/6/07 Final Report - 12/6/07
Results	3 of the 7 Subdistricts categorized as Priority Districts (10H, 10J and 10M). 10G, 10I, 10K and 10L are categorized as No Significant I/L. 10G should be reevaluated in the next 5 years as it is close to limits.			
Corrective Action	The Township plans to field investigate areas 10H, 10J and 10M.			

PHASE 7				
Monitoring Period	Number of Bloomfield Twp. Meters	OCDC Meters	Estimated Project Cost	Report Date
9/05-5/06	9	4840	\$53,085	Final Report - 7/06
Results	Area 5D from Phase 5 Study was subdivided into 10 subdistricts and re-metered for this Phase 7 Study. 7 of the 10 subdistricts are categorized as Priority Districts (7A, 7B, 7C, 7E, 7G, 7I & 7J). 7D, 7F & 7H are categorized as No Significant I/L.			
Corrective Action	The Township performed field investigations on the priority districts. No major infiltration sources were found on mainline sewer.			

PHASE 8				
Monitoring Period	Number of Bloomfield Twp. Meters	OCDC Meters	Estimated Project Cost	Report Date
6/06-12/06	9	3430, 3450	\$59,555	Final Report - 2/07
Results	7 of the 9 Subdistricts categorized as Priority Districts (8A, 8B, 8C, 8D, 8I, 8J, 8K). 8F & 8G are categorized as No Significant I/L.			
Corrective Action	The Township has televised areas 8A, 8B, 8C, 8D, 8I and 8J were previously televised and repairs were made. Smoke testing and manhole inspections were completed in areas 8B and 8C. Manhole rehabilitation is underway.			

PHASE 1				
Monitoring Period	Number of Bloomfield Twp. Meters	OCDC Meters	Estimated Project Cost	Report Date
05/00-11/00 04/01-09/01	7	3340 3630	\$129,910	Draft Report - 01/02 Final Report - 09/02
Results	6 of the 10 sub-districts categorized as Priority Districts (1A, 1B, 1C, 1H, 1I and 1J). 1A, 1B and 1J were subdivided and re-metered in the 2002 Phase 2 study. 1C and 1E categorized as Potential Investigation District. 1D and 1F categorized as No Significant I/L.			
Corrective Action	The Township staff field investigated and televised 1H and 1I and found a major source of I/L; a depressed/fractured pipe near Franklin Lake. The Township lined the segment of pipe with cured-in-place liner and metered upstream and downstream of pipe segment before and after remediation. The metering indicates that the Township removed an average infiltration rate of 106 gpm (0.24 cfs) up to a peak infiltration rate of 250 gpm (0.56 cfs). Refer to Phase 3 report for more info.			

PHASE 2				
Monitoring Period	Number of Bloomfield Twp. Meters	OCDC Meters	Estimated Project Cost	Report Date
03/02-06/02	8	3340 3630	\$35,100	Draft Report - 10/02 Final Report - 02/03
Results	4 of the 9 subdistricts categorized as Priority Districts (2B, 2E, 2F, and 2G). 2A, 2D, 2E and 2I categorized as Potential Investigation District. 2C and 2H categorized as No Significant I/L.			
Corrective Action	The Township staff field investigated and televised all priority districts, found and corrected: a manhole with a hole next to retention pond (2B), storm connection to sanitary (2B), major leaky joints (2E) and several illegal sump pump connections (2G). An SSES was performed in 2D, 2E and 2F.			

PHASE 3				
Monitoring Period	Number of Bloomfield Twp. Meters	OCDC Meters	Estimated Project Cost	Report Date
07/02-11/02	3	3500, 3510 3520, 3540	\$24,350	Draft Report - 07/03 Final Report - 07/04
Results	2 of the 4 subdistricts categorized as Priority Districts (3A and 3D). 3A and 3D were sub-divided and re-metered as part of the Phase 6 Meter Study. 3B and 3C categorized as Potential Investigation District.			
Corrective Action	The Township staff field performed television inspection in 3B, 3A and 3D are currently under Phase 6 study. Major rehabilitation project including main line and manhole rehab was completed in 2011 and 2012.			

PHASE 4				
Monitoring Period	Number of Bloomfield Twp. Meters	OCDC Meters	Estimated Project Cost	Report Date
07/02-11/02	4	3640	\$28,150	Draft Report - 07/04
Results	3 of the 5 subdistricts categorized as Priority Districts (4A, 4D and 4E). 4A, 4D and 4E are planned to be sub-divided and re-metered as part of the Phase 4 Part II Meter Study (to be completed in 2005). 4B categorized as Potential Investigation District and 4C categorized as No Significant I/L.			
Corrective Action	The Township sub-divided the area and re-metered in 2005.			

PHASE 4 - PART II				
Monitoring Period	Number of Bloomfield Twp. Meters	OCDC Meters	Estimated Project Cost	Report Date
03/05-07/05	9	3640	\$52,875	Final Report - 02/06
Results	Areas 4A, 4D, & 4E from the Phase 4 Study were subdivided into 10 subdistricts & re-metered for this Part II study. 4 of the 10 subdistricts (4IIA, 4IIC, 4IID, & 4IIF) are categorized as Priority Districts. Area 4IIB is categorized as Potential Investigation District and 4IIB, 4IIE, 4IIG, 4IIH, & 4IIL are categorized as No Significant I/L.			
Corrective Action	The Township has televised 4IIA, 4IIC, 4IID & 4IIF. An SSES has been performed in Area 4IIC, 4IIE and 4IIF.			

PHASE 5				
Monitoring Period	Number of Bloomfield Twp. Meters	OCDC Meters	Estimated Project Cost	Report Date
03/03-08/03	6	4800, 4810 4820, 4830 4840	\$40,700	Draft Report - 01/05
Results	3 of the 5 subdistricts categorized as Priority Districts (5A, 5C and 5D). 5B categorized as Potential Investigation District and 5E and 5F are categorized as No Significant I/L.			
Corrective Action	The Township subdivided and re-metered area 5D in the summer of 2005. Township plans to field investigate areas 5A and 5C, and plans to evaluate potential relief sewer options in 5A as part of their Short Term Corrective Action Plan.			

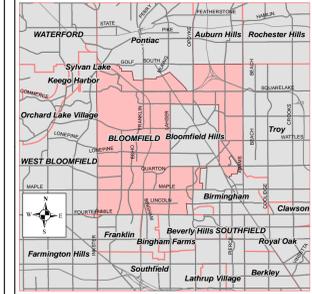
PHASE 6				
Monitoring Period	Number of Bloomfield Twp. Meters	OCDC Meters	Estimated Project Cost	Report Date
9/04-12/04	6	3500, 3510 3520, 3540	\$40,700	Draft Report - 02/05
Results	2 of the 6 subdistricts categorized as Priority Districts (6C and 6F). 6D is categorized as Potential Investigation District and 6A, 6B and 6E are categorized as No Significant I/L.			
Corrective Action	The Township performed field investigations of areas 6C and 6F in 2005. Several lines were rehabilitated.			



Legend

- 3640 OCDC PERMANENT METER LOCATION & NUMBER
- TEMPORARY METER LOCATION
- SANITARY SEWER
- WATERMAIN
- COMBINED SEWER
- STORM SEWER
- OCDC INTERCEPTOR
- OCDC METER DISTRICT
- MANHOLE
- COMBINED SEWER DISTRICT
- AREAS WITHOUT SANITARY
- PRIORITY DISTRICT
- POTENTIAL INVESTIGATION DISTRICT
- NO SIGNIFICANT I/L DISTRICT
- PUMP STATION
- CRACKED PIPE
- GROUTED JOINTS
- LINED PIPE
- SEWER REPAIR
- TELEVIEWED
- TELEVIEWED PRIOR TO STCAP
- POINT REPAIR
- MANHOLES THAT HAVE BEEN REHABILITATED

Designed N.R.S./K.M.S.
 Drawn J.R.M.
 Checked N.R.S./K.M.S.
 Approved T.E.B.



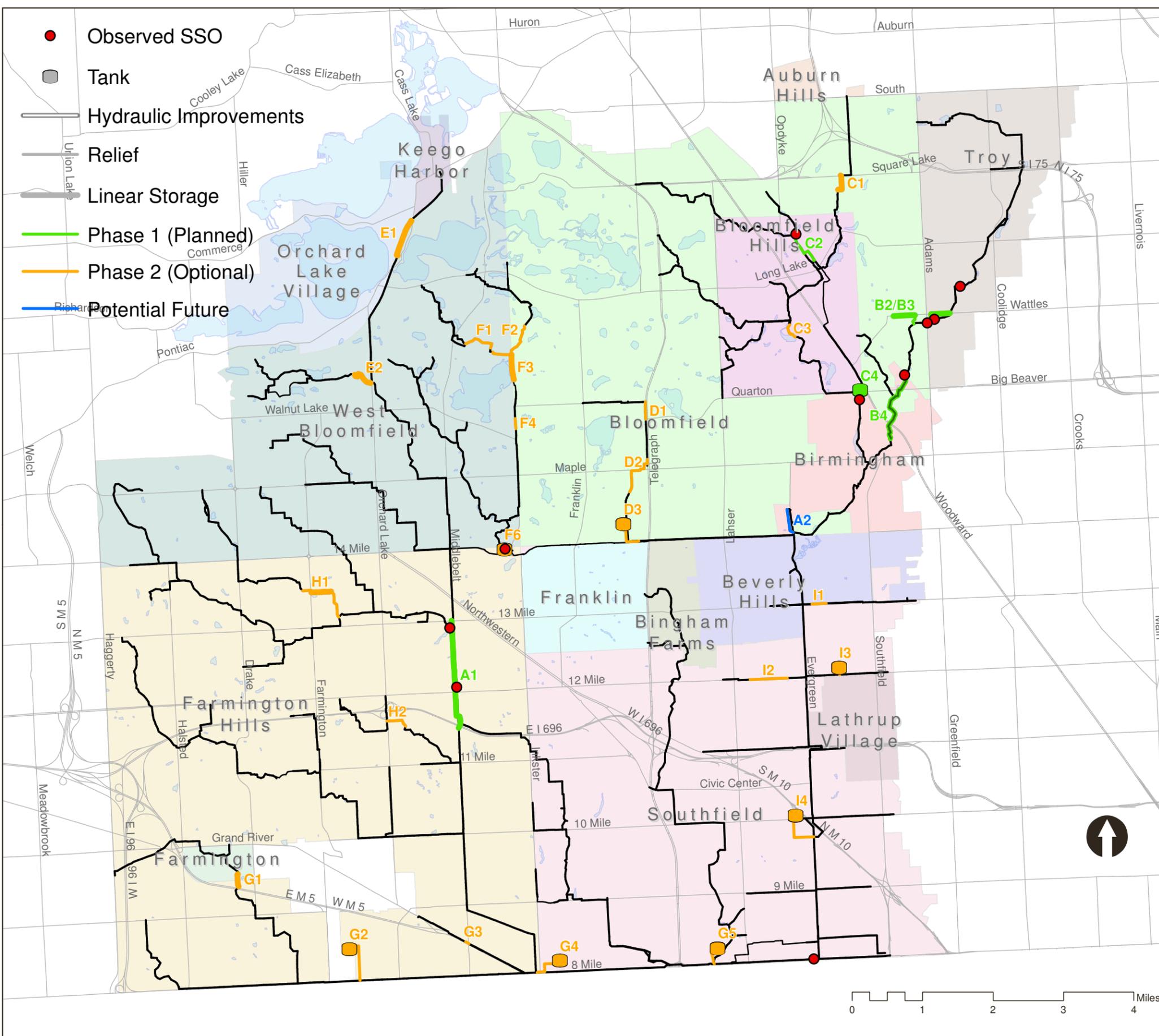
**CHARTER TOWNSHIP OF BLOOMFIELD
 ADMINISTRATIVE CONSENT ORDER
 SHORT TERM CORRECTIVE ACTION PLAN**

**BLOOMFIELD TOWNSHIP'S CORRECTIVE ACTION METER PROGRAM
 METER SUMMARY**

HRC JOB NO. 20130897	SCALE NOT TO SCALE
DATE JUNE 2014	APPENDIX B

EXHIBIT II

WRC LTCAP Map



Project Summary

No.	Description	Phase
A1	Middlebelt Tunnel Storage	1
A2	WLPS RTB Connection	-
B1	Troy Linear Storage A	*
B2/B3	Wattles Road Linear Storage	1
B4	NEI Hydraulic Improvements	1
C1	Eastways Linear Storage	2
C2	Stonycroft Relief & Amy PS upgrades	1
C3	Cranbrook Relief	2
C4	Quarton Road Storage OR Pontiac Diversion	1
D1	Telegraph Relief	2
D2	Maple Relief	2
D3	Cathedral Storage	2
E1	Orchard Lake Linear Storage	2
E2	Morris Lake Arm Linear Storage	2
F1	WLPS2 Relief A and Linear Storage	2
F2	WLPS2 Relief B	2
F3	WLPS2 Linear Storage	2
F4	Inkster Road Relief	2
F5	Inkster Road Relief	*
F6	WLPS1 Storage	2
G1	Tarabusi Arm Linear Storage	2
G2	8 Mile Storage	2
G3	Grand River Arm Relief	2
G4	Rensselaer Storage	2
G5	8 Mile PS Storage	2
H1	13 Mile Road Arm Linear Storage and Relief	2
H2	Kendallwood Arm Relief	2
I1	13 Mile Road Relief	2
I2	12 Mile Road Relief (West of Evergreen)	2
I3	12 Mile Road Storage (East of Evergreen)	2
I4	Evergreen Downstream Storage	2
Total	(29 Projects; 5 Phase 1; 23 Phase 2; 1 Potential Future)	

*Collection of post-STCAP data and resulting model refinements indicate that no project is needed at this location

Published: 05.22.2014