



## CITY COUNCIL REPORT

TO: Phillip L. Nelson, City Manager

FROM: Brian P. Murphy, Assistant City Manager/Economic Dev. Services  
Steven J. Vandette, P.E., City Engineer 

SUBJECT: Completion of Section 4 Weir Flood Control Structure Project and Status of Sylvan Glen Golf Course Wetlands

The project area is a detention basin in Section 4 in a wooded area east of Vernmoor and north of Aspinwall. The original basin was constructed in the mid-1970's, as an inline detention basin on a natural stream, tributary to the Clinton River. Over time, the basin filled in with sediment, and forested through natural processes. Stormwater detention had been greatly reduced due to accumulation of sediment.

On January 28, 2008, City council passed Resolution #2008-01-023-F-4d, which awarded the Section 4 Weir Control Structure Project to DeAngelis Landscape, Inc., at an estimated total cost of \$393,725.00. The contractor is near completion of the construction of this project, with only a handful of plantings to be completed.

As a part of the Section 4 Weir Control Structure Project the MDEQ required the City to mitigate the wetlands impact on the project site. The MDEQ permit required mitigation of 1.14 acres of wetlands. The City created over 7 acres of new wetlands downstream of the project site, on the Sylvan Glen Golf Course. These newly created wetlands are being monitored for MDEQ requirements to show that the wetlands are viable. This past summer, the City's consultant completed the Year 2 monitoring event for the wetlands, and found that they are functioning beyond expectation. In fact, the letter states:

"The mitigation wetlands as a whole received an overall FQI score of 26.04, significantly higher than the score of 17.35 experienced during the first growing season, which in itself was relatively high for a newly created area. An FQI score greater than 20.00 typically isn't observed in mitigation sites less than five years old. Each of the wetlands is functioning properly as designed, and no corrective actions are warranted at this time. The MDEQ should be pleased with the progress of the mitigation site."

The Section 4 Weir Control Structure Project has improved the stormwater detention for the downstream reaches of the Clinton River. A wetland has been created to absorb the excessive

flows, provide stormwater storage and abate downstream flooding. The wetlands have created wildlife habitat for deer, herons, frogs, toads and other aquatic wildlife. In fact, during the project, a snapping turtle with an estimated diameter of 20 inches on the shell was saved from the construction site and moved downstream. There were small warm water fish present in the forebays almost immediately after they were formed. Several egrets and heron visited the site daily during construction.

Over time, the grassy areas that are shown will become fields of wildflowers and wet prairie plants. These plants will uptake excess nutrients and absorb stormwater to even further improve the stormwater capabilities of the pond. In addition, the plants will provide habitat and forage for songbirds, butterflies and bedding areas for deer and fox.

As for maintenance, the DPW will be mowing the site once a year after the prairie plants establish themselves. The mowing will be done to keep any woody plants (i.e. cottonwood seedlings, etc.) from multiplying across the site.

Residents in the area have verbally thanked Engineering Department Staff for the improved aesthetics of the area and for the City's consultant and staff's performance during construction.

Attached are some before/after photos



AFTER: Looking downstream from the corner at Fredmoor – this area was overgrown and channelized.



AFTER: looking downstream from the SW corner of the site (closer to Aspinwall). This is after the large rain event that occurred the weekend of 9/12/08.



BEFORE: Downstream of the project, looking upstream at old weir control structure and eroded streambanks.



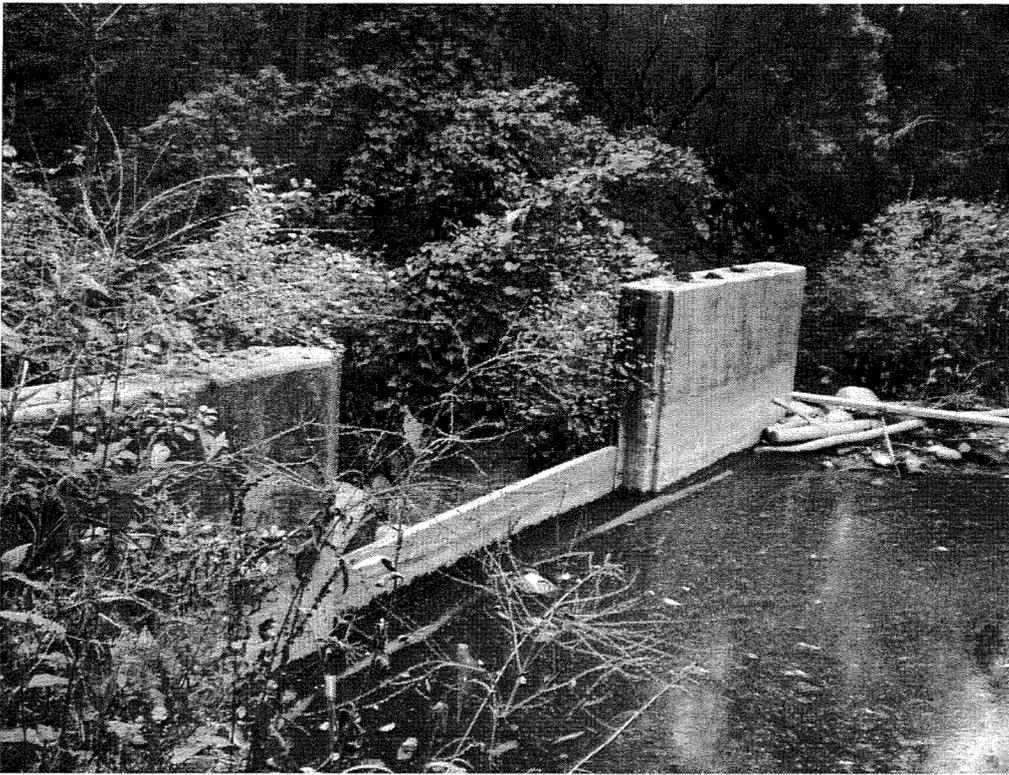
AFTER: Downstream of the project, looking upstream at new weir control structure and streambank stabilization techniques.



BEFORE: Looking upstream at the old weir control structure



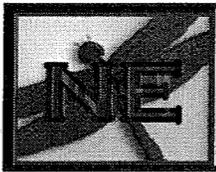
AFTER: Looking upstream at the new weir control structure



BEFORE: Looking downstream at old weir control structure



AFTER: Looking downstream at new weir control structure and pond. Note the habitat structures.



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## MEMO

September 8, 2008

Ms. Jennifer Lawson, Environmental Specialist  
**City of Troy**  
500 W. Big Beaver Road  
Troy, MI 48084

**Subject:** *Project Status Update*  
*Sylvan Glen Wetland Mitigation Monitoring*  
*Section 10 of Troy, Oakland County, MI*  
*NE 1136*

Dear Ms. Lawson:

Hubbell, Roth & Clark, Inc. and Niswander Environmental have completed the Year 2 monitoring event for the mitigation wetlands located at the Sylvan Glen Golf Course in Section 10 of Troy, Oakland County, Michigan. The wetlands as a whole have matured in the last year and appear to be more heavily vegetated and significantly more diverse than during the first growing season. Favorable weather conditions seem to have played a major role in assisting the wetlands during the 2008 growing season; a wet spring and early summer allowed wetland plants to thrive while preventing upland species from becoming established in the basins. None of the wetlands contain less than 95% vegetative cover, and fifteen of the seventeen were completely vegetated (100%) by the end of the second growing season.

The mitigation wetlands as a whole received an overall FQI score of 26.04, significantly higher than the score of 17.35 experienced during the first growing season, which in itself was relatively high for a newly created area. An FQI score greater than 20.00 typically isn't observed in mitigation sites less than five years old. Each of the wetlands is functioning properly as designed, and no corrective actions are warranted at this time. The MDEQ should be pleased with the progress of the mitigation site.

If you have any questions or require additional information, please feel free to contact us at your convenience.

Sincerely,

Jeff W. Bridgland  
Ecologist  
Professional Wetland Scientist #1810

Steven F. Niswander  
Principal  
Professional Wetland Scientist #1276