



Wayne County, Michigan

Annual Report

For Reporting Period January 1, 2014 – December 31, 2014

Certificate of Coverage MIG610040 General Storm Water Discharge Permit (MIG619000)

Submitted to:

Michigan Department of Environmental Quality - Water Bureau

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SECTION 1
DETERMINATION OF EFFECTIVENESS

Background

Under the federal Clean Water Act, the Phase II regulations for small municipal storm sewer systems (MS4) state that operators of small MS4s must obtain coverage under an NPDES storm water permit which requires development and implementation of a storm water management program that “must:

- Reduces the discharge of pollutants to the "maximum extent practicable" (MEP);
- Protects water quality; and
- Satisfies the appropriate water quality requirements of the Clean Water Act.

MEP is a standard that establishes the level of pollutant reductions those MS4 operators must achieve through implementation of a storm water management program. The definition of "MEP" should adapt continually to both current conditions and BMP effectiveness, but ultimately, successive iterations of the mix of BMPs and measurable goals should be made to achieve the objective of meeting water quality standards”.

“...identifying overarching goals for your entire storm water management program is also useful. Establishing objectives for each of the minimum measures can help put each program component into perspective within the framework of your overall program. One way to evaluate program success at either the minimum measure- or overall program-level is through the use of environmental indicators.

Useful indicators are often indirect or surrogate measurements where the presence of the indicator points to a likelihood that the program area was successful. Indicators can be a cost-effective method of assessing the effectiveness of a program because direct measurements sometimes can be too costly or time-consuming to be practical.” (EPA, “Measurable Goals Guidance for Phase II Small MS4s”,

<http://cfpub.epa.gov/npdes/stormwater/measurablegoals/index.cfm>)

Michigan General Storm Water Discharge Permit (MIG619000) requires a determination of the effectiveness of the various public education activities (Section A.3.b), illicit discharge elimination activities (Section A.3.a), the watershed management plan(s) (Section B.1) and the Storm Water Pollution Prevention Initiative (Section B.2). The methods for evaluation of progress “may include chemical or biological indicators, flow measurements, erosion indices, and public surveys”.

Effectiveness of Wayne County's Storm Water Management Program

Wayne County uses an innovative combination of measurable goals for some watershed management activities and evaluations through ecosystem health monitoring programs to assess the effectiveness of our storm water management program implemented under our Certificate of Coverage MIG610040. Sections 2 through 5 of this report present a summary of the implementation of watershed management activities and other BMPs. Evaluations of improvements in ecosystem health in Wayne County watersheds are presented below.

Rouge River Watershed. The Rouge River Watershed Monitoring Database, developed by Wayne County's Rouge River National Wet Weather Demonstration Project (Rouge Project), is available on CD/DVD upon request. The *Rouge River Monitoring and Assessment Report*, previously published annually by the Rouge Project and the Alliance of Rouge Communities (available at <http://www.rougeriver.com>) presents trend analysis for the monitoring data.

A summary of the water quality trends in each of the seven Rouge subwatersheds, based on water quality data collected through 2013 and ecosystem health data collected through 2014, is presented in Table 1. As noted in the footnotes to Table 1, data for various water quality parameters were collected at different time periods. The most recent data reflected in the table were collected in 2013 and include continuous monitoring of level and flow at six locations throughout the watershed and continuous monitoring of dissolved oxygen (DO) and temperature at Plymouth Road (US7) in the Main Branch and at Military Road (L05D) in the Lower Branch.

From Table 1, all of the watershed areas show either a "no change" or "improving" trend for the monitored parameters of stream flow, temperature, dissolved oxygen (DO), total phosphorus, E.coli bacteria, fish communities, stream habitat, macroinvertebrates, and amphibians, with the following exceptions: Middle 1 for stream flow; Lower 1 for dissolved oxygen; the Middle 1 and Middle 3 for fish community; the Upper Rouge for macroinvertebrates; and the Lower 2 for amphibians. In particular, trend analysis indicates stream flow to be improving or has not changed in 6 of the 7 Rouge subwatershed areas. DO trend analysis shows improvement or no change in 6 of the 7 subwatershed areas and E.coli trend analysis indicates an improving or no change in all 7 watershed management areas. In 2014, seven species of the eight amphibians monitored were observed in 4 of the 7 watershed management areas.

Water Quality and Flow Monitoring: The most recent water quality monitoring data for the Rouge River was collected in 2013. Water quality monitoring is conducted according to the monitoring program described in the 2012 Rouge River Watershed Management Plan (WMP) prepared by the Alliance of Rouge Communities (ARC). The five-year Rouge River Monitoring Plan for the period 2009 through 2013 included the collection of several types of data throughout the watershed, which were used to measure the improvements in Rouge River water quality and ecosystem health. Precipitation, streamflow, and biological health monitoring data were collected each year of the plan. Collection of monitoring data for dissolved oxygen, temperature, bacteria, and nutrients occurred during at least one year of the plan.

A key element of a healthy river ecosystem is adequate dissolved oxygen (DO). Instream DO concentrations (over 5 mg/L) are essential for healthy fish and other aquatic life. Even brief declines in DO concentrations to levels below 5 mg/L can have a detrimental effect on aquatic organisms. In general DO and temperature are in compliance with minimum water quality

Table 1: Analysis of Rouge River Conditions
Developed from *Rouge River Ecosystem Monitoring and Assessment Reports*

Parameter	Rouge Subwatershed						
	Main ½	Main ¾	Upper	Middle 1	Middle 3	Lower 1	Lower 2
Stream Flow¹	↑	↔	↑	↓	↔	↔	↔
Temperature²	↑	↑	↑	↑	↑	↑	↑
Dissolved Oxygen³	↑	↑	↑	↔	↑	↓	↑
Total Phosphorus⁴	↔	↔	↔	↔	↑	↑	↑
E.coli⁵	↔	↔	↔	↔	↑	↔	↔
Fish Community⁶	↔	NA ⁷	↑	↓	↓	↔	NA ⁷
Habitat⁸	↔	NA ⁷	↔	↔	↔	↑	↔
Macroinvertebrates⁹	↔	↔	↓	↑	↑	↔	↔
Frogs & Toads¹⁰	↑ 7	↑ 6	↑ 8	↑ 8	↑ 6	↑ 8	↓ 4

- 1) Trend arrow is based on frequency of peak flow decreasing as reported in *2013 Rouge River Ecosystem Monitoring and Assessment Report*.
- 2) Michigan water quality standards for temperature, developed to protect warm water fisheries are established only for streams receiving heated effluents with 29.4°C being the maximum temperature allowed during any month. Up arrow indicates continuous temperature monitoring did not exceed this value as reported in *2007 Rouge River Ecosystem Monitoring and Assessment Report*.
- 3) Arrow is based on daily average DO trend analysis as reported in Table 1 from the *2013 Rouge River Ecosystem Monitoring and Assessment Report* of the most downstream monitoring station.
- 4) Arrow is based on Total Phosphorus trend analysis as reported in *2007 Rouge River Ecosystem Monitoring and Assessment Report*.
- 5) Arrow is based on the majority of sampling points having an improving trend as reported in *2007 Rouge River Ecosystem Monitoring and Assessment Report*.
- 6) Trend arrow is based on comparing reported MDNR 1995 fish community survey results to MDEQ 2005 fish community survey results as reported.
- 7) Not Applicable - Lack of data to perform trend assessment.
- 8) Trend arrow was established by comparing MDEQ 2000 study ratings with MDEQ 2005 study ratings.
- 9) Arrow was established based on Friends of the Rouge and Wayne County macroinvertebrate monitoring trend analysis spring and fall 2001 – 2013. Arrows reflect a significant trend in either spring or fall data. **Bold arrows** reflect a significant trend in both spring and fall.
- 10) Arrow indicates either an increase or decrease in number of species heard in the watershed from the prior year or minimum 7 species heard in the watershed during Friends of the Rouge 2014 Frog & Toad Survey.

standards on a routine basis throughout the watershed and have remained fairly stable at most locations.

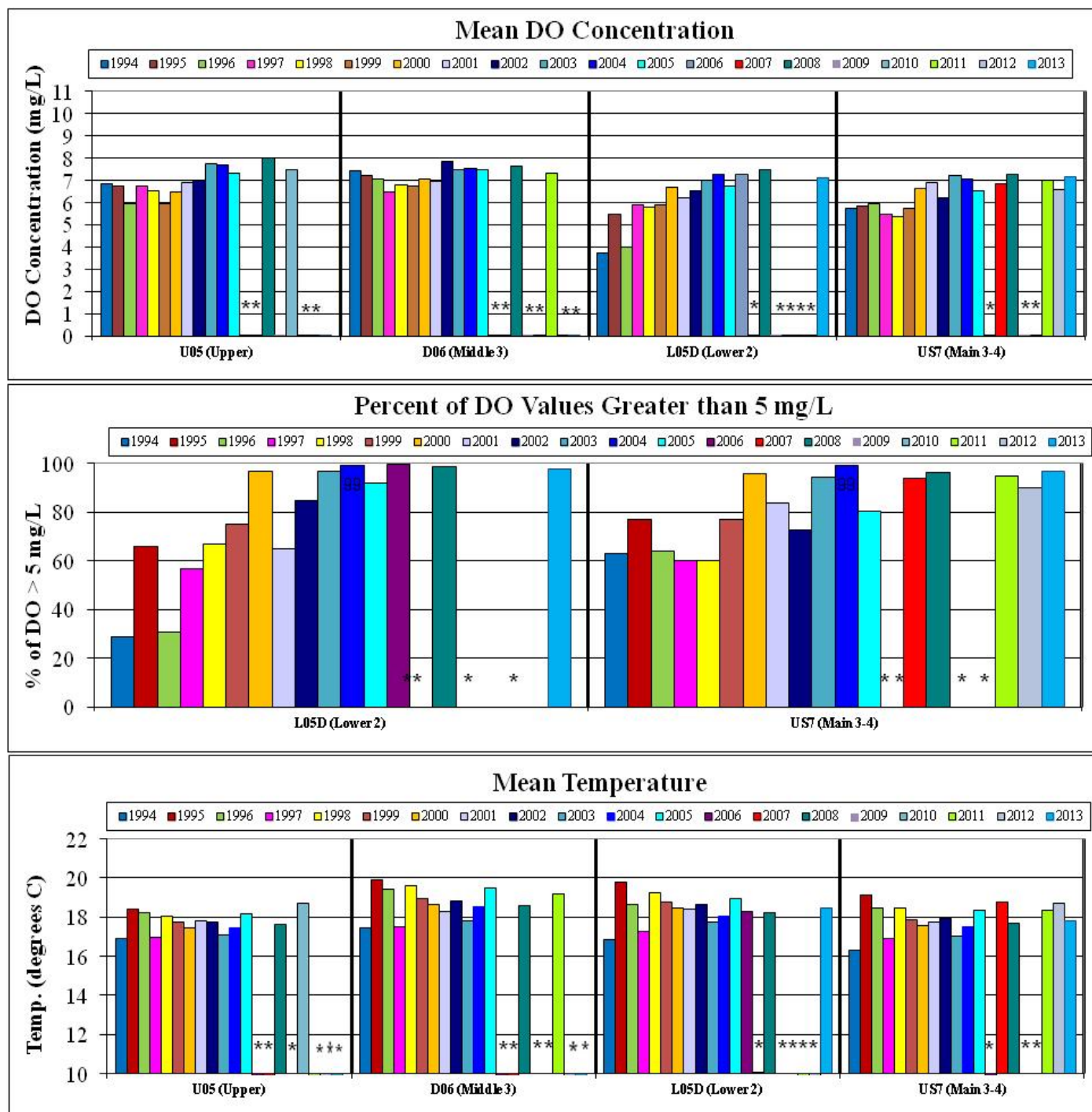
DO has been monitored in the river for almost two decades and is very useful in determining spatial and temporal water quality trends. Prior to 2006, there was at least one continuous DO and water temperature monitoring location in each of the seven Storm Water management Areas (SWMAs) in the Rouge River watershed, and two in the Main 3-4 SWMA. From 2007 through 2012, continuous DO and temperature were monitored in at least one location in the watershed with the exception of 2009. In 2013, DO and temperature were monitored at Plymouth Road (US7) in the Main Branch and at Military Road (L05D) in the Lower Branch.

Figure 1 shows the mean DO values, the percent of DO values greater than 5.0 mg/L, and the mean temperature values from 1994 through 2013 at Telegraph Road (U05), Plymouth Road (US7), Hines Drive/Ford Road (D06), and Military Road (L05D). The percent of the time DO concentrations were in compliance with the minimum 5 mg/L warm water State standard show an upward trend. Based on a rating scale developed by the Rouge Project, since 2008 the DO data at the four previously mentioned monitoring locations are all rated good ($\text{DO} \geq 5 \text{ mg/L}$, $\geq 95\%$ of the time) with the exception of Plymouth Road (US7) in 2012 when the rating was fair ($\text{DO} > 5 \text{ mg/L}$, $< 95\%$, but $> 5 \text{ mg/L}$, $> 75\%$ of the time). 2013 was one of the 5th wettest years since 1960. DO values of less than 5 mg/L at Plymouth Road (US7) in 2013 occurred 13 times: nine times after small rainfall events (ranging from 0.04 inches to 0.67 inches) with water temperatures ranging from 2°C – 8.6 °C above the average water temperature of 17.8°C. Once after a medium rainfall event of 0.86 inches and 0.6°C below the average water temperature of 17.8°C and three times after large rainfall events (ranging from 0.92 inches to 1.39 inches) with water temperature ranging from 2.2°C–7.6°C above the average water temperature of 17.8°C. DO values of less than 5 mg/L at Plymouth Road (US7) were not observed during low flow conditions in 2013.

DO values of less than 5 mg/L at Military Road (LO5D) in 2013 occurred 19 times: 12 times after small rainfall events (ranging from 0.04 inches to 0.39 inches) with water temperatures ranging from 1.4°C below–6.7° C above the average water temperature of 18.5°C. One medium rainfall event of 0.78 inches of rainfall with water temperature ranging from 3.7°C – 4.2°C above the average water temperature of 18.5°C, and one large rainfall event of 0.91 inches with water temperature ranging from 0.6°C -1.1°C below the average water of 18.5°C. DO values of less than 5 mg/L occurred five times under low flow conditions with water temperatures ranging from 0.7°C–5.8°C above the average water temperature of 18.5°C.

Regression analyses (1994 – 2013) of the continuous DO daily averages at Plymouth Road (US7) were updated with 2013 data and as in previous years continued to show improvement. The improvement at Plymouth Road (US7) from 1994 through 2013 is calculated as 0.08 mg/L/year. A regression analysis (May - October 1999 – 2013) of the continuous DO daily averages at Military Road (L05D) was updated with 2013 data and, as in previous years, shows improvement. The improvement at Military Road (L05D) from 1999 through 2013 is calculated as 0.083 mg/L/year. Trend analyses were previously performed on historical continuous daily average DO data collected from 1994 to 2012 (data not collected at each location in all years) at the six other continuous monitoring locations and in general they show improvement or no significant trend (Table 2).

Figure 1
Rouge River Continuous DO and Temperature Annual Mean Data
May – October 1994 – 2013
Stations U05, D06, L05D, US7



Note: * indicates no data available for year.
 2013 DO percent completeness US7=97.3%
 2013 DO percent completeness L05D=99.9%

Table 2
Trend Analyses: Rouge River Daily Average Dissolved Oxygen Concentrations

Daily Average DO Trend Analyses for the Rouge River Watershed			
SWMA	Site ID	Period of Record	Trend
Main 1-2	US5	1997-2005	Improvement of 0.15 mg/L/year
Main 3-4	US7	1994-2005, 2007, 2008, 2011-2013	Improvement of 0.08 mg/L/year
Main 3-4	US8	2001- 2005, 2007	No significant change
Upper	U05	1994-2005, 2008, 2010	Improvement of 0.10 mg/L/year
Middle 1	US10	2003-2005	No significant change
Middle 3	D06	1994-2005, 2008, 2011	Improvement of 0.04 mg/L/year
Lower 1	US9	2002-2006	Degradation of 0.04 mg/L/year*
Lower 2	L05D	1994-2006, 2008, 2013	Improvement of 0.17 mg/L/year**

*Since data collection began at US9 in 2001 (May – Oct) DO mean is ≥ 7.7 mg/L and the percent ≥ 5 mg/L is 100%.

**Excluding data 1994-1998

Rouge River Flow Monitoring: Moderate, stable streamflows are generally best for aquatic life and stream habitats. Extreme variation of flow rate and volume during storm events can result in severe bank erosion and sediment resuspension, which can significantly degrade fish habitats. In 2013, continuous flow and level monitoring data were collected at six locations in the watershed by the United States Geological Survey (USGS). Data were collected in cooperation with Oakland County and the Michigan Department of Environmental Quality (MDEQ) at Maple Road (US4), Beech Road (US5), Plymouth Road (US7), Shiawassee Road (US3), Inkster Road (US2), and John Daly Road (US1). Additional continuous flow and level monitoring data were collected May – October at two locations (US9 and L05D) on the Lower Branch by USGS. Flow and level monitoring was discontinued by the USGS in October 2009 at Evans Ditch (US6). A tabular summary by SWMA of the streamflow data for the period of record are shown in Table 3 as well as the 2013 precipitation totals (as percent of long-term average from 1994 through 2013).

High stream flow variability continues to negatively impact the water quality and ecosystem health of the Rouge River Watershed. Trend analyses generally indicate that the frequency of high flow is holding steady in the Middle 3 and Lower Rouge River subwatersheds. However, an increase in the frequency of high flow was calculated in the Middle 1. In the Main and Upper Rouge River, a decrease in the frequency of high flow was indicated.

Table 3
Streamflow Trend Analyses Summary and 2013 Precipitation Totals

SWMA	Site ID	Low Flow (Base Flow)	Average Flow	Peak Flow Exceeding Gage-Specific Threshold ²	Streamflow Period of Record	2013 Precipitation Total (as percent of long-term average, 1994-2013) ¹
Main 1-2	US4	↑ to mid 1990s, then ↓	↑ from mid 1960s to mid 1990s, then no change	↑ from mid 1960s to mid 1990s, then no change	1951-2013	110.34% (average of gages R15- R20, R30-R33) ³
	US5	↑ to mid 1990s, then ↓ to mid 2000s, then no change	↑ from mid 1960s to mid 1990s, then no change (cyclical)	↑ from mid 1960s to mid 1990s, ↓ begin 2000s, recent cyclical	1959-2013	
	US6	↑ to mid 1990s, then ↓	↑ from mid 1960s to mid 1990s, then no change	↑ from mid 1960s to mid 1990s, then ↓	1959-2009	
Main 3-4	US7	↑ from mid 1960s to mid 1990s, then ↓ to mid 2000s, then no change	↑ from mid 1960s to mid 1990s, then cyclical	Cyclical	1931-2013	109.01% (average of gages R37-R39) ³
Upper	US3	↑ to mid 1990s, then ↓ in late 1990s, then no change in recent years	↑ since data collection began in 1959	Cyclical	1959-2013	104.17% (average of gages R21, R29) ³
	U05	↓ since mid 1990s	↓ since mid 1990s, but no change in recent years	↓ since mid 1990s	1994-2011	
Middle 1	US10	No change	↑	↑	2002-2005, 2011 (2002 partial year)	106.09% (average of gages R11, R12, R28) ³
Middle 3	US2	↑ since mid 1980s to mid 1990s, then ↓ in late 1990s, then no change since mid 1990s	No change to mid 1990s, then ↑	No change (cyclical) since the mid 1980s	1948-1977 1984-2013	106.09% (average of gages R11, R12, R28) ³
	D06	No change since mid 1990s	No change	No change	1994-2008, 2011	
Lower 1	US9	No change	No change	No change	2001-2006* (2001 partial year)	104.17% (average of gages R13, R14, R27) ³
Lower 2	US1	No change 1948 to 1995, then ↑ in 1996, then ↓	No change to mid 1990s, then ↑ since 1995	↓ 1948 to 1995, then no change (cyclical)	1948-2013*	104.17% (average of gages R13, R14, R27) ³
	L05D	No change since 1996	No change since 1996	No change since 1996	1994-2006, 2008, 2013*	

Note: ↑=increasing trend, ↓=decreasing trend,

*YCUA WWTP began discharging in upstream end of Lower Rouge in 1996.

¹Rouge River Watershed rain gages used for calculation of precipitation totals.

²The discharge exceeded 1% of the time (calculated in the mid-1990s over the period of record).

³Partial month not included in calculation of average.

A goal for the watershed defined in the 2012 WMP is to control the volume of urban storm water runoff as well as the flow rate. The ARC's Rouge River Monitoring Plan (2009-2013) included monitoring of continuous river level and flow, which was used to evaluate progress of the best management practices towards establishing stable streamflow and habitat conditions that are supportive of diverse aquatic life communities. When the ARC receives its SAW grant in 2015, it is anticipated that the funding will be used to enhance current USGS continuous monitoring efforts.

Rouge River Macroinvertebrate Monitoring: The Wayne County Water Quality Management Division (WQMD) continued its partnership with the Friends of the Rouge (FOTR) to complete benthic macroinvertebrate monitoring at numerous locations in the Rouge River on behalf of the Alliance of Rouge Communities (ARC). Winter Stonefly Searches were held in January and February 2014. Eighty-one volunteers braved the snow and bitter cold during Friends of the Rouge's 2014 Winter Stonefly Search on January 25th to sample a total of 24 sites, volunteer efforts on additional days sampled an additional six sites. WQMD sampled an additional three sites in January for a total of 33 sites sampled in winter 2014. Stoneflies were found at 11 of the 33 sites. The majority of stoneflies found were slender winter stoneflies, family Capniidae. Perlodid stoneflies, family Perlodidae, were found at one site in Fellows Creek, a Lower Rouge tributary. Stoneflies were collected at four of the eleven sites sampled in the Lower Rouge subwatershed, Six of the eleven Johnson Creek sites had stoneflies present, as did one of the eight Middle Rouge sites sampled. Three sites were sampled in the Upper Rouge watershed, and no stoneflies were found.

In the spring of 2014, macroinvertebrates were monitored at 59 sites (40 by FOTR and 19 sites by the Wayne County WQMD). Approximately 120 volunteers participated in the spring event, held April 12, 2014. Figure 2 identifies the site locations and ratings for the spring 2014 monitoring. In fall 2014, macroinvertebrates were monitored at 53 sites (36 by FOTR volunteers and 16 by WQMD). Approximately 100 volunteers participated in the fall event held on October 25, 2014. Figure 3 identifies the locations and site ratings for the fall 2014 monitoring.

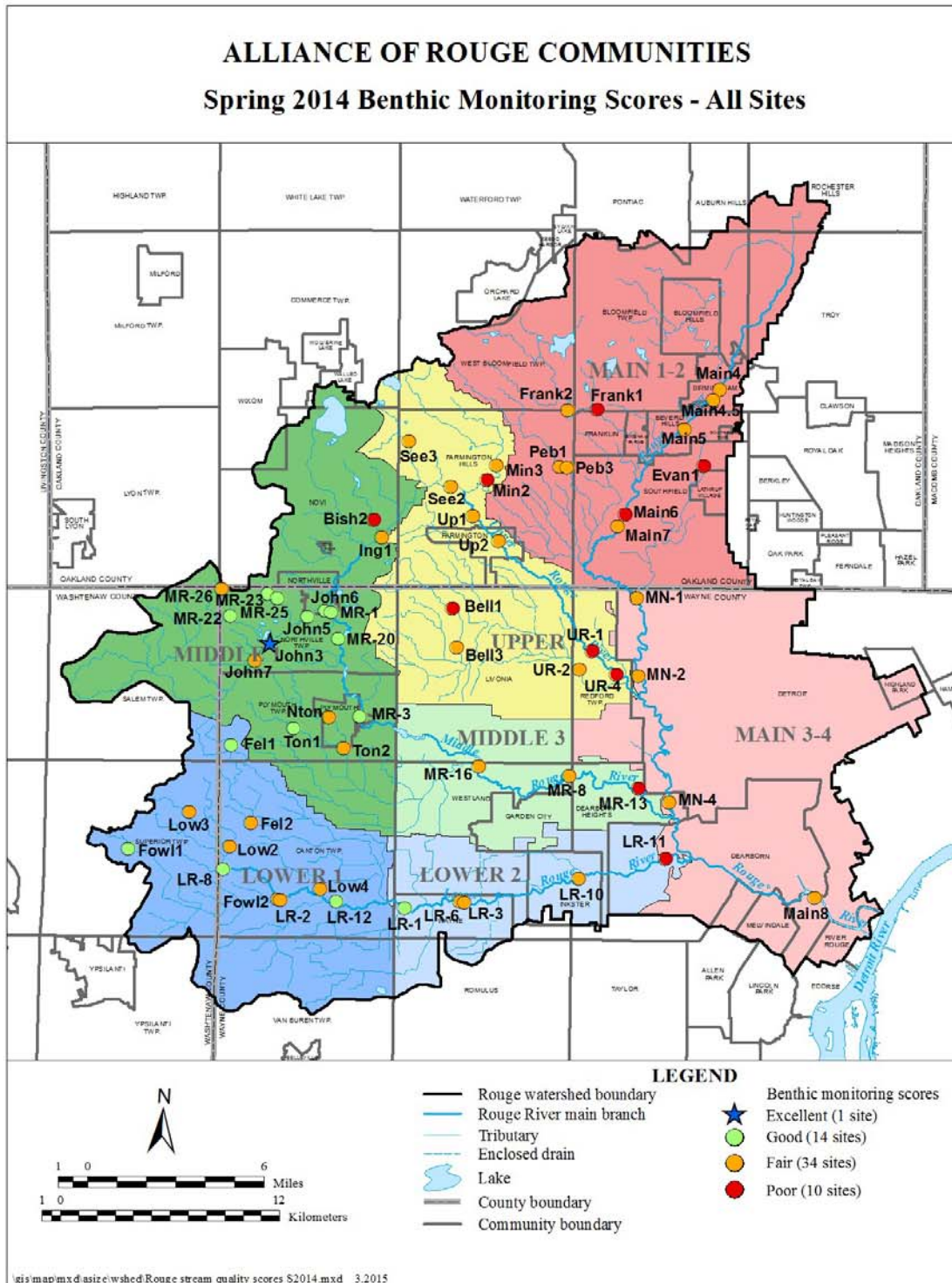
Notable Rouge River watershed macroinvertebrate findings for 2014 include:

- *2014 Winter Stonefly Search:* Stoneflies were found at 11 of the 33 sites sampled during the winter Stonefly Search. Temperatures were colder than what is typical, and below freezing the weeks before the event with record setting snowfall. As a result, some sites were frozen over and team leaders had to break through the ice to sample. Slender winter stoneflies (Family Capniidae) were the most common type found, collected at all 11 sites. Perlodid stoneflies (Family Perlodidae) were found at one site, in the Fellows Creek, a Lower Rouge tributary.
- *2014 Spring Bug Hunt:* Six sensitive families were found at 13 sites. The sensitive families are: Stoneflies (families Capnidae and Perlodidae), Pronggill mayflies (family Leptophlebiidae), free living caddis flies (Family Rhyacophilidae) and Gomphid dragonflies (family Gomphidae). Six Johnson Creek sites had at least one sensitive family present, and ones site had three families present. Freelifving caddisflies, first documented in the Lower Rouge in spring 2003, continue expanding their range and were found in the Johnson Creek and in the Lower Rouge. Genetic analysis on the freelifving caddisfly specimens to verify their species was completed by University of Michigan researchers in 2013. These freelifving caddisflies are the first of its genus reported in Michigan. Also, sensitive caddisflies known as

the saddle-case maker (family Glossomatidae) were collected at two sites, one on Johnson Creek and one on Seeley Creek, an Upper Rouge tributary. It was the first time this species was found at this Seeley Creek site.

- *2014 Fall Bug Hunt:* Four sensitive families were found at seven sites. Pronggill mayflies (family Leptophlebiidae) were found at two Johnson Creek sites and one Lower Rouge tributary site. Net-tube caddisflies (family Psychomyiidae) were found at two sites in the Lower Rouge watershed. Dobsonfly larvae (family Corydalidae) were collected at Sprague Creek, a Main Rouge tributary. Saddle-case maker caddisflies (family Glossomatidae) were collected on the Johnson Creek at Fish Hatchery Park. It is encouraging to see that the net-tube caddis flies were found in the Lower Rouge, in addition to being found in Johnson Creek, the only cold-water stream in the Rouge watershed. Also encouraging is the collection of very sensitive saddle-case maker caddisfly at two sites in two different subwatersheds (the Upper Rouge and the Johnson Creek). An interesting vertebrate find at a site on the Middle Rouge was a softshell turtle, collected at Ford Field in the City of Northville.

Figure 2: Rouge River Benthic Monitoring Sites and Scores, Spring 2014



ALLIANCE OF ROUGE COMMUNITIES

Fall 2014 Benthic Monitoring Scores - All Sites

LEGEND

- Rouge watershed boundary
- Rouge River main branch
- Tributary
- Enclosed drain
- Lake
- County boundary
- Community boundary
- Benthic monitoring scores
 - ★ Excellent (2 sites)
 - Good (15 sites)
 - Fair (30 sites)
 - Poor (6 sites)

gis:map/mx/dasiz/cwshed/Rouge stream quality scores F2014.mxd 3.2015

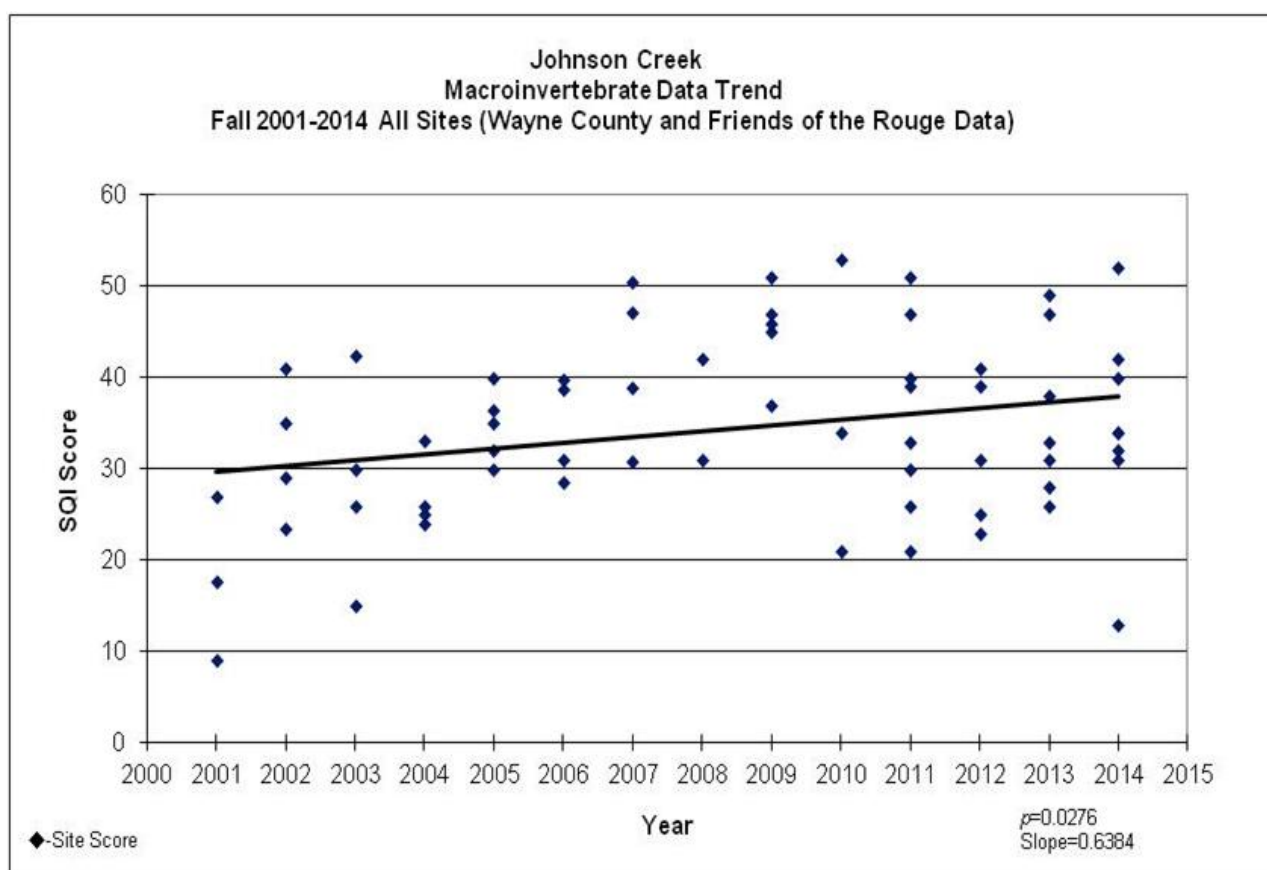
Rouge River Macroinvertebrate Data Trend Analysis: A trend analysis was performed on the Rouge River benthic macroinvertebrate data collected 2001 - 2014. The data were subdivided into the seven primary Rouge River subwatersheds and the Johnson Creek subwatershed for statistical analysis. Johnson Creek is recognized as a coldwater stream and therefore unique from the rest of the Rouge River system. The data analyzed is the Stream Quality Index (SQI) which is the score that is calculated by combining the number and type of macroinvertebrates found. The higher the SQI the better the water quality is at the site. Evaluation of the data to determine trends is accomplished by evaluating spring and fall data separately and for sites with a minimum of three years of data. A standard significance test ($p < 0.05$) was applied to the linear regression analysis to determine trend significance. The slope of the linear regression trend line is expressed as a number, either positive or negative. A positive slope suggests an upward (improving) trend in the data. A negative slope suggests a downward (declining) trend in the data. The direction of the trend line is recognized as significant if the p-value is equal to or less than 0.05. If there is no statistical significant trend, either positive or negative, the subwatershed trend is considered stable. Table 4 summarizes the results of the data trend analysis since FOTR/WQMD macroinvertebrate monitoring began in 2001. Table 4 also presents the average score calculated from all scores for each subwatershed and the subsequent water quality rating. The ratings are based on the following: >48 =Excellent, $34-48$ =Good, $19-33$ =Fair, <19 =Poor. All eight Rouge River subwatersheds have average scores in at least the “Fair” rating range, in both the spring and fall seasons. The Johnson Creek has a subwatershed average score in the “Good” rating range for both seasons.

Table 4: Rouge River Macroinvertebrate Trend Analysis, 2001 - 2014

Spring Data Trend				Subwatershed Average Score (SQI)	Water Quality Rating
Subwatershed	slope	p-value	Significant trend		
Main 1-2	0.3042	0.0820	Stable	27	Fair
Upper	-0.0106	0.9595	Stable	24	Fair
Johnson Creek	0.7698	0.0076	Yes, positive	39	Good
Middle 1	0.9248	0.0012	Yes, positive	29	Fair
Middle 3	0.7998	0.1035	Stable	19	Fair
Lower 1	0.1455	0.5698	Stable	30	Fair
Lower 2	-0.1076	0.7714	Stable	26	Fair
Main3-4	-0.2083	0.7167	Stable	25	Fair
Fall Data Trend					
Subwatershed	slope	p-value	Significant trend		
Main 1-2	-0.3992	0.0915	Stable	31	Fair
Upper	-0.4172	0.0340	Yes, negative	25	Fair
Johnson Creek	0.6384	0.0276	Yes, positive	34	Good
Middle 1	0.3552	0.1282	Stable	33	Fair
Middle 3	0.6210	0.0093	Yes, positive	22	Fair
Lower 1	-0.1587	0.4615	Stable	29	Fair
Lower 2	-0.2099	0.5159	Stable	26	Fair
Main3-4	-1.3084	0.0695	No	28	Fair

Figure 4 presents a graphic representation of the linear regression analysis completed for macroinvertebrate data collected in Johnson Creek during the fall for the period 2001-2014 (*see Section 1: List of Attachments* for the linear regression graphics for the spring and fall data analysis for each of the subwatersheds). Based on this analysis, two of eight subwatersheds are showing significant improving trends for spring macroinvertebrate monitoring data. Two of eight subwatersheds have significant improving data trends for fall monitoring. One of the subwatersheds (the Upper Rouge) had a significant declining data trend in fall 2014. The Upper Rouge has had a significant declining data trend in the fall for four consecutive years, 2011-2014. Detailed information about the 2014 macroinvertebrate sampling in the Rouge River is available online at <http://therouge.org/index.php?id=687847>.

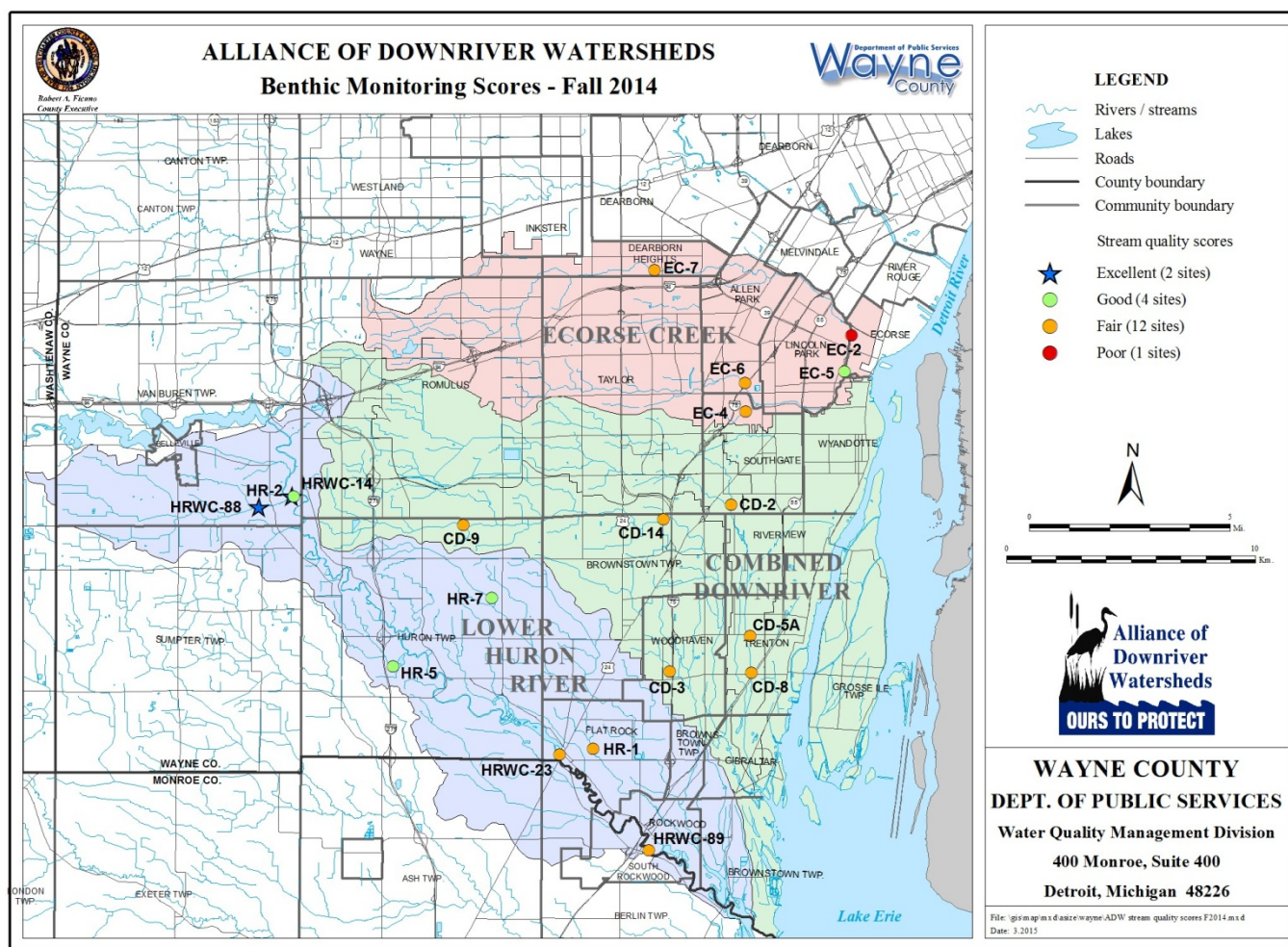
Figure 4: Fall Macroinvertebrate Data Trend for Johnson Creek Subwatershed, 2001-2014



Rouge Fish Monitoring: WQMD also assisted Friends of the Rouge (FOTR) with fish survey work within the Lower Rouge watershed during 2014 as part of an evaluation of the fish populations in the Rouge River watershed being conducted by University of Michigan-Dearborn students (see reports available from the FOTR website www.therouge.org).

In fall 2014, macroinvertebrate monitoring was performed by WQMD and HRWC at 18 locations in the ADW watersheds of Ecorse Creek, Combined Downriver and the Lower Huron River during October. Fifteen ADW sites were monitored by WQMD, including eight sites with student volunteers assisting. Southgate Anderson High School, Southgate Creative Montessori, Hedke Elementary, Keppen Elementary, Pardee Elementary, Barnes Elementary, Brown Elementary, and Trenton High School participated in the monitoring, providing 250 student volunteers. Figure 6 identifies the fall 2014 locations and their site ratings for the 15 sites monitored by WQMD. The HRWC sampled three additional Lower Huron River watershed sites with River Roundup volunteers on October 18, 2014.

Figure 6: Downriver Watersheds, Benthic Monitoring Sites and Scores, Fall 2014



Notable macroinvertebrate findings in the Downriver Watersheds during 2014 include:

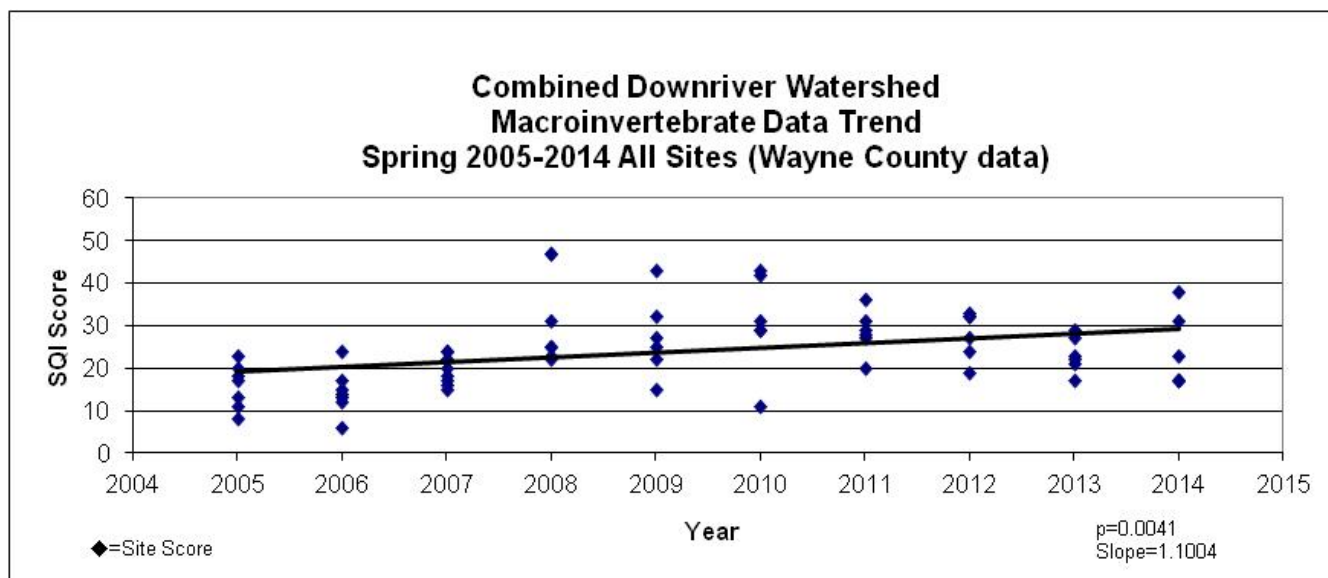
- Sensitive Clubtail dragonflies (family Gomphidae) were collected at a Combined Downriver site on the Blakely Drain in spring 2014 and on Woods Creek a Lower Huron River tributary, in fall 2014.
- The Silver Creek at King Road site had Perlodid stoneflies (family Perlodidae), a sensitive family, present in spring 2014. Silver Creek is a Lower Huron River tributary.
- Pronggill mayflies (family Leptophlebiidae), a sensitive mayfly family, were collected on Woods Creek, a Lower Rouge tributary, in fall 2014.

Downriver Watersheds Macroinvertebrate Data Trend Analysis: A trend analysis was performed on the macroinvertebrate data collected during 2004 – 2014 in the ADW watersheds. The data were subdivided into the three primary watersheds of Ecorse Creek, Combined Downriver and the Lower Huron River for statistical analysis. The data analyzed is the Stream Quality Index (SQI) which is the score that is calculated by combining the number and type of macroinvertebrates found. The higher the SQI the better the water quality is at the site. Evaluation of the data to determine trends is accomplished by evaluating spring and fall data separately and for sites with a minimum of three years of data. A standard significance test ($p < 0.05$) was applied to the linear regression analysis to determine trend significance. The slope of the linear regression trend line is expressed as a number, either positive or negative. A positive slope suggests an upward (improving) trend in the data. A negative slope suggests a downward (declining) trend in the data. The direction of the trend line is recognized as significant if the p -value is equal to or less than 0.05. If there is no statistically significant trend, either positive or negative, the subwatershed trend is considered stable. Table 5 summarizes the results of the data trend analysis since ADW macroinvertebrate monitoring began in 2014. Table 5 also contains an average of all water quality rating site scores in each watershed and a water quality rating based on the following water quality rating: >48 =Excellent, $34-48$ =Good, $19-33$ =Fair, <19 =Poor. Two of the three ADW watersheds have a Fair water quality rating in both seasons, spring and fall 2014, and one watershed is rated as Good, the Lower Huron River watershed. All three watersheds demonstrated a statistically significant trend in spring 2014. The data in the watersheds did not demonstrate a statistically significant trend in fall and are considered stable.

Table 5
Downriver Watersheds Macroinvertebrate Trend Analysis, 2004-2014

Spring Data Trend				Watershed Average Score (SQI)	Water Quality Rating
Watershed	slope	p -value	Significant trend		
Ecorse Creek	0.7583	0.0310	Yes, Positive	25.0	Fair
Combined Downriver	1.1004	0.0041	Yes, Positive	23.8	Fair
Lower Huron River	0.8108	0.0428	Yes, Positive	34.0	Good
Fall Data Trend					
Watershed	slope	p -value	Significant trend		
Ecorse Creek	-0.2183	0.5096	stable	27	Fair
Combined Downriver	-0.1187	0.7050	stable	27	Fair
Lower Huron River	-0.3350	0.4325	stable	32.5	Fair

Figure 7 presents a graphic representation of the linear regression analysis completed for the macroinvertebrate monitoring data collected in the Combined Downriver watershed during spring conditions. *Section 6: List of Attachments* presents the linear regression graphics for the spring and fall data analysis for the Ecorse Creek, Combined Downriver, and Lower Huron River. Detailed information about the watershed health monitoring conducted during 2014 is provided in the report *2014 Monitoring Report Alliance of Downriver Watersheds* available online at <http://www.allianceofdownriverwatersheds.com/initiatives/>.



**Figure 7: Spring Macroinvertebrate Data Trend
Lower Huron River Watershed, 2004 – 2014**

Lake St. Clair (Direct Drainage) Watershed. As described in Section 5, the Lake St. Clair Watershed Advisory Group developed a watershed management plan for the area which was approved by the Michigan Department of Environmental Quality on June 27, 2008. The methods of assessing progress of watershed plan implementation are under development by the Advisory Group.

In 2011, the group initiated updating the Watershed Management Plan by developing an online survey tool to gauge public opinion for necessary plan revisions. The Public Participation Plan online survey tool was in operation in 2012-13. WQMD provided a link to the survey via Southeast Michigan Council of Governments (SEMCOG) website. The report on the analysis of the survey was presented to members in January 2014 by the Clinton River Watershed Council. The report covered the time period from March 30, 2012 through July 9, 2013 with 432 respondents of which vast majority were watershed residents. The most significant issues identified by the respondents were beach closures due to high bacteria levels followed by contaminated sediments and loss of wildlife habitat and natural areas. The survey revealed that the three most common practices that residents do to reduce polluted storm water runoff are washing vehicles at a car wash, sweep fertilizer and grass clippings off sidewalks and plant trees.

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SECTION 2
WAYNE COUNTY
ILLICIT DISCHARGE ELIMINATION PLAN
SUMMARY OF ACTIVITIES

This section summarizes Illicit Discharge Elimination Plan (IDEP) activities completed by Wayne County during the time period **January 1, 2014 – December 31, 2014**, in compliance with the County's Certificate of Coverage MIG610040 under the Michigan Department of Environmental Quality (MDEQ) General Storm Water Discharge Permit MIG619000. All activities were conducted County-wide, unless otherwise noted. Table 6 presents a summary of the results of Wayne County's IDEP.

Table 6
Environmental Concerns Investigated/Illicit Discharges Identified by Wayne County,
January 1 through December 31, 2014

<i>Method of Identification and Type of Illicit Connection</i>	<i>Number Handled or Investigated</i>	<i>Number of Confirmed Illicit Discharges</i>
Total Number of Environmental Concerns Handled or Investigated		
Calls into Wayne County Hotline	1,384	NT
Water Quality Complaints into DPS-Water Quality Division	40	11
Drainage Complaints directly into DPS-FMD Drain Office	216	0
Environmental Complaints directly into DPS-LRMD (15 SESC)	109	NT
<i>Subtotal, Complaints Handled</i>	365	11
Types of Environmental Concerns or Illicit Discharges Identified during Complaint Investigations (WQMD, FMD and LRMD)		
Illicit Discharge Concern - Grease/Oil/Fuel	11	4
Illicit Discharge Concern - Sewage/Grey Water	5	1
Illicit Discharge Concern – Other	11	5
Requesting Information/Technical Assistance	2	0
Soil Erosion Sedimentation Control	13	1
Landfill Odor	91	0
Illegal Dumping	6	0
Logjams/Woody Debris	123	0
Catch basin/Manhole Issue	4	0
Flooding/Poor Drainage	37	0
Sinkhole	3	0
Debris	19	0
Miscellaneous – track out, noise, excessive vegetation	40	0
<i>Subtotal, Complaint Investigation</i>	365	11
Emergency Spill Response	1¹	1
<i>Subtotal, Emergency Spill Response</i>	1	1

Table 6 (Continued): 2014 Wayne County Environmental Concerns/Illicit Discharges

Environmental Concerns Identified during Routine Field Operations	Number Handled or Investigated	Number of Confirmed Illicit Discharges
Illegal Dumping (LRMD, Roads, Parks)	>5	>5
Solid Waste Facility Leachate (LRMD)	1	1
Excessive Erosion (Roads, FMD)	5	5
Illicit Discharge (Engineering, Roads, Parks, Admin, FMD)	5	3
<i>Subtotal, Field Operations</i>	>16	>14
Illicit Discharges Identified during Facility Dye Test and Onsite Sewage Disposal System Inspections		
Floor Drains	23	23
Food preparation facility oil & grease spills	2	2
Inappropriate Floor Wash Water Disposal	1	1
Outdoor Washing (equipment)	2	2
Tank overflow from a granite fabrication shop	1	1
Foot wash at a closed outdoor pool	1	1
Onsite Sewage Disposal System Failures (EHD)	60	60
<i>Subtotal, Facility Inspections</i>	90	90
Pollution Prevented or Removed by Activity	<i>Amount</i>	<i>Sites/Events</i>
Pollutant Load Reductions from Dye-Testing (WQMD)	7,424 lbs; 291,888 gals/yr	30
Pollutant Load Reductions from Onsite Sewage Disposal System Program (EHD)	46,745 lbs; 4,233,544 gals/yr	60
Cleanup of illegal dump sites (LRMD - C.L.E.A.N. program)	990 cu yds including 12,679 tires	24
Household Hazardous Waste Collection Days (3 days – LRMD)	287.6 tons (575,200 lbs)	3
Cleanup of material dumped on County property, street sweepings and catch basin spoils (DPS-Roads)	12,995.73 tons (25,991,460 lbs) 3,095 miles swept	NT
County Drain debris disposal (FMD)	1,691 cu yds reported	51
TOTAL POLLUTION PREVENTED AND/OR ILLICIT DISCHARGES IDENTIFIED	26,620,829 lbs²	>115³

NT = Not Tracked separately DPS = Department of Public Services

LRMD = Land Resource Management Division

FMD = Facilities Management Division

WQMD = Water Quality Management Division

C.L.E.A.N = County Lending Environmental Assistance to Neighborhoods program

SESC = Soil Erosion and Sedimentation Control Program

EHD = Department of Public Health, Environmental Health Division

1 - This fuel spill is also reported under Total Number of Environmental Concerns Handled

2 - Does not include activities reported in cubic yards.

3 – Number of confirmed illicit discharges; does not include number of LRMD cleanup or collection events.

County-Based 24-Hour Hotline and Coordinated Complaint Response (WCIDEP #1)

24 Hour Hotline/Complaint Response

The Wayne County Department of Public Services (WCDPS) maintained the County's telephone "Environmental Hotline" (888-223-2363) during the reporting period. The hotline is operated 24 hours per day seven days a week, to log and coordinate responses to environmental concerns and information requests of all types. During the reporting period, 1,384 calls were handled through the WCDPS Environmental Hotline as follows:

- 134 calls required technical assistance;
- 15 calls were referred to outside agencies;
- 1,235 inquiries were addressed by staff over the telephone, without need for a field investigation; and
- 119 calls were transferred to WCDPS field operations staff in the Land Resource Management Division (LRMD), the Facilities Management Division (FMD) or the Water Quality Management Division (WQMD). As summarized below, complaints regarding environmental matters are also received directly by these WCDPS divisions as well as by the Wayne County Environmental Health Division and Roads Division.

Coordinated Complaint Response

The WQMD handled a total of 40 complaints during the reporting period as follows: 3 were referred to other agencies or County Departments (none with confirmed illicit discharges) and 37 were investigated by WQMD. Of the 37 investigated by WQMD, 24 were illicit discharge complaints with 11 being confirmed as illicit discharges as follows: leaking auxiliary fuel tank, truck bay connected to storm drain, broken hydraulic line in elevator shaft drained to storm drain, diesel fuel released, red dye spill, soil erosion, discolored creek, SSO, oil in pond, pumping out building, suspicious discharge. All 11 confirmed discharges have been removed or referred to others for correction follow-up.

The Facilities Management Division (Drain Office) handled a total of 216 complaints concerning County Drains during the reporting period, categorized as follows: log jams/woody debris – 123, Illegal dumping – 6, debris – 14, catch basin/manhole – 4, flooding/poor drainage – 37, sink hole – 3, and excessive vegetation – 22, erosion – 1, and miscellaneous - 6.

LRMD staff responded to over 1,200 information requests regarding the recycling and/or disposal of household hazardous waste materials. Additionally, LRMD received and responded to 109 complaints in 2014, categorized as follows: 91 landfill odors, 10 soil erosion sedimentation control, 5 debris from landfill operations; 1 track out, and 2 miscellaneous/other.

County-Based Illicit Discharge Advanced Investigation and Correction (WCIDEP #2)

Illicit Discharge Investigations, Facility (Dye-Test) Inspections

Dye-testing of facilities to identify improper connections of plumbing fixtures to the storm sewer system/waterways took place in four watersheds during 2014: Rouge River, Ecorse Creek, the Middle Huron River, and Combined Downriver. Plumbing fixtures at 154 facilities were dye-tested, resulting in the identification of 23 illicit connections at seven facilities, seven illicit discharges at five facilities, and three environmental concerns at three facilities. During the

reporting period, corrective actions of identified illicit connections, illicit discharges, and environmental concerns were verified at 11 facilities.

Table 7 provides a summary of the facility dye test inspections by watershed. Table 8 summarizes the types of illicit connections and illicit discharges found by Wayne County during facility inspections for this reporting period. Table 9 presents a summary of illicit discharge investigations performed independently of facility dye testing activities. Table 10 presents an estimate of the pollutant loading reductions to Wayne County waterways that will be achieved per year when all of the illicit discharges identified in 2014 by dye-test (WCIDEP #2) and onsite sewage disposal system inspections (WCIDEP #5) are eliminated. Wayne County's 2014 illicit discharge elimination efforts (WC IDEP #2 and #5) will prevent over 54,000 pounds of pollutants and over 4.5 million gallons of polluted water per year from entering Wayne County waterways.

**Table 7: Wayne County Watersheds Facility (Dye Test) Inspection Summary
January 1 through December 31, 2014**

	Annual Total	Watershed			
		Rouge River Watershed	Ecorse Creek Watershed	Combined Downriver Watershed	Middle Huron Watershed
Number of Facilities Inspected	154	136	8	9	1
Number of Facilities with Illicit Connections	7	3	1	3	0
Number of Illicit Connections	23	10	7	6	0
Number of Facilities with Illicit Discharges	5*	3	1*	0	1
Number of Illicit Discharges	7	4	2	0	1
Number of Environmental Concerns	3	3	0	0	0
Number of Facilities with Environmental Concerns	3	3	0	0	0
Number of Facilities with Confirmed Corrections	11	6	4	1	0
Number of Illicit Connections Corrected	4	3	0	1	0
Number of Illicit Discharges Corrected	7	3	4	0	0
Number of Environmental Concerns Corrected	6	1	4	1	0

*An illicit discharge was discovered during a follow up inspection of a facility with an illicit discharge reported previously.

Since the inception of the Illicit Discharge Elimination Program in 1987, Wayne County staff have inspected 9,899 facilities and identified 2,596 illicit connections at 650 facilities. WQMD confirmed corrections of illicit connections, illicit discharges and environmental concerns at a total of 614 facilities through 2014. Assuming correction of all illicit discharges identified to date, Wayne County's illicit discharge elimination efforts since 1987 have prevented over 836,044,718 gallons of polluted water from entering Wayne County waterways. Assuming the

same rate of corrections going forward, it is estimated that sometime in 2016 more than 1 Billion gallons of polluted water will have been prevented from entering Wayne County waterways.

Environmental concerns are material storage / handling and housekeeping issues that have the potential for creating illicit discharges. These items are identified and depending on the severity may be referred to the MDEQ for enforcement or if the owner agrees to correct the deficiencies, WQMD may perform a follow up inspection to ensure corrective action. A list of facilities with outstanding illicit connections, illicit discharges, and environmental concerns is provided within Section 2.1 of Section 6: Attachments. Confirmation of corrective action is pending at 56 facilities. Four of these facilities are vacant and three were referred to the local community or appropriate state agency for enforcement action. Corrections of outstanding illicit connections, illicit discharges, and environmental concerns were confirmed at 11 facilities during 2014. A listing of these corrections is presented in the Attachments for Section 2.2.

Table 8
Types of Illicit Discharges Found Within Wayne County
During Facility (Dye-Test) Inspections January 1 through December 31, 2014

<i>Type of Illicit Connection</i>	<i>Percent of Total Identified</i>	County Total	WATERSHED			
			Rouge River	Ecorse Creek	Combined Downriver	Middle Huron River
Floor Drains	100	23	10	7	6	
Sinks						
Toilets						
TOTAL	100	23	10	7	6	
<i>Type of Illicit Discharge</i>	<i>Percent of Total Identified</i>	County Total	Rouge River	Ecorse Creek	Combined Downriver	Middle Huron River
Outdoor Equipment Washing	29	2	2			
Cooking oil handling/dumping	29	2		2		
Inappropriate Floor Wash Water Disposal	14	1	1			
Foot wash (Outdoor pool)	14	1				1
Tank overflow	14	1	1			
TOTAL	100	7	4	1		1

Table 9
Summary of Illicit Discharge Investigations Performed Independently of Wayne County
Facility Dye Testing Activities: January 1 through December 31, 2014

	Annual Total 2014	WATERSHED			
		Rouge River	Ecorse Creek	Combined Downriver	Swan Creek
Number of Onsite Sewage Disposal Systems (OSDS) with Illicit Discharges	60	NT	NT	NT	NT
Number of Illicit Connections	1	1	0	0	0
Number of Illicit Discharges	11 ¹	4	1	4	1
Number of Illicit Connections Corrected	1	1	0	0	0
Number of Illicit Discharges Corrected	11 ¹	4	1	4	1

NT: Not Tracked. WCHD-EHD tracks OSDS by community and not by watershed

1- One site/issue was located in the City Detroit in a combined sewer system area and not recorded by watershed. It was corrected.

Table 10
Summary of Illicit Connections and Estimated Pollutant Load Reductions to Wayne
County Watersheds: January 1, 2014 through December 31, 2014

Parameter	Estimated Amount of Polluting Material Prevented from Entering Wayne County Waterways (annually in pounds)*			
	Annual Loads	Watershed		Failed OSDS
	Pounds/year	Rouge River	Combined Downriver	
Surfactant	531	49	6.54	476
Potassium	261	43	5.74	212
Suspended Solids	11,410	2,844	0	8,566
Total Phosphorus	320	3	0	317
Total Solids	24,324	0	0	24,324
Total Organic Carbon	1,657	0	0	1,657
Ammonia	354	54	0.03	300
Biochemical Oxygen Demand	7,914	123	0	7,791
Chemical Oxygen Demand	4,296	4,296	0	0
Fats, Oils and Grease	3,102	0	0	3,102
Total Annual Pounds per Year	54,169	7,412	12.3	46,745
Flow (gallons/year)	4,525,432	275,888	16,000	4,233,544

*These loading reductions assume the removal of all illicit discharges identified during the reporting period.

OSDS = Onsite Sewage Disposal System

Rouge Watershed Facility Inspections (Dye-Testing)

Under contract to the ARC, WQMD staff assessed municipal facilities of select ARC members for illicit connections and illicit discharges during 2014. Community municipal facilities assessed were located in the communities of Farmington, Melvindale, Northville, and Wayne. The results of this effort are included in the summary of Rouge River Watershed facility inspections presented in the next paragraph.

In 2014, WQMD performed 136 facility dye test inspections in the Rouge River watershed. Dye testing was performed in the Wayne County communities of Livonia, Farmington, Northville, Northville Township, Plymouth Township, and Wayne. Wayne County confirmed corrections of three illicit connections, two illicit discharges and one environmental concern previously identified at six facilities. Communities where follow up inspections were performed include Livonia, Northville Township, Plymouth Township and Wayne. At the end of 2014, there were 33 facilities with outstanding illicit discharges (including illicit connections) and environmental concerns in the Rouge River watershed. Eighteen of these facilities are municipal and the respective communities are proceeding with corrections to be in compliance with their storm water permit. Two of the facilities were vacant at the time of the follow up inspection. One facility is pending confirmation of all of its corrections with Wayne County and MDEQ staff. Five facilities corrected their outstanding issues in early 2015 (see Table 2.2 in the Attachments for further details).

Alliance of Downriver Watersheds (ADW Dye-Testing)

Under contract to the ADW, WQMD staff assessed municipal facilities of select ADW members for illicit connections and illicit discharges during 2014. The results of this effort are described below by watershed.

- Ecorse Creek Watershed

Seven municipal facilities were inspected in 2014 and included one facility in the City of Wyandotte and six facilities in Lincoln Park. Seven illicit connections were found at one facility, and cooking grease spills were identified at two facilities. WQMD also performed follow up facility inspections to confirm corrections of outstanding illicit connections and discharges in the communities of Lincoln Park and Taylor. Corrections of two illicit discharges were verified at two facilities and one facility corrected four environmental concerns. At the end of 2014, there were nine facilities with outstanding illicit discharges and environmental concerns located within the Ecorse Creek watershed (see Table 2.2 in the Attachments). Correction of these outstanding violations will be pursued in 2015.

- Combined Downriver Watershed Facility Inspections (Dye Testing)

Nine dye test inspections were performed in 2014. Inspections occurred in the communities of Gibraltar, Van Buren Township and Romulus within the Combined Downriver watershed. A total of six illicit connections were found at three facilities. Currently there are 12 facilities with outstanding illicit connections, illicit discharges or environmental concerns in the Combined Downriver Watershed (see Table 2.2 in the Attachments). Two of these facilities are vacant and one was referred to MDEQ for follow up. Correction of these outstanding violations will be pursued in 2015.

Middle Huron River Watershed (Dye Testing)

At the request of Wayne County's Environmental Health Division (EHD), WQMD dye tested an outdoor swimming pool at an apartment complex in the City of Belleville. The pool is currently not in use but the EHD wanted to determine the status of the pool drainage. A violation was identified; the pool foot wash is not connected to the sanitary sewer and is therefore considered an illicit discharge.

Compliance Plan

WQMD continues follow up visits to facilities with outstanding illicit discharges and continues its efforts to achieve voluntary compliance. Table 2.2 "Facilities with Outstanding Illicit Discharges" within the Attachments – Section 2 identifies an expected date of compliance for each facility with unresolved illicit discharges. If voluntary compliance efforts fail, the County enlists the assistance of the local community to seek compliance through their plumbing code. The County may also initiate enforcement under its civil infraction ordinance. If voluntary compliance and local enforcement efforts are unsuccessful, the facility will be referred to the MDEQ. The local communities are responsible for compliance of the outstanding illicit discharges that were identified at their respective facilities during inspections performed by WQMD during this reporting period.

IDEP Training Workshops (WCIDEP #3)

In 1999, the WQMD initiated a program designed to provide training for county and local community staff responsible for locating and eliminating illicit discharges to surface waters. To date, five modules and two specialty sessions have been developed and presented to 2,260 municipal staff and other interested parties. The five modules are: (A) *Overview*, (B) *Basic Investigations*, (C) *Construction-Related Illicit Connections*, (D) *Advanced Investigations*, and (E) *Combined Basic/Advanced Investigation Training*. The *Specialty Training Session I: Recognizing and Reporting Illicit Discharges*, and *Specialty Training Session II: IDEP Problem Solving Exercise* were also developed. Each module or session includes key messages, technical information, an examination, and a certificate of successful completion.

In 2012, WQMD and the Alliance of Rouge Communities staff revised and shortened the full day *Combined Basic/Advanced IDEP Training Workshop* to a half day session titled *Illicit Discharge Investigators Training*. In 2013, the five year Southeast Michigan Regional IDEP Training Plan was developed and recommends that the *IDEP Investigator Training* program be offered in the years 2013, 2015 and 2017. *Illicit Discharge Recognition & Reporting* along with *Municipal Good House Keeping Training* is to be provided in years 2014 and 2016. As planned, St. Clair County hosted the *Illicit Discharge Recognition & Reporting* and *Municipal Good House Keeping Training* in the fall of 2014.

WQMD provided the *Illicit Discharge Recognition & Reporting* and *Good House Keeping Training* sessions to Wayne County staff on two occasions.

- February 27, 2014 for Department of Public Services Engineering and Permits staff (39 people) and Land Resources Management Division staff (1 person) in Wayne, MI.
- November 6, 2014 for Department of Public Services, Roads Division (26 people) and Land Resource Management Division (1 person) in Romulus, MI.

Table 11
2014 Attendance
Wayne County Illicit Discharge Elimination Program Training Workshops

Community/Agency	Number
Wayne County community staff	0
Wayne County staff	67
Oakland County community staff	0
Macomb County staff	0
Macomb County community staff	0
Washtenaw County community staff	0
Washtenaw County staff	0
St. Clair County staff	0
Consultants representing communities	0
MDEQ staff	0
School District staff	0
University/community college staff	0
Staff from environmental groups	0
Wayne County Airport Authority staff	0
Others not classified	0
2014 Total	67

Minimize Infiltration of Seepage from Sanitary Sewers (WCIDEP #4)

In 2014, Wayne County continued to minimize seepage of sanitary sewage by training field staff to identify and report suspicious discharges (WCIDEP#3), by training citizen volunteers to identify and report suspicious discharges (WCIDEP#11), and by continued operation and maintenance of our sanitary sewer systems and implementation of sanitary sewer overflow (SSO) elimination activities as specified under the NPDES permit and consent agreements for the sanitary sewer systems operated by Wayne County.

Minimize infiltration of Seepage from Onsite Sewage Disposal Systems (WCIDEP #5)

During 2014, the Wayne County Department of Public Health, Environmental Health Division (EHD) continued implementation of the Wayne County Onsite Sewage Disposal Systems (OSDS) Evaluation and Maintenance Ordinance (Enrolled Ordinance 99-527). Table 12 lists 133 “time of sale” evaluations of onsite sewage disposal systems performed during 2014. Fifty-nine of these systems were identified as failing, with 51 of the 59 systems repaired during 2014. In 2014, a total of 60 failed systems were identified by EHD via complaints, repair permit evaluations, and “time of sale” inspections. Sixteen inspectors were certified to perform OSDS “time of sale” evaluations in Wayne County during 2014.

Table 12
Summary of Onsite Sewage Disposal System Evaluations Performed
January 1, 2014 through December 31, 2014

Type of OSDS Inspection	Number of Inspections	Number of Failures
Time of Sale	133	59
Totals	133	59

As summarized in Table 13, the Wayne County EHD requires permits for the construction of new OSDS and for repair/replacement of existing OSDS. In 2014, a total of 65 new and repaired system permits were issued by Wayne County.

Table 13
Summary of Onsite Sewage Disposal System Permits Issued
January 1 through December 31, 2014

Permit Type Issued	Number of Permits	Percent (%) of Permits
New Construction	17	26%
Repair or Replace	48	74%
Total	65	

Table 14 provides a summary of OSDS-related complaints investigated in 2014. The sole complaint received was from a dwelling's inhabitant concerning a failed system; the failed system was subsequently replaced by a new permitted system.

Table 14
Summary of Onsite Sewage Disposal System Related Complaints Investigated
January 1, 2014 through December 31, 2014

Number of Complaints	1
Number of Complaints identified as failing OSDSs	1
Number of Complaints Resolved	4*

* Carryover from 2013

In 2009, WQMD identified five homes on Pardee Road in the City of Taylor with a common discharge "cheater pipe" to the German Drain. As of December 2014, two of the five properties from the original complaint remain out of compliance. The two residences were ordered to install an approved on-site system and have yet to do so. These residences remain on "Pump and Haul" orders. Periodic home visits and City of Taylor water records to date show the property on 6525 Pardee Road is not inhabited. The owner was assessed a Civil Penalty in early 2013 due to lack of adherence to her agreement to repair the system. This civil penalty is unpaid. The second location, 6607 Pardee Road, has almost a negligible amount of usage. Sewage remains contained in an individual septic tank on each property. No sewage has been observed upon the ground at either location.

As described in WCPEP#32 of this report, educational materials about proper maintenance of OSDS are distributed to homeowners at the time of permit issuance. Septage haulers have a responsibility under Ordinance #99-527 to file OSDS evaluation reports for all pump outs in Wayne County. One hundred sixty-six reports were received in 2014; there were no significant findings to report. Table 15 summarizes the estimated pollutant loading reductions to Wayne County watercourses from the 60 failed OSDS that were defined in 2014 as illicit discharges.

Table 15
Summary of Estimated Pollutant Load Reductions to Wayne County Watersheds from
Onsite Sewage Disposal Systems: January 1, 2014 through December 31, 2014

Parameter	Loading Reductions (<i>lbs/year</i>)¹
Total Solids	24,324
Total Suspended Solids	8,566
Biochemical Oxygen Demand	7,791
Ammonia	300
Total Phosphorus	317
Surfactant	476
Potassium	212
Total Organic Carbon	1,6579
Fats, Oils & Grease	3,102
Total pollutant reduction	46,745
Flow reduction (gals/year)	4,233,544

1. These loading reductions assume the repair of the failed OSDS identified during the reporting period.

Response to Emergency Spills to Waterways (WCIDEP #6)

In an effort to prevent pollution from entering County Drains and waters of the State, Wayne County has continued to assist with investigations of major oil spills, illegal dumping, odors, and other “emergency” water quality issues. During the reporting period, there was one major spill or other “emergency” water quality issue that required investigation assistance from Wayne County. On April 28, 2014, WQMD was informed of an Emergency Response issue in Northville at Sheldon and 7 Mile regarding Johnson Creek. A resident noticed an oil sheen and odor on the Rouge River (Johnson Creek) on Friday evening (April 25th) and called the MDEQ emergency line. MDEQ investigated and confirmed the sheen. The Northville Fire Department and Western Wayne County Hazmat team also responded. The source was traced to a 12-in outfall next to a 24-in outfall on the north bank near 7 Mile and Center Streets/Sheldon Road. The MDEQ requested storm sewer maps from the City and the County. The 12-in line was not on the City or County storm sewer maps. At the request of MDEQ, City and County staff conducted an advanced investigation and determined that the 12-in line was a privately owned

storm sewer. City and County staff traced the oil to a foundation sump pump in an elevator pit; a seal on the hydraulic elevator leaked and the oil reached the sump pump and into the private sewer that discharged to Johnson Creek. The property owner accepted responsibility and took over the clean up of the creek, storm sewer, elevator pit, and steps to prevent future discharges to the satisfaction of the MDEQ.

Illegal Dumping Control (WCIDEP #7)

The Wayne County Lending Environmental Assistance to Neighborhoods “C.L.E.A.N.” program, managed by the DPS-Land Resources Management Division (LRMD), is the centerpiece of the Wayne County’s efforts to control and clean-up illegal dumping. The County physically removes the waste illegally dumped at a site, and the local community then implements measures to stop future dumping. In 2014, the program conducted 24 clean-up events including 14 neighborhood clean-ups and tire sweeps and 10 additional scrap tire collection events. A total of 990 cubic yards of waste and 12,679 scrap tires were cleaned up as a result of these events. Preventive efforts at these sites include neighborhood watch programs, volunteer clean up days, community gardens, signage and fencing. LRMD mails out C.L.E.A.N. project application packages twice a year to every mayor, township supervisor, clerk and public works director in Wayne County as well as 115 community groups, seeking their participation in the program. Approximately 200 CLEAN Program brochures were distributed in 2014 through direct mailings to every community in Wayne County, community organizations, neighborhood block clubs and churches. Distribution also took place and numerous block club meetings and public events.

Three household hazardous waste (HHW) collection events were conducted by Wayne County in 2014. A total of 287.59 tons of HHW and E-Waste was collected. For all events, informational flyers and press releases were sent to the news media and representatives of all Wayne County communities (e.g., mayors, managers, public works departments, and clerks). Notices were placed on the Wayne County website and on the LRM phone mail system. A summary of the results of Wayne County’s HHW and E-Waste collection days for 2014 is shown in Tables 16 and 17.

Table 16
Summary of Wayne County’s
2014 Household Hazardous Waste and E-Waste Collection Days

Date	Location	Number of Participants
May 3, 2014	Belleville: Wayne County Community College	1000
June 28, 2014	Dearborn Henry Ford Community College	2,119
August 16, 2014	Westland Mall	2,131
Totals	3 events	5,250

Table 17
Summary of Material Collected During
Wayne County's 2014 Household Hazardous Waste and E-Waste Collections

Materials	2014 (Tons)
Hazardous Waste	
Acids	1.59
Aerosols	7.63
Antifreeze	4.81
Batteries, lead acid	5.88
Batteries, Lithium	0.21
Batteries, mixed/household	5.82
Bio-medical sharps	0.74
Caustics/Oxidizers	1.62
Electronic Equipment	91.17
Expired medicines/pharmaceuticals	0.68
Fire Extinguishers	2.15
Flammable Liquid	8.91
Fluorescent Lamps	2.47
Herbicides & Pesticides	11.31
Mercury Devices	0.04
Oil	15.76
Paint, latex	91.35
Paint, oil	21.72
PCB Ballast	0.11
Propane cylinder	1.97
Smoke detectors	0.05
Toxic Products	11.19
Other	0.41
TOTAL TONNAGE	287.59

Land Resource Management Division Illegal Dumping Reports

On December 7, 2014 a Wayne County Roads Division foreman reported significant reoccurring incidents of illegal dumping on the shoulder of Outer Drive south of Schoolcraft Avenue near the Main Branch of the Rouge River in the City of Detroit. The debris consisted primarily of household debris and brush. An investigation determined that the source of the illegal dumping was coming from a nearby resident. The complaint was referred to the City of Detroit Building, Safety, Engineering and Environmental Department. The site was subsequently inspected by the City and the property owner was ticketed and instructed to cease illegal disposal activities. LRMD staff will continue to monitor this site in 2015.

On multiple occasions in 2014, household debris was observed dumped outside of the Anthon Yard and State Fair Yard bulk waste drop off areas in the City of Detroit. The incidents were reported to the City of Detroit personnel working at the site. The debris is removed by Detroit Department of Public Service workers and placed in roll off boxes on the sites.

Roads Division Illegal Dumping Reports

Many complaints came in from Huron Township throughout the summer of 2014 regarding people dumping debris on Prescott Road East of Vining. Since the dumping has been in the roadway, the debris was picked up by New Boston Yard and hauled to Woodland Meadows landfill for proper disposal. Many complaints also came in from Sumpter Township throughout the summer of 2014 regarding people dumping debris on Haggerty Road between Arkona and Oakville-Waltz. The debris was picked up by New Boston Yard and hauled to Woodland Meadows landfill for proper disposal.

Parks Division Illegal Dumping Reports

There were multiple incidents of dumping in various Wayne County parks areas that were reported by Parks staff or by the Sheriff Park Patrol. The debris was immediately cleaned up by Parks maintenance staff for proper disposal.

Facilities Management Division Illegal Dumping Reports

There were no incidents of illegal dumping recorded by Facilities Management Division (FMD) staff in 2014. As part of their regular duties, maintenance was performed by FMD on 51 County Drains resulting in the removal and proper disposal of 1,691 cubic yards of material from County Drains in 2014.

Swimming Pool Inspections (WCIDEP #8):

The Wayne County Department of Public Health, Environmental Health Division (EHD) is responsible for inspections of public swimming pools located within Wayne County (excluding the City of Detroit). These inspections are performed each spring prior to opening for the swimming season. During the 2014 swimming season, EHD inspected 601 swimming pools.

EHD cooperates with the MDEQ in the issuance of permits for proposed new public swimming pools or for existing pools proposing extensive modifications. During the process of reviewing plans and specifications for these facilities, EHD specifically reviews the sewer connections to ensure that the modifications will not result in illicit connections. For this reporting period, 11 newly constructed pools were inspected and the proper connection of the backwash water system to the sanitary sewer system for each was confirmed.

WQMD inspected three swimming pools during 2014 during facility dye testing inspections in the City of Livonia. The drains for these pools were determined to be connected to the sanitary sewer.

WQMD dye tested an apartment complex swimming pool in the City of Belleville at the request of EHD. The pool was not in use and EHD wanted to determine the status of the pool drainage. The pool foot wash was not connected to the sanitary sewer and is considered an illicit discharge.

County-Owned Building Inspections (County-wide) (WCIDEP #9)

WQMD staff has previously completed dye-test inspections of all County-owned buildings that are located in areas of the County served by separate sanitary sewers. In 2014, WQMD performed follow-up pollution prevention (P2) inspections at five of the eight WCDPS-Road Maintenance Yards: Norton, Sibley, Wayne, New Boston, and Goddard. WQMD staff completed and submitted P2 follow-up inspection memos for all five WCDPS-Road yards during 2014. In 2015, follow up site visits will be conducted to assist with implementation of the P2 Action Plan at the remaining DPS-Road facilities: Central Maintenance, Merriman, and Phoenix yards.

Visual Inspections During Routine Field Operations (WCIDEP #10)

Wayne County “field” staff have been trained to identify and report potential illicit discharges and other environmental concerns in the course of their duties. Training has been provided to personnel from the Department of Public Services (Facilities Management, Engineering, Roads, Parks, Land Resources, and Water Quality Management) and the Department of Public Health (Environmental Health Division). Table 18 presents a summary of the environmental concerns identified during routine Wayne County field operations. Table 19 summarizes the results of the follow up investigations to routine field operation reports. Descriptions of select investigations are summarized below:

- Land Resource Management Division staff reported leachate discharges to the Frank and Poet Drain and the Brownstown Creek from Countywide Landfill in Gibraltar on multiple occasions during 2014. All discharges observed are reported to the MDEQ Office of Waste Management and Radiological Protection. MDEQ is currently using bond and escrow funds to pump and haul leachate from the facility. LRMD is working with MDEQ, EPA, the City of Gibraltar and the owners on long-term solutions to these ongoing discharges. The MDEQ and USEPA are proposing to place the facility on the National Priorities List (aka “Superfund” list) to secure funding needed for remediation activities.
- DPS Administration reported an area of concern along east bound Ecorse Road in the loop to northbound I-75. LRMD staff investigated and found a tan\buff colored discharge in the ditch along the ramp from Eureka road to North bound I-75. It is unknown if the discolored water was entering the Frank & Poet waterway. Issue was referred to MDOT engineers.
- The Wayne County Drain Office staff referred an illicit discharge concern. A neighbor reported a leaking residential fuel tank onto a driveway then into the street. WQMD staff investigated and found a pickup truck with a auxiliary diesel fuel tank leaking onto the driveway. The home owner was notified and instructed to clean up the spill.
- Parks Division staff reported a possible illicit discharge into a pond along Hines Drive at 6 mile in Northville Township. WQMD staff investigated and could not verify the illicit discharge but found that the material in the pond is a bloom of blue-green algae. There was a rotten vegetation odor in the air around the pond and abundant biomass in the pond. No petroleum odor or sheen was present. The sheen present was from the breakdown of the organic material in the pond. There was no discharge from the pond outlet into the Middle Rouge River. No further action needed at this time.
- Roads Division staff reported a red dye spill on Inkster Road in Romulus. A non-toxic dye used to color diesel fuel, hydraulic fluid, and other products was leaking from a truck that travelled to a trucking yard in Romulus. WQMD notified the property owner. MDEQ, EPA, WC Roads and Romulus Fire Department were also notified; no further action needed by WQMD. This complaint is closed.

- Engineering Division staff reported a suspicious pipe and discharge observed while on the job in Brownstown. WQMD investigated and found the pipe was from a residential sump pump. No further action needed at this time. This complaint is closed.

**Table 18: Types of Environmental Concerns “Identified” during Routine Field Operations
January 1 through December 31, 2014**

<i>Type of Environmental Concern</i>	
Landfill Leachate (LRMD)	1
Excessive Erosion (FMD, Roads)	5
Illicit Discharge (Engineering, Roads, Parks, Admin, FMD)	5
TOTAL*	11

* Numbers do not include issued identified via complaints.

**Table 19: Environmental Concern Investigations Resulting from
Routine Field Operations
January 1 through December 31, 2014**

Reporting Division	Environmental Concerns Reported	Verified by WQMD	Source/Cause Identified	Referred To	Corrections Confirmed
DPS-LRMD	1	0	1	MDEQ	1 ¹
DPS– Admin	1	1	1	MDOT	1 ¹
DPS – Roads	5	1	5	MDOT (1)	4
DPS - FMD	2	1	2	NA	1
DPS - Engineering	1	1	1 ²	NA	NA
DPS – Parks	1	1	1 ²	NA	NA
TOTAL	11	5	11	3	7

1 – Referred to and under the responsibility of MDEQ or MDOT and counted as confirmed correction.

2 – No correction needed.

* Numbers do not include issued identified by complaints.

Unconfirmed corrections involve unresolved erosion issues (1 Roads/MDOT, 1 FMD/streambank)

County Drain Inspections

There were no County Drain inspections reported in 2014.

IDEP Training for Volunteers (WCIDEP #11)

WQMD staff prepared and provided a presentation regarding illicit discharge identification and reporting to the Friends of the Rouge (FOTR). The brief presentation introduces illicit discharges, contains suspicious discharge example photos, explains how important it is to report illicit discharges, and provides contact information for Wayne County and other local agencies. FOTR has incorporated this presentation into their orientation sessions for volunteers, teachers

and team leaders. In 2014, FOTR held 12 different training and/or volunteer monitoring sessions that provided IDEP training to approximately 722 people.

Methods to Evaluate Effectiveness – Storm Water Point Source Inspection – Alternative vs Traditional IDEP Comparison (WCIDEP #12)

Wayne County participated in and helped finance the Alliance of Rouge Communities (ARC) report "Comparison Analysis of Finding Illicit Discharges to Storm Water Systems", submitted to MDEQ on May 22, 2007. Based on the findings of this analysis, it is the position of Wayne County that scheduled inspections of points of discharge are not a safe nor effective method for evaluating the effectiveness of illicit discharge elimination activities.

Methods to Evaluate Effectiveness – Performance Tracking of IDEP Activities (WCIDEP #13). Please refer to *Table 6* and particularly *Table 10: Summary of Illicit Connections and Estimated Pollutant Load Reduction to Wayne County Watersheds*: for an overall summary of the performance of Wayne County's IDEP Activities.

Methods to Evaluate Effectiveness – Instream Monitoring/Environmental Indicator Monitoring (WCIDEP #14). Please refer to Section 1 of this report, "Determination of Effectiveness", for a summary of this activity.

Updated Map of Known Storm Water Point Sources and Respective Receiving Waters or Drainage Systems (WCIDEP #15)

Alliance of Rouge Communities (ARC) Outfall Mapping

As part of the ARC Technical Committee's Collaborative IDEP Action Plan development process, in 2009 WQMD staff began accepting ARC member data regarding known municipal separate storm water sewer system (MS4) discharge points. A watershed-wide GIS map of discharge points to "Waters of the State" in the Rouge River watershed was initiated along with a central warehouse for digital storm sewer maps. Centralizing this data is intended to simplify NPDES permit compliance and reporting efforts for the MDEQ and ARC members as well as improve compliant response and suspicious discharge source tracking efforts. A map of the data compiled through 2015 will be included within the attachments for Section 2 of the 2015 report.

Alliance of Downriver Watersheds (ADW) Outfall Mapping

As part of the ADW's Collaborative IDEP Action Plan development process, WQMD staff began accepting ADW member data regarding known municipal separate storm water sewer system (MS4) discharge points in 2013. A watershed-wide GIS map of discharge points to "Waters of the State" was initiated along with a central warehouse for digital storm sewer maps. Centralizing this data is intended to simplify NPDES permit compliance and reporting efforts for the MDEQ and ADW members as well as improve compliant response and suspicious discharge source tracking efforts. A map of the data compiled for the Rouge River watershed through 2015 will be included within the attachments for Section 2 of the 2015 report.

Wayne County Updated Storm Water System Map

In 2015, Section 6 of this report will included an updated GIS map of Wayne County's storm water system including latest coverage of County Drains, County Roads, County Parks and maintenance yards.

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SECTION 3

WAYNE COUNTY PUBLIC EDUCATION PLAN

SUMMARY OF ACTIVITIES

The following Public Education Plan (PEP) activities were completed by Wayne County during the reporting period **January 1, 2014 – December 31, 2014** in compliance with the County's Certificate of Coverage MIG610040 under the MDEQ General Storm Water Discharge Permit MIG619000.

Educate Public Regarding Location of Residential Storm Drainage Systems and Waters of the State (WCPEP #1)

Nearly all of the activities performed by the County to comply with the Public Education Section of our SWPPI address this topic; see, in particular, the reports for activities WCPEP #4, #6, #7, #9, #11, #22 and #26.

Educate Public Regarding Animal Waste (WCPEP #2)

WCPEP activities #4, #6, #7, #11 and #22 address this topic.

Educate Public Regarding Pavement or Power Washing (WCPEP #3)

WCPEP activities #4, #6, #7, and #22 address this topic.

Distribute Pollution Prevention Literature and Messages (WCPEP #4)

Pollution Prevention Literature and Messages: Through outreach efforts performed under contract to the ARC, the WQMD provided over 2,500 pieces of public information materials relating to water pollution issues to numerous individuals and groups within the Rouge River during 2014. The materials included *Value of Trees* flyer; *Rouge River bookmark*; *Tree Planting Instructions*, *ARC Information Flyer* and *Register your Tree Instructions*.

Wayne County distributed additional educational materials at community events or festivals, staff training sessions, workshops, leadership presentations, departmental presentations, or office display racks. During the reporting period, approximately 10,000 pieces of Storm Water Public Education Handout information were distributed to fill requests via phone calls, fax, website, e-mail, and letters for either public education materials or technical information. Examples of the Storm Water Public Education Handout materials were submitted with previous annual reports and include the *Storm Drains Aren't Garbage Cans* brochures and bags; the *WCDPS 24-Hour Environmental Hotline* brochure; *Our Actions Affect the River* flyers; the *Rouge River Activity Book*, *River Friendly* brochure series; *7 Simple Steps to Clean Water* tip cards; *Riparian Corridor Management Principles and Practices* brochure, and others. The *Storm Drains Aren't Garbage Cans* brochure, the *Rouge Watershed Recreational Map and Index*, and the *WCDPS 24-Hour Environmental Hotline* brochures are nearly always delivered and available with the *Our Recreational Resource Displays*, the *Our Actions Affect the River Display* and the *7 Simple Steps to Clean Water Display*. See WCPEP #6 & #7 below. Wayne County also supports the ADW's Pet Waste Outreach Program (see <http://www.allianceofdownriverwatersheds.com>) by distributing educational materials.

During 2014, LRMD staff distributed the *Resource Recovery Guide (RRG) Booklet*, *Disposal Tips for Home Medical Waste & Pharmaceuticals* brochure, the *Mercury Information* brochure, and the *CLEAN Program* brochure (see WCPEP #24 for more detail).

Publication Clearinghouse: The *Wayne County Publication Clearinghouse* was established to produce and distribute public information materials to local communities at cost. All communities have the option of using the “Rouge Products CD” to produce their own materials or they can order them at cost from the *Clearinghouse*. WCDPS-WQMD warehouses a large supply of the most requested items so that delivery takes place as the items are ordered. The *Clearinghouse* can also produce community specific products if the order is large enough to justify doing so. During the reporting period, the *Clearinghouse* filled orders for over 600 public education items provided to communities for subsequent distribution to others.

Newsletter Articles and Advertisements (WCPEP #5)

During this reporting period, the WQMD produced several public education and involvement activity summaries for posting to websites and publication in County or community newsletters. These included the *Hines Park Green Infrastructure (GI) Volunteer Work Day, 2014 Green Schools Program*, and the ADW and ARC *Trees for Green Schools* summaries. These summaries were provided to the communities via the ARC and ADW websites (<http://www.allianceofrougecommunities.com/index.html> and <http://www.allianceofdownriverwatersheds.com/>, respectively) and included the Water Environment Federation’s *Water is Life* ad graphic.

Displays: Community/Agency Events (WCPEP #6) and Static (WCPEP #7)

During 2014, the WQMD planned, coordinated, promoted and/or participated in various community events, meetings, seminars and workshops with environmental displays and educational information, including:

- *Shiver on The River*, Detroit, February 1, 2014;
- *Southgate City Hall*, March 4, 2014;
- *Canton Home Expo*, March 1-2, 2014;
- *Frog & Toad Survey Workshop*, Canton Township, March 4, 2014;
- *Frog & Toad Survey Workshop*, Livonia, March 8, 2014;
- *Frog & Toad Survey Workshop*, Plymouth, March 15, 2014;
- *Detroit River Water Festival*, May 8, 2014;
- *Melvindale City Hall*, April 15 – May 15, 2014;
- *17th Annual Rouge River Water Festival at University of Michigan-Dearborn*, May 1, 2014;
- *Canton River Day*, May 17, 2014;
- *Gibraltar City Hall*, June 23 – July 23, 2014;
- *Wyandotte Street Fair*, July 9 - 12, 2014;
- *Dearborn Homecoming*, July 28 - August 4, 2014; and
- *2nd Annual Rouge-A-Palooza*, City of Wayne, October 11, 2014.

WCDPS Environmental Information Line (WCPEP #8)

Wayne County continues to promote the use of its *24-Hour Environmental Hotline* (888-223-2363) for water quality complaints throughout the County. A variety of products are used to educate the public about the *24-Hour Environmental Hotline*, including magnets (with the

“Storm Drains Aren’t Garbage Cans” message, the Environmental Hotline number, and the WCDPS-WQMD web page address) several departmental and division brochures and the Wayne County website. During the reporting period these materials were distributed at display events, workshops, and presentations. In addition, the hotline number is advertized on the County’s website www.waynecounty.com.

Advertisements (WCPEP #9)

Due to funding limitations, stormwater/watershed management advertisements were not placed during 2014.

Point of Sale Education (WCPEP #10)

During 2014, Wayne County continued its involvement and support of the *Earth-Friendly Fertilizer Sticker Program* in cooperation with the Southeastern Oakland County Water Authority (SOCWA). Efforts are targeted at educating the public about environmentally friendly home lawn and garden maintenance and included program planning and development, development and distribution of promotional flyers, and website promotions and information. During the reporting period, listings of the approved fertilizers and participating retailers were maintained and made available through the Wayne County (www.waynecounty.com) and Rouge River National Wet Weather Demonstration Project (www.rougeriver.com) websites. The Healthy Lawn Care Program for Watershed Protection was also promoted via websites and program flyer distribution.

Workshops and Demonstration Projects (WCPEP #11)

Wayne County co-sponsors and participates in numerous workshops each year to educate various stakeholders on a variety of topics related to managing storm water and protecting the environment. A summary of the Wayne County co-sponsored environmental education workshops or demonstration activities held during the reporting period follows.

ARC Green Infrastructure Workshops

Wayne County was once again an integral partner in the successful Green Infrastructure Education Campaign established by the ARC to assist with implementation of green infrastructure (grow zone) workshops. During 2014, the ARC workshop sub-committee scheduled and held four (4) *Naturalizing the Home Garden: A Native Design Workshop for Homeowners* green infrastructure workshops. A total of 205 people attended the workshops to get hands-on experience from experts about how to design a small native garden at their homes. Surveys conducted at the workshops showed that participants thought the workshops were a valuable experience. Workshops were held in February, March, April, and November 2014 at the following locations:

- February 19 in Novi;
- March 5 in Livonia;
- March 31 in Bloomfield Township; and
- April 15 in Dearborn Heights.

ARC Grow Zone Maintenance Workshop

Eleven people participated in the November 18, 2014 *Grow Zone Maintenance* workshop for homeowners held in Farmington Hills Civic Center. This workshop focused on assisting ARC members and others who installed ARC grow zones from 2009-11. The main presentation

included a variety of ARC grow zones showcasing both success stories and not so successful projects, and a forum discussion on maintenance.

Middle Rouge Riparian Corridor Management: Bennett Arboretum Grow Zone Work Day

Wayne County Parks, WQMD, Wayne County Commissioner Laura Cox, and the Wayne County Master Gardeners continued their partnership to host the sixth Annual *Hines Park Green Infrastructure Volunteer Work Day* on May 10, 2014. Over 40 volunteers participated in efforts that included: weeding around the alternative shade trees collection, the welcome kiosk, and interpretive signs; six yards of cedar mulch was placed around the alternative shade trees, kiosk and signs; and 33 garbage bags of garlic mustard were collected.

Middle Rouge Riparian Corridor Management: The Youth Connection Program

WQMD partnered with Wayne County Parks Division in 2014 to implement three green infrastructure workday events with The Youth Connection, a private non-profit agency based in Detroit. The Youth Connection receives funding from the Michigan Department of Natural Resources to employ youth in summer programs connected to parks and natural resources. The green infrastructure workday events were as follows:

- July 23: Ten members of The Youth Connection participated in a workday at Inkster Road Grow Zones. Activities included: cutting out all woody plants (small trees and shrubs).
- July 31: Ten members of The Youth Connection participated in a workday at Sumac Pointe and Newburgh Lake Dam grow zones. Activities included: cutting out all woody plants (small trees and shrubs).
- August 7: The workday took place at Newburgh Pointe and included planting and garden clean out. The old gardens around the lakeside of the Newburgh Pointe comfort station had been previously treated with herbicide, cleaned out and mulched. The Youth Connection group planted 87 plants in these gardens, including black-eyed susan, New Jersey Tea, Karl Foster's Feather Reed Grass, Pennsylvania Sedge, and Autumn Moor Grass. Woody plants were removed from the Newburgh Pointe rain garden and the grow zone on the north side of Hines Drive. The garden along the stairs on the west side of the Newburgh Pointe comfort station was cleaned out of dead vegetation and non-native invasive plants.

Wayne County Michigan Green Schools Program

Wayne County's WQMD staff has been working with the Wayne County Regional Educational Service Agency (Wayne RESA) since 2007 to promote and grow Wayne County's Green Schools Program. In 2014, 132 schools were recognized as "Wayne County Green Schools". These schools earned at least 10 points under the Michigan Green School legislation for implementing specific energy-saving and environmental activities within the 2013-14 academic year. Under Wayne County's Green School program, the activities are set up in four categories (A-D): Recycling, Energy Saving, Environmental Protection and Miscellaneous. A fifth category (E) allows schools to propose their own activity. Points can be accumulated in any combination of categories, as long as there is a minimum of two from each Category A-D. Additional points can be earned from Category E. Emerald School designation can be achieved by successfully participating in 15 points and the Evergreen designation is achieved by successfully participating in 20 points. Information on Wayne County's Green Schools Program is available online at <http://www.waynecounty.com/doe/1136.htm>

Trees for Rouge Green Schools Program

With financial support from the ARC, the *Trees for Rouge Green Schools Program* was again implemented in 2014, with 12 trees were purchased and distributed to the new 2014 Michigan Green Schools located in the Rouge River watershed. The tree species offered were all native to Michigan and included eastern redbud, sugar maple and tulip tree. Wayne County offered trees to 5 new schools within the Wayne County portion of the Rouge watershed and Oakland County offered trees to 7 new schools. Of the 12 Wayne County schools, 8 schools accepted the offer. The remaining 4 trees were given to the Farmington Public Schools for distribution throughout their district.

ARC Tree Seedling and P2 Literature Distribution

Distribution of individual tree seedlings and pollution prevention (P2) literature occurred during 2014 as follows:

- May 17th in conjunction with Friends of the Rouge's Rouge Rescue events,
- August 16th in conjunction with the Household Hazardous Waste Collection event in Westland, and
- September 10th in conjunction with ARC's City of Southfield's Summer Event.

The seedlings were provided in packs of 30. Informational material including planting instructions, the *Value of Trees flyer*, Rouge River bookmark, ARC flyer and instructions on registering the tree through the ARC's website were provided for each student receiving a seedling. Over 1,000 conifer tree seedlings were distributed in 2014 along with 5,000 pieces of literature to Rouge watershed residents and students.

Trees for Downriver Green Schools Program

With financial support from the ADW, the *Trees for Downriver Green Schools Program* was again implemented in 2014. Fourteen trees were purchased and distributed to the 2014 Michigan Green Schools located in the Downriver watersheds. The tree species offered were all native to Michigan and included eastern redbud, tulip tree and sugar maple. Wayne County offered trees to the 24 recognized green schools within the ADW, and 14 schools accepted trees.

Riparian Corridor Management Technical Advisory Committee and Work Group (WCPEP #12)

Although there were no meetings of the Riparian Corridor Management Technical Advisory Committee (RCM TAC) in 2014, WQMD continued to support the intent of RCM TAC and Work Group by coordinating, co-sponsoring, promoting and/or participating in the above workshops and demonstration projects as described in WCPEP #11 as well as WCPEP #14.

Healthy Lawn and Garden Technical Advisory Committee (HL&G TAC) (WCPEP #13)

WQMD continued to support the HL&G TAC efforts as described above in WCPEP #10 as well as by coordinating, co-sponsoring, promoting and/or participating in the WCPEP #11 activities. Informational materials for healthy lawn care are available online from the County website at <http://waynecounty.com/doe/1047.htm>.

River Day/Rouge Rescue (WCPEP #14)

Wayne County actively promoted participation in and provided funding for the Friends of the Rouge (FOTR) Rouge Rescue held May 17, 2014 (see www.therouge.org/index.php?id=687629)

for a description of activities and program results). In addition, WQMD staff provided services and support for Rouge Rescue 2014. Kesh Raizada from WQMD served as the site coordinator at the Meadows of Canton site (Fellows Creek at Palmer and Lotz Road near the Meadows of Canton subdivision); with WQMD staff Susan Thompson providing event support. Due to the heavy rains before the event covering the floodplain and creating river levels too high to allow volunteers to enter safely, the event was held at an alternative site, the Canton Temple. Over 95 volunteers assisted in catch basin stenciling, benthic macro-invertebrate monitoring and bird box building. WQMD's *Frog & Toad* and *7 Steps* displays were set-up and a variety of educational material was provided to all volunteers.

The second annual *Rouge A Palooza* was held in the City of Wayne's Goudy Park on Saturday October 11, 2014. The celebration was organized by dedicated City of Wayne volunteers to promote the cleanup and restoration of the Lower Rouge in the City of Wayne. The second annual *Logjam Classic* canoe race, a three mile dash along the Lower Rouge River through Wayne kicked off the activities on a beautiful fall day. Thirteen canoes competed, with the winning team completing the route in 33 minutes, breaking the course record of 37 minutes from the previous year. The trophies given to the winners were carved from a log recovered from the Rouge River. A public canoe trip organized by FOTR began after the canoe race, with 19 people paddling the route. Both events ended in Goudy Park in the City of Wayne, where the *Rouge A Palooza* event was staged and open to the public from 1:00-8:00pm. The celebration included food and drink, live music, a paper boat race, a rubber duck race, fun activities for kids, and displays by local governments and community groups, including Wayne County Parks, WQMD and FOTR. Visitors to the event assisted WQMD in looking for benthic macroinvertebrates by sorting samples collected from the Lower Rouge River at Goudy Park and learned about how benthic macroinvertebrates are used to determine water quality. The "Our Actions" tabletop display and water quality public education material was also on hand. Attendees visiting the WQMD displays picked up 20 "Seven Simple Steps" tip cards, "Storm Drains Aren't Garbage Cans," and Wayne County 24 hour hotline brochures to take home. Event organizers were pleased with the support of local organizations and the attendance at the inaugural event. Plans for a third annual event in 2015 are underway.

Volunteer Monitoring: Frog & Toad Surveys, Rouge Watershed (WCPEP #15)

Wayne County actively promoted participation in and provided funding for the Rouge Frog & Toad Survey conducted in 2014 by FOTR (see <http://therouge.org/index.php?id=687624> for a description of activities and program results).

Volunteer Monitoring: Bug Hunts, Rouge Watershed (WCPEP #16)

In support to the ARC and FOTR, WQMD staff participated in multiple volunteer monitoring events in 2014 as follows:

- *FOTR Winter Stonefly Search:* WQMD served as team leaders for the FOTR Winter Stonefly Search held January 25. Over 80 people from around the Rouge Watershed went out into the cold to sample for the stonefly, a macroinvertebrate species whose presence indicates high water quality. The results of the 2014 winter stonefly search are summarized in Section 1.
- *FOTR Spring Bug Hunt:* WQMD staff served as team leaders for this event held April 12, joining approximately 120 volunteers in benthic macroinvertebrate sampling at 40 sites throughout the Rouge River watershed. Volunteers and WQMD staff collected and identified

benthic macroinvertebrates for the purposes of gauging Rouge River water quality. The results of the 2014 Spring Bug Hunt are summarized in Section 1.

- *FOTR Fall Bug Hunt:* WQMD participated as team leaders for the FOTR fall “bug hunt” sampling event held October 25, leading volunteers in the collection and identification of benthic macroinvertebrates for the purpose of using the data to gauge the water quality of the Rouge River. Over 100 people from around the Rouge Watershed participated and sampled 29 sites. See Section 1 of this report for a summary of the water quality scores from this monitoring event.
- *WQMD Spring Bug Hunt:* WQMD performed a bug hunt with 126 students from East Middle School students at Lions Park in the City of Plymouth over two days, May 28 and 29, 2014. The Tonquish Creek in Plymouth Township was sampled and the students sorted the samples to obtain a water quality score. Both samples scored “Excellent”.
- *WQMD Fall Bug Hunt:* WQMD performed a bug hunt with East Middle School students at Lions Park in the City of Plymouth on October 1. A total of 55 students participated. The Tonquish Creek in Plymouth Township was sampled and the students sorted the samples to obtain a water quality score of 42, a “Good” water quality rating for the site.

Volunteer Monitoring: Bug Hunts, Downriver Watersheds (WCPEP #17)

During 2014, WQMD (with ADW financial support) continued its partnership with the Downriver Citizens for a Clean Environment “Stream Team” volunteers and the Huron River Watershed Council (HRWC) and volunteers to implement macroinvertebrate monitoring at locations throughout the downriver watersheds of Ecorse Creek, Combined Downriver and the Lower Huron River watersheds. Over 283 volunteers assisted with monitoring at 15 sites during the spring sampling, and almost 250 volunteers assisted with sampling at 15 sites during the fall effort. The results of these monitoring efforts are presented in Section 1 of this report.

Rouge Education Project (WCPEP #18)

WQMD staff participates on the FOTR Public Involvement Advisory Task Force, which meets on a monthly basis throughout the year.

Storm Sewer System Labeling (WCPEP #19)

WQMD supported storm sewer stenciling in Canton Township subdivision streets as part of their annual River Day activities (see also report for WCPEP#14). In 2015, Wayne County will continue to offer these stencils to schools and community groups and promote the use of decals for labeling storm sewers within residential areas and at facilities inspected as part of our Illicit Discharge Advanced Investigation and Correction (WCIDEP #2).

Storm Sewer System Labeling: County Facilities (WCPEP #20)

In 2014, WCDPS staff advised DPS-Road yard staff through P2 follow-up inspections to maintain marking the location of storm sewers throughout the County’s Road Division maintenance yards including storm sewers located in unpaved areas.

Alliance of Rouge Communities: Public Information and Education Committee (WCPEP #21)

WQMD staff participated in all 2014 Alliance of Rouge Communities Public Information and Education (PIE) Committee meetings and activities (see the 2014 Executive Director Annual Report available at www.allianceofrougecommunities.com for more detailed information). In

addition, Wayne County participated in all 2014 activities of the Alliance of Downriver Watersheds, Public Education Committee (see the ADW Bi-Annual Report 2012-2014 available at http://www.allianceofdownriverwatersheds.com/adw_info.htm for more detailed information).

Information Dissemination via Websites (WCPEP #22)

In 2014 the website for Wayne County's Rouge River National Wet Weather Demonstration Project (www.rougeriver.com) experienced over 1.71 million hits and 205,968 site visits from citizens, students, university staff, businesses, community groups, municipalities, and others interested in obtaining information on the Rouge River and the Rouge River Project. In addition, the ARC (www.allianceofrougecommunities.com) and ADW websites (www.allianceofdownriverwatersheds.com) and the Wayne County website (www.waynecounty.com) are also used to inform and involve the public in storm water management and watershed awareness activities.

Information Dissemination from County Buildings (WCPEP #23)

Storm Water Public Education Handout information continues to be available at County-owned facilities for Wayne County employees, businesses and the general public. Information racks are maintained at 8 Wayne County offices including: Department of Public Services (three locations), Environmental Health Division, Mental Health Department, Parks Headquarters, Permit and Field Engineering Office, and Roads-Central Maintenance Yard. Table 20 summarizes the educational publications placed by WQMD at County offices in 2014. This information was supplemented by additional materials placed at County offices by other departments (e.g., Section WCPEP #31, Integrate Public Education into Parks Operations, describes additional educational materials placed by Parks).

Education: Waste Disposal Locations (WCPEP #24)

The LRMD continues to maintain and distribute listings of approved disposal points for various materials including motor oil, antifreeze, gasoline, transmission fluid, travel trailer waste disposal and mercury recycling/disposal facilities. These listings are in the *Resource Recovery Guide* (RRG). The RRG is available to download from the DPS - ESG website <http://www.waynecounty.com/doe/1062.htm> and is also distributed at all public events in which LRMD participates including the HHW and electronic waste collection events. Other materials to educate the public about pollution prevention include *Disposal Tips for Home Medical Waste & Pharmaceuticals* brochure, *Mercury Information* brochure, flyers for HHW and Electronic Waste collection events, and the *CLEAN Program brochure*. These materials are also available, along with home composting tips, from the website shown above. Table 21 summarizes the educational materials related to proper waste disposal that were distributed at public events during the reporting period.

Additionally, as described in the report for WCIDEP#7, two mailings were made to all Wayne County Commissioners, Mayors, Township Supervisors, Clerks and Public Works Directors seeking their participation in the C.L.E.A.N program. The mailings consisted of C.L.E.A.N. information pamphlets and applications for assistance. This information was also sent to over 115 community groups in Wayne County. Approximately 200 CLEAN Program brochures were distributed in 2014 through direct mailings to every community in Wayne County, community organizations, neighborhood block clubs and churches. Distribution also took place and numerous block club meetings and public events.

Table 20
Storm Water Educational Materials Available at County Offices
January 1 – December 31, 2014

Location	Date Refreshed	Materials
DPS Roads Division main office, Central Maintenance Yard, Romulus	1/9/14	<i>Hotline</i> brochure, <i>Storm Drains</i> , <i>7 Simple Steps</i> tip cards, Rouge Watershed recreation maps
DPS Parks Division headquarters, Nankin Mills, Westland	1/9/14	<i>Hotline</i> brochure, <i>Storm Drains</i> , <i>7 Simple Steps</i> tip Cards, Rouge Watershed recreation maps, <i>Riparian Corridor Management Principles and Practices</i> brochure
DPS Engineering Division Permit Office, Wayne	6/5/14	<i>7 Simple Steps</i> tip cards, <i>Hotline</i> brochure, <i>Storm Drains Aren't Garbage Cans</i> brochure, Rouge Watershed recreation maps
DPS Roads Division main office, Central Maintenance Yard, Romulus	6/5/14	<i>7 Simple Steps</i> tip cards, <i>Hotline</i> brochure, <i>Storm Drains Aren't Garbage Cans</i> brochure, Rouge Watershed recreation maps, West Nile Virus prevention magnets
DPS Parks Division headquarters, Nankin Mills, Westland	6/12/14	<i>7 Simple Steps</i> tip cards, <i>Hotline</i> brochure, <i>Storm Drains Aren't Garbage Cans</i> brochure, Rouge Watershed recreation maps, West Nile Virus prevention magnets
640 Temple, Detroit	7/16/14, 7/17/14, and 11/26/14	<i>7 Simple Steps</i> tip cards, <i>Hotline</i> brochure, <i>Storm Drains Aren't Garbage Cans</i> brochure, Rouge Watershed recreation maps; <i>7 Simple Steps</i> Tip Cards, <i>Riparian Corridor Management Principles and Practices</i> brochure
DPS WQMD office, 3600 Commerce Court, Wayne	As Needed	<i>Hotline</i> brochure, <i>Storm Drains</i> , <i>7 Simple Steps</i> tip cards, Rouge Watershed recreation maps, <i>Riparian Corridor Management Principles and Practices</i> brochure, <i>Resource Recovery Guide</i> , <i>Disposal Tips for Home Medical Waste & Pharmaceuticals</i> brochure, <i>Mercury Information</i> brochure, flyers for HHW and Electronic Waste collection events, <i>CLEAN Program</i> brochure, Compost "Black Gold" brochure; <i>Soil Erosion, Sediment Pollution and Your Home</i> brochure; ADW Pet Waste educational materials
DPS Environmental Services Group administration office, 400 Monroe, Suite 400, Detroit	As Needed	<i>Hotline</i> brochure, <i>Storm Drains</i> , <i>7 Simple Steps</i> tip cards, Rouge Watershed recreation maps, <i>Riparian Corridor Management Principles and Practices</i> brochure

Table 21
Distribution of Educational Materials for Proper Waste Disposal
January 1 – December 31, 2014

Educational Item	Quantity Distributed	Distribution Methods
<i>Resource Recovery Guide</i>	7000	<ul style="list-style-type: none"> • HHW Events • Community groups/events • County participating events • Municipalities for distribution • Presentations
<i>Disposal Tips For Home Medical Waste and Pharmaceuticals</i>	200	<ul style="list-style-type: none"> • Community groups/events • County participating events • Municipalities for distribution • Presentations
HHW/E-waste collection event flyers	1,000	<ul style="list-style-type: none"> • Direct mailings • Community groups/events • Presentations
Recycled pencils and bags	300	<ul style="list-style-type: none"> • Students via recycling presentations including Rouge River Watershed Festival
CLEAN Program Brochures	200	<ul style="list-style-type: none"> • Direct mailings
Compost brochures	200	<ul style="list-style-type: none"> • Schoolcraft Community College Earth Day Fair
Soil Erosion, Sediment Pollution and Your Home brochure	50	<ul style="list-style-type: none"> • Community • Walk in applicants
Homeowner's Guide to Septic Systems	NT	<ul style="list-style-type: none"> • Distributed at time of sale inspections and upon completion of new or repair of septic systems.
Michigan Environmental Health Association "Home Sewage Disposal" Pamphlet	NT	<ul style="list-style-type: none"> • Distributed at time of sale inspections and upon completion of new or repair of septic systems.

NT – Not tracked.

Staff Education and Training (WCPEP #25)

Staff Training: The participation of Wayne County staff in "environmental" training programs during the reporting period is shown in Tables 22 and 23 for the Department of Public Services and Environmental Health Division, respectively.

Table 22
Wayne County Department of Public Services Staff Training
in Environmental Issues During 2014

Training Topic	Number of Staff Trained
Pesticide Applicators	10
De-icing Equipment Calibration	197
Hazardous Waste and Emergency Response (HAZWOPER)	2
Soil Erosion and Sedimentation Control Certification	2
Engineering Society of Detroit Solid Waste Conference and Training	6
Michigan Recycling Coalition Conference	4
IDEP Recognition Training	67
Webinar: Daylighting: A Storm Water Management Trend	8
Webinar: Erosion Control with Articulating Concrete Blocks	7
Webinar: Managing Storm Water on Construction Sites	8

Table 23
Wayne County Environmental Health Division Staff Training
in Environmental Issues During 2014

Training Topic	Number of Staff Trained
MDEQ Annual Type II Water Supply Conference	1
Water Treatment Systems	2
Investigating and Correcting Coliform Bacteria Problems	2
Monitoring Requirements	0

Staff Education and Awareness: During this reporting period, the WCDPS arranged for the County's electronic mail (e-mail) system to periodically post watershed/storm water management messages to all County employees during the reporting period. For example, all Wayne County employees with email accounts received messages encouraging their participation in the County's Office HHW Collection events and Computer/Computer Peripheral Waste Collection events, and the WC office paper recycling program. There is also a WCDPS newsletter that is distributed to staff and posted online at www.waynecounty.com. This newsletter was issued three times in 2014 and included various articles regarding environmental restoration and protection projects and potential individual activities.

Signage (WCPEP #26)

Watershed, stream crossing awareness, and grow zone signage are made available to communities at cost through the Wayne County Publication Clearinghouse. In 2014, WQMD processed 12 crossing and boundary signs for the Alliance of Downriver Watersheds for 12 communities that had no signs installed. During the reporting period, four of the 12 signs were installed by the communities. The remaining signs will be installed by communities in 2015.

Local Presentations (WCPEP #27)

Children's Education: WQMD was invited to give water quality related presentations at Smith Elementary School in the City of Plymouth on April 14, 2014. Approximately 60 students participated in presentations of "Don't Bug Me," an interactive presentation introducing benthic macroinvertebrates, their role in determining water quality, and how human activities affect the river and the life within. Students also participated in the "Riverbend" activity, learning about watersheds and their geography.

The *Don't Bug Me* presentation was also given to participants at Water Festivals as follows:

- 120 fifth grade students from four classes at the Rouge River Water Festival held May 1 at UM Dearborn. The four schools were from communities throughout the Rouge River watershed.
- 105 students from four Detroit school classes at the Detroit River Water Festival held on Belle Isle in the City of Detroit May 8.

Graduate level education: WQMD gave a lecture for the University of Michigan-Dearborn Watershed Analysis class detailing Wayne County's illicit discharge elimination program. The presentation gave a history of the illicit discharge elimination activities in southeast Michigan, including defining what illicit discharges are, describing illicit discharge recognition observations, and techniques used to identify and eliminate sources. Eighteen students participated in the class and the problem solving exercise on Tuesday, November 18, 2014.

Other: LRMD staff participated in a Recycling presentation to Garden City Rotary Club (25 Adults). RRG's and recycled bags were distributed. A recycling presentation and a tour of Materials Recycling Facility was given to 10 middle school children and their parents from the Plymouth/Canton school district. RRG's, recycled bags, and recycled pencils were distributed.

Develop/Maintain Partnerships (WCPEP#28)

Wayne County participates in numerous partnership activities each year for the purpose of managing storm water and protecting the environment. Described below are a number of the highlights or new activities performed during the reporting period.

Rouge Gateway Partnership: The Rouge River Gateway Partnership was formed in the summer of 1999 to represent the interests in the lowest section of the Rouge River in Dearborn, Melvindale, Allen Park, Detroit, and River Rouge. Officials from these communities, together with leaders representing cultural institutions, private business, and Wayne County make up the partnership. A Master Plan for the Gateway Corridor of the Rouge Watershed was developed to serve as a guide to advance, extend, and coordinate current planning and redevelopment projects in order to achieve the goals of ecosystem restoration, heritage preservation, increased

recreation, and economic development along the Rouge River. Under the Partnership's guidance, many projects from the Rouge Gateway Master Plan are underway or have been completed.

During 2014, Wayne County and Gateway partners met as needed to coordinate the Rouge Gateway Master Plan with other efforts. For example, meetings continued with the Detroit District COE regarding potential restoration of the paved channel section of the Rouge. Additionally, Wayne County, the Corps of Engineers, the University of Michigan-Dearborn re-initiated work to construct a potential fish passage around the dam at Henry Ford Estate.

Friends of the Rouge: Wayne County actively supported and provided funding for several FOTR efforts during 2014 including Rouge River Day, Rouge Education Project (REP), Public Outreach Workshops, Rouge Frog & Toad Survey and Macro-invertebrate Volunteer Monitoring. Specific activities completed in support of FOTR included setting up public information displays at FOTR sponsored workshops throughout the watershed; supporting the Winter Stonefly Search and the Spring and Fall 2014 Bug Hunts; coordinating a River Day site in Canton Township; posting promotional flyers for FOTR events to the Rouge Project and Wayne County websites; and participating on the Public Involvement Projects Task Force.

Rouge River Advisory Council: Wayne County staff participated in and supported efforts of MDEQ's Rouge River Advisory Council (RRAC) during the reporting period. Activities included response to MDEQ information requests regarding potential Rouge River Area of Concern (AOC) delisting project ideas and opportunities; letters of support to various communities, agencies or non-profits or the ARC for grant projects within the Rouge AOC; development of public advisory council support grant applications and implementation of awarded grant projects.

Detroit River Area of Concern Public Advisory Committee: In 2014, Wayne County staff continued participation in the Committee to assist with watershed management and river restoration efforts in the Detroit River.

Southeast Michigan Illicit Discharge Elimination Program (IDEP) Work Group

The work group was initiated in 2011 to facilitate the networking of individuals in Southeast Michigan responsible for implementing Illicit Discharge Elimination Programs, including staff from the Counties of Wayne, Oakland, Washtenaw, Macomb and St Clair; SEMCOG; and other municipal and university staff. WQMD is currently serving as Chair of the group, which meets quarterly to discuss common issues/ problems and collaboration on efforts beneficial to all. In 2013, the group developed a five year regional IDEP training plan for municipal staff. The plan calls for a five year rotation of IDEP training sponsored by Oakland, Wayne, Washtenaw, St, Clair and Macomb Counties, Alliance of Rouge Communities, Alliance of Downriver Watersheds, and Southeast Michigan Council of Governments. Each of these agencies signed an agreement committing themselves to their role in the plan. IDEP Investigator Training will have three sessions as follows: 2013 (Wayne County), 2015 (Washtenaw County), and 2017 (Macomb County). The Good Housekeeping/Illicit Discharge Recognition Training will have two sessions: 2014 (St. Clair County) and 2016 (Oakland County). The sponsoring County is responsible for facility procurement, registration, refreshments, etc.

The 2014 the Good Housekeeping/Illicit Discharge Recognition Training was sponsored by St Clair County. The training sessions held at the Seaway Terminal in Port Huron on October 8, 2014. Fifty-seven people participated in this training session.

Stream Team/Friends of Detroit River/Riverkeeper: In 2014, Wayne County continued its partnership with *The Stream Team* and *Friends of the Detroit River and Riverkeeper* to assist with watershed management in the downriver area through three major efforts: stream monitoring, riparian corridor/green infrastructure management projects and watershed management public awareness education. The intent of the partnership is to assist local communities, public school districts and the County with compliance under the Storm Water Permit while educating students using the local natural environment and current issues as the classroom. Stream Team teachers, with assistance and support from WQMD, work with high school students empowering them to identify, evaluate and solve real world problems using real world techniques and technology.

Regional/National Outreach Activities: Wayne County participated in several national outreach activities/events/meetings during the reporting period to exchange information about storm water and watershed management, including:

- The IDEP Tip Card produced by the Southeast Michigan IDEP workgroup was provided to the Monroe County Stormwater Services of Bloomington, Indiana in February. The stormwater services group is very impressed with the tip card and intends to utilize it in its operations
- In March, staff provided John Hartig, International Wildlife Refuge Manager with Rouge River Project summary information and graphics for potential use in future presentations and other outreach work in March.
- WQMD staff presented at the Michigan Chapter of the Association of Hazardous Materials Managers in Howell, Michigan April 17. Approximately 63 people attended the presentation about municipal storm water permits and illicit discharges.

Integrate Public Education into Public Services, Facilities Management Division Operations (WCPEP #29)

Information Dissemination: Approximately 10 copies of the following flyers were distributed: *RCM: Principles and Practices*, *WDM 101: The Clean and Open Method*, *WDM 201 – Habitat Structure Method*, *RCM Streambank Management 101*, *RCM Streambank Management 201*, *Naturescaping*, and *Site Preparation for Small Planting Areas*. Facilities Management staff also regularly meets with the public for petition related meetings and at service request inspections.

Industrial Pretreatment Excellence Award and Zero Discharge Club: The County's Industrial Pretreatment Program (IPP) for the Downriver Wastewater Treatment Facility recognized 31 industrial waste water dischargers as members of the *Zero Violations Club* during 2014.

Facility Tours: Four tours of the Downriver Wastewater Treatment Facility were given in 2014. Approximately 130 people attended.

Other: Wayne County is an active member of the Michigan Association of County Drain Commissioners and the Michigan Water Environment Association. Staff attend, and make

presentations at, the annual conferences hosted by these professional organizations for in-depth education, training and networking opportunities related to management of the County's waterways and watersheds.

Integrate Public Education into Public Services, Roads Division Operations (WCPEP #30)

Information Dissemination: As described in WCPEP #23, an informational display rack is set up at the Wayne County Roads Division Central Maintenance Yard and numerous environmental education materials are available to employees and the general public.

Watershed Awareness Signage: The Roads Division fabricates river crossing signs for the WQMD Clearinghouse described in WCPEP#26. In 2014, the Roads Division sign shop fabricated the 12 river crossing and watershed entry signs purchased by the Alliance of Downriver Watersheds. Existing river crossing and watershed entry signs are specified to be retained/replaced on road reconstruction project plans.

Adopt-a-Road Program: Thirty-four (34) groups adopted approximately 157 miles of County Road in 2014.

Integrate Public Education into Public Services, Parks Division Operations (WCPEP #31)

Information Dissemination from Nankin Mills: The Parks Administration office at Nankin Mills continues to supply the public with educational and informational brochures developed by Parks staff, by WQMD staff, Friends of the Rouge and others. Table 24 presents a summary of the environmental educational information distributed by the naturalists at Nankin Mills during 2014.

Table 24
Environmental Educational Information
Distributed from Nankin Mills Parks Office During 2014

Educational Item	Approximate Number Distributed
Rouge Watershed Public Recreation Areas Map and Index	50
Holliday Nature Preserve Map & History	300
Holliday Nature Preserve Association newsletters	200
Southeastern Michigan Butterfly Association flyers	200
Bennett Arboretum History brochure	200
Bennett Arboretum Trail Map and Interpretive Guide	200
Bluebird Nesting Box Information flyer	100
How to Build a Bat Box instruction packet	50
How to Build an Owl Nesting Box instructions	50
Wildlife Rehabilitators contact information	50
What is a Floodplain? Park Information Bulletin	200
Herps of the Rouge Interpretive flyer	500

Educational Item	Approximate Number Distributed
Owls of Michigan Interpretive flyer	400
Match Animal to Habitat flyer	200
Fish of the Rouge River activity flyer	150
Trees of the River Floodplain activity flyer	150
Geology of Michigan flyers	600
Poisonous Plants and Animals flyers	150
Animal Tracks, activity flyer	400
Pond Benthics and Water Quality flyer	300
Michigan State Symbols flyer	300
Maple Sugaring History/Instructions/Resource flyer	400
Bird List – Holliday Nature Preserve	200
Trees of the Floodplain List – Holliday Nature Preserve	200
Wildflower List – Holliday Nature Preserve	100
Mammals List – Holliday Nature Preserve	100
WCDPS 24-Hour Environmental Hotline	100
WCDPS How to Be a River Friendly Gardener	100
WCDPS Fertilizer Selection and Application	100
WCDPS Storm Drains Aren't Garbage Cans	100
Our Actions Affect Our Rivers	100

Nankin Mills Interpretive Center – Stormwater/Watershed Displays: The theme of the Nankin Mills Interpretive Center which opened in January 2001, is “The Rouge River Runs Through History”. The Center is free to the public and open Monday through Saturday, 9 am – 4 pm. Featured are a variety of exhibits designed to foster visitor appreciation for the role the Rouge River has played in the natural and cultural history of our area, as well as the role that people have today in protecting this valuable resource. Permanent exhibits include:

- A diorama of wildlife of the Rouge floodplain, past and present;
- An early Potawatomi village scene depicting the many uses of the river by their culture;
- Gristmill exhibits describing the crucial role the Rouge River waterpower played in powering early mills in the early settlement of southeastern Michigan; and
- Exhibits featuring Henry Ford’s Village Industry project, which relied on water power of the rivers in southeastern Michigan to run his small industries using hydroelectric generators.

Permanent displays supporting environmental restoration/protection at Nankin Mills Interpretive Center include:

- Animals of the Rouge River floodplain diorama – Past and Present (conveying the message: it’s a habitat, and explaining why some animals no longer live here)
- Changing Currents: Public Efforts to Restore the Rouge River
- CSOs: What are they and how are they being eliminated?

- Newburgh Lake clean up project
- Industry takes a proactive role
- Volunteer groups on the Rouge River
- Computer kiosk filled with Rouge River information
- Four touch-screen interactive computer programs focusing on our daily activities, and seeing how the results of our choices impact the Rouge River.
- Kid's Map of the Rouge River Watershed: Know Your Watershed
- Live reptiles and amphibians of the Rouge floodplain, interpretive panel depicting all native reptiles and amphibians in Michigan and highlighting those that live in the Rouge River watershed.
- Live fish aquarium highlighting fish of the Rouge River, interpretive panel listing all species of fish living in the Rouge River and pictures of many species including those in the aquarium for identification.
- Owls of Michigan guessing game.
- How the Rouge River was used in the past – Native American diorama
- How the Rouge River was used in the past – Settlement era displays
- How the Rouge River was used in the past – Henry Ford exhibits
- The Rouge River 1920s – 1970s: Troubled Waters
- Turtles of the Rouge River with interpretive panel above the live turtle tanks for identification of the ten Michigan species.
- Songbirds of Michigan with over 50 bird mounts on display with labels identifying each species.
- A seasonal exhibit is displayed in the spring and summer highlighting the life cycles of native butterflies, with live butterflies.
- Nature Touch Table.
- Seasonal photographs of wildlife and plant life in Holliday Nature Preserve.

The Nankin Mills Interpretive Center also has a temporary “Storm Water/Watershed” display in the classroom which includes a map of the watersheds in southeastern Michigan and the posters “Use Your Head, You Live in a Watershed”, “We are all part of the solution”, “Storm Drains Aren’t Garbage Cans”, etc. Posters of the live frogs, salamanders, turtles and snakes of Michigan, butterflies, birds, and endangered species are also displayed.

Nankin Mills Interpretive Center Grounds: Native plants in the Butterfly Garden established on the site are identified by labels contributed by the Southeastern Michigan Butterfly Association (SEMBA).

Motor Cities Heritage Trail: Interpretive signage has been fabricated and installed to interpret the Rouge River history of Henry Ford’s waterpower sites on the Middle Rouge River:

<i>Henry Ford’s Nankin School</i>	<i>Newburgh Village Industry</i>	<i>Waterford Village Industry</i>
<i>Haggerty Station</i>	<i>Wilcox Village Industry</i>	<i>Phoenix Village Industry</i>
<i>Nankin Mills Village Industry</i>	<i>Northville Village Industry</i>	<i>Nankin Miller’s House</i>
<i>Gunsolly Mill</i>		

Naturalist Programming at Nankin Mills: Nankin Mills Interpretive Center offers natural and cultural history programming about the Rouge River watershed for school groups, scout groups and families. In addition, naturalists provide Outreach Programming at local schools, libraries,

scout pack meetings and other recreation facilities. As shown in Table 25, over 9,500 people attended a natural and cultural history interpretive program provided by Wayne County Parks during 2014.

Table 25
2014 Attendance at Nankin Mills Interpretive Programs

Number of Interpretive Programs Provided	306
Number of Children Attending	5,627
Number of Adults Attending	3,964
Total Number Attending	9,591

Nankin Mills Interpretive Center Natural Resource Related Programs: Nankin Mills Interpretive Center offered the School Field Trip and Outreach Programs highlighting natural resource topics listed below during 2014.

<i>History of the Rouge River</i>	<i>Animals in Winter/Tracks</i>
<i>Reptiles and Amphibians of the Rouge Floodplain</i>	<i>Animal Mysteries/Skulls & Scat</i>
<i>Habitat Hike</i>	<i>The Rouge River Watershed</i>
<i>Insect Adventures</i>	<i>Land and Water Connections</i>
<i>Michigan Geology</i>	<i>Bird Adaptations</i>
<i>Owls of Michigan</i>	<i>Pond Life</i>
<i>Poisonous Plants and Animals of Michigan</i>	<i>Flood Plain Tree Identification</i>
<i>Michigan State Symbols & Natural Resources</i>	<i>Beginning Astronomy</i>
<i>Henry Ford Water-Powered Sites on the Rouge</i>	<i>Maple Sugaring</i>
<i>Underground Railroad History on the Rouge</i>	

Nankin Mills Scout Badge Workshop Programs Featuring Natural Resources included the following in 2014:

<i>Astronomy</i>	<i>Environmental Science</i>	<i>Water/Soil Conservation</i>
<i>Sharing World w/Wildlife</i>	<i>Forester</i>	<i>Nature Crafts</i>
<i>Naturalist</i>	<i>Birds</i>	<i>Geologist</i>
<i>Your Living World</i>	<i>Map and Compass</i>	<i>Geocache</i>
<i>Animal Habitats</i>	<i>Hiker</i>	<i>Bugs</i>

Nankin Mills Monthly Home School Series Natural Resource Related Programming in 2014 included:

<i>Astronomy: Our Solar System</i>	<i>Maple Sugaring</i>	<i>Michigan Copper Mining</i>
<i>Michigan Geology</i>	<i>Winter Campfire&Hike</i>	<i>Nature Jeopardy</i>
<i>Herps of the Rouge</i>	<i>Animal Tracks in Winter</i>	<i>Leaf Prints/Tree I.D.</i>
<i>All Things Michigan</i>	<i>Owls of Michigan</i>	<i>Bird Watching</i>
<i>Natural Plant Dyes</i>	<i>Raising Butterflies/Host Plants</i>	
<i>Native American History of the Great Lakes</i>		

Natural Programs for the Whole Family in 2014 included:

<i>Maple Sugaring at Cass Benton</i>	<i>Halloween Forest Fun Hike: Rouge Wildlife</i>
<i>Wildlife Safari</i>	<i>An Evening with Frogs</i>
<i>Family Fun: Leaves and Cider</i>	

The 2014 Adult Botany Hike Series, included:

Spring Wildflowers & Folklore, Cowan Holliday Nature Preserve
Deciduous Tree Collections of Bennett Arboretum
Fern and Flora Hike, Koppernick Section Holliday Nature Preserve
Conifer Tree Collections of Bennett Arboretum

SEMBA Monthly Adult Butterfly Programs included:

How Butterfly Gardens Affect the Community
Self-Medication in Monarchs – Plants as Sources of Medicine
Lives of Butterflies and Moths
Garden Design
Good Bug, Bad Bug
Increasing Biodiversity of Lepidoptera Using Native Plants and Grasses
Outdoor Photography
Overwintering Butterflies
Butterfly Movie Night
Seed Collection and Exchange

Library Outreach and Community Programs for Families included:

<i>Animal Tracks</i>	<i>Live Reptiles and Amphibians of the Rouge.</i>
<i>Michigan Geology</i>	<i>Leaf Print T-shirts & Hike</i>
<i>Owls of Michigan</i>	<i>Native American History – Living with Nature</i>
<i>Beginning Astronomy</i>	<i>All Things Michigan</i>
<i>Rouge Watershed Water Quality</i>	<i>Bird Watching</i>

Wayne County naturalists participate as instructors at the Rouge River Water Festival each year on University of Michigan Dearborn campus. This annual event provides river and watershed education for hundreds of school children throughout southeastern Michigan. For 2014, two staff presented *Live Reptiles and Amphibians of the Rouge*. Wayne County naturalists also participated in the 2014 Rouge-A-Palooza by staffing a booth with nature-related display topics.

Workshops and other events related to watershed management held at the Nankin Mills Interpretive Center during the reporting period include:

- Nankin Mills Department Manager worked with the Southeastern Michigan Butterfly Association to maintain a Butterfly Garden with native plants next to the building. In addition, the Nankin Mills Interpretive Center Naturalist hosts monthly meetings of the SEMBA that include educational presentations about butterflies and butterfly gardening
- Nankin Mills Naturalists worked with Youth Connection High School students for six weeks in the summer on various projects such as removal of invasive plants and planting native plants on the Nankin Mills grounds, fish seining for the Interpretive Center's native fish display, program presentations, and caring for the live reptiles and amphibians in the Interpretive Center.
- Nankin Naturalist met with volunteers to inventory and clean out bluebird nesting boxes in Grow Zone areas.
- Nankin Naturalist performed several garlic mustard pulls in Ellsworth Section entrance to Holliday Nature Preserve, and also worked with scout volunteer groups to pull garlic mustard in Ellsworth Section.

- Nankin Mills hosted the Rouge Water Trail Partners meetings throughout 2014.

Activities to promote and advertise Nankin Mills Interpretive Center Programs during the reporting period included:

- *School programs:* A brochure listing school interpretive programs is available in the lobby and programs are listed in Wayne County Parks brochure and on the Parks Division section of the County website as well as the Friends of Nankin Mills website. Schools also spread the information by word of mouth.
- *Outreach programs:* A flyer is available in the Nankin Mills lobby and programs are listed in the Wayne County Parks brochure and on the Parks Division and Friends of Nankin Mills websites. The outreach program flyer is also electronically mailed to local libraries and Recreation Departments.
- *Scout programs:* A scout flyer and brochure with program information is electronically mailed to scouts on the Parks mailing list twice a year for walk-in registration dates. Information is also available in the lobby, in Wayne County Parks brochure and on the Parks Division and Friends of Nankin Mills websites. Registration dates are displayed on the electronic sign on Hines Drive. Scout organizations also advertise our programs.
- *Family programs:* A seasonal family program flyer is electronically mailed to those on the Parks mailing list and available in the lobby. Programs are also listed in the Wayne County Parks brochure, and on the Parks Division and Friends of Nankin Mills websites, and an illustrated advertisement is made and displayed on an announcement board in the Park Office lobby. The Parks Division sends out press releases to local papers. Programs are displayed on the Park electronic sign on Hines Drive. Sometimes reporters attend and photograph events or publish articles about our programs.
- *Home school programs:* An annual flyer is electronically mailed to those on the Parks mailing list, available in the Nankin Mills lobby, and program offerings are listed in the Wayne County Parks brochure, on the Parks Division section of the County website, and on the Friends of Nankin Mills website. Programs are displayed on the Park electronic sign on Hines Drive. Home school networking groups also advertise our programs.
- *Large Family Events:* Flyers are electronically mailed to those on the Parks mailing lists, local libraries and Recreation Departments. These events are also advertised in the Wayne County Parks brochure, in the Parks Division section of the County website, and an illustrated advertisement is displayed on an announcement board in the Parks Office lobby and on the Parks electronic sign on Hines Drive. Press releases are sent out and often reporters attend these events and publish newspaper articles.
- Co-sponsored events are advertised by the event co-sponsor. For example, Native American Day receives radio coverage and is listed in Native American publications.

In addition to the 9,591 visitors who came to Nankin Mills Interpretive Center to visit and attend an interpretive program in 2014, an additional 4,000 people visited the Interpretive Center exhibits without attending an interpretive program, for a total of 13,591 visitors in 2014. Total Interpretive Center attendance since opening in January 2001:

2001:	15,664
2002:	15,112
2003:	17,804
2004:	22,055
2005:	19,509

2006:	17,524
2007:	17,233
2008:	16,589
2009:	18,932
2010:	16,355
2011:	11,276
2012:	12,387
2013:	13,816
<u>2014:</u>	<u>13,591</u>
Total:	228,047

Information Dissemination from Crosswinds Marsh: The DPS-Parks office at Crosswinds Marsh continued to supply the public with educational and informational brochures during the reporting period. Table 26 presents a summary of the environmental educational information distributed from the Crosswinds Marks Parks Office during 2014.

Table 26
Environmental Educational Information Distributed From Crosswinds Marsh, 2014

Educational Item	Approximate Number Distributed
The Fish of Crosswinds Marsh	220
2014 Fishing Guide	220
Soil Layers (info sheet)	50
Distribution of Earth's Water (info sheet)	50
Natural History of the Beaver (info sheet)	80
Natural History of the Muskrat (info sheet)	80
Poisonous Plants and Animals of MI (booklet)	110
Conservation of the Kirtland's Warbler (booklet)	110
The Benefits of Trees (booklet)	120
Tree Identification Guides (booklet)	120
Forest Plants (info sheet)	120
Seed Dispersal (booklet)	40
Natural History of Michigan Owls (booklet)	180
Michigan Frogs (booklet)	140
Michigan Frogs (Coloring Sheet)	140
Frog Facts (Bookmark)	140

Bulletin Board Display at Crosswinds Park Entrance: *What is a Wetland, Benefits of Wetlands, Wetland Conservation, Wetland Animals, All About Beaver, Bald Eagles of Michigan, Wildflowers of Crosswinds, etc.*

Naturalist Programming – Crosswinds Marsh: The Parks Division continued to provide and expand educational programming focused on the natural environment for scout troops, school groups and families at Crosswinds Marsh. During the reporting period, approximately 3,519 children and 1,079 adults participated in one of the educational programs offered by the naturalists stationed at Crosswinds Marsh and listed below. Approximately 30,000 people visited Crosswinds Marsh in 2014.

Crosswinds Marsh School Programs:

<i>Michigan Frogs and Toads</i>	<i>Fall Frolic</i>
<i>Spring Fling</i>	<i>Wetland Field Investigation</i>
<i>All About Birds</i>	<i>Wetland Homes and Habitats</i>
<i>Canoe Hike</i>	<i>Wetland Plant and Animal Adaptations</i>
<i>Wonders of Water and Wetlands</i>	<i>Marsh Mammals</i>
<i>Insect Incognito</i>	<i>Michigan Owls</i>
<i>Michigan Trees</i>	<i>Michigan Reptiles and Amphibians</i>
<i>Self Guided Canoe Hike</i>	<i>Nature Detective</i>

Crosswinds Marsh Outreach Programs:

<i>All About Birds</i>	<i>Nature Detective</i>
<i>Fall Frolic</i>	<i>Michigan Reptiles and Amphibians</i>
<i>Insect Incognito</i>	<i>Wetland Plant and Animal Adaptations</i>
<i>Michigan Frogs and Toads</i>	<i>Michigan Owls</i>

Crosswinds Home School Programs:

<i>Wildlife Tracking</i>	<i>Splendid Spiders</i>
<i>Animal Architects</i>	<i>Dabblers and Divers</i>
<i>Alien Invaders</i>	<i>Sensational Seed Dispersal</i>

Crosswinds Marsh Family Programs (* indicates large family event):

<i>*Family Fishing Fun Day</i>	<i>Michigan Frogs and Toads</i>
<i>*Nature Fest</i>	<i>Spring Bird Hike</i>
<i>Fall Marsh Hike</i>	<i>Michigan Owls</i>
<i>Cattail Kids</i>	<i>Bats Friend or Fiend</i>

Crosswinds Marsh Boy Scout Badge Programs:

<i>Birds Elective #13 (Wolf)</i>	<i>Your Living World, Achievement #7(Wolf)</i>
<i>Fishing Elective #19 (Wolf)</i>	<i>American Indian Life, Elective #24(Bear)</i>
<i>Start a Collection Achievement #6 (Wolf)</i>	<i>Sharing your World with Wildlife #5(Bear)</i>
<i>Naturalist Activity Badge (Webelos)</i>	<i>Scientist Activity Badge (Webelos)</i>
<i>Forester Activity Badge (Webelos)</i>	<i>Water and Soil Conservation, Elective #15 (Bear)</i>
<i>Fishing (Academics & Sports)</i>	<i>Wildlife Conservation (Academics & Sports)</i>
<i>Map and Compass (Academics & Sports)</i>	<i>Nature Crafts, Elective #12(Wolf)</i>
<i>Nature (Merit Badge)</i>	

Crosswinds Marsh Girl Scout Badge Programs:

<i>Bugs (Brownie)</i>	<i>Animal Habitats (Junior)</i>
<i>Senses (Brownie)</i>	<i>Geocacher (Junior)</i>

Hiker (Brownie)
Flowers (Junior)

Trees (Cadette)
Adventurer (Senior)

Cattail Kids Summer Nature Series (ages 6-10):

Become a Scientist

Natures Detectives

Natures Details

Crosswinds Marsh Naturalists also participate in the *Rouge River Water Festival*, held each year on University of Michigan Dearborn campus. This event provides river and watershed education for school children throughout southeastern Michigan. For 2014, two staff presented *Aquatic Invertebrates of the Rouge Watershed* and *Wetland Plants and Animals* for approximately 410 students and 68 adults.

Crosswinds Marsh Wetland Interpretive Preserve – Workshops and Other Events

- Naturalists are currently working with an Eagle Scout on one project to install a new bulletin display board near the vehicle parking lot and enlarge the bulletin board near the horse trailer parking lot.
- Naturalists continued their partnership with Trenton Parks and Recreation to conduct their *Nature Nook Program Series and Nature Day Camp*.
- Naturalists continue their partnership with Van Buren Parks and Recreation to conduct spring, summer and fall programs.
- Naturalists established a partnership with Canton Parks and Recreation to conduct a series of Nature Programs.

Crosswinds Marsh Wetland Interpretive Preserve – Promotion and Advertisement of Nature Programming and other Environmental Programs:

- *Crosswinds Marsh School and Outreach Programs:* An annual *Parks Events and Interpretive Programs* brochure listing all interpretive School and Outreach Programs is available at the entrance to the Park. This brochure is also distributed to local schools and other individuals on our mailing list. All programs are listed on the bulletin board at the entrance to the park and on the Parks Division section of the Wayne County website. E-mail mailing lists are also used to distribute school and outreach program information.
- *Crosswinds Marsh Scout Programs:* Flyers and the *Parks Events and Interpretive Programs* brochure listing all Scout Badge Programs is available at the entrance to the Park.. Brochures (200) are distributed to the Detroit Area Boy Scouts of America Council. All programs are listed on the bulletin board at the entrance to the park and on the Parks Division section of the Wayne County website. E-mail mailing lists are also being used to distribute scout program information.
- *Crosswinds Marsh Family Programs and Large Family Events:* The *Parks Events and Interpretive Programs* brochure listing all Family Programs is available at the entrance to the Park. This brochure is also distributed to individuals on our mailing list. All programs are listed on the bulletin board at the entrance to the park and on the Parks Division section of the Parks website. A press release for each program is sent to the local newspapers.

Parks Website: The Wayne County Parks website (<http://www.waynecounty.com/dps/2138.htm>) promotes and advertises the Interpretive and Naturalist programming offered by the County.

Signage – Don’t Feed the Geese: Eleven signs are in place near the Middle Rouge impoundments, five signs are at Elizabeth Park and eight signs are installed at Crosswinds Marsh.

Signage - Holliday Nature Preserve: Preserve map and rule signage are provided at Nature Preserve trailheads.

Signage - Bennett Arboretum: Welcome kiosk and the *Oak Collection*, *Wetlands* and *Bennett Arboretum Wildflower Area* interpretive signs remain at the Bennett Arboretum. Native plant beds at the base of these signs were maintained as part of the May 2014 work day.

Signage – Crosswinds Marsh:

- Six “No Fishing” signs have been installed in restricted areas.
- Six “No Bicycles Beyond This Point” have been installed in restricted areas.
- Eight “Don’t Feed the Waterfowl” signs.
- Six “Endangered Species” signs are installed near the bald eagle nest.

Twenty-four Interpretive Trail signs identifying various wetland types, plants and habitats are being developed by naturalists and will be installed as an Eagle Scout project in 2015. Signs explaining the negative impacts of zebra mussels and why no personal watercraft are allowed at Crosswinds are also being developed and will be installed in 2015.

Signage - Grow Zone Areas: Interpretive Grow Zone signs remain at the Nankin Mills Grow Zone, the Bennett Arboretum Grow Zone and the Newburgh Pointe Rain Garden. Permanent Grow Zone signs are installed at all Middle Rouge Grow Zones and temporary Grow Zone boundary marker signs were replaced throughout the Grow Zones installed in Edward Hines Park.

Signage – Stream Bank Stabilization: The interpretive signs highlighting biotechnical stream bank stabilization methods remain at the Northville Recreation Area, the Levan Knoll Bike Path and the Valley View stream banks stabilization sites.

Staff Training: Parks staff did not report any environmental training in 2014.

Integrate Public Education with County-Issued Permits (WCPEP #32)

Facilities Management Division, Industrial Pretreatment Program (IPP) Permits: Wayne County’s Industrial Pretreatment Program routinely works with industrial/commercial facilities to prevent adverse impacts on the Downriver Wastewater Treatment Facility and to the environment. Examples of implemented programs are: slug/spill control plan evaluation, mercury reduction plans and investigation of spills into sewers/drains. The County’s Industrial Pretreatment Program for the Downriver Wastewater Treatment Facility issued 31 Zero Violations certificates to industrial dischargers during 2014.

Environmental Health Division – Onsite Sewage Disposal System (OSDS) Permits: Wayne County’s Environmental Health Division (EHD) continues to provide educational materials to owners of onsite sewage disposal systems in conjunction with the Wayne County OSDS

Evaluation and Maintenance Ordinance (Enrolled Ordinance 99-527). Materials distributed include:

- Recordkeeping folder,
- Homeowner reference guide for on-site sewage disposal,
- A copy of the homes sewage disposal system permit,
- A copy of the final inspection report,
- A copy of the disposal system evaluation report,
- *Wayne County OSDS Evaluation and Maintenance Ordinance* brochure,
- *Rouge River DemoInfo – Septic Systems* brochure, and
- Michigan Environmental Health Association *Home Sewage Disposal* pamphlet.

Materials are provided to new owners of new on-site systems. Current owners are provided information when they have their on-site system evaluated. Materials are also provided to patrons at public educational events such as the annual Rouge River Days in Dearborn Michigan at the University of Michigan campus.

Land Resources Management Division – Soil Erosion Permits: Approximately 50 *Soil Erosion and Your New Home* brochures were distributed in 2014; 25 were distributed directly to Northville Township and an additional 25 were distributed to walk-in applicants. Forty-three copies of the *Soil Erosion and Sedimentation Control Program Information Package* were distributed to contractors and walk-in applicants. The brochure was also distributed via County office information racks and upon request.

Engineering Division – Storm Water Permits: Wayne County developed our *Storm Water Management Standards Manual* and publishes it in conjunction with the County's Storm Water Management Ordinance and Administrative Rules. This manual provides a "plain English" explanation of the ordinance and administrative rules, user-friendly guidance for design of different storm water management facilities, and other useful information. The *Wayne County Storm Water Management Standards Manual* also addresses topics such as pollution prevention through storm water management, pollution prevention through soil erosion control, and management of riparian lands. Wayne County routinely updates the guidance in the manual based on emerging technologies and other factors.

The ordinance, administrative rules, and standards manual are available online from Wayne County's website <http://www.waynecounty.com>. These documents and periodic updates, along with supplemental materials not included in the Standards Manual but which may be helpful in implementing the Wayne County Storm Water Management Program, are available at in the "storm water program" section of the county website at <http://www.waynecounty.com/doe/1122.htm>. Links to other useful information are also provided on this page. For example, Wayne County has established a registry of Storm Water and Water Quality Practices Constructed/Implemented in Southeast Michigan that include project summaries, photos, location and contact information, weblinks, and other information for a variety of storm water and watershed management practices constructed/implemented in southeast Michigan in the following categories: Bioretention / Low Impact Development / Native Landscaping; Manufactured Treatment Systems and Underground Detention; Detention Ponds/Constructed Wetlands; Streambank Stabilization; Woody Debris Management; and Green Buildings.

Hard copy versions of the manual are available from the Permit Office (33809 Michigan Avenue, Wayne, MI). Staff from DPS-WQMD and DPS-Engineering routinely respond to requests for information about the County's storm water management program. These requests are from developers, communities, engineers, and citizens. Storm water magazines and other engineering magazines related to environmental issues are in the Permit Office reception area for clients to read.

SECTION 4

WAYNE COUNTY

ADDITIONAL STORM WATER MANAGEMENT ACTIVITIES

The following storm water management activities relate to Wayne County's Storm Water Pollution Prevention Initiative (SWPPI). These activities were completed by Wayne County during the reporting period **January 1, 2014 – December 31, 2014** for compliance with the County's Certificate of Coverage MIG610040 under the MDEQ General Storm Water Discharge Permit MIG619000.

Outlet Stabilization: County Projects (WCSWM #1)

Routine maintenance of existing outlets from County storm water systems to surface waters includes stabilization if necessary. Proper outlet stabilization techniques are included in design documents for any projects where new outlets from County storm water systems to surface waters were created. In 2014, proper outlet stabilization techniques were utilized for outlets replaced as part of road construction projects identified in Table 27 below or as part of County Drain improvement projects.

BMP Implementation: Treatment Controls for County Projects (WCSWM #2)

Low Impact Development/Green Infrastructure Projects

Rouge River Riparian Corridor Management Project

Wayne County Parks and WQMD continued their partnership to implement the *Rouge River Riparian Corridor Management Project* within Hines Park. Twenty-nine green infrastructure sites within Hines Park and along the Middle Rouge River have been constructed and are being managed in a way that reduces storm water runoff and pollution, promotes biodiversity, increases wildlife habitat, while also providing or improving passive recreational opportunities. The sites include 13 biotechnical stream bank stabilization projects, two bioretention cells, two detention pond native plant retrofits, and 12 native plant grow zones. In 2014, maintenance of these sites was completed with a Green Infrastructure work day held at the Bennett Arboretum in May; Youth Connection work days at Newburgh Pointe Rain Garden and Grow Zone, Sumac Pointe and Newburgh Dam site; through Nankin Mills Naturalist Program activities; and through the County's grow zone restoration and maintenance contractor.

Restoring the Rouge AOC from Mowed Down to Grown Up Project

In 2010, DPS-WQMD and Parks staff partnered with the ARC to secure a grant from the U.S. EPA under the Great Lakes Restoration Initiative (EPA- GLRI). Through this grant approximately 15 acres of new grow zone were established in Wayne County Parks along the Lower Rouge River and within Lola Valley (Upper Rouge River) during 2012. Funding was also included in the grant to develop and begin implementation of an invasive species management plan for the Wayne County grow zones and for in-stream macroinvertebrate (bug hunt) monitoring to evaluate project implementation. In 2014 the invasive species management plan and project evaluation efforts continued. Spring, fall and winter macro-invertebrate monitoring efforts were conducted as part of the *Rouge River Macroinvertebrate Monitoring* (see

Section 1). Long-term invasive species management resulted in 20 acres receiving treatment by the County's grow zone restoration and maintenance contractor, including prescribed burns at 3 acres.

Restoring the Lake Erie Corridor Through Green Streets Project

In 2010, Wayne County partnered with SEMCOG to secure the *Restoring the Lake Erie Corridor Through Green Streets Project* also funded through the EPA-GLRI. Work completed included design of approximately 16 acres of grow zone within County and MDOT road right of ways. Seven of the 16 acres of grow zone were constructed at two sites: Ecorse Road Boulevard (Van Buren Township) and Morton Taylor (Canton Township). Turf grass was converted to deep rooted native grasses, wildflowers and shrubs to reduce and filter polluted storm water runoff. Storm water catch basins were also raised to increase infiltration and reduce the volume of polluted storm water entering our open water courses during small storm events. In 2014, WQMD staff monitored site performance. Grow zone restoration and maintenance completed during 2014 included spot treatment of reed canary grass at the Morton Taylor site.

Tree Enhancements on Publicly-Owned Priority Urban Areas Project

In 2010, WQMD and Roads Division staff partnered with SEMCOG to secure a US Forest Service GLRI grant entitled: *Tree Enhancements on Publicly-Owned Priority Urban Areas Project*. A total of 435 trees were planted at 16 different locations. In 2014, staff continued to maintain these planting areas as part of the routine road right of way maintenance efforts.

Restoring Community Trees in an Urban Watershed

In 2011, WQMD and Roads Division staff partnered with the Alliance of Rouge Communities (ARC) to secure a US Forest Service GLRI grant entitled: *Restoring Community Trees in an Urban Watershed*. This grant funded the installation of 1,102 trees within County rights-of-way and properties within the ARC watershed area as follows: 250 trees were planted by WC Roads Forestry in 2012, 651 trees were planted by WC Roads Forestry and 135 were planted by WC Parks in 2013, and 65 trees were planted by WC Parks in 2014. Independent of this grant project, Roads Division also planted 10 new trees in 2014 and removed over 1,780 dead or diseased trees.

Wayne County Storm Water Green Infrastructure (GI) Planning

In 2011, WQMD staff worked with MDEQ staff to secure non-competitive Clean Water Act 205J Planning grant through the USEPA. Tasks under this planning grant include GI retrofit planning on County properties, GI operation & maintenance efficiencies and training, GI policy and financing strategies, and public education and outreach strategy. In 2014, WQMD staff coordinated with the Parks, Roads, and Facilities Management division staff regarding potential GI project sites, short and long-term maintenance and outreach efforts. WQMD staff also managed and coordinated with a design contractor to perform site assessments, develop project concepts and initiated the preparation of construction plans and specifications for 3 priority project sites. Conceptual plans and cost estimates have been prepared for more than 15 sites, three sets of construction plans and specifications have been submitted to MDEQ for review/comment and draft project fact sheet and project summary documents were also prepared and submitted to MDEQ. The project contract was extended to June of 2015.

Road Construction – DPS Field Engineering Office: Table 26 summarizes the Wayne County road construction projects administered by the Field Engineering Office in 2014. Except as noted below, these projects consisted primarily of an asphalt overlay of an existing concrete or asphalt roadway. Most projects also required removal of soil build-up (overburden) above the roadway curb and approximately five feet behind the curb. After removal of these excess soils, the areas were stabilized with sod, thus preventing the existing soils from washing into the roadway drainage system in the future. Erosion control protection filters were provided at storm drain structures, as needed, to prevent sedimentation from entering the roadway drainage system during construction.

Each of the road projects administered by WCDPS – Field Engineering has a plan for Soil Erosion and Sediment Control during construction. Each project has a certified storm water operator that maintains a “Soil Erosion & Sedimentation Controls Inspection Log”. Observations are recorded after each storm event and at least once a week. The contractor is then directed to make corrections if control measures are found to be inadequate.

The Gibraltar Road project shown in Table 27 was an entire road reconstruction project. Erosion control protection filters were provided at storm drain structures to prevent sedimentation from entering the roadway drainage system during construction.

Combined Sewer Overflow Control Implementation (WCSWM #3)

During the reporting period, Wayne County continued operation and maintenance of combined sewer overflow control facilities in Dearborn Heights, Harper Woods (Milk River Retention Treatment Basin), Inkster, Redford, River Rouge and Wyandotte (Southgate-Wyandotte system). Operation of these facilities and planning for any additional facilities required for CSO control in Wayne County is completed pursuant to the NPDES permits for these systems.

Sanitary Sewer Overflow Control Implementation (WCSWM #4)

During the reporting period, Wayne County continued operation and maintenance of the sanitary sewer interceptor system tributary to the County’s Downriver Wastewater Treatment Facility and those tributary to the Detroit Wastewater Treatment Plant (Rouge Valley and Northeast Sewage Disposal Systems). Any sanitary sewer overflow (SSO) control activities necessary for these systems are defined in the NPDES permits for these systems.

Table 27
Wayne County 2014 Road Construction Projects

Project Name	Project Limits	Type of BMP Installed
Pennsylvania Road	Middle Belt to East of Inkster	Riprap, concrete box culvert, vortech, silt fence, mulch blanket, sediment trap, fabric drops, check dams, and seeding
Goddard Extension	West Airport Service Drive west	Silt fence, stone check dams, riprap, fabric drops, stone filter, mulch blanket, seeding
Greenfield Road	Ford to Warren	Silt fence, fabric drops, mulch blanket, seeding
Mack Avenue	Cadieux to Moross	Fabric drops and sodding
North Line Road	Inkster to Toledo	Fabric drops and sodding
Oakwood	M-39 to I-94	Silt fence, fabric drops, riprap, mulch blanket, seeding
Outer Drive	Mitchell to Mt. Elliot	fabric drops, mulch blanket, seeding
Seven Mile Road and Hines Drive	Edenderry to Northville Road	Silt fence, stone check dams, riprap, fabric drops, stone filter, sodding
Sumpter	Willow, Sumpter and Judd Rds	None – no soil disturbed
Wayne Road	Van Born to US-12	Fabric drops and sodding
Wyoming	Warren to Tireman	Fabric drops, silt fence and sodding
7 Mile and Haggerty Road	Intersection	Fabric drops and sodding
Gibraltar Road (entire road reconstruction)	Old Fort to Allen	Riprap, concrete box culvert, vortech, silt fence, mulch blanket, sediment trap, fabric drops, check dams, seed and sod

Pollution Prevention (P2): General Public Facilities Management (WCSWM # 5)

WQMD has previously dye-tested all County facilities within the separated storm sewer system area of the County and continues to improve site mapping of storm sewer system and on-site pollution prevention awareness at maintenance yards and facilities. In 2014, the Pollution Incident Prevention Plans (PIPPs) for the following DPS Roads facilities were updated: Central Maintenance Yard, Goddard Yard, Merriman Yard, New Boston Yard, Norton Yard, Phoenix Yard, Sibley Yard, and South Wayne Yard. Site revisits and follow-up P2 Action Plan Inspections were also completed and memos issued for the following DPS Roads Division facilities: Norton Yard, New Boston Yard, Sibley Yard, Wayne Yard, Goddard Yard and Sibley

Yard in 2014. In 2015, on-going implementation and updates of these P2 Plans will continue. The remaining DPS Roads yards (Central Maintenance, Merriman and Phoenix) as well as some of the DPS Parks yards will be inspected in 2015. A P2 training presentation and additional P2 workshops will be made available to all WCDPS-Roads staff in 2015. Table 28 presents the DPS maintenance yards, by watershed, for which follow-up inspections were completed during 2014.

Table 28
2014 Pollution Prevention Action Plan Inspections at
Wayne County Department of Public Services Maintenance Yards

Wayne County DPS-Roads Maintenance Yards	Watershed			
	Rouge River Watershed	Ecorse Creek Watershed	Combined Downriver Watershed	Lower Huron Watershed
Goddard Yard Maintenance Facility		X		
New Boston Yard Maintenance Facility				X
Norton Yard Maintenance Facility	X			
Sibley Yard Maintenance Facility			X	
South Wayne Yard Maintenance Facility	X			

A summary of pollution prevention activities undertaken on properties operated by WCDPS Roads (including all Roads maintenance yards) is as follows:

- Cleaning Up Spills and Leaks: Each Roads maintenance yard has a Pollution Prevention Incident Plan (PIPP) and a Hazardous Waste Contingency Plan.
- Cleaning of Paved Surfaces is accomplished with road sweepers as described in WCSWM#10. Spills of materials on County roads are handled by an environmental cleanup company under contract to Wayne County. The Michigan Department of Transportation is notified of spills on State trunk lines and contracts with a clean up contractor for removal of the material.
- Storing and Disposing of Wastes: Spills of hazardous materials on County roads are handled by an environmental cleanup company under contract to Wayne County. Scrap tires from various Roads yards are picked up by a contractor for proper disposal. Street sweeping material and catch basin cleanings are taken to an industrial waste processor for proper disposal.
- Storing and Handling of Inventory: Materials for Roads operations are stored in a climate controlled building with storage of containerized liquids on bases with overflow spill protection. Bulk storage is typically undercover and on impervious surfaces.
- Certified Storm Water Operators: 17 Roads Division employees are certified storm water operators through the MDEQ's Operator Training and Certification Unit.
- Dumpster and Loading Dock Maintenance: Thirty cubic yard and six cubic yard dumpsters are placed at Roads maintenance yards by a contractor. These dumpsters are used for disposal of trash and waste from the yards and roads. The contractor responds on demand to empty the dumpsters.

- Maintaining Landscaped Areas: The Forestry unit has 14 certified pesticide applicators and is actively seeking opportunities and funding to replace lost trees and to safely implement grow zones along County roads.
- Miscellaneous Activities:
 - At the MDOT Pump Stations operated by DPS – Roads, all floating objects such as foam and plastic containers are removed prior to any maintenance at the station that requires de-watering to clean and remove sand and dirt from the sump bottom.
 - All three of the draw bridges maintained by the County have installed electric toilets. These electric toilets have eliminated the direct discharge of sewage from these facilities into the Rouge River and Trenton Channel.
 - Quarterly P2 Action Plan inspections by the Department Managers at all County Maintenance Yards within separated storm sewer area and an annual inspection by the Forestry Department Manager are to be conducted.

WCDPS – Parks maintenance yards are routinely inspected by Parks Foreman and Department Managers to ensure compliance with waste management, pollution prevention and safety requirements as outlined by Wayne County Risk Management and the P2 Action Plans developed by WQMD.

Staff Training (WCSWM #6)

See Activities reported under WCIDEP #3 and WCPEP #25.

P2: Training and Inspection Program for Contractors (WCSWM #7)

Wayne County contracts require contractor compliance with all applicable local, state and federal regulations. WQMD has previously dye-tested all County facilities within the municipal separated storm sewer system area and has stenciled the storm sewer manholes within maintenance yards and parking lots. As part of the P2 Action Plan development/update process, contracts for maintenance of County facilities are reviewed for opportunities to include specifications for pollution prevention activities and/or identify training opportunities.

P2: Fertilizer, Pesticide and/or Herbicide Applications (WCSWM #8)

Fertilizers are not used on the majority of Wayne County properties. All pesticide and herbicides are applied by state certified pesticide/herbicide applicators according to product labels and certified applicator training. As part of the P2 Action Plans development/update process, landscaping practices at individual County facilities (done in house or under contract) are reviewed for opportunities to minimize or improve fertilizer, pesticide and herbicide application practices.

P2: Storm Sewer Operation and Maintenance (WCSWM #9)

As part of the Wayne County road improvement projects identified in Table 27, all existing catch basins and storm water manholes associated with the roads in the project were cleaned, including the sumps, to improve the efficiency of conveying the storm water from the roadway to the designated outlet. Cleaning of the sumps allows particles to settle and not be carried into ditches, streams and rivers. Additional cleaning of catch basins associated with storm sewers owned by Wayne County Roads Division is performed on an as-needed basis. During 2014, the Wayne County DPS-Roads Division removed and properly disposed of 12,996 tons of material from catch basins, storm sewers, roadside ditches and other features. The Roads Division has policies,

procedures and a contractor in place to ensure that hazardous materials spilled on the roadways are appropriately disposed of and reported.

P2: Road Maintenance and Sweeping (WCSWM #10)

The WCDPS-Roads Division sweeps the curbed roadways under its maintenance responsibility. Table 29 presents a summary of roadway sweeping for this reporting period.

Table 29
2014 Roadway Sweeping Summary: Wayne County Roads Division

Type of Roadway	Cycles	Total Road Miles Swept
Urban Freeway	2	1029
Non-urban Freeways	2	478
County Primary Roads	2	1588
County Local Roads	0	0
Total		3,095

See WCSWM #9 for volume of material collected and disposed of properly.

P2: Snow Removal and Storage (WCSWM #11)

Consistent with the PIPP developed for each County maintenance facility, Wayne County will continue to store and handle all snow removal equipment, supplies, and chemicals such as salt and calcium chloride in shelters and that prevent spill and leaks that could enter the storm drainage system. Chemicals will continue to be stored in containers that are properly labeled to reduce the chance of using the wrong material and accidental mixtures. Where possible, chemicals will be eliminated by substituting non-hazardous or less hazardous materials. Snow that is removed from roads and stored on site will be properly disposed of if contaminated with chemicals or other hazardous materials, otherwise, snow will be allowed to melt and drain into sanitary and or storm drains.

P2: Deicing Practices and Storage (WCSWM #12)

The WCDPS-Roads Division will continue to practice environmental friendly methods of deicing, and stores all deicing equipment, supplies, and chemicals in shelters that prevent spill and leaks that could enter the storm drain system. Roads Division staff are trained on winter safety and salt operations. Salt truck equipment is calibrated routinely to minimize over application. Salt brine-making machines have now been installed at all six Roads Division maintenance yards. Roads Division continued to use salt brine as anti-icing agent for pre-treating roads for snow and ice clearing. This practice can result in up to 25% saving in salt usage which reduces damage to roadside vegetation and reduces chloride discharged to the storm water system and surface waters.

Oil and Grease Traps: County Implemented (WCSWM #13)

The eight oil-water separators installed at County maintenance yards are routinely cleaned and the material properly disposed.

Goose Control Program (WCSWM #14)

The program to control Canada Geese populations (egg replacement) in Wayne County Parks continued in 2014. A total of 286 eggs were replaced at 7 locations.

Soil Erosion and Sedimentation Control Implementation: County Projects (WCSWM #15)

As an Authorized Public Agency (APA) the WCDPS-Field Engineering Office follows the Soil Erosion and Sedimentation Control (SESC) Procedures and supplemental manual, as approved by MDEQ in June of 2011. The Field Engineering Office is responsible for the Construction Administration of approximately 15 to 20 Wayne Road improvement projects annually. Each project has a plan for Soil Erosion and Sedimentation Control during construction. Each project has a certified storm water operator that maintains a "Soil Erosion and Sedimentation Controls Inspection Log". Observations are recorded after each storm event and at least once a week. The contractor is then directed to make corrections if control measures are found to be inadequate. The Field Engineering Office currently has eight Certified Storm Water Operators and two Certified Soil Erosion & Sedimentation Control staff.

The WCDPS-FMD Field Operations is an Authorized Public Agency under Part 91, Act 451. FMD Field Operations oversees SESC activities relating to their work within County Drains in conjunction with DPS- Permits in accordance with its' APA requirements.

Construction of capital improvements to County wastewater and storm water facilities and systems is conducted in accordance with all applicable local, state and federal regulations, including SESC regulations.

Streambank Stabilization: Projects Subject to County Storm Water Ordinance (WCSWM #16)

The Wayne County Storm Water Management Program is performance-based, with requirements for both flood control and water quality protection. The developer may choose from a variety of best management practices (BMPs) or combinations of BMPs to meet the performance standards defined in the Ordinance and Administrative Rules. Design guidance for stream bank stabilization is provided in the *Storm Water Management Standards (v3.0)* Chapter 8.4 within the *Wayne County Storm Water Standards Manual*.

BMP Implementation, Treatment Controls: Projects Subject to County Storm Water Ordinance (WCSWM #17)

In 2014, the Permit Office reviewed development projects to ensure compliance with applicable County regulations. Four hundred forty-eight (448) projects were reviewed for compliance. Three hundred seventy-two (372) construction permits were issued. Two hundred two (202) construction projects were completed in 2014 and 170 projects were still in construction at the end of the calendar year. The Field Engineering Office provides inspection of all approved projects to ensure compliance with approved construction plans and the Wayne County Storm Water Management Ordinance, Administrative Rules, and Standards.

Outlet Stabilization: Projects Subject to County Storm Water Ordinance (WCSWM #18)

The Wayne County Storm Water Management Program is performance-based, with requirements for both flood control and water quality protection. The developer may choose from a variety of best management practices (BMPs) or combinations of BMPs to meet the performance standards

defined in the Ordinance and Administrative Rules. Design guidance for conveyance elements including outlet design is provided in the *Storm Water Management Standards* (v3.0) Chapter 8.3 within the *Wayne County Storm Water Standards Manual*.

Ordinance Enforcement: Illegal Dumping Ordinance (WCSWM #19)

Illegal dumping is prohibited under the Wayne County Solid Waste Ordinance No. 2004-787 and the Wayne County Litter Control Ordinance No. 97-297. See the report under *WCIDEP* #7.

Ordinance Enforcement: Municipal Civil Infractions Ordinance (WCSWM # 20)

Wayne County's Municipal Civil Infraction Ordinance (Enrolled Ordinance No. 2001 - 404) (MCI) provides opportunities for addressing violations of Wayne County environmental ordinances. This ordinance addresses enforcement of elements of the County's IDEP such as the Illegal Dumping Ordinance (Enrolled Ordinance 96 - 100), the Sewer Use Ordinance (Chapter 101 of Wayne County Code of Ordinance) and the Wayne County's Storm Water Management Ordinance (Enrolled Ordinance No. 2000 - 652). The goal of the MCI is to correct violations of the ordinance where "guilt" or "criminal incarceration" would not be applicable. The Municipal Civil Infraction Bureau (MCIB) is authorized to accept admissions of responsibility for a Municipal Ordinance Violation Notice (ticket) issued and served by authorized County officials and to collect fines and penalties for violation of an environmental ordinance.

During the reporting period, there were 8 violation notices from the Soil Erosion Program issued under Wayne County's Municipal Civil Infraction Ordinance. See also report under WCSWM #22.

Ordinance Enforcement: OSDS Evaluation and Maintenance Ordinance (WCSWM #21)

See the report under *WCIDEP* #5.

Ordinance Enforcement: Sewer Use Ordinance (WCSWM #22)

The WCDPS-FMD Industrial Pretreatment Program (IPP) continued implementation of the Sewer Use Ordinance (Chapter 101 of Wayne County Code of Ordinances). At the end of 2014, there were 511 Industrial Users on the WCDPS – FMD IPP master list, including 43 Significant Industrial Users (SIU) of which 17 are categorical industrial users (CIU). All are permitted, inspected, sampled and have quarterly compliance evaluations. SUI permit holders are evaluated annually for spill/slug potential and spill plans are developed and implemented as necessary. The following were issued in 2014: 1 Special Condition permit, 0 Excellence awards, and 30 Zero Violation certificates. One industrial user was under pollution minimization plans (Mercury Reduction Plans) for 2014. No municipal civil infraction violations notices were written in 2014, but two industrial users were identified as being in significant noncompliance. Conciliation meetings were held and user implemented corrective actions were taken that resulted in compliance. Sampling was performed to confirm compliance with discharge limits.

In addition, Wayne County reviewed 39 applications during 2014 for the design and construction of wastewater facilities within the County that discharge wastewater directly or indirectly to a Wayne County sewer for compliance with the Sewer Use Ordinance and with Part 41, Sewerage Systems, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

Ordinance Enforcement: Soil Erosion and Sedimentation Control Ordinance (WCSWM #23)

The WCDPS Land Resources Management Division (LRMD) administers Part 91 (Soil Erosion and Sedimentation Control) (SESC) of the Michigan Natural Resource and Environmental Protection Act as the CEA within 34 of the 43 local communities within Wayne County. In 2014, LRMD issued 234 soil erosion control and sedimentation permits, and inspections were performed at all sites. Municipal civil infraction notices were issued to eight individuals for violations, with fines ranging \$250 - \$500. Stop Work Orders were issued at 10 different project sites in 2014. An MDEQ program audit was performed in 2011 and the program received the highest achievable rating in each program review area. LRMD staff participates in the Wayne County Storm Water Ordinance Workgroup.

Ordinance Enforcement: Storm Water Management Ordinance (WCSWM #24)

Enforcement of Wayne County's Storm Water Management Ordinance (Enrolled Ordinance No. 2000-652), Administrative Rules (Resolution No. 2000-653), and Standards Manual is implemented through the existing review and permit processes of the Permit Office of the Wayne County Department of Public Services, Engineering Division. As described in WCSWM #17, the Permit Office reviewed 448 development projects in 2014 to ensure compliance with the Wayne County Storm Water Ordinance. The Field Engineering Office provides inspection for all approved projects.

Flow Obstruction Prevention/Removal and Woody Debris Management (WCSWM #25)

Every maintenance project undertaken by FMD staff that involves management of woody debris is evaluated for the potential use of woody debris management techniques. Staff regularly uses banking of material as well as the clean and open method as an option in daily drain maintenance activities.

Parks Division and WQMD continue to support Friends of the Rouge and City of Wayne volunteers to establish a canoe route along the Lower Rouge River using woody debris management techniques described in the riparian corridor management brochures available online at the County's website <http://waynecounty.com/doe/1146.htm>. Parks Division also maintains the woody debris that occasionally obstructs the spillway dam at the Crosswinds Marsh.

Stream Bank Stabilization Efforts: County Implemented (WCSWM #26)

In 2014, WCDPS – FMD continues to require the use of native seed mix for drain restoration projects. See also activities summarized above in WCPEP #11, WCSWM #2, WCSWM #24 and WCSWM #25.

Habitat Restoration and Protection (WCSWM #27)

Grow Zone Initiative: As described in WCPEP #11 and WCSWM#2, DPS-Parks, Roads, Drains, and Water Quality Management Divisions continue efforts to expand grow zones in County park areas, along County Roadways, and along County Drains in support of storm water management and improvement of riparian corridors along river tributaries.

Wayne Road Dam Removal and Habitat Restoration Project: In 2011, Wayne County partnered with the ARC, the City of Wayne and the Rouge RAP Advisory Council to secure a GLRI grant through the National Oceanic and Atmospheric Administration to remove the dam and restore habitat on the Lower Rouge River at Wayne Road within the City of Wayne. The project consisted of removing the low-head dam at Wayne Road, stabilizing the stream bank using a combination of green infrastructure and structural controls, and improved fish passage using a system of pool-riffle in-stream rock structures. A dedication ceremony for the completion of the project was held in the spring of 2013. In 2014, project evaluation efforts continued and included spring, fall and winter macro-invertebrate monitoring conducted as part of the *Rouge River Macroinvertebrate Monitoring* (see Section 1) activities. The site also hosted the 2nd Annual Rouge-a-Palooza.

Detroit River International Wildlife Refuge: Wayne County Parks is an active partner in the Detroit River International Wildlife Refuge. The Detroit River International Wildlife Refuge is currently in the process of building a Visitor Center to orient and welcome regional residents and students to the Detroit River. Ground was officially broken for this 12,000 square foot structure in November 2013. Work through 2014 included installation of geo-piers to support the building and excavation of stormwater management swales and ponds to sustainably manage on-site rainwater runoff. Eventually, this building will incorporate passive solar to power its utilities. The project earned a Gold LEED certification for this and other innovations that are integrated into the design. This project is expected to be complete in 2016 and will welcome visitors from across Southeast Michigan, Northern Ohio, and Western Ontario. Also in 2014, with the help longtime friend to the refuge Richard Mills, a observation deck was constructed to facilitate wildlife observation. This deck was designed using recycling plastic lumber and stainless steel hardware, creating a low-maintenance and high-design feature that will be around for many years to come. Horizontal platforms on all sides provide a space to mount a camera or balance a sketchbook. Eventually, a winding path from the Visitor Center will make this experience fully accessible and complete the awe-inspiring experience of Raptor Point. Finally, with the help of volunteers from Lowes, construction began on two boardwalks that will soon connect visitors from the West Jefferson greenway trail all the way up to the Visitor Center. These boardwalks are being constructed from recycled plastic lumber that, along with reducing maintenance, demonstrates the refuge's commitment to sustainability and recycled materials. These boardwalks feature a triangular overlook that will eventually feature interpretive signage detailing the Monguagon Creek Daylighting Project that detains and treats rainwater urban runoff in a constructed wetland system. These boardwalks are a great example of efforts at the refuge to utilize local volunteers to improve public access while also building capacity and support.

Wayne County Native Plant and Backyard Composting Demonstration Site: WQMD continues to maintain a native plant and backyard composting demonstration site at its Commerce Court office location in the City of Wayne. This site was created in 2003 as a staff training effort, a public education effort and as a habitat restoration effort. In 2014, the site continues to serve as a monitoring location for the WQMD and FOTR and was the launch point for the Friends of the Rouge/City of Wayne Lower Rouge River Canoe Race and Canoe Trip in conjunction with the 2nd Annual Rouge-A-Palooza.

Nankin Mills Interpretive Center: Bluebird and wood duck nesting boxes that were established by Eagle Scouts and Girl Scouts are being maintained in the Grow Zone areas, Holliday Nature Preserve and Bennett Arboretum. WCDPS - Naturalists and volunteers continued to maintain the (mostly) native plant butterfly garden at the Nankin Mills site. See other projects identified under WCPEP#31 above.

Crosswinds Marsh Wetland Interpretive Preserve:

- Crosswinds Naturalists continue to monitor, clean and repair existing 50 blue bird nesting boxes installed by an Eagle Scout.
- Crosswinds Naturalists continue to monitor, clean and repair existing 28 bat houses.
- Crosswinds Naturalists continue to implement an invasive species control program for autumn olive, phragmites, purple loosestrife and Eurasian water milfoil.
- Crosswinds Naturalists continue to implement the control program for cottonwood trees and other woody vegetation in the wet meadow and wildflower areas.
- Crosswinds conducts prescribed burns bi-annually on two threatened and endangered plant species sites.
- Crosswinds maintains no mow barriers between the wetlands and picnic/public use areas.
- In 2015, Crosswinds in cooperation with the Nature Conservancy will begin efforts to restore Lake Plain Prairie remnants located at Crosswinds.

Bennett Arboretum Restoration: Parks Division Maintenance Staff and Design Office personnel continued efforts in 2014 to clear invasive species from four of the historic tree collections. Parks anticipates maintenance clearing in 2015 and adding to trees to the collections and labeling the trees. This will allow residents the opportunity to enjoy the arboretum, be outside in nature, and also learn about the trees.

Elizabeth Park Greenway and Shoreline Restoration Project: This project includes the implementation of a non motorized greenway and shoreline restoration at Elizabeth Park in Trenton, MI. The first key component is the proposed construction of the greenway which will be a 10 ft. wide pathway along the park canal's entire 4000 ft. western shoreline. The pathway would serve as a connector from the Grosse Ile Parkway to downtown Trenton. The other focus of this project is the proposed shoreline stabilization. The canal is the final section of shoreline at Elizabeth Park in need of restoration and stabilization. This includes the removal of invasive plant species, naturalization, and use of soft engineering design applications that will protect sensitive ecosystems, improve natural habitat and as well as minimize flooding and erosion. This restoration effort will replace natural habitat for a variety of fish and wildlife species that has been lost over time. Habitat restoration will be achieved by systematically removing approximately 1.9 acres of invasive plant species and by adding 4.9 acres of shoreline and upland habitat. This project will also provide access for canoeing and kayaking along the canal and there will be five designated fishing locations. By introducing access to the canal, we are also promoting the Detroit Heritage River Water Trail. A Michigan Natural Resources Trust Fund grant for this project was received and the project is slated for construction in the summer of 2015.

Ellsworth Boardwalk and Trailhead Parking: WC Parks has a pending grant award for a boardwalk and parking area that will provide universal access to the Holliday Nature Preserve. A 460 foot boardwalk will allow visitors to explore the nature preserve. The Ellsworth entrance

area often floods making the Preserve inaccessible and unusable for many of the Naturalist Programming activities scheduled out of Nankin Mills. The project will included constructing a 30 car parking lot and will include bioswales to manage the stormwater generated by the parking lot.

River Day Participation (WCSWM #28)

See activities reported under WCPEP #14.

Assessment of County Implemented Flood Control Projects (WCSWM #29)

The Wayne County Drain Commissioner annually receives petitions for drain improvement projects. These projects can include drain improvements for flood control projects. Drain improvement petition projects include natural channel design and other storm water management measures where practical and where allowable under the Michigan Drain Code.

Other Activities and Projects

Other activities and projects of importance to watershed management, pollution prevention and habitat restoration include active water-based recreation use within Wayne County Parks, summarized below for 2014:

- 322 people participated in Crosswinds Fishing Derby events
- Approximately 3,800 people went fishing at Crosswinds Marsh in 2014.
- 555 people participated in guided interpretive canoe trips at Crosswinds.
- Repairs/reconstruction of one of the fishing docks and on sections of the 1.8 miles of boardwalk at Crosswinds Marsh was completed in 2014.
- Canoes & paddleboats rental continued on Newburgh Lake in Hines Park.
- Planning the locations of kayak/canoe launches in the Lower Rouge Parkway along the Lower Rouge River is underway; these projects are proposed for implementation in 2016-2017.

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SECTION 5

WAYNE COUNTY WATERSHED PLANNING

SUMMARY OF ACTIVITIES

The following Watershed Planning activities were completed by Wayne County during the reporting period **January 1, 2014 – December 31, 2014** in compliance with the County's Certificate of Coverage MIG610040 under the MDEQ General Storm Water Discharge Permit MIG619000.

Activities in the Rouge River Watershed

As described below, Wayne County is a very active participant in watershed planning and management activities in the Rouge River watershed.

Alliance of Rouge Communities: In December 2005, the Rouge watershed communities and counties formed the *Alliance of Rouge Communities* (ARC) to guide the Rouge River restoration into the future as the federal grant funding diminishes. The ARC is a legal public entity under the Watershed Alliance Act, Public Act 517 of 2004, and succeeded the voluntary Rouge River Watershed Local Management Assembly which operated 2002-2005. The ARC operates under approved bylaws and has an annual budget on the order of \$600,000 per year, used to fund: 1) watershed-wide monitoring; 2) sampling data analyses and reports; 3) the coordination of public education and involvement activities, all of which are required by local units of government under the Michigan watershed-based storm water permit. In addition, the funds are used to provide technical guidance and facilitation for the ARC its committees and the seven Subwatershed Advisory Groups. Wayne County served as fiduciary for the ARC during 2006, 2007 and 2008 under inter-agency agreements. Fiduciary duties for 2009 were transferred to the ARC via an interagency agreement executed in December 2008. For the period 2008-2014, Wayne County executed inter-agency agreements with the ARC on an annual basis to provide Rouge Project grant funding to the ARC.

Much of the work of the ARC is happening through the standing committees: Finance, Technical, Public Involvement/Education (PIE) and Organization. Wayne County was a founding member of the ARC, is an active participant on every committee, serves as chair of the Organization Committee, and provides many of the services being provided to ARC members. Wayne County participated in virtually every activity described in the *ARC Executive Director's 2014 Annual Report* which is available at www.allianceofrougecommunities.com.

In addition, Wayne County continues to take a leadership role in implementing the *Watershed Management Plan for the Rouge River* (available at <http://www.allianceofrougecommunities.com>).

Rouge River Advisory Council (RRAC): Wayne County staff continued their active participation on the RRAC and any subcommittee that may be active. During 2014, Wayne County staff continued to actively participate in on-going efforts of the group. This activity included coordinating and providing letters of support to numerous Great Lakes Restoration Initiative grants submitted by Rouge Watershed stakeholders as well as active participation and support to the RRAC's Habitat Priority Projects Work Group.

Wayne County Rouge River National Wet Weather Demonstration Project. In 2014, federal support of Wayne County's Rouge River National Wet Weather Demonstration Project (Rouge Project) was completed. Since its inception in 1992, there has been continued and substantial progress toward restoring the Rouge River and preserving it for future generations. *Rouge River Progress Reports* were published annually and an overall project summary was prepared in 2014. All reports are available from www.rougeriver.com.

Many projects completed with Rouge Project funding in 2014 focused on the variety of topics needed to restore the river: getting people involved, implementing flow and pollution controls, and improving access to recreational opportunities along the river. Watershed communities, businesses and residents are involved in ways big and small, and have formed innovative partnerships, such as the Alliance of Rouge Communities (ARC), to leverage ideas and resources to achieve common environmental goals. Water quality continues to improve, and the numbers and variety of wildlife living in the river and the watershed increases each year.

Activities in Wayne County Downriver Watersheds

The Inter-Municipality Committees (IMCs) for the Ecorse Creek Watershed, Combined Downriver Watershed, and Lower Huron River Watershed successfully operated for over two years under the Memoranda of Agreement establishing the Committees. The Inter-Municipality Committees Act, PA 1957, No. 200 (MCL 123.631, et seq.) under which the existing IMCs were formed does not provide for implementing some of the required activities under the watershed management plans. There was broad interest in forming a permanent watershed organization under the new Watershed Alliance legislation, and Wayne County facilitated a subcommittee to draft bylaws. In October 2006, the 14th eligible entity approved the bylaws, officially forming the Alliance of Downriver Watersheds (ADW). The first meeting of the new ADW was held on January 18, 2008.

Wayne County was a founding member of the ADW, is an active participant on every committee, has served as ADW fiduciary since its inception, and provides many of the services being provided to the ADW. Wayne County and ADW activities are summarized in the report, *Alliance of Downriver Watersheds, 2012-2014 Bi-Annual Summary of Activities/Accomplishments* which is available at www.allianceofdownriverwatersheds.com.

Activities in the Lake St. Clair (Direct Drainage) Watershed

Wayne County actively participates in the Lake St. Clair Watershed Advisory Group facilitated by the Macomb County Public Works Office. A Watershed Management Plan developed to meet Clean Michigan Initiative and 319 requirements was submitted to MDEQ on November 1, 2006 and approved in June 2008. In 2010, Wayne County executed the Operating Agreement for the Lake Saint Clair Watershed group, formally committing County participation in the group. Throughout 2014, WQMD staff continued to work with Macomb County, the consultant and the other watershed partners to initiate updating of the *Lake St. Clair Direct Drainage Subwatershed Plan*, available online from <http://www.crwec.org/watershed/subwatersheds/lakestclair>. The first step, developing and implementing the online Public Participation Plan online survey tool, was in operation in 2012 and a draft report on the analysis of the survey was presented to members in October 2013 by the Clinton River Watershed Council. Analysis of the Lake St. Clair (Direct Drainage) Watershed was complete in January 2014. The report covered the time period from March 30, 2012 through July 9, 2013 and included 432 respondents, with the vast majority being

residents. The most significant issues identified by the respondents were beach closures due to high bacteria levels followed by contaminated sediments and loss of wildlife habitat and natural areas. The survey revealed that the three highest practices that residents did to reduce polluted storm water runoff were, bring car to a car wash, sweep fertilizer and grass clippings off of sidewalk and plant trees. Wayne County participated in all but one of the group's 2014 meetings. General areas of discussion were the storm water permit, grant ideas, public participation plan and the future needs of the group.

Activities in the Detroit River Area of Concern

Wayne County participates in the Detroit River Area of Concern Public Advisory Committee, whose efforts are targeted to the goal of removing the Loss of Fish and Wildlife Habitat Beneficial Use Impairment in the Detroit River. Information about this effort, including Detroit River Area of Concern Public Advisory Committee remedial action plans, updates and progress reports are available on the U.S. EPA's Great Lakes Area of Concern website: <http://www.epa.gov/glnpo/aoc/detroit/index.html>. Progress reports for restoration projects managed by the Friends of the Detroit River (FDR) are available online at the FDR website, <http://www.detroitriver.org>.

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SECTION 6 LIST OF ATTACHMENTS

Wayne County Annual Report: January 1, 2014 – December 31, 2014

SECTION 1: DETERMINATION OF EFFECTIVENESS

- The *2013 Rouge River Ecosystem Monitoring and Assessment Report*, along with reports from previous years, is available online at: http://www.allianceofrougecommunities.com/PDFs/technical/2013_RREMAR_FINAL.pdf
- Rouge River Macroinvertebrate Data Trend Graphics
- Alliance of Downriver Watersheds (ADW) Macroinvertebrate Data Trend Graphics
- Alliance of Downriver Watersheds 2014 Monitoring Report will be available online at: <http://www.allianceofdownriverwatersheds.com/initiatives>

SECTION 2: ILLICIT DISCHARGE ELIMINATION PLAN

- Table 2.1: Facilities with Confirmed Corrections (2014)
- Table 2.2: Facilities with Outstanding Illicit Discharges (2014)
- Alliance of Rouge Communities (ARC) Outfall Map (to be included in Section 6 of 2015 Report)
- Updated Wayne County Storm Water System Map (to be included in Section 6 of 2015 Report)

SECTION 3: PUBLIC EDUCATION PLAN

- The *Resource Recovery Guide* as well as additional information regarding Wayne County's Household Hazardous Waste Collection events can be found at <http://www.waynecounty.com/doe/1062.htm>.
- WQMD pollution prevention public education materials can be found at <http://www.waynecounty.com/doe/1130.htm>
- Information on Wayne County's Green Schools Program is available online at <http://www.waynecounty.com/doe/1136.htm>
- Information on the numerous public education and involvement activities of Friends of the Rouge activities completed with Wayne County's active support is available at <http://www.therouge.org/>

SECTION 4: ADDITIONAL STORM WATER MANAGEMENT ACTIVITIES

- Wayne County Storm Water Management Program materials are available online at: <http://www.waynecounty.com/doe/1122.htm>

SECTION 5: WAYNE COUNTY WATERSHED PLANNING

- Alliance of Rouge Communities *Executive Director 2014 Annual Report* is available online at: <http://www.allianceofrougecommunities.com>. The updated *Rouge River Watershed Management Plan* is also available at this website.

- Annual *Rouge River Progress Reports* are available online at: www.rougeriver.com
- *Alliance of Downriver Watersheds - 2014 Summary of Activities/Accomplishments* available online at: <http://www.allianceofdownriverwatersheds.com>. The *Watershed Management Plans* for Ecorse Creek, Combined Downriver and Lower Huron River are also available at this website.
- *Lake St. Clair Direct Drainage Subwatershed Plan* is available online from <http://www.crwc.org/watershed/subwatersheds/lakestclair>

Additional materials and documentation can be made available to substantiate statements made in this report. Contact Mr. Noel Mullett at (734) 326-4486 or email him at nmullett@waynecounty.com with any questions or inquires regarding the content of this report.