

Engineering & Environmental Services Department

2011 Annual Report



MISSION STATEMENT

Our mission is to provide professional engineering and environmental services in a respectful and efficient manner, which safeguards the Township's public infrastructure and natural resources for the well-being of our residents.



Engineering and Environmental Services Department Staff

The following are current EESD employees with their years of Township service included.

Wayne Domine PE, Director (20 years)

Department Head and Township Engineer, responsible for supervising the overall activities of the department in the implementation of engineering and environmental services, in conjunction with the Township's water supply system, sanitary sewer system, watershed management, and other public works activities.

Lance Scram, Project Coordinator (14 years)

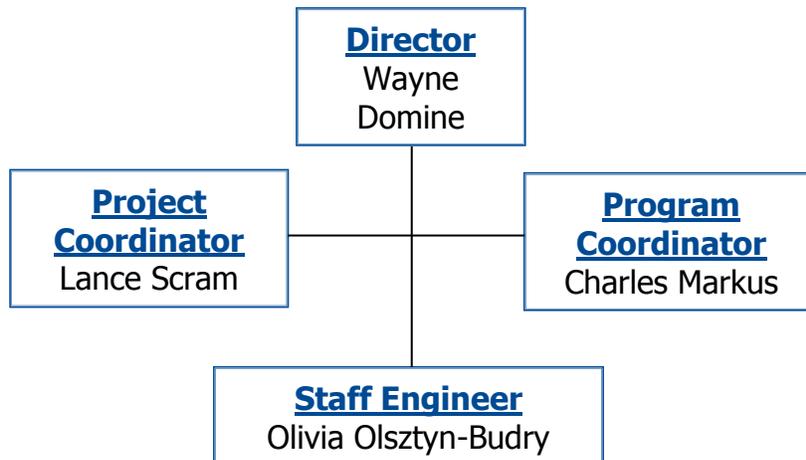
Coordinates the project administration and field oversight of Township contracted public works projects with consultants, contractors and customers including the Township safety path and concrete repair programs. *Also, assists the Department of Public Works with snow removal activities as needed.*

Olivia Olsztyn-Budry, PE, Staff Engineer (4 years)

Manages engineering services with consultants, contractors and customers during the construction of public improvement projects. Provides technical support associated with the planning and construction of public improvements and review of site development projects submitted for Building Permits. *Also, responsible for reviewing Building Permit applications on behalf of the D.P.W. - Water Division.*

Charles Markus, Program Coordinator (1 year)

Responsible for implementing the activities involving management of the Township's environmental programs to meet regulatory compliance in conjunction with the Township's Phase II Watershed-based Storm Water permit, wetlands, pest management, woodlands, and protection of other natural features. *Also, responsible for reviewing Tree Permit applications on behalf of Planning, Building, and Ordinance.*



Engineering and Environmental Services Department

The Engineering and Environmental Services Department (EESD) provides engineering and environmental support to Bloomfield Township residents, local businesses, commercial developments, and other Township departments. The department manages Township capital improvement projects, provides construction administration, and coordinates a variety of services. The EESD also provides technical oversight and manages several programs that have a potential impact on our community's public health and environment. Below are some of the services and programs provided by the EESD:

Services:

- Perform site plan reviews for new developments
- Review wetland permit and right-of-way permit applications
- Construction administration for public improvements
- Provide technical support to Lake Improvement Boards
- Review and apply for grant funding opportunities
- Provide technical assistance for the National Flood Insurance Program (NFIP)
- Provide assistance for miscellaneous residential concerns (Emerald Ash Borer, flooding/drainage, natural features, etc)
- Coordinate projects with other public agencies

Programs:

- Water System Capital Improvement Program
- Sanitary Sewer Rehabilitation Program
- Safety Path Construction Program
- Road Improvement Program
- Coordinate data acquisition for utility mapping
- Manage/coordinate Special Assessment Districts (SAD)/Escrow Accounts (EA)
- Manage Phase II Storm Water Permit requirements
- Gypsy Moth Management Program
- West Nile Virus Management Program
- Review of Wetland Permit applications
- Wetland inventory mapping updates
- Hazard mitigation planning projects
- Water Quality Monitoring activities
- Tree Preservation & Protection Ordinance management
- Fertilizer Ordinance management

Support and Technical Assistance

The EESD supports other departments in the review of projects that seek permits from the Township. In cooperation with the Planning, Building & Ordinance Department and Department of Public Works, the EESD reviewed 144 applications for building permits, demolition permits, fill permits, planning permits and tree removal permits, 29 applications for right-of-way disturbance permits, and 4 applications for Wetland Permits. The EESD also facilitates the Township Wetland Committee meetings and performs site inspections for these projects. One EESD staff member was utilized in the winter of 2011 by the DPW for snow removal activities.

In 2011, EESD staff provided technical support to the DPW Water Division throughout several emergency water and sewer repairs. In addition, EESD staff provides assistance to residents regarding connection to Township water and sewer services, drainage concerns impacting their property, and natural resource development regulations. EESD staff also provided project management and technical direction during the replacement and upgrading of public utilities. The EESD works collaboratively with other jurisdictions, including MDOT, DWSD, SOCWA, and the Water Resource Commissioner's office.



EESD Staff Left to Right: Charles Markus, Olivia Olsztyn-Budry, Lance Scram

Engineering & Environmental Services Department

2011 Project Highlights

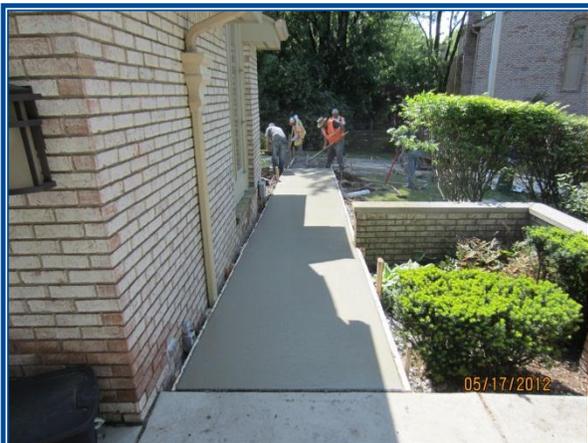
**Department Highlight
Joint Department Project
Clerk's Office and EESD**

**Adams Woods Polling Station Grant
\$10,194.50**

The EESD was contacted by the Clerk's Office with respect to available grant funds for Americans with Disabilities Act improvements to Polling Stations through the Help America Vote Act. The Clerk's office selected the polling station site and prepared the grant application. The EESD developed the site plan which included a survey and design of an access ramp to the building entrance. The EESD also solicited proposals for the work from contractors that currently work with the Township. In December 2011, the Clerk's office received the grant. The work was completed in the spring of 2012.



Completed project on voting day
August 7, 2012



Photos clockwise: Top Left: Adams Woods building prior to construction; Top Right: Placement of concrete; Bottom Left: Freshly poured concrete ramp

Department Highlight Grant Funding

Sanitary Sewer Restoration and Rehabilitation

Because of the continual aging of the Township's infrastructure, the EESD is always looking for sources of funding to fund and supplement projects. Over the past year, Bloomfield Township received one grant for sewer rehabilitation and will make application for a second grant. Below is a summary of the grant received in 2011-2012.

Rouge Program Office Round X Grant: \$348,070

Bloomfield Township received a grant for sanitary sewer rehabilitation in the amount of \$977,500 with 40% provided for grant. The project area was Hickory Heights and surrounding subdivisions. A more detailed project description can be found under the Construction Project section of this report.

Rouge Program Office Round XI Grant: Funding Expected in 2012

The EESD has been informed that the Rouge Program Office will accepting applications for a Round XI grant projects for sanitary sewer rehabilitation. It is unknown at this time the available grant funds, but EESD will make application for grant funds to perform sanitary sewer rehabilitation in Section 29, the area around Wing Lake.



Photo Left: Liner curing, the yellow tube is for ventilation and the white tube is the liner that is inserted through the sewer.
Photo Right: Liner curing in sewer along Maple Road. The white cloud is steam from the hot water used to cure the liner and make it hard.

Department Highlight

Grant Funding

Green Landscaping and Beautification

While surface water quality in the Township remains higher than several other areas in the Rouge River Watershed, it is critical to continue to maintain and protect these water features. In part, landscaping practices using trees and other vegetation will help protect water quality. Below is a summary of tree grants received in 2011-2012.

ARC Tree Grant

In the fall of 2011, EESD staff was able to procure 2 trees through an Alliance of Rouge Communities (ARC) grant. EESD staff was responsible for choosing the trees, picking up the trees, and planting of the trees. The trees were planted on the Bloomfield Township campus.

ARC Tree Grant

In the spring of 2012 the ARC obtained a grant from the MDNR for the procurement of trees. Bloomfield Township requested and was granted at total of 25 trees from the ARC. The ARC solicited for a single nursery supplier for the entire grant. EESD staff is handling the responsibilities of planning and planting of the trees. Two locations have been chosen for the 25 trees the Township will receive, with the planting taking place in fall in 2012.

MDOT Funded Tree Planting

Michigan Department of Transportation presented Bloomfield Township with \$31,000.00 for beautifying the medians in the area near the Bloomfield Park Project. The EESD and DPW partnered to form a tree planting plan for this area. The result was the planting of 135 trees including the following species: Autumn Blaze Maple, Bald Cypress, Kentucky Coffee Tree, Thornless Hawthorne, Ohio Buckeye and Hackberry. The medians are adjacent to other beautification projects that have been performed along the MDOT trunk lines.



Trees along Telegraph Medians

**Department Highlight
Community Participation
Eagle Scout Volunteer, EESD and DPW Building & Grounds Maintenance**

Campus Native Garden

EESD staff worked with Nick Alexander of Bloomfield Township to help him earn the rank of Eagle Scout in the Boy Scouts of America and procure his Eagle Badge. The project that Nick selected was to design the layout of a native garden adjacent to the Public Service Building entrance and select the plants and the locations in which to plant. The EESD reviewed Nick's proposal, layout and plant selection. Grounds maintenance prepared the area of the garden and provided mulch. The garden was planted by volunteers from the Boy Scouts of America on October 14, 2011 with oversight by EESD staff and Nick. As follow up, Nick presented the project to EESD and DPW staff and performed a spring time clean up and weeding in the spring of 2012. Nick will be awarded his Eagle Badge this fall.



Native garden photos clockwise from top left: Noah Mehalski, Nick Alexander, and Charles Markus; Grow Zone sign supported by ARC and FOTR; Black Eyed Susans and Great Blue Lobelia; and Great Blue Lobelia and Sedge Grass



Engineering & Environmental Services Department

2011 Project & Program Review

Escrow Accounts

Escrow accounts are established to retain funds from applicants in the administration and construction oversight of private developments. In 2011, the EESD managed 6 escrow accounts. Two are summarized below:



Tim Horton's on Square Lake

EA 844: Tim Horton's and Rusty Bucket Development: The existing structure on the property was upgraded from a Bennigan's to a Rusty Bucket restaurant. On the same site, a second structure was added as Tim Horton's restaurant. The site development included a new fire suppression system for the Rusty Bucket and new water services, hydrants, sanitary sewer service and an extensive underground storm water storage system for the remainder of the site.

EA 845: Dick's Sporting Goods: The project included demolition of part of the existing strip mall and construction a new building for Dick's Sporting Goods. The new structure required the relocation of a sanitary sewer at the rear of the building and the installation of new fire suppression system, water main and hydrant to serve the front of the building and hydrant relocation at the rear of the building.

Other escrow account work included the extension of public sanitary sewer, sanitary sewer service studies, and fire suppression lines.



Dick's Sporting Goods on Telegraph Road

Construction Summary

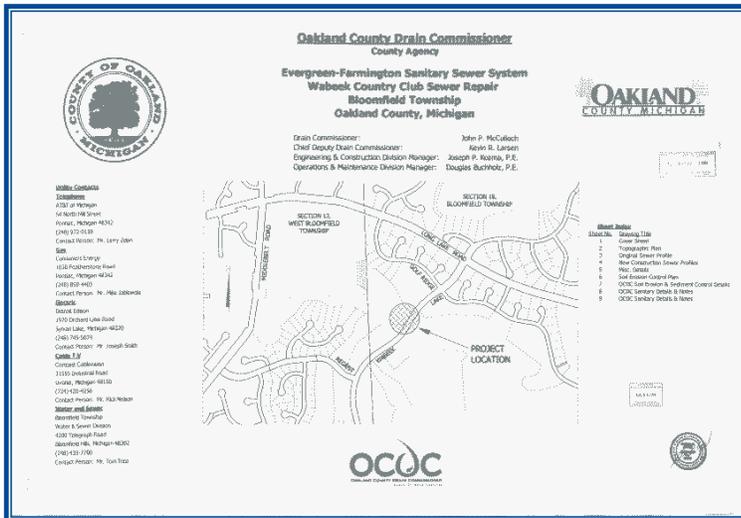
The EESD provides construction oversight and management to a variety of projects. Some key programs include: safety path construction and replacement, water system upgrades, sewer rehabilitation project oversight, and tri-party road construction projects. The EESD managed over \$6,000,000 in project funds during 2011.

Oakland County Interceptor Sewer Repairs

Project Cost: WRC Project

In late 2007, Bloomfield Township was made aware of the County Sanitary Sewer Interceptor through part of Wabek Country Club needing emergency repair. A portion of sanitary sewer had to be relocated due to a belly in the pipe. The work was postponed while the County worked with the golf Course because the repair was in an area of extremely poor soils and under a golf course green. The County managed the project and was able to relocate the sewer in a more acceptable location for all parties. The sewer

relocation also required the relocation of the Township's 12" diameter water main. Coordination was required at times from the Township Engineering and Environmental Department and Public Works to operate the water system while the water main was relocated and provide over site of the contractor's working on the Township's utility. This repair benefits Bloomfield Township since the Township owns several sanitary sewers that discharge to the County Interceptor as well as individual homes being directly connected.



Cover page of sewer relocation plans

Andover Road Reconstruction Tri-Party Agreement

Project Cost: \$464,565 (Estimated)

In 2011 Bloomfield Township applied for funding for road reconstruction from the County Tri-Party program. The Township selected Andover Road between Telegraph and Exeter roads for reconstruction. This area was originally bid in 2009 with Exeter Road Reconstruction Tri-Party Project, but at that time, the bid prices came back too high and the project was reduced to just Exeter Road. Work on Andover Road will start mid-June and completed prior to the start of school in 2012.

Oakland County Recovery Zone Bond Sale: Bloomfield Township CSO Chapter 20 Drainage District Rehabilitation Project

Project Cost: \$3,000,000

Bloomfield Township partnered with Oakland County in 2010 to obtain Recovery Zone



Debris removed from a sewer during the inspection phase of the project

Bonds for sanitary sewer rehabilitation in the Bloomfield Township Chapter 20 Drainage District. By utilizing the bonds available from Oakland County, the Township receives a rebate on the bond interest rate. Oakland County also funds a portion of the project leaving the Township's portion to only 77% of the total costs. The project was bid in 2010 and the unit prices came back very favorably. These low bid prices have allowed funds allocated for the original project scope to be used on the rehabilitation of additional sewers. The scope of the project includes cleaning, inspecting and rehabilitating sanitary sewers and manholes in order to reduce infiltration and inflow (I/I) and restore structural integrity of the aging sewer system. This additional work has resulted in all Township owned sanitary sewers being inspected and rehabilitated between Quarton and Maple Roads east of Cranbrook, all sanitary sewers in the Oakland

Club subdivision north and south of Maple Road, and a large portion of the remaining Bloomfield Township Chapter 20 District. The project is expected to be completed in the summer of 2012.

SOCWA Contract for Water Supply

Project Cost: No Outside Costs

In 2011 Bloomfield Township became a customer of SOCWA for purchasing water. Bloomfield Township has been a customer of DWSD since 1964, but by purchasing water from SOCWA, was able to save on the cost of water. Original savings projections were estimated in a 20% reduction in the water rate. This savings was realized, as the Township was able to maintain the current water rate from 2010 to 2011. No increases were passed on to the residents.

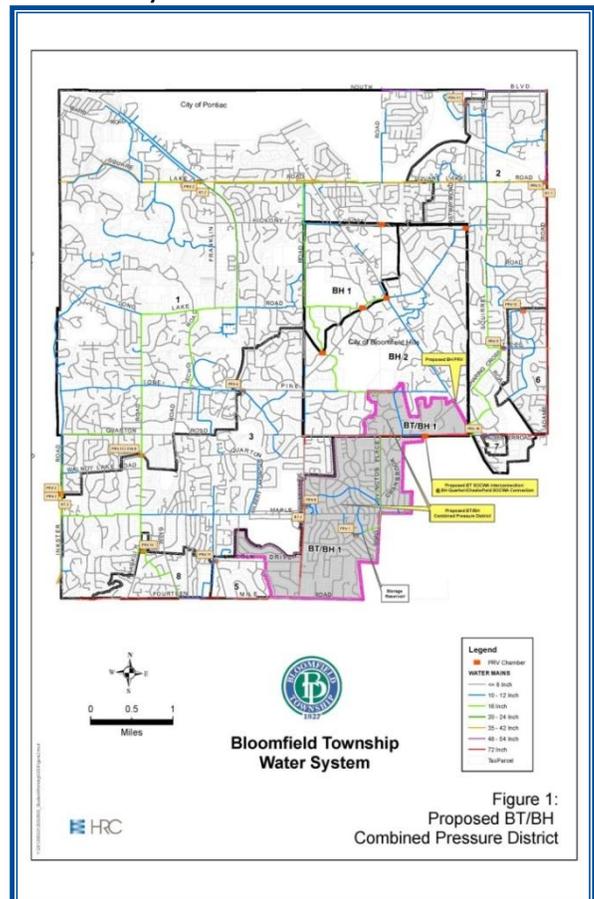


Figure 1:
Proposed BT/BH
Combined Pressure District

SOCWA Agreement and Study

Agreement Service Fee: \$195,000 per year for three years

Part of becoming a customer of SOCWA, Bloomfield Township entered into an agreement with SOCWA which had several requirements and goals set within it. The requirements included that Bloomfield Township pay a one-time “service fee”, connect to the SOCWA water supply system, agree to work with the city of Bloomfield Hills to possibly integrate the two water systems.

The service fee was addressed in the agreement between Bloomfield Township and SOCWA. To meet the other requirements, Bloomfield Township contracted with HRC to study the existing Township water system and evaluate the most economical and supply beneficial connection points. The results of the study determined that the most beneficial connection to the SOCWA system is at Quarton Road east of Cranbrook. Bloomfield Hills and Birmingham currently have connections in this area to the SCOWA system. Additional savings can be made by utilizing the existing Bloomfield Hills connection and combining a small district in Bloomfield Hills with the Bloomfield Township District. This option will have to be reviewed and discussed with Township and City leaders. Connection to the SOCWA system is required in three years.

Echologics AC Water Main Assessment Pilot Project

Recent developments in technology have made it possible to assess the condition of asbestos concrete (AC) pipe water main without having to take the water main out of service. AC pipe is among some of the oldest water main installed in the Township and serves large areas. To take the water main out of service for assessment is not possible. Echologics agreed to do a pilot study with the Township on a small area of AC pipe water main. The area selected was Westchester Village No. 4, along Breckenridge and Bradford Roads. The AC pipe water main is 6” and 8” diameter. This pilot project was paired with another study by Echologics by Independent Township.



Pilot project test area

By connecting to several points along the water main and creating a disturbance, or sound, Echologic's equipment can determine through the response time, the condition of the water main. Other factors that are included in the analysis are age of pipe and concrete class of the pipe. The results of the study provide an average condition over the length of 3,200 linear feet pipe sections tested. The Township AC pipe in the pilot test was determined to be of average condition. Because the results are averaged over several hundred feet, it is not possible to locate a specific weak spot or deteriorated spot in the water main pipe. There is no history of water main breaks on the section of pipe for the pilot study. Combining this experience with the water main and the results of the study, no follow up is required for this area. At this time, the EESD has placed on hold using this technology on other sections of AC pipe water main until the results can be refined to focus on smaller sections.

DWSD Meter Pit Improvements Design

Three of the four Township connection points to the DWSD system were constructed in the 1960s. Since that time, the DPW-Water Division has operated and maintained the components to the Township water system in the pits, including the valves and pressure reducing valves (PRVs). The PRVs have operated past their expected useful life. In order to replace the PRVs, other improvements to the meter pits are required, including upgrades for entry and access to equipment for operation and maintenance. The design of the improvements at the three connection pits is underway and construction is expected in the fall of 2012.

Pilot Pressure Reducing Valve Study

Bloomfield Township EESD and DPW staff reviewed and met with different pressure reducing valve (PRV) suppliers for evaluation of new PRV technology. The ultimate goal is to have every PRV in the Township supplied by the same manufacturer to allow for better efficiency for operation and maintenance. After reviewing several new PRV technologies and manufacturers, the EESD and DPW selected Singer Valve, which is supplied by the same local representative that currently provides service on all nine of the Township sewage pump stations. Singer Valve agreed to provide a pressure relief valve at no cost to use at the Westbourne pumping station, and a PRV at cost for the Lincoln-Bingham Township owned structure. Both valves were installed and are currently being operated by the DPW-Water Division. Based on observations and experience thus far, it appears that the PRVs meet the Township's needs and will be selected for the improvement project scheduled for fall 2012.

Avondale Terrace Drainage Investigation

Project Costs: No Outside Costs

Flooding on the northern portion of Avondale Terrace near the border of Bloomfield Hills has been observed since the 1960's. The homeowners requested assistance in resolving the flooding. Under a joint effort Bloomfield Township EESD, DPW and the Road Commission for Oakland County (RCOC) proceeded to investigate the storm sewer serving Avondale Terrace and Charring Cross. The RCOC and DPW cleaned the existing storm

sewer and the DPW televised the storm sewer to assess the condition. Follow up with the residents regarding options for mitigating the flooding is planned in the future.

Sewer Bond Sale

Project Cost: \$3,000,000

In early 2011, the Township sold bonds for sanitary sewer restoration, rehabilitation, and improvements. Project have commenced as described for the bond sale and additional descriptions are included below.

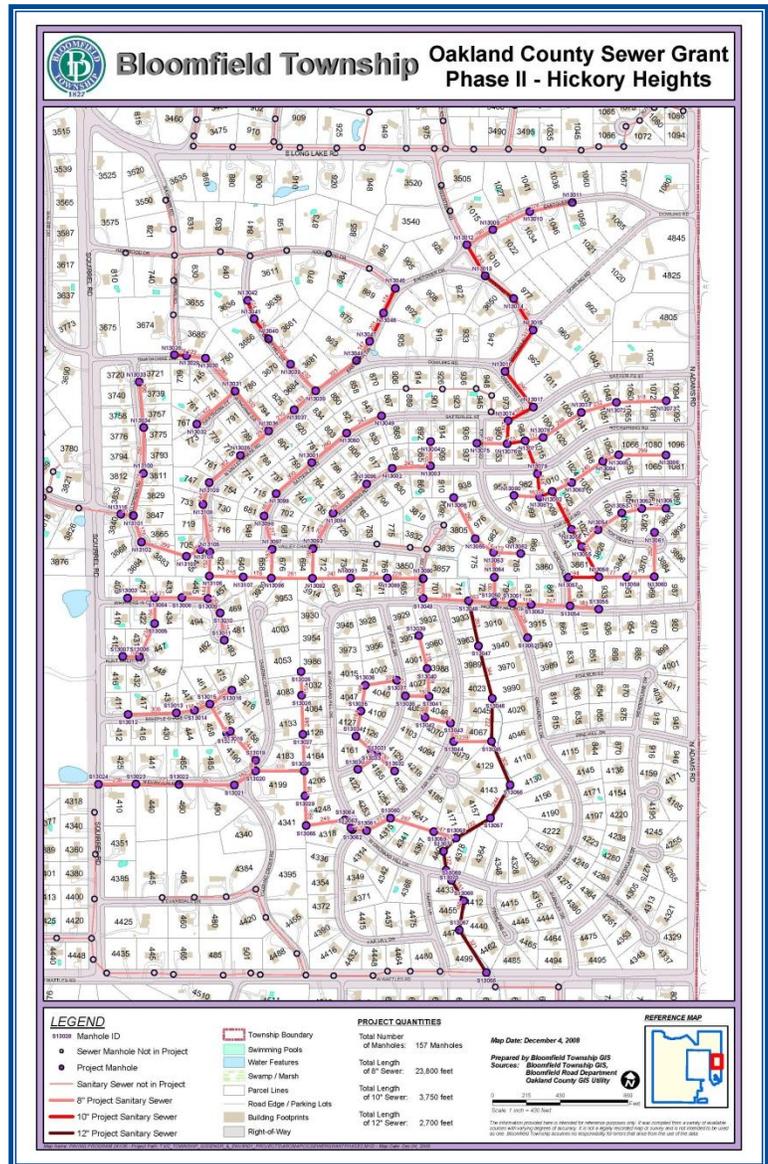
Rouge Program Office Round 10 Grant – Hickory Heights Area Sewer Rehabilitation

Grant: \$348,070

In 2010 Bloomfield Township was awarded for a federal grant from Wayne County's Rouge Program Office. The grant provided funding for 40% of the project to reduce I/I from sanitary sewers. The area selected included Hickory Heights Subdivision and the surrounding area between Adams and Squirrel Roads and Long Lake to Wattles Roads. The project was completed in the spring of 2012 and a total of 16,252 lf of 8" to 12" diameter sanitary sewer was rehabilitated and 109 manholes were rehabilitated. The total project costs was \$870,176 with 40% reimbursed through the grant.

Section 24 & 25 Manhole Inspection

The Township's consultant located and inspected 145 sanitary sewer manholes in sections 24 and 25. Manholes were inspected for structural issues as well as I/I issues. The results of this study are to develop a rehabilitation program to reduce I/I as required under the Township's ACO.



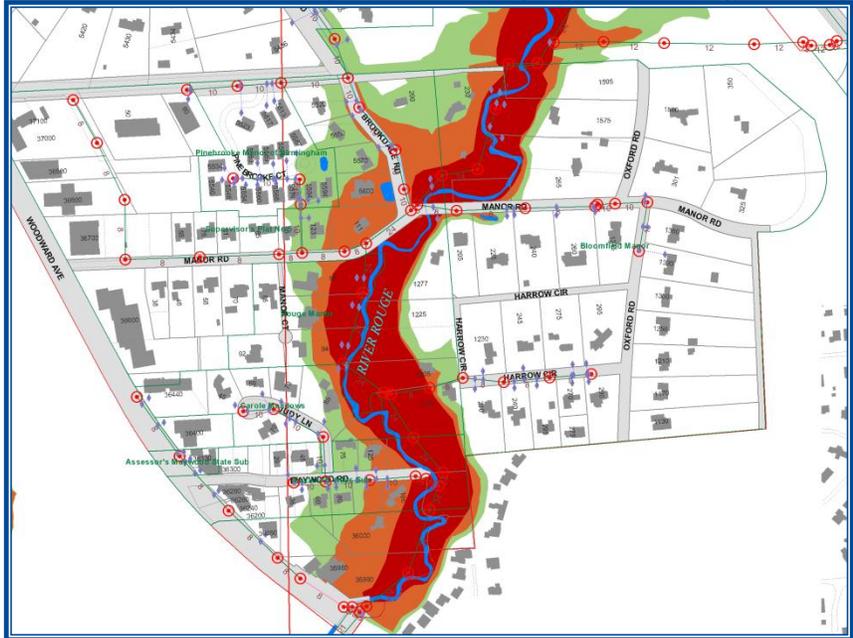
Project Area Map

Flood Prone Area Sewer Rehabilitation: Section 24 & 25

The next phase of rehabilitation is to focus on the sanitary sewers in Sections 24 & 25. This area has been identified as having high I/I. A majority of the sewers were constructed in the 1960's and 1970's, are of pipe material that has extended past its useful life, and are located in low lying areas and adjacent to the Rouge River. The WRC's flow metering has also indicated that this is an area of high flows in the County Interceptor which runs through both Sections. The project is to line all non-plastic sewers (pre 1980's) in rear and side yards, inspect and rehabilitate sewers in the road right of ways on an as-needed basis per the sewer inspection logs, and rehabilitate all poor and fair rated manholes as determined during the Section 24 & 25 Manhole Inspection. The project is being developed and will be bid in early 2012.

Facility Plan Update

In the 1970's the Township developed a Sanitary Sewer Facility Plan which laid out how every property in the Township can be served by gravity sanitary sewer. The Facility Plan showed what sewers were existing and what sewers were to be developed in the future. Since the development of the plan in the 1970's sewers have been constructed both in accordance with the Facility Plan and also different than the Facility Plan. The deviation



Section 25 floodplain and sanitary sewer reference map



Smoke escaping from the sanitary sewer through an uncapped cleanout

from Facility Plan is due to several factors including: changes in land development, access to easements from property owners, properties to be served, and availability of land for septic systems. The Facility Plan Update includes three phases, the first being to update the maps to show all existing sewers, identify unsewered areas, and develop the Facility Plan to show how all areas can be served by sewer. Once the three phases are complete, The plan will be finalized.

Phase III Sanitary Sewer Evaluation Survey and Manhole Inspection

In accordance with the Township's ACO, the Township has been performing Sanitary Sewer Evaluation Survey's (SSESs) in areas that are identified as having higher than average sanitary sewer flows. The SSES includes inspecting all sanitary sewer manholes for structural and I/I purchases and smoke testing the sanitary sewers. Smoke testing allows for field crews to identify un-capped cleanouts, illicit connections from the sanitary to the storm sewer, and open joints and cracks in the sanitary sewers. The Phase III area includes two areas, 1) between Hickory Grove and Lone Pine Roads and Telegraph to Lahser Roads, and 2) between Quarton and Maple Roads and Lahser and Telegraph Roads.

Inkster Road Manhole Rehabilitation

In 2009 a SSES was performed west of Inkster Road between Woodview and Wye Oak Roads. The results of the SSES indicated that there were 47 manholes that were found to be in poor or fair condition. In 2011 the EESD began a rehabilitation program to rehabilitate all 47 manholes. The program will extend in to 2012.



Standard Township sanitary manhole cover

WRC EFSDS Participation

Project Cost: No Outside Costs

In 2008, the WRC's office implemented the flow based billing system for collecting sewage disposal costs from the EFSDS communities. As part of the development and refinement of this method, the EESD has continued to participate in quarterly technical meetings, monthly flow based

metering work groups, monthly CSO RTB workgroups, and quarterly general EFSDS meetings. The regular participants in these various meetings include interested EFSDS communities and their consultants.

Recent activities have focused on compliance with the Administrative Consent Order (ACO) which Oakland County, Bloomfield Township, and several other communities are under. The overall goal is to reduce sanitary sewage flows. Activities have included additional flow metering, and analysis and preliminary development of both short and long term projects. More recently is the WRC's submittal for low interest loans through the state revolving fund (SRF) program for modifications to the 8-Mile Pumping Station and storage facilities along the Farmington Interceptor Branch. A Project Plan was developed as required during the SRF process.

Bloomfield Township also received notice from the MDEQ that our extension request for the Township's ACO was granted. This extension allows for additional time for the Township to plan and implement the long term corrections to the sewer system.

2011 Sewer Flow Meter Purchase

The EESD purchased five new flow meters from Teledyne ISCO. These meters are to begin a phase out of Township owned meters purchased several years ago and replace one damaged meter. The meters are installed in several sanitary sewers throughout the Township and are necessary as part of the Township's ACO. The Township is required to perform a year of flow metering and provide the information to MDEQ. This information will be used to analyze if sanitary flows are below the Township's TOC and if the ACO can be removed. The Township also uses these meters to identifying areas of I/I.

Safety Path Program

In 2011, 3.1 miles of new safety paths were constructed as part of the master plan approved with the 2008 millage renewal. These areas include:

- Telegraph Road – west side from Orchard Way to Maple Road (.2 miles)
- 14 Mile Road – north side from Telegraph Road to Lahser Road (1.2 miles)
- 14 Mile Road – north side from Orchard Lane to Crosswick Drive (.5 miles)
- Covington Road – west side from Amberly Drive to Dorstone Place (.4 miles)
- Square Lake Road – north side from the Surf Club to Woodward Avenue (.5 miles)
- Square Lake Road – south side from the International Academy to Squirrel Road (.3 miles)



Safety path



Safety path

Maintenance of the Township's existing safety paths or sidewalks is an ongoing project. During 2011 a total of 5,400 sq. ft. of concrete was replaced or repaired on existing paths or sidewalks. These areas include:

- Bloomfield Village – 4,300 sq. ft.
- Outlying Areas – 1,100 sq. ft.

MDOT Telegraph Road Reconstruction Project

As part of the Telegraph Road Reconstruction project, MDOT included 1.36 miles of safety path in 2011 during the completion of the reconstruction Telegraph Road. The two new safety paths included sections from westbound Quarton Road to Orchard Way and from Sandalwood Drive to 14 Mile Road. This was done at the Township's request, courtesy of the Michigan Department of Transportation, using Federal American Recovery and Reinvestment Act funding. These locations are also identified on the 2008 millage renewal.

Concrete Replacement Program

Each year, funds are allocated to perform concrete repair on road surfaces within the Township. Although the roads are under the jurisdiction of the Road Commission for Oakland County, the roads are evaluated by Township staff and selected for repair. Selection criteria include the number of complaints, age of road, location of repair, and type of pavement issue. In 2011, 39,000 sq ft of concrete removed and replaced in fifteen locations throughout the Township.

Township Gateway Program

The Township's Gateway Signage Program completed its fifth year with re-installation of the sign located at Telegraph Road and 14 Mile Road and landscape rehabilitation. This was originally removed to accommodate the complete reconstruction of Telegraph Road in the area and protect the gateway sign. The landscaping at the each site includes Ginko trees, Dawn Redwood trees, and clusters of daylilies among others. Water and electrical services had to be brought to each site and many other technical challenges had to be overcome to create these new Bloomfield Township landmarks. Township staff from Engineering & Environmental Services, Public Works, Planning, Building & Ordinance and Community Relations Departments directed the project.



HR-1A Pre concrete replacement



HR-1A Post concrete replacement

EESD Programs

In addition to construction projects, the EESD manages and over sees several Township-wide programs both specific to EESD and in coordination with other departments.

Lake Board Webpage

Updated by EESD staff in cooperation with the Clerk's Office and the Community Cable Department, the Lake Improvement Board webpage has been updated to include information useful to riparian property owners and other interested parties. The main page of the site provides general public education regarding the impacts property owners can have on adjacent streams and lakes and also explains how Lake Improvement Boards are formed and what their functions are. A link is also provided for each of the eight Lake Improvement Boards which exist in the Township. Information regarding this includes; contact information and photos of Lake Board members, engineering assessment reports for the lake, tax assessment maps and an archive of past meeting minutes. This new webpage provides a great public education and information sharing tool for all those interested in Lake Board matters.

Water Quality Report (CCR) | Energy Efficiency and Conservation

Lake Improvement Boards

Under the Natural Resources and Environmental Protection Act (Public Act 451 of 1994, Part 309, Inland Lake Improvements), lake board membership includes representatives from the following entities: Bloomfield Township, two designees, Oakland County Board of Commissioners, Oakland County Water Resource Commissioner's Office, and a riparian land owner, appointed by the lake board, who owns land abutting the lake. Lake improvement boards have been established to address relevant lake improvement issues, including the oversight of aquatic weed control programs, nuisance control, water quality improvements and other educational activities.

For more information regarding the Township's eight established lake boards, engineering studies or maps of each lake board area, please select a link below.

Lake Boards	Year Formed
Forest Lake	1986
Gilbert Lake	2007
Island Lake	1983
Lower Long Lake	1985
Meadow Lake	1986
Orange Lake	2003
Upper Long Lake	1984
Wabeek Lake	1989

As of March 1, 2005, Michigan legislative amendments have made new changes to the administration structure of lake improvement boards. For more information, please see our [informational flyer](#).

For a complete copy of the Natural Resources and Environmental Protection Act - Public Act 451 of 1994, Part 309

Contact Us:
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Bloomfield Twp. MI 48303-0489
ph: 248.433.7700
fax: 248.433.7714

08/22/2012

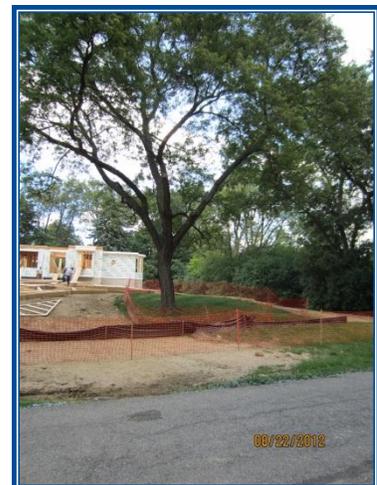
Lake Board Main Page

<http://www.bloomfieldtpw.org/Services/EES/Environment/LakeImprovementBoards.htm>

Implementation of Tree Preservation & Protection

The EESD along with the Planning, Building & Ordinance Department developed a draft Tree Preservation & Protection Ordinance. The Ordinance was enacted in order to protect Bloomfield Township's woodland areas and the quality and character of the neighborhoods within our community. After a two-year long drafting process, the Township Board of Trustees adopted the Tree Preservation & Protection Ordinance on March 29, 2009.

During 2011, EESD worked with the Planning, Building & Ordinance Department to assist over one hundred 100 residents and contractors in the form of pre-application meetings, site visits, plan evaluation and phone conversations with perspective applicants and interested residents. In all 35 Tree Preservation and Protection permits were issued for Township properties in 2011.



Residential tree protection fencing

Fertilizer Ordinance

Through Bloomfield Township's Registered Fertilizer Applicator Program, commercial fertilizer firms agree to follow the requirements of the Fertilizer Ordinance for all fertilization done in the Township. The registrars are issued a permit for a two year period. In 2012, 31 commercial fertilizer applicators registered to do work within the Township.

National Pollution Discharge Elimination System (NPDES) Permit Management

On May 22, 2008 the Michigan Department of Environmental Quality (MDEQ) issued a new National Pollutant Discharge Elimination System (NPDES) General Permit for our Municipal Separate Storm Sewer System (MS4). On November 30, 2010, the MDEQ rescinded that permit in response to over seventy communities contesting the requirements in that permit as being unduly prescriptive and costly. On this action, the Township was forced to revert back to its 2003 Watershed Permit requirements.

Bloomfield Township has continued to participate in the MDEQ Stakeholders Group, created to drive the formation of the new permit language. The stakeholders group has continued to meet through the year. No draft permit has been created.

Bloomfield Township continues to implement the requirements under the Storm Water Pollution Preventive Initiative (SWPPI) plan which was required as part of the 2003 Watershed Permit. In addition, Bloomfield Township also incorporates elements from the rescinded 2008 permit. These elements, while not required, show Bloomfield Township's commitment to being a good steward of the Rouge River Watershed.

West Nile Virus Management Program

In 2011, the Township West Nile Virus Management Program continued to address the WNV problem through an integrated pest management program that consisted of identifying and prioritizing approximately 1900 catch basins and detention basins. Public areas found to be in high priority of mosquito control treatment are sampled and treated on a monthly basis.

The Township program began in June and was completed in early October. Throughout the year the EESD provided public education and community



Survey of mosquito larvae



Administration of West Nile treatment "dunks"

outreach activities through the WNV hotline, Township newsletter articles, and printed materials. The website provides additional information, such as the modes of virus transmission; means of prevention; and how to reduce the risk of exposure. There were no reported cases of the WNV in the Township for 2011. However, the risk for contracting the disease is still present in Southeast Michigan.

Gypsy Moth Management Program

Since 1993 Bloomfield Township, together with the National Gypsy Moth Management Group, has implemented an integrated pest management approach to reduce and contain the Gypsy Moth problem. Components of the program include: public education, intensive biological monitoring, and treatment plus evaluation.



Gypsy moth caterpillar



Adult gypsy moth

In 2011, the National Gypsy Moth Management Group personnel collected data from biological surveys at permanently established survey locations to determine Gypsy Moth population, density and health, susceptibility and vulnerability of trees and infestation trends. In the spring, fungus inoculations were applied to 28 locations throughout the Township.

Community Participation

Cranbrook Water Festival

EESD staff volunteered in the Cranbrook water Festival on September 15, 2011. EESD staff was responsible for taking 5th grade students from station to station to learn about water topics. More than 1,700 students attended this event.

Conant Vegetable Garden

EESD staff volunteered to help Conant Elementary design, build, and provide supplies for a vegetable garden that was built in October 2011. This garden is planted to produce vegetables, herbs, fruits, and plants. The garden is maintained by the students using organic practices including utilizing compost provided by Bloomfield Township, cover crops, chemical-free pest control, succession planting, and heirloom seed saving.



Conant Elementary vegetable garden



2011 Open House EESD Display

Open House

EESD staff participated in Bloomfield Township's open house on October 16, 2011. EESD answered questions, displayed information, and educational materials addressing storm drain awareness, water conservation, earth-friendly landscape materials, fertilizer education, car washing techniques, proper HHW disposal, Emerald Ash Borer, West Nile Virus, "Ours to Protect" materials, and sidewalk maps.



E. L. Johnson Nature Center
Rouge Rescue Site

River Rouge Cleanup

EESD partnered with E.L. Johnson Nature Center to hold a Rouge Rescue Events. The event took place on June 5, 2011. Over thirty volunteers worked to removed invasive species, planted native species, cleaned trash, and worked to restore the hiking trails within the nature center.



Frog and Toad Survey

On March 17, 2012 EESD staff hosted a Frog and Toad Survey training in conjunction with Friends of the Rouge and the ARC for over 70 participants. Amphibians are used as a survey tool because they depend on clean water for breeding and need good quality upland habitat for the adult portion of their life, their presence is an indicator of good quality habitat. This means the more species a site can support, the healthier the habitat is.

Career Day

Annually, the Pontiac Optimist club brings interested students to tour the Township Government. The EESD participates and spends time with the students discussing the water and sewer systems and the importance of both system for human health, watershed wide topics and their effect on the watershed and other projects that may be of interest to students. This year, four students spent an hour with the EESD on May 3, 2011.

International Academy Rain Garden

EESD staff worked in conjunction with SOCWA and International Academy staff and students in the spring of 2012. EESD provided expertise with the design of a rain garden as well as helping with the redesigning of four existing gardens. EESD provided supplies, tools, and labor. This project will be completed in the fall of 2012.

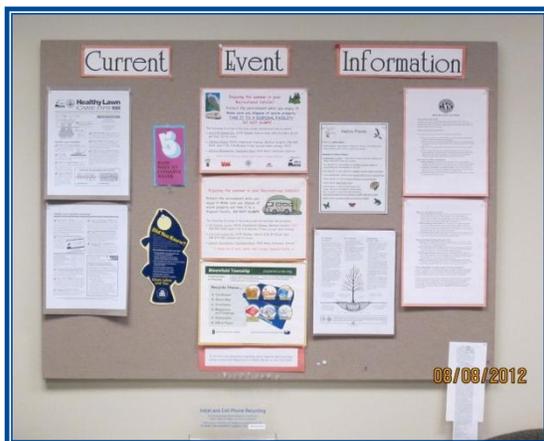
Public Education

EESD maintains two bulletin boards along with a display case within the Township Campus.

These information centers are maintained periodically with current events and helpful information regarding environmental issues such as proper riparian maintenance, holiday tree removal, keeping our water clean, proper lawn maintenance, proper tree maintenance, etc.



Public Educations locations in DPW lobby and BPO lobby



Engineering & Environmental Services Department

2011 Professional Development

Professional Development

The EESD staff commits to expanding their knowledge on changing technologies, practices, and methods for engineering, construction, environmental and water and sewer operations. Summarized below are recent accomplishments by EESD staff and a summary of educational trainings attended.

Staff Accomplishments

Olivia Olsztyn-Budry, PE

- Received the S2 Water Operator certification
- Graduated from Michigan Public Service Institute

Training and Development

HDPE Pipe

ISCO Meeting

January 19, 2012

Brad Gray from ISCO pipe, a HDPE pipe supplier for several recent water main replacement projects in Bloomfield Township, met with Township staff and HRC to provide an update on the use of HDPE pipe. Two staff members from EESD, three staff members from DPW and two consultants from HRC attended the meeting. ISCO reviewed training services they provide for proper operation of equipment by contractors. ISCO also reviewed the different fusing practices and common problems and solutions for use of HDPE pipe. As part of this update meeting, EESD will proceed with supplementing the current specifications for HDPE pipe by including contractor training and certification requirements and data logging of pipe use and construction.

HDPE On-Site Training

ISCO

March 20, 2012

After the in-house meeting with ISCO pipe, the EESD organized a Butt Fusion and Electro-Fusing training at ISCO pipe's facility. Several DPW Water Division staff members attended as well as several HRC observers who provide construction oversight on Township water main replacement and extension projects. The training included a review of the equipment for Butt and Electro-Fusing joints, review of available manuals and resources, and a demonstration of the fusing procedures for both methods. The training was also extended to discuss acceptable water main repair techniques and appropriate water main fittings for HDPE pipe and HDPE to Ductile Iron connections.

2012 Pipeline Emergency Response & Awareness for Excavator Operations

Paradigm Liaison Services

February 28, 2012

The EESD staff attends the annual safety training program for operations and excavations around gas and oil, etc. pipelines. Topics include recognition of these utilities, contacts, planning, and response in case of an emergency.

Mosquito Control

Michigan Mosquito Control Association

October 11, 2011

One staff member attended this training on characteristics of common mosquitoes, mosquito borne disease, surveillance, regulatory concerns, mosquito control materials and label review, methods for evaluating insecticide use, larviciding, and adulticiding techniques & equipment, as well as commercial barrier treatment.

Illicit Discharge Elimination Program Training (IDEP)

The Alliance of Rouge Communities (ARC)

December 8, 2011

One staff member attended this training to determine what is an illicit discharge, how to locate an illicit discharge, suspicious discharges, techniques for finding illicit discharges, resolving illicit discharges, and IDEP requirements for Federal NPDES regulations.

Americans with Disabilities Act (ADA)

Michigan Department of Transportation

February 27, 2012

This program focused on engineering and layout standards for sidewalk construction and how to incorporate these requirements in the design and construction of future sidewalk programs.

Engineering & Environmental Services Department

A Look Ahead

A Look Ahead

As we look ahead to 2012, the EESD will continue to oversee the Township's construction projects and continue to provide support to all Township departments regarding the environment, natural features, building projects, and Township utilities.

Projects planned for 2012 include:

- Completion of the SOCWA Water Study
- Improving PRV/Meter Pits
- Implementing water system improvements for SOCWA
- Manhole and sewer rehabilitation in Sections 24 and 25
- Rehabilitating the manholes and sewers in flood prone areas
- Rouge Program Office Round XI Grant Application
- Wing Lake Sanitary and Manhole rehabilitation
- Tree City USA
- Continued use of Intern Program
- Reconstruction of Andover Road
- Constructing new safety paths



Bud the frog watching over the native garden