



Wayne County, Michigan

Annual Report

For Reporting Period January 1, 2009 – December 31, 2009

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

Submitted to:

**State of Michigan Department of Natural Resources and
Environment - Water Bureau**

April 2010

WAYNE COUNTY
Certificate of Coverage MIG610040
General Storm Water Discharge Permit (MIG619000)
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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, maintained by Wayne County's Rouge River National Wet Weather Demonstration Project (Rouge Project), is available at www.rougeriver.com/database. There are several publications that present trend analysis for the monitoring data, including the *Rouge River Ecosystem Monitoring and Assessment Report* (RREMAR), published annually by the Rouge Project and the Alliance of Rouge Communities.

A summary of the water quality trends in each of the seven Rouge subwatersheds, based on water quality data collected through 2008 and ecosystem health data collected through 2009, is presented in Table 1. From the table, 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*, fish communities, stream habitat, macroinvertebrates, and amphibians, with the following exceptions: Lower 1 for dissolved oxygen; the Middle 1 and Middle 3 for fish community; and the Main 1/2, Main 3/4, Middle 3 and Lower 2 for amphibians. In particular, trend analysis indicates stream flow to be improving or has not changed in 7 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 2009, seven to eight species of amphibians monitored were observed in 3 of the 7 watershed management areas.

Wayne County Water Quality Management Division (WQMD) continued its partnership with the Friends of the Rouge to implement environmental indicator monitoring in the Rouge River watershed.

Rouge Macro-Invertebrate Monitoring: Spring and fall 2009 macro-invertebrate monitoring occurred at numerous locations. In the fall, 47 sites were monitored (26 by Friends of the Rouge (FOTR) volunteers and 21 by WQMD). Figure 1 identifies the site locations and the Fall 2009 scores for each site. A summary of the site scoring is as follows:

- Three sites scored Excellent,
- Fifteen sites scored Good,
- Twenty-six sites scored Fair, and
- Three sites scored Poor.

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	↑↑ 8/9	⇔ 1/2	↑↑ 7/8	↑↑ 11/14	⇔ 3/6	↑↑ 7/8	↑↑ 3/3
Frogs & Toads¹⁰	↓↓ 4-5	↓↓ 4-5	↑↑ 7-8	↑↑ 7-8	↓↓ 4-5	↑↑ 7-8	↓↓ 4-5

- 1) Trend arrow is based on frequency of high flow decreasing as reported in *2008 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 *2008 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 the 2005 MDEQ Macroinvertebrate Assessment Survey. Up arrows were given if a majority of the sites being rated received an “Acceptable” or better.
- 10) Arrow indicates either an increase or decrease in number of species heard in the watershed from the prior year or minimum 7-8 species heard in the watershed during Friends of the Rouge 2009 Frog & Toad Survey.

Figure 1: Rouge River, Benthic Monitoring Sites and Scores, Fall 2009

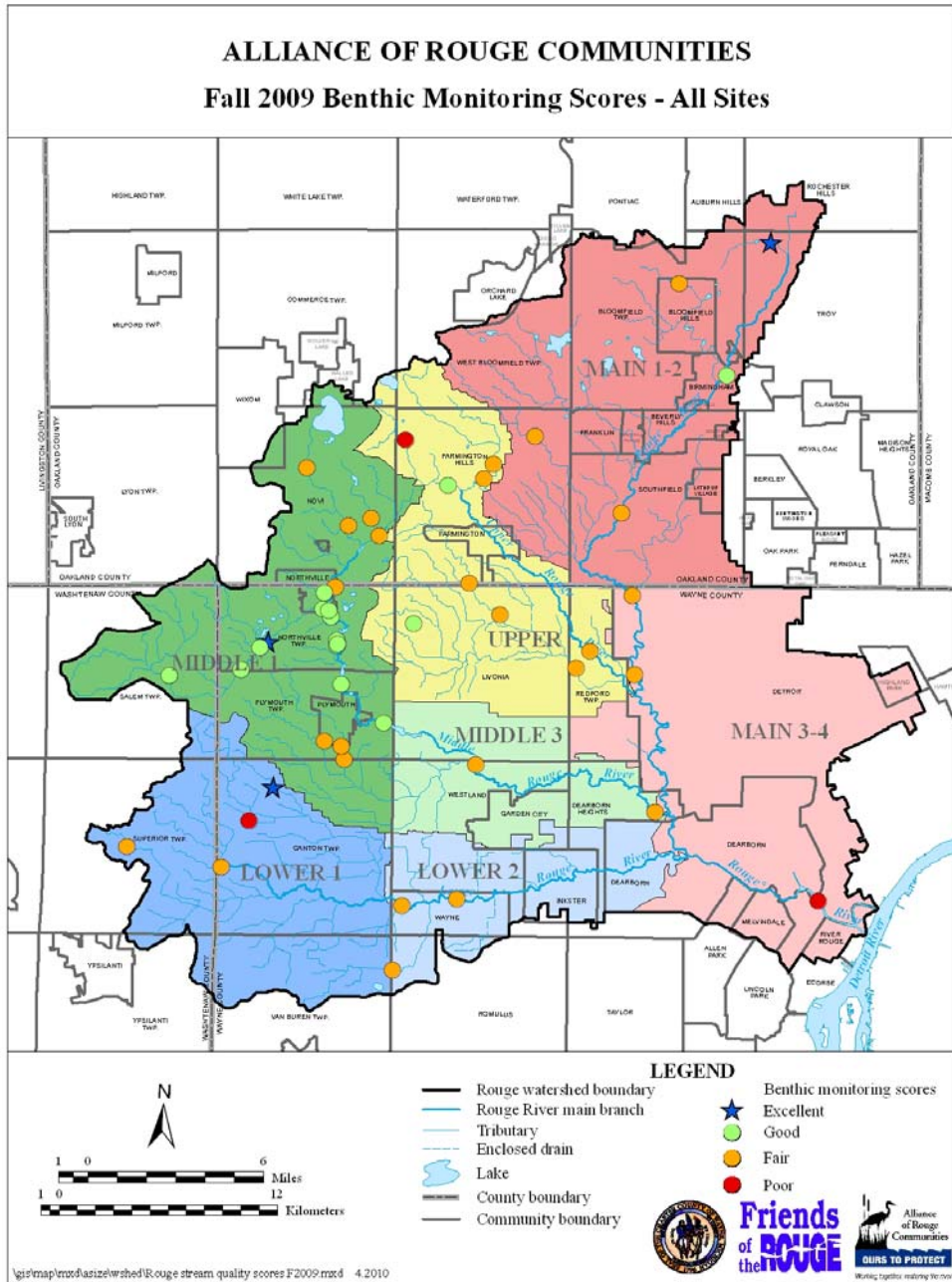
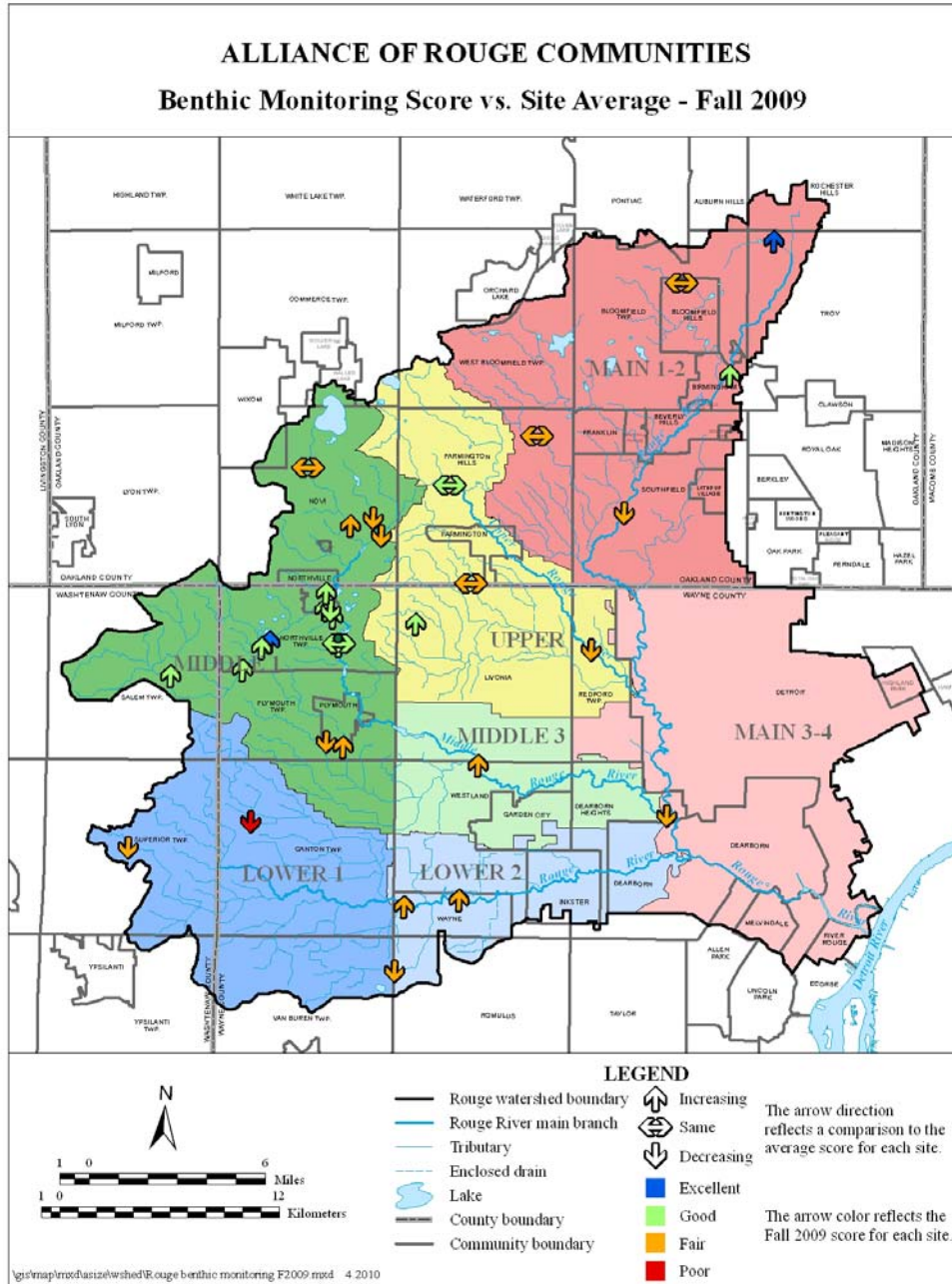


Figure 2: Rouge River, Benthic Monitoring Score Trends, Fall 2009



Thirty-two of the sites sampled have three or more years of data so the scores can be compared to the average site score. Figure 2 identifies the score trends by comparing the Fall 2009 score to the site's average. The trend results are summarized as:

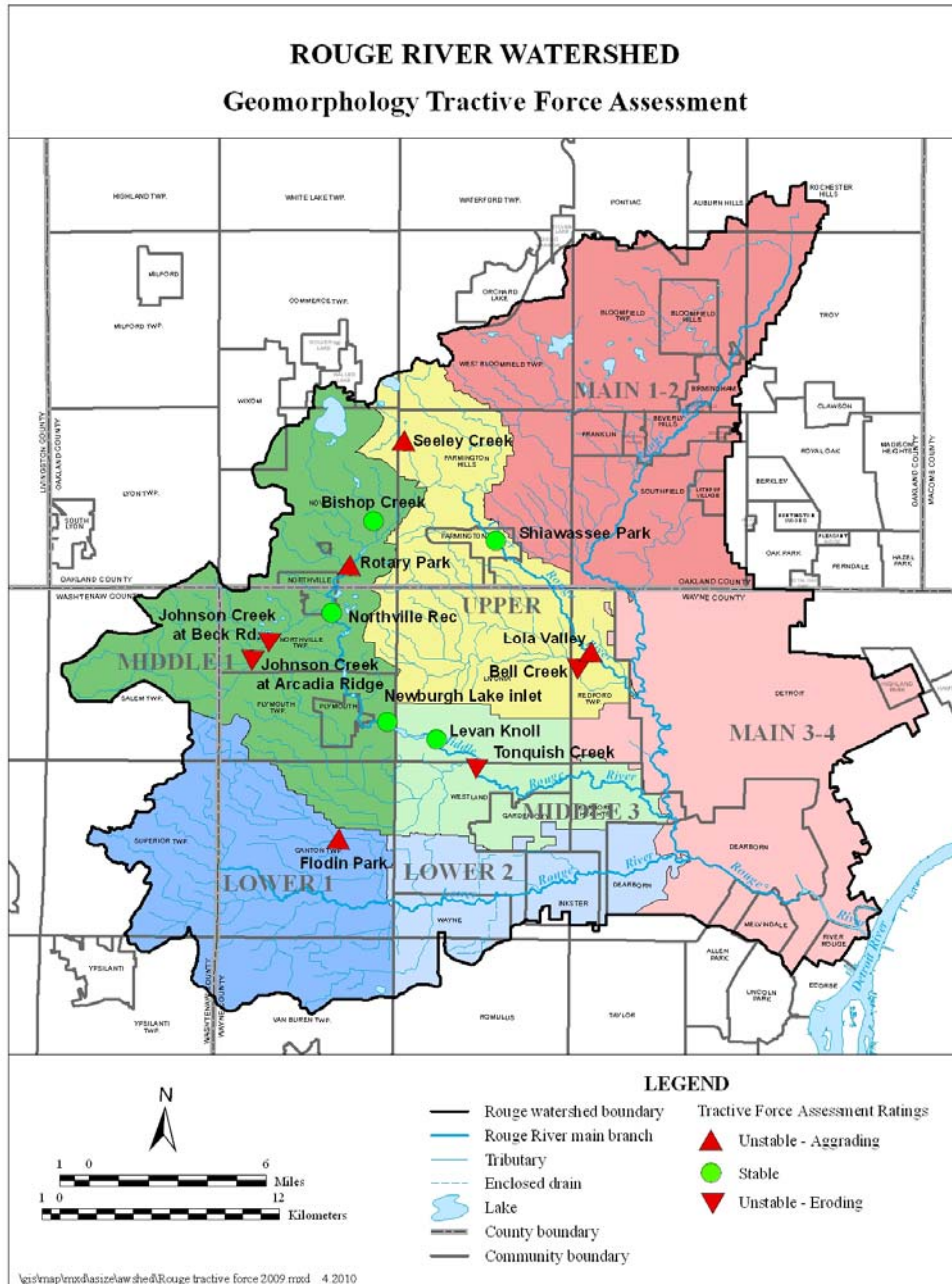
- A majority of the sites scored at or near their site averages (no decline);
- Six sites (five on the Johnson Creek, a Middle Rouge tributary, and one on the Bell Creek, an Upper Rouge tributary, scored above their site averages; and
- Three sites, one Fellows Creek and one Fowler Creek site (Lower Rouge tributaries), and one Walled Lake branch site (a Middle Rouge tributary) scored below their site averages.

Another water quality indicator is the type of “bugs” found in the river. Monitoring results for 2009 were:

- Clubtail dragonflies, a member of the dragonfly family Gomphidae which is very sensitive to water quality, were found for the third time in the Rouge at Sprague Creek in Troy, a tributary near the headwaters of the Main Rouge River. A Dobsonfly, or Hellgrammite, was also found at this site. The Dobsonfly is a member of the family Corydalidae, also very sensitive to water quality.
- Stoneflies, a macro invertebrate species whose presence indicates high water quality, were found at 13 of the 23 sites sampled under *FOTR Winter Stonefly Search*, January 24, 2009. WQMD team leaders and volunteers found stoneflies at multiple locations on the Middle Rouge River, and at Springbrook Recreation Area in Edward Hines Parkway (southeast of M-14). This is the furthest downstream in the main branch of the Middle Rouge River that stoneflies were found during this survey and since sampling began. In addition, patterned stoneflies (family Perlodidae), an aquatic insect very sensitive to water quality, were found at a new site on Fellows Creek (a Lower Rouge tributary) and at a Johnson Creek site.
- Pronggill mayflies, another insect family sensitive to water quality, were found at two Johnson Creek sites.
- Finger-net and long-horned case maker caddis flies, water quality-sensitive families, were also collected at several sites this fall.

Rouge River Geomorphology Assessments: In 2008, the WQMD/FOTR team initiated geomorphology assessments in the Rouge watershed based on training from the Michigan Department of Natural Resources and Environment (MDNRE). The training was provided consistent with the Quality Assurance Project Plans for the *Middle Rouge Riparian Corridor Management Project* and the *Grow Zones Across the Alliance of Downriver Watersheds Project* funded under the Clean Michigan Initiative. Geomorphologic assessments were conducted at six sites during 2008 as part of the training program. In 2009, FOTR, WQMD and MDNRE staff revisited four sites across the watershed where geomorphic assessments were performed and scour chains were installed in the streambed. The scour chains are used to estimate the depth of sediment deposition or erosion at a stream cross section. Three of the sites appeared stable. One site located on the Upper Rouge in Farmington, was showing sediment accumulation (aggradation) at the scour chain installation. The slope and cross section were resurveyed in September 2009 and another scour chain installed.

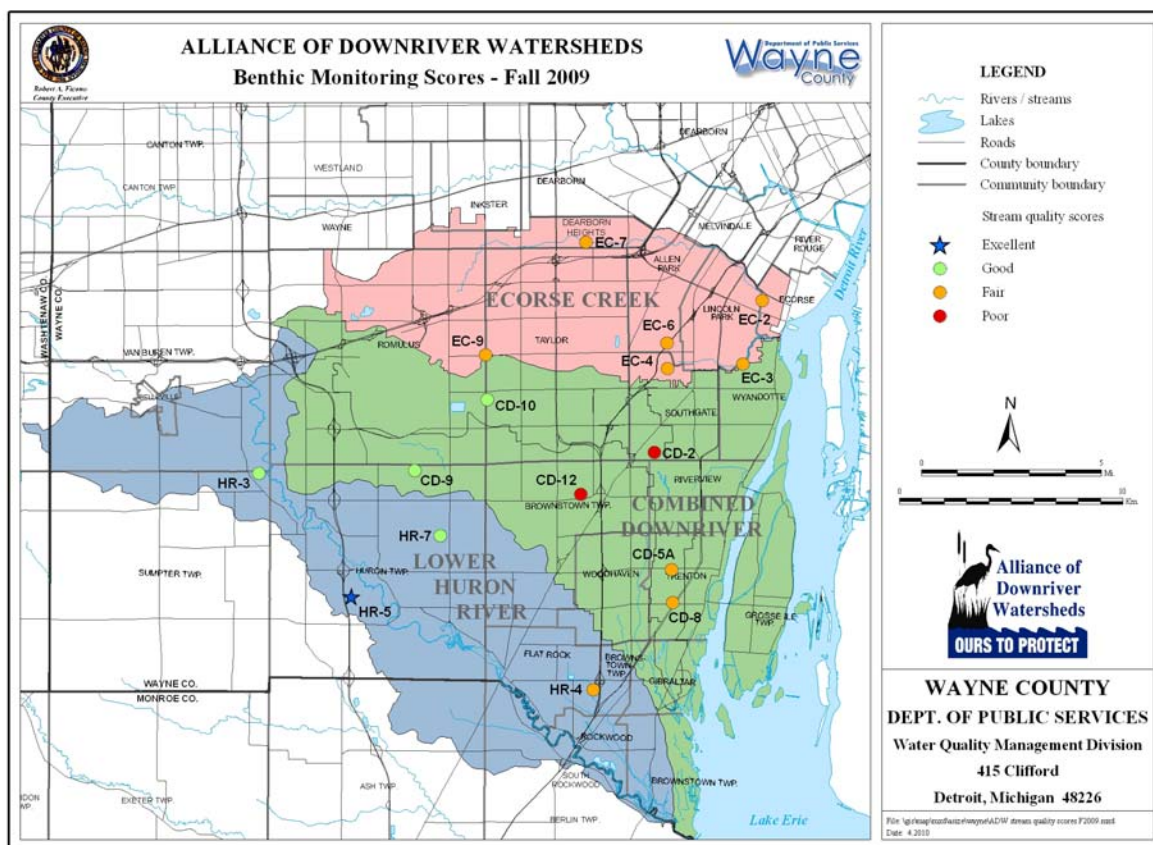
Figure 3: Rouge River Geomorphology Assessment Status - 2009



WQMD staff completed geomorphology studies at two Rouge River sites (the Upper Rouge at Lola Valley park and the Johnson Creek at Beck Road) in 2009. The tractive force ratio, which estimates stability of a stream based on a ratio calculated from the bankfull depth, channel slope and the size of particles found on the stream bed, was calculated for both sites. The tractive force ratio for the Upper Rouge site is much lower than 1, which suggests the stream at this location is aggrading. The Johnson Creek site tractive force ratio was over seven, which suggests that the stream at this location has “excess energy” and is capable of creating channel erosion. Figure 3 identifies the location of the sites and the scores for each site based on the calculated tractive force ratio for the site.

Alliance of Downriver Watersheds (ADW). During 2009, Wayne County continued its partnership with the *Downriver Citizens for a Clean Environment “Stream Team”* to implement macroinvertebrate monitoring at 23 locations in the downriver watersheds of Ecorse Creek, Combined Downriver and the Lower Huron River watersheds. Work is underway with the Huron River Watershed Council (HRWC), the local communities and other watershed partners such as the Alliance of Downriver Watersheds (ADW) to expand the monitoring locations and monitored parameters to establish an ecosystem monitoring program for measuring progress in these watersheds.

Figure 4: Wayne County Downriver Watersheds, Benthic Monitoring Site Scores, Fall 2009



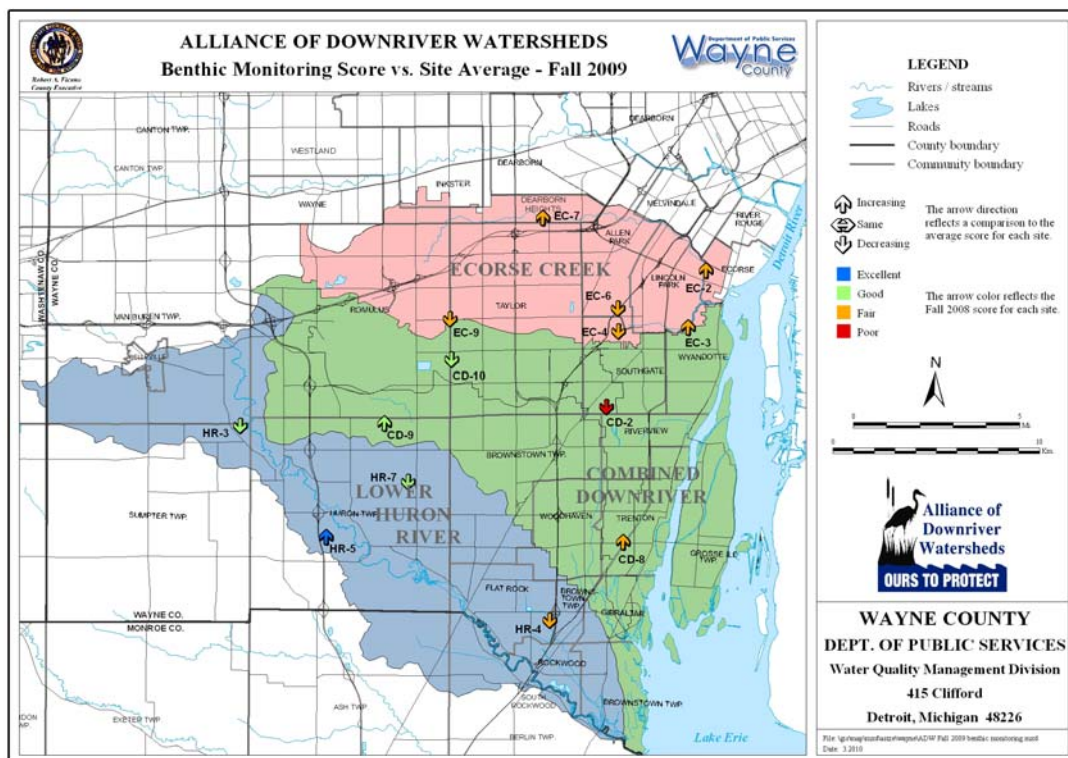
ADW Macro-Invertebrate Monitoring: The HRWC initiated its volunteer macroinvertebrate monitoring program in the Lower Huron River in 1996. WQMD and the Stream Teams began monitoring in the Combined Downriver and Ecorse Creek watersheds in 2004. Figure 4 identifies the sites and the site scores. The 2009 ADW fall water quality monitoring scores range as follows:

<u>Watershed</u>	<u>Macro-Invertebrate Monitoring Results</u>
Ecorse Creek	Six sites monitored: all sites scored fair
Combined Downriver	Six sites monitored: good to poor scores
Lower Huron River	Eleven sites monitored: excellent to fair scores

Figure 5 identifies the score trends by comparing the Fall 2009 score to the site's average score. The trend results are summarized below:

- Two of four Combined Downriver sites scored below their site average, while two scored below the site average.
- Three of the Ecorse Creek sites scored above their site average, while three scored below the site average.
- Three sites scored slightly below their site average, while one scored above the site average.

Figure 5: Wayne County Downriver Watersheds, Benthic Monitoring Score Trends, Fall 2009

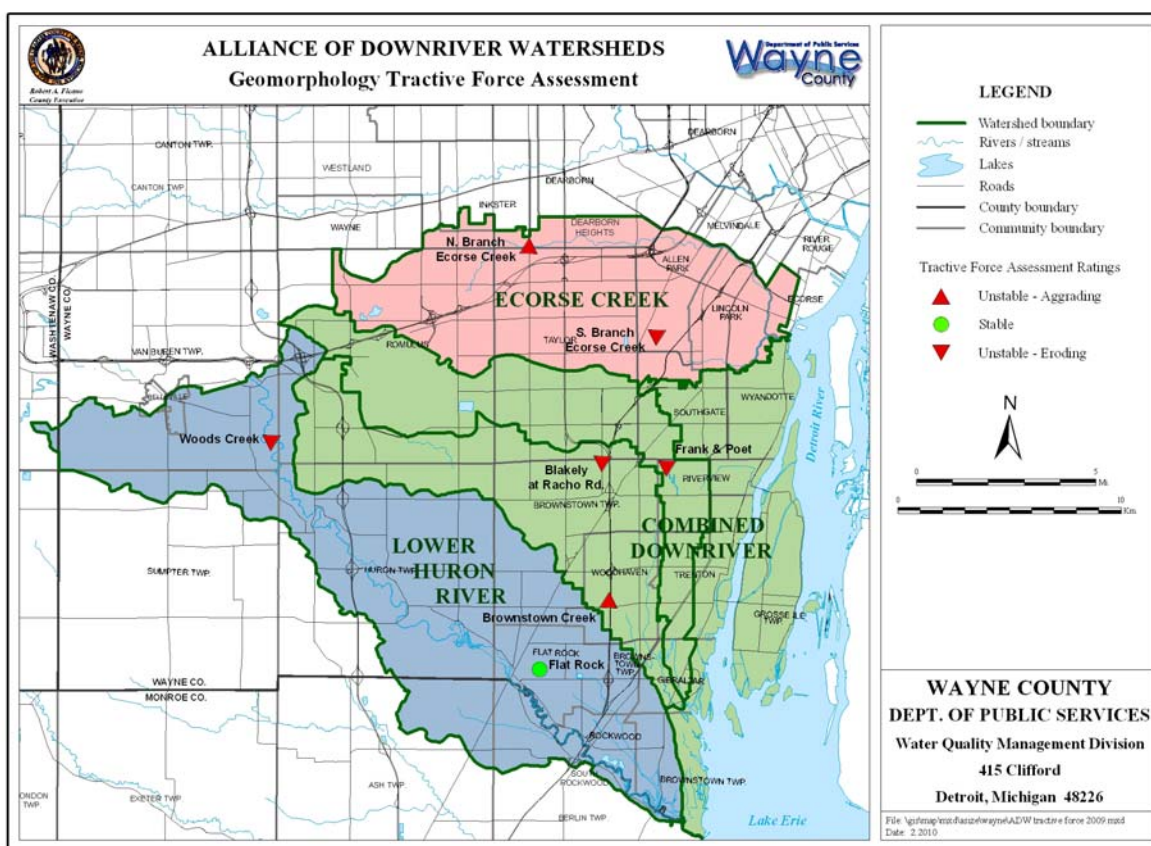


Another water quality indicator is the type of “bugs” found. Sensitive families were observed in each ADW watershed in fall 2009 as summarized below:

- A Dobsonfly or Hellgrammite (Family Corydalidae), a very sensitive aquatic insect, was found at one site in the Lower Huron River watershed;
- Case maker caddis flies sensitive to water quality (the Northern Case maker caddis (Limnephilidae) and Giant case maker caddis (Phryganeidae)) were found at several Lower Huron, Ecorse Creek and Combined Downriver sites.

ADW Geomorphology Monitoring: Using stream channel geomorphology field measurement techniques acquired during Rouge River watershed work, Wayne County and HRWC staff assessed stream channel stability within the Combined Downriver, Ecorse Creek, and Lower Huron River Watersheds and began establishing baseline data across the watersheds. This is being done to geospatially assess channel stability as well as assess stabilizing or destabilizing trends over time. As shown in Figure 6, this analysis was done at seven sites across the watersheds, with four sites found to be unstable with eroding characteristics, two sites were unstable with aggrading characteristics and one site was stable. A complete discussion of the process, findings and conclusions is presented in the Evaluation Report for the Clean Michigan

Figure 6: ADW Geomorphology Assessment Status – 2009



Initiative Grant *Grow Zones Across the Alliance of Downriver Watersheds* (# 2006-0137), published in 2010.

ADW Flow Monitoring: Flow monitoring was conducted at seven sites within the Alliance of Downriver Watershed during 2009. Two sites were located in the Ecorse Creek watershed; one site along South Branch and one site at the United States geological Survey (USGS) gage station on the North Branch of Ecorse Creek. Data from this station was utilized for the streamflow analysis. WQMD collected data at three Combined Downriver sites: one on the Frank and Poet Drain, one on the Blakely Drain and one on the Brownstown Creek. The HRWC collected data at two sites in the Lower Huron River watershed. Monitoring involved the collection of continuous water level data at a fixed point using a pressure sensor, accompanied by regular discharge measurement across a range of flow conditions to calibrate water level to stream discharge. Discharge was measured during the growing season (roughly April through October) at seven sites over two years. Statistics are computed to determine the stream's flashiness, peak and base flows over that time period. These statistics will be used to assess trends over time with the goal being to realize decreases in the streams' flashiness and peak flows and increased base flows. The Evaluation Report for the Clean Michigan Initiative Grant *Grow Zones Across the Alliance of Downriver Watersheds* (# 2006-0137), available in 2010, contains a complete discussion of the methodology, findings and conclusions which are summarized in Table 2.

**Table 2: Flow Characteristics
Ecorse Creek, Combined Downriver, and Lower Huron River Watersheds**

Site	Drainage Area (sq. mi.)	Median Flow (cfs)	Peak Flow (cfs)	Flashiness
1. Frank & Poet	27	2.51	207	0.68
2. Blakely	32	2.31	78.0	0.53
3. Brownstown	27	2.45	77.5	0.70
4. SB Ecorse	12	4.98	22.0	0.23
5. NB Ecorse	18	1.1 (2.3)	99 (Sep '08) 162 (June '09) 182 (Dec '09)	1.01 (0.84)
6. Woods	21	1.78	44.8	0.31
8. Silver	7.9	NA	NA	NA

* The North Branch of Ecorse Creek has been gaged by USGS since 2002. Flow data reported in this table is for July-November, 2008-09 to be consistent with other sites. Long-term median and flashiness index are included in parentheses.

^ The Silver Creek site was established in August 2009. Insufficient discharge data has been collected for an accurate projection. Results are preliminary.

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 submitted to MDNRE in November 2006 and subsequently approved on June 27, 2008.

Information on the watershed management plan can be found at

<http://www.crowc.org/programs/phase2/subwatersheds/LSC.html>. The methods of assessing progress of watershed plan implementation are under development by the Advisory Group.

Wayne County was also an active participant in the Lake St. Clair Regional Monitoring Project. Information on this project can be found at <http://www.lakestclairdata.net>. This project was completed in 2008.

SECTION 2
WAYNE COUNTY
ILLICIT DISCHARGE ELIMINATION PLAN
SUMMARY OF ACTIVITIES

The following Illicit Discharge Elimination Plan (IDEP) activities were completed by Wayne County during the time period **January 1, 2009 – December 31, 2009**, in compliance with the County's Certificate of Coverage MIG610040 under the MDNRE General Storm Water Discharge Permit MIG619000. All activities were conducted County-wide, unless otherwise noted. Table 3 presents a summary of the results of Wayne County's IDEP.

Table 3: Environmental Concerns Investigated
January 1 through December 31, 2009

<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	186	NT
Water Quality Complaints into DPS-Water Quality Division	58	9
Drainage Complaints directly into DPS-Drain Office	200	
Complaints directly into DPS-Land Resources Division	126	0
<i>Subtotal, Complaints Handled</i>	384	9
Types of Environmental Concerns or Illicit Discharges Identified during Complaint Investigations (WQMD, FMD and LRMD)		
Grease/Oil/Fuel	10	4
Other Industrial Fluids	13	4
Sewage Related	5	1
Fallen Trees/Log Jams	76	
Odor	119	
Track Out	2	
Soil Erosion	5	
Debris	28	
Flooding	29	
Other Misc.	97	
<i>Subtotal, Complaint Investigation</i>	384	9
Emergency Spill Response		
Chemical AEA-92 spill/released and entered the storm and Tonquish Creek	1	1

Table 3 (Continued): Illicit Discharges Found Within Wayne County

Environmental Concerns Identified during Routine Field Operations	<i>Number Handled or Investigated</i>	<i>Number of Confirmed Illicit Discharges</i>
Sewage Related	1	1
Vactor Truck Discharge	1	
Sewer Odor	1	
Leafate	1	
Suspicious Discharge	3	1
<i>Subtotal, Field Operations</i>	7	2
Illicit Discharges Identified during Facility (Dye Test) Inspections		
Floor Drains		12
Material Storage		1
Trash Compactor		1
Inappropriate Floor Wash Water Disposal		4
Outdoor Power Washing (vehicles)		1
Outdoor Mat Washing		1
Roof conductor exposed to wastewater		1
Onsite Sewage Disposal System Failures (EHD)		28
<i>Subtotal, Facility Inspections</i>		49
Illegal Dumping Prevention/Cleanup	<i>Amount</i>	<i>Sites/Events</i>
Pollutant Load Reductions from Dye-Testing (WQMD)	45 lbs; 51,628 gals/yr	NA
Pollutant Load Reductions from OSDS Program (EHD)	26,864 lbs; 2,275,958 gals/yr	NA
Cleanup of illegal dump sites (LRMD - C.L.E.A.N. program)	2,893 cu yds; 6,395 tires	18
Computer/Computer Peripheral Waste Collection Days (3 days – LRMD)	129,460 lbs	3
Household Hazardous Waste Collection Days (4 days – LRMD)	651,400 lbs	4
Cleanup of material dumped on County property, street sweepings and catch basin spoils (DPS-Roads)	26,003 cu. yds.	4
TOTAL POLLUTION PREVENTED &/OR ILLICIT DISCHARGES IDENTIFIED	>834,633 lbs	90

NT = Not Tracked

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

EHD = Environmental Health Division

Leafate = Water that has taken on a dark color as a result of exposures to downed leaves

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 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, approximately 186 calls were handled through the WCDPS Environmental Hotline. Twenty-nine of these calls were referred to outside agencies. WCDPS responded to approximately 157 complaints or inquiries involving land or water pollution concerns. Approximately 10 of these inquiries were addressed by staff over the telephone, without need for a field investigation. The balance of calls, approximately 147, were transferred to WCDPS field operations staff in either the Land Resource Management Division (LRMD), the Facilities Management Division (FMD) or the Water Quality Management Division (WQMD). Citizen complaints regarding environmental matters are also received directly by these different divisions in WCDPS as well as by the Wayne County Environmental Health Division. These efforts are summarized below. The total number of hotline calls in 2009 were significantly lower than previous years as a result of a landfill controlling most of its odor issues under a MDNRE consent order. In 2009, each of the Wayne County communities with a storm water permit was given a supply of *24-Hour Hotline* brochures (approximately 200 each) and encouraged to promote the Hotline for reporting of illicit discharges.

Coordinated Complaint Response

The WQMD handled a total of 58 complaints during the reporting period. Of these, 37 were various illicit discharge related calls, five were fallen trees, three were ponding water/drainage issues, three were dust or noise issues, two were regarding drinking water quality, and eight others were miscellaneous concerns or information requests. Of the 58 complaints, 25 were referred to other agencies or County Departments, and 33 were investigated by WQMD. Of the 33 investigated by WQMD, 19 were fuel/oil/grease/or other industrial fluid, 3 were odor, noise and/or dust issues, two were sewage related, two suspicious discharges, one concerning storm drain clean out dewatering and storage, and six miscellaneous. Of these 33, nine were confirmed illicit discharges, with eight discharges removed and one discharge remaining under investigation.

The Land Resource Management Division received and responded to 128 complaints during 2009. The complaints were categorized as follows: odor - 119, track out - 2, soil erosion - 2, chemical spill - 1, other and miscellaneous - 4.

The Facilities Management Division handled a total of 200 complaints during the reporting period, categorized as follows: illegal dumping - 1, log jams/woody debris - 71, debris - 28, flooding - 29, standing water - 10, erosion - 3, other and miscellaneous - 58.

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 three watersheds: Rouge River, Ecorse Creek, and Combined

Downriver. Plumbing fixtures at 368 facilities were dye-tested, resulting in the identification of twelve illicit connections at two facilities. Illicit discharges were identified at eight facilities (Table 4). Table 5 provides a summary of the types of illicit connections and illicit discharges found by Wayne County during facility inspections for this reporting period. Table 6 presents a summary of illicit discharge investigations performed independently of facility dye testing activities. Table 7 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 2009 are eliminated. Wayne County's illicit discharge elimination effort prevents over 26,909 pounds of pollutants and approximately 2.3 million gallons of polluted water per year from entering Wayne County waterways. These pollutant loading reduction estimates include illicit discharges identified during all 2009 Wayne County illicit discharge investigations.

**Table 4: Wayne County Watersheds Facility (Dye Test) Inspection Summary
January 1 through December 31, 2009**

	Annual Total	Watershed			
		Rouge River Watershed	Ecorse Creek Watershed	Combined Downriver Watershed	Lower Huron Watershed
Number of Facilities Inspected	368	360	0	1	7
Number of Facilities with Illicit Connections	2	2	0	0	0
Number of Illicit Connections*	12	12	0	0	0
Number of Facilities with Illicit Discharges	7	7	0	0	0
Number of Illicit Discharges	9	9	0	0	0
Number of Environmental Concerns	2	2	0	0	0
Number of Facilities with Environmental Concerns	2	2	0	0	0
Number of Facilities with Confirmed Corrections	17	15	2	0	0
Number of Illicit Connections Corrected	21	17	4	0	0
Number of Illicit Discharges Corrected	7	7	0	0	0
Number of Environmental Concerns Corrected	4	4	0	0	0

* Nine floor drains and three Interior catch basins

Since the inception of the Illicit Discharge Elimination Program in 1987, Wayne County staff have inspected 8,858 facilities and identified 2,496 illicit connections at 611 facilities. WQMD confirmed corrections of illicit connections and illicit discharges at a total of 552 facilities through 2009. During the reporting period, corrective actions of identified illicit connections, illicit discharges, and environmental concerns were verified at 17 facilities. A list of these facilities is provided within Section 2.1 of the attachments. Confirmation of corrective action is pending at 24 facilities. Ten of these facilities are vacant, referred to the local community or appropriate state agency for enforcement action. A listing of these facilities and their status is also in Section 2.2 of the attachments. Illicit discharge facility inspection activity is summarized by watershed in the following subsections.

**Table 5: Types of Illicit Discharges Found Within Wayne County
During Facility (Dye-Test) Inspections January 1 through December 31, 2009**

<i>Illicit Connections</i>	<i>Percent of Total Identified</i>	<i>County Total</i>	Watershed		
			Rouge River	Huron River	Combined Downriver
Floor Drains	100	12	12	0	0
TOTAL		12	12	0	0
<i>Illicit Discharges</i>	<i>Percent of Total Identified</i>	<i>County Total</i>	Rouge River	Huron River	Combined Downriver
Outdoor Vehicle Washing	11	1	1	0	0
Inappropriate Floor Wash Water Disposal	44	4	4	0	0
Trash Compactor	11	1	1	0	0
Outdoor Mat Washing	11	1	1	0	0
Roof conductor exposed to waste water	11	1	1	0	0
Material Storage and handling	11	1	1	0	0
TOTAL	100	9	9	0	0

**Table 6: Wayne County Watersheds Illicit Discharge Investigation Summary
January 1 through December 31, 2009**

	Annual Total 2009	Watershed		
		Rouge River Watershed	Ecorse Creeked	Combined Downriver Watershed
Number of Onsite Sewage Disposal Systems (OSDS) with Illicit Discharges	32	NA	NA	NA
Number of Illicit Connections	0	0	0	0
Number of Illicit Discharges	5 ¹	0	0	5 ¹
Number of Environmental Concerns	0	0	0	0
Number of Illicit Connections Corrected	1 ²	0	1 ²	0
Number of Illicit Discharges Corrected	0	0	0	0

NA: Not Applicable as WCHD-EHD tracks OSDS by community and not by watershed

1. OSDS system from five homes discharging to a common cheater pipe, City of Taylor.

2. A misconnected sanitary sewer discharging to a County Drain served 179-unit mobile home park and nine homes. Confirmed corrected by visual inspection March 17, 2009.

Table 7: Summary of Illicit Connections and Estimated Pollutant Load Reduction to Wayne County Watersheds: January 1, 2009 through December 31, 2009

Parameter	Estimated amount of polluting material prevented from entering Wayne County Waterways annually in pounds*				
	Annual Loads	Facility Inspections			Failed OSDS
	Pounds/year	Rouge River	Huron River	Combined Downriver	
Surfactant	52	24	0	0	28
Potassium	134	20	0	0	114
Suspended Solids	4,644	1	0	0	4,643
Total Phosphorus	436	0	0	0	436
Total Solids	15,920	0	0	0	15,920
Total Organic Carbon	981	0	0	0	981
Ammonia	190	0.1	0	0	190
Biological Carbon Demand	4,643	0	0	0	4,643
Total Annual Pounds per Year	26,909	45.1	0	0	26,864
Flow (gallons/year)	2,327,586	51,628	0	0	2,275,958

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

Rouge Watershed Facility Inspections (Dye-Testing)

During the reporting period, WQMD performed 360 facility dye test inspections in the Rouge River watershed. Dye testing was performed in the communities of Garden City, Livonia, Plymouth and Inkster. Twelve illicit connections were found at two facilities. Nine illicit discharges were discovered at eight facilities. WQMD staff confirmed corrections of 21 illicit connections and seven illicit discharges at 15 facilities. Communities where follow up inspections were performed are: Canton Township, Dearborn Heights, Garden City, Livonia, Northville, Redford Township, Wayne, and Westland. Three new illicit connections, interior floor drains, were found at one facility in the City of Wayne during a follow up inspection. There are 21 facilities with outstanding illicit discharges in the Rouge River watershed.

Ecorse Creek Watershed Facility Inspections (Dye-Testing)

During the reporting period, WQMD performed follow up facility inspections to confirm corrections of outstanding illicit connections and discharges within the Ecorse Creek watershed. Four illicit connections were corrected at two facilities corrected, one in Dearborn Heights and one in Southgate. There are two facilities with outstanding illicit discharges located within the Ecorse Creek watershed, one in Romulus (currently vacant) and one in Taylor.

Combined Downriver Watershed Facility Inspections (Dye Testing)

Seven facilities in the communities of Woodhaven, Grosse Ile, Riverview, and Gibraltar were dye tested during 2009. None of these facilities had illicit connections. One facility with outstanding illicit connections was visited to determine the status of illicit connections. This facility, located in Romulus, was vacant at the time of the inspection.

Additional Investigation on Behalf of Communities:

Lower Huron River Watershed

WQMD, under contract with one community and a school district in the watershed, inspected two public facilities. The Flat Rock Community Center and the Woodhaven-Brownstown School District fleet maintenance facility were dye tested, and no illicit discharges or connections were discovered at either facility.

Ecorse Creek Watershed

City of Lincoln Park

The correction of the Lincoln Park Mobile Home Village illicit connection was confirmed in 2009. This illicit connection discharged sewage from 170 mobile home sites and nine homes to the LeBlanc Drain. It is estimated that eliminating these illicit connections prevents approximately 9,497,318 gallons of polluted water from entering the Ecorse Creek annually.

City of Allen Park

WQMD received a complaint referral from WCDPS-FMD concerning black colored water in the North Branch of Ecorse Creek in Allen Park. WQMD investigated this complaint and verified the discoloration and collected a water sample, which was tested for tannin/lignin content. Elevated tannin/lignin concentrations are associated with breakdown of leaves and other vegetative material. The tannin/lignin concentration in this sample was 1 parts per million (ppm). Flow data from the USGS gage station showed that a large discharge of undetermined origin took place on the North Branch 48 hours prior to the complaint. The discharge appears to be from the breakdown of leaves and vegetation in the creek. The complaint was closed.

City of Allen Park

WQMD staff received an anonymous complaint concerning a paving contractor dumping broken asphalt into Ecorse Creek in the City of Allen Park. WQMD investigated and did not find evidence of illegal dumping. The complaint was closed.

Cities of Allen Park and Taylor

WCDPS-FMD and WQMD investigated to determine the cause of a suspicious condition in the Reek Drain. FMD noticed a sheen and black odorous material in open sections of the Reek Drain in Taylor and Allen Park. WQMD performed several investigations of the affected area, including collecting water samples in the selected areas of the Drain. WQMD staff performed wet weather sampling as part of the Reek Drain investigation in July 2009. The wet weather event generated 0.59 inches of rain over 48 hours in the project area. Eight locations along the Reek Drain were sampled, including two unknown outfalls discharging into the Reek Drain on the east side of Pelham Road in Allen Park. Six samples were collected at various sites in the City of Taylor. The investigation of this drain is ongoing into 2010.

City of Romulus

WQMD performed a joint inspection with Wayne County Department of Public Health, Environmental Health Division (EHD) at a septage facility in the City of Romulus. This investigation was in response to an anonymous complaint received by the County's Inspector

General. The anonymous complaint alleged the facility was illegally dumping septage into storm sewers and nearby surface waters. WQMD and EHD performed a survey of the facility and adjacent storm sewers and surface water to determine if there was evidence of the alleged illegal dumping. No evidence of illegal dumping was observed at the time of the investigation. Other Wayne County agencies and the City of Romulus also investigated and did not observe evidence of illegal dumping. The MDNRE was notified of the complaint. EHD determined the facility did not have a permit to install the septage holding tanks and is requiring that the facility obtain a permit. This complaint is closed.

Combined Downriver Watershed

Under contracts with individual communities, WQMD performed facility dye test inspections of three municipal buildings in the watershed. The City of Riverview Library, City of Gibraltar City Hall and the Township of Grosse Ile Town Hall were inspected and illicit discharges were not discovered at any of the facilities.

City of Romulus

WQMD assisted MDNRE with the investigation of a chromic acid spill that occurred at a facility in Romulus. The material spilled into a storm water pond that may discharge to the McClaughtery Drain.

Brownstown Township

WQMD received a complaint stating that a forklift driver for a local company had punctured a 55-gallon drum containing 'Corrosive 8'. It was reported that the facility's manager instructed the employees to dump the material down the storm drain. Brownstown Township investigated and found no evidence of the chemical (dicycloexylamine). WQMD staff spoke to the facility manager who stated that approximately 1/3 of the drum was spilled, and the spilled material was contained with Floor Dry. The remaining material is stored in the damaged drum and the absorbed Floor Dry material is also stored in a drum on site. The facility manager believes the material did not discharge to the storm drain. This complaint is closed.

City of Southgate

WQMD investigated a complaint from a Southgate Anderson High School teacher reporting that his students observed a fuel sheen discharging from the Sutliff Drain, a County Drain tributary to the Frank and Poet Creek. WQMD investigated and confirmed the sheen and diesel fuel odor at the Sutliff Drain. WQMD contacted the City of Southgate Fire Department, who assessed the spill and determined the product volume present was not enough to endanger public health or safety. Because of this determination, the fire department could not deploy a boom without declaring a HAZMAT emergency. MDNRE was also contacted about the spill. WQMD investigated storm sewer manholes upstream of the outfall and could not determine a definitive source. The teacher agreed to monitor the area and report suspicious conditions to WQMD.

City of Taylor

WQMD assisted EHD with the dye test inspection of residential homes in the City of Taylor with suspected failed OSDs. Four of five homes investigated have direct discharges to the German Drain, an Ecorse Creek tributary. These discharges are entering the Drain through two separate drainage pipes. This arrangement is considered a failing OSD. The fifth home was unoccupied

and EHD is confirming water use records for this home with the City of Taylor. It is assumed that the fifth home is also discharging to the German Drain. Investigative resolutions have been formulated and action is in progress to bring about closure of this environmental concern.

City of Trenton

WQMD investigated a complaint from a Wayne County Roads engineer concerning an illicit discharge in a road drainage system discovered in during a City of Trenton road reconstruction project. The County road ditch eventually drains to a Wayne County Drain, the Frank and Poet. WQMD investigated the complaint and confirmed an illicit discharge of a petroleum based product and a whitish substance into an unpermitted storm sewer structure draining into the road ditch. The origin of the structure was not determined at the time of the investigation. Investigators believe the drainage may be originating from an adjacent asphalt facility that was under investigation in 2007. WQMD performed a dye test inspection at the facility in 2007 and no illicit connections were found. WQMD contacted the City of Trenton to inform them of the illicit discharge. The City of Trenton staff agreed to investigate the source of the illicit discharge. The County Roads Engineer reported that the storm sewer structure was removed during the construction. This complaint is closed.

City of Woodhaven

WQMD investigated a complaint concerning a white soapy substance in a storm drain in the City of Woodhaven. WQMD investigated storm sewer manholes in the vicinity and dye tested a nearby car wash. The car was properly connected to the sanitary sewer. No evidence of illicit discharge was observed. This complaint is closed.

Rouge River Watershed

Canton Township

WQMD assisted Canton Township with investigation of a complaint involving fuel odor in a residential area storm sewer. The source of the odor was a storm sewer catch basin that drained to a residential storm water pond. A sheen was present on the pond, and the Township Fire Department boomed the area and the pond standpipe. WQMD investigated the following day and did not detect product or odors in the storm sewer system.

Canton Township

WQMD investigated a report from a concerned citizen regarding a trench that was dug from a parking lot to a stream. Field investigation revealed that the trench was dug to resolve poor drainage from a parking lot which also contains dumpsters. This issue was referred to Canton Township. This complaint is closed.

City of Dearborn Heights

WQMD investigated a report from a concerned citizen regarding water being pumped from the basement of a neighboring burned out house onto the yard. The complaint included note of strong odors, a sick dog, and concern about his own health. The health concerns were referred to EHD. The water discharge was referred to the community who agreed to ensure that the discharge will be directed into the sanitary sewer. This complaint is closed.

City of Dearborn Heights

WCDPS-FMD and WQMD investigated a suspicious discharge to a manhole in the City of Dearborn Heights. The discharge was attributed to a contractor for the City of Dearborn Heights discharging vacuum truck waste to a sanitary manhole near the Sexton-Kilfoil Drain.

City of Inkster IDEP Investigation

Under contract with the City, WQMD performed IDEP investigations during March, August and September 2009. These investigations were to follow up on storm sewer segments where elevated IDEP parameters (surfactants, *Escherichia coli* (*E. coli*), ammonia, etc. were identified during previous investigations WQMD performed for the City of Inkster. Follow up investigations were performed in two storm sewer segments in two separate sections of the City. WQMD investigated over 32 storm sewer manholes and collected sixteen water quality samples, analyzed for IDEP parameters. Facility dye testing was also performed in this area as summarized in IDEP#2. A report containing the investigation data and follow up recommendations was provided to the City of Inkster.

City of Livonia

WQMD surveyed a gas pipeline spill in the City of Livonia and received an update about the status of clean up activities. According to the pipeline contractor, the spill occurred when an in-ground gas pipeline sustained a joint failure. A resident in the area notified the fire department and investigators detected the product in a nearby storm sewer that eventually discharges to the Bell Creek, an Upper Rouge tributary. The pipeline personnel controlled the spill and a spill contractor responded to boom the storm sewer outfall and remediate the spill. The MDNRE was on the scene and overseeing the clean up operations. An estimated 100-300 gallons of product was discharged into the storm sewer. There is a MDNRE PEAS report on file concerning this incident.

City of Livonia

WQMD assisted the City of Livonia with investigating a suspicious discharge discovered during the City's outfall survey. The suspicious discharge was a seep of orange colored water coming out of the ground near Eight Mile Road west of Newburgh Road. The sample collected from this discharge contained *Escherichia* and fecal coliform bacteria in concentrations that may indicate the presence of an illicit discharge. WQMD met City of Livonia staff in the field to assess the discharge. The water in the seep had a biological film, an orange color, and a hydrogen sulfide odor. Investigators checked storm drains on the north side of Eight Mile Road (the City of Farmington Hills) and discovered a beehive sewer containing orange iron bacteria and a flowing four-inch PVC pipe. The pipe had iron deposits on its outlet. The storm sewers on Eight Mile Road were stagnant, so it was difficult to determine flow direction. A definitive source of the elevated bacteria concentrations was not determined. The City of Livonia will resample the seep and continue investigating. This complaint is closed.

City of Melvindale

WQMD performed a complaint investigation in the City of Melvindale concerning a stormwater discharge from the train well of a facility. The facility was pumping stormwater from their flooded train well to the street. The complainant was concerned that this water may contain hazardous materials. WQMD investigated and did not observe evidence of spills or hazardous materials in

the flooded train well. The facility was not discharging stormwater to the street at the time of the investigations. MDNRE was made aware of this complaint.

Plymouth Township

WQMD investigated a complaint concerning noise and possible water quality impacts at a radio controlled car racetrack in Hines Park (Plymouth Township). This complaint is being investigated by several jurisdictions including MDNRE, Plymouth Township and Wayne County Parks. There was no water quality impact observed at the time of the investigation. This complaint is closed.

Plymouth Township

WQMD investigated an anonymous complaint concerning a furniture restoration facility dumping its chemicals on the ground where they drain to a storm sewer. The complaint alleged that this practice has been ongoing for years. WQMD investigators did not observe evidence of dumping on the facility property. The facility operator explained the restoration waste handling and disposal procedures to investigators. The small quantity of waste generated from the furniture stripping is placed in a bucket, where it is thickened with paraffin and allowed to harden. The material is then placed in the dumpster for disposal. This complaint is considered closed.

Plymouth Township

WQMD investigated an anonymous complaint concerning a facility in Plymouth Township that was allegedly dumping an unknown blue material into a storm drain. WQMD verified that a screen-printing facility had dumped a blue material into a storm drain in the parking lot behind their facility. The facility was contacted about this discharge and sent a letter and public educational material regarding proper disposal of hazardous materials. Plymouth Township was also notified of this incident. During the investigation, several facilities were observed storing and handling hazardous materials in a manner that may be potentially hazardous to the environment. These facilities were referred to MDNRE, who is investigating one facility that did not appear to have the proper hazardous material permits.

City of Westland

WQMD received a complaint from a City of Westland official concerning a facility experiencing a chemical spill of approximately 800 gallons of caustic cement fixing material. WQMD met Westland staff onsite. The building was evacuated and the Fire Department advised against investigating storm sewers and nearby drains until Western County HAZMAT responded (for safety purposes). WQMD was informed that the spill occurred the night before and a spill response contractor was cleaning up storm sewers. An unknown quantity of product reached the outfall at Tonquish Creek. MDNRE took over responsibility for overseeing the cleanup and spill investigation

City of Westland

Concerned citizen reported that a gas station had a hose leading from a gas tank to the street. Upon investigation by WQMD, the owner stated that he was pumping out the water in the pit around the gas tank. He stated that “it was tested a long time ago and that it was ok to discharge”. The issue was referred to MDNRE, who stated that this facility does not have a

storm water discharge permit and has had two previous releases. No further action needed by WQMD; complaint closed.

Middle Rouge River Residential IDEP Grant

City of Plymouth Residential Illicit Discharge Investigation Summary

WQMD continued illicit discharge investigations in the City of Plymouth during 2009, under a jointly formulated investigation plan based on the outfall survey of the Tonquish Creek and Byron Drain performed by the city's consultant. The MDNRE reviewed this survey and identified thirteen outfalls for follow up investigations. Four of the outfalls were designated high priority. Two of these locations were identified as possible water main breaks and were to be investigated by the City. WQMD identified two additional outfalls for investigation based on outfall survey photographs and observations.

WQMD performed follow up investigations of the Tonquish Creek and Byron Drain outfalls in the City of Plymouth in August 2009. WQMD investigated and sampled over 31 storm sewer manholes and outfalls during this investigation. During the investigations upstream of one suspect outfall, field investigators detected elevated surfactant concentrations and dry weather flow in storm sewer manholes upstream of the outfall. The flow and elevated surfactants were traced to catch basin a multi-use commercial facility with a dog wash and car wash. It was suspected that this facility has illicit discharge(s). This facility was dye tested by WQMD field staff and an illicit discharge (mop bucket dumping) and material storage and handling environmental concerns documented. Samples from two of the manholes investigated upstream of two other outfalls had elevated IDEP parameters. One of the outfalls on the Byron Drain, drained a parking lot for a bagel shop. It is suspected that the facility is dumping its mop buckets in the storm sewer catch basin in the parking lot. WQMD met with the City of Plymouth to share its outfall survey investigation data and discuss areas that need follow up investigation. Facility dye test activity in the City of Plymouth is summarized in IDEP#2.

City of Livonia

WQMD performed a complaint investigation in the Hawkins Drain beginning in December 2008 and continuing into January 2009. The findings and recommended follow up steps with discussed with the City of Livonia. WQMD plans to conduct further investigation in the area, primarily dye testing of commercial facilities in the industrial complex adjacent to the Drain. These activities are summarized in the Rouge River Watershed facility dye testing section detailed in IDEP #2.

City of Livonia, Beitz Drain Investigation

WQMD initiated investigation in an area of the Upper Rouge including the Beitz Drain watershed near Six Mile and Farmington Roads. This area was targeted for IDEP activity because of elevated *Escherichia coli* (*E. coli*) concentrations and a positive human biomarker indicative of human sewage presence was detected during dry weather and wet weather sampling performed by the Alliance of Rouge Communities (ARC) and the MDNRE. WQMD surveyed the area to identify sampling points. This area targeted for investigation is the Beitz Drain drainage area, an area that has residential, commercial and educational land uses. The City of Livonia provided its outfall survey sampling data for its outfalls within the nearby area. WQMD

sampled seven storm sewer manholes, outfalls and Beitz Drain surface water locations as part of this investigation. Facility dye tests were also conducted in the drainage area as part of this investigation as summarized in IDEP #2. Illicit discharges were not readily identified during this investigation. Additional investigation in this area may continue in 2010.

City of Inkster, Perrin Drain Investigation

WQMD performed an illicit discharge monitoring project for the City of Inkster in 2008. During this investigation, a storm sewer manhole contained extremely high *E. coli* concentrations (1,400,000 organisms per 100 milliliters of water) was discovered, along with elevated concentrations of other parameters indicative of an illicit discharge. The City of Inkster stated that this manhole was not part of their storm sewer system. Research revealed that this storm sewer is part of the enclosed Perrin Drain, a Wayne County Drain.

WQMD further researched the area and prepared an investigation plan that was transmitted to MDNRE in December 2008. WQMD initiated the Perrin Drain investigation and is attempting to identify the illicit discharge source(s) in the area. During 2009, nine samples were collected from storm sewer manholes in the drainage area for the Perrin Drain in the City of Inkster. Several storm sewer inlets appeared suspicious and several samples contained elevated IDEP parameters. Facility dye testing was performed in the area as summarized in IDEP#2.

The Perrin Drain enclosure plans were obtained and reviewed to identify locations where there are sanitary sewer crossings and other potential problem areas. The crossings pose a high illicit discharge potential and are an investigative priority. There are five such crossings in the enclosed section of the Perrin Drain. An investigation and water quality sampling in the Perrin Drain downstream of the sanitary sewer crossings identified on the Perrin Drain plans was performed. Water samples were collected during this investigation and approximately 20 manholes surveyed. A sample collected at an inlet at Magnolia and Avondale contained elevated IDEP parameters that indicate an illicit discharge may be present in the nearby area. This inlet, in a storm sewer in the City of Inkster, was reported to the City. Investigations to identify illicit discharges to the Perrin Drain will continue in 2010.

City of Wayne

During July 2009, WQMD investigated the WQMD Commerce Court demonstration garden in response to suspicious activity near the garden trail leading to the Lower Rouge River. An employee of a nearby facility was observed leaving the woods near the demonstration garden wearing dark stained gloves. The vegetation was very heavy but no disturbance or unusual condition was noted. No evidence of dumping was noted at the time of the investigation.

County Drain Annual Inspections

Under contract to FMD, WQMD performed annual inspections of County Drains during 2009 as follows: Tonquish Creek (City of Plymouth, Plymouth Township) and Truesdell Drain (Canton Township). For Tonquish Creek, WQMD identified five suspicious outfalls in the City of Plymouth and two suspicious outfalls in Plymouth Township. The outfalls are listed in Table 2.3 – Section 6 List of Attachments, and are being currently being investigated. For the Truesdell Drain, one suspicious outfall was identified in Canton Township. The outfall is listed in Table 2.3 – Section 6 List of Attachments and is currently being investigated.

Swan Creek Watershed

Sumpter Township

WQMD staff performed an annual inspection of the Elwell Drain, a 0.5-mile Drain tributary to the Big Swan Creek Consolidated Drain in Sumpter Township. One of the outfalls appeared suspicious, and the outfall was sampled and the ditchline upstream of the terminal end of the drain surveyed. Green algal growth was observed in the ditch near the intersection of Sumpter and Dunn Roads. A water sample was collected in the ditch at this location. Elevated surfactant concentrations were present in the Elwell Drain near the Sumpter Township Police Department and Community offices. These facilities are serviced by an On-site Sewage Disposal System (OSDS). Wayne County EHD was informed of the elevated surfactant concentrations.

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 will enlist 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 MDNRE.

Staff IDEP Training (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 1,674 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. Our 23 years of experience with administering an illicit discharges detection and elimination program were coordinated with anticipated abilities and needs of local communities in designing and refining the program.

During this reporting period, Wayne County presented the *Combined Basic/Advanced IDEP Training Workshop* on two occasions: May 27, 2009 in the City of Livonia, and June 3, 2009 in the City of Pontiac. As presented in Table 8, total of 38 people completed training offered during these workshops. The training workshops were promoted by distributing flyers via Watershed Alliances, watershed management planning committees, County Drain Commissioners, MDNRE, and internal County distribution mechanisms.

**Table 8: Wayne County IDEP Training Workshops
Attendance Summary 2009**

Community/Agency	Number
Staff from Wayne County communities	8
Oakland County staff	1
Staff from Oakland County communities	12
Livingston County staff	1
Staff from Macomb County communities	3
Michigan Department of Natural Resources and Environment staff	2
Southeast Michigan Council of Governments staff	1
Washtenaw County staff	2
Consultants representing communities	6
School District staff	2
Total	38

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

In 2009 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)

The Wayne County Department of Health, Environmental Health Division (EHD) continued implementation of the Wayne County Onsite Sewage Disposal Systems (OSDS) Evaluation and Maintenance Ordinance (Enrolled Ordinance 99-527) and program during the reporting period. As shown in Table 9, 114 “time of sale” evaluations of onsite sewage disposal systems were performed during the calendar year 2009. Sixteen of these systems were identified as failing. An additional 12 facilities were evaluated at the request of the Michigan Department of Human Services (MDHS), Office of Children and Adult Licensing, resulting in the identification of two additional failing systems. In 2009, a total of 61 failed systems were identified by EHD via complaints, repair permit evaluations, “time of sale” inspections, and MDHS requested evaluations. Forty-eight failing systems were repaired in 2009. Since program inception in February 2000 through December 2009, 1,430 OSDS were inspected under the “time of sale” provision of the ordinance. Three hundred and thirteen OSDS were identified as failing. Twenty-six inspectors are certified to perform OSDS “time of sale” evaluations in Wayne County.

**Table 9: Summary of OSDS Evaluations Performed
January 1 through December 31, 2009**

Type of OSDS Inspection	Number of Inspections	Number of Failures	Percent (%) of Failures
Time of Sale	114	16	14%
MDHS Licensed ⁽¹⁾	12	2	17%
Totals	126	18	14%

1: Facilities licensed under the state MDHS program; inspection of the facility, including any OSDS, is completed upon request by the agency.

The Wayne County EHD requires permits for the construction of new OSDS and for repair/replacement of existing OSDS (Table 10). In 2009, a total of 56 new and repaired systems were installed in Wayne County. Two hundred and ninety two inspections were made during and/or after construction. Table 11 provides a summary of OSDS-Related Complaints Investigated in 2009.

**Table 10: Summary of OSDS Permits Issued
January 1 through December 31, 2009**

Permit Type Issued	Number of Permits	Percent (%) of Permits
New Construction	6	11%
Repair or Replace	50	89%
Total	56	

**Table 11: Summary of OSDS-Related Complaints Investigated
January 1 through December 31, 2009**

Number of Complaints	19
Number of Complaints identified as failing OSDS's	10
Number of Complaints Resolved	15

As described in the PEP# 9 section of this report, educational materials about proper maintenance of OSDS are distributed to homeowners at the time of permit issuance. The EHD continues to add files of previously issued permits to the database. Currently over 13,100 permits have been put into the database. Septage haulers have a responsibility under Ordinance #99-527 to file septic tank evaluation reports for all pump outs in Wayne County. Approximately 14% of the pump-out reports indicate a problem with the OSDS system at time of pump out. In these instances, the owner of the system is contacted by EHD to ensure repairs.

Table 12 summarizes the estimated pollutant loading reductions to Wayne County watercourse from failed onsite disposal systems that are considered illicit discharges. The estimate assumes correction of these failures.

Table 12: Summary of Estimated Pollutant Load Reduction to Wayne County Watersheds from Onsite Sewage Disposal Systems: January 1, 2009 through December 31, 2009

Parameter	Loading Reductions (<i>lbs/year</i>)¹
Total Solids	15,920
Total Suspended Solids	4,643
Biological Oxygen Demand	4,643
Ammonia	190
Total Phosphorus	436
Surfactant	28
Potassium	114
Total Organic Carbon	891
Total reduction	26,864
Flow (gals/year)	2,275,958

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. As described in the previous section, WQMD assisted the City of Westland and MDNRE regarding a chemical spill of approximately 800 gallons of caustic cement fixing material from a facility. MDNRE assumed responsibility for overseeing the cleanup and spill investigation.

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 2009, the program conducted 18 total clean up projects including nine illegal dumping site clean ups and nine community scrap tire collection events. A total of 2,893 cubic yards of waste and 6,395 tires were cleaned up as a result of these projects. Preventative efforts at these sites include neighborhood watch programs, volunteer clean up days, signage and fencing. LRMD mails out C.L.E.A.N. project application packages twice a year to every Mayor, Township Supervisor, Clerk and DPW Director in Wayne County along with 58 community groups, to seek their participation in the program.

The Wayne County Department of Public Services-Parks Division cleans up illegally dumped items within County Parks. The Wayne County Department of Public Services-Roads Division daily removes illegally dumped items (e.g. trash, tires, auto parts, garbage, roofing materials, appliances, etc.) from County Roads located in townships. County Roads with high volumes of dumped materials reported in 2009 include:

- Beech Daly between Sibley and Pennsylvania,
- Striecher between Huron River Drive and Jefferson,
- Ash between Clark and Waltz, and
- Clark between Willow and County Line.

Four household hazardous waste (HHW) and three computer/computer peripheral (E-Waste) waste collections were conducted by Wayne County in 2009. A total of 651,400 pounds 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 Wayne County's household hazardous waste (HHW) collection days for 2009 is shown in Tables 13 - 15.

Table 13
Summary of Wayne County's
2009 Household Hazardous Waste Collection Days

Date	Location	# of Participants
March 28 th	Allen Park	645
June 27 th	Northville	686
August 22 nd	Dearborn	2,979
October 24 th	Westland	999
Totals	4 – events	5,309

Table 14
Summary of Wayne County's
2009 E-Waste Collections

Date	Location
May 9 th	Canton Township
July 18 th	Dearborn
September 12 th	Livonia

Table 15
Summary of Material Collected During
Wayne County's Household Hazardous Waste and E-Waste Collections, 2009

Waste Classification	Amount (lbs)
Acids	3,400
Aerosols	11,800
Antifreeze	9,000
Batteries, lead acid	17,800
Batteries, mixed/household	5,600
Bio-medical sharps	600
Caustics/Oxidizers	3,600
Electronic Equipment (E-Waste)	294,800
Expired medicines/pharmaceuticals	400
Fire Extinguishers	2,200
Flammable Liquid	21,200
Fluorescent Lamps	3,000
Herbicides & Pesticides	15,800
Mercury Devices	200
Neutral Products	14,400
Oil	26,600
Paint, latex	179,400
Paint, oil	35,400
Propane - 1# cylinder	800
Propane - 20# cylinder	5,000
Other	200
TOTAL	651,400

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 in separate sanitary sewer areas within Wayne County, prior to their opening each spring for the swimming season. For the 2009 swimming season, EHD inspected 557 swimming pools.

EHD issues 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, two newly constructed pools were inspected and the proper connection of the backwash water system to the sanitary sewer system for each was confirmed.

Prevention of illicit discharges at public swimming pools is also part of WCDPS-WQMD's facility inspection activities. During the current reporting period, one public pool facility was tested as part of the WQMD facility dye test program. This swimming pool was confirmed to be properly connected to the sanitary sewer.

Follow up inspections to confirm correction of a misconnected public facility swimming pool backwash drain in the City of Wayne was performed in 2009. The illicit connection at the facility was verified as corrected.

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

WQMD has completed inspection of all County-owned buildings that are located in areas of the County served by separate sanitary sewers. Our focus in 2010 will be to conduct pollution prevention inspections at County-owned buildings and to develop site specific Pollution Prevention Action Plans that educate staff and reduce the potential for illicit discharges to Wayne County's storm drainage systems.

Visual Inspections During Routine Field Operations (WCIDEP #10)

Pursuant to our Certificate of Coverage, Wayne County "field" staff have been trained to identify and report suspicious discharges in the course of their duties. Training has been provided to personnel from the Departments of Public Services (FMD, Engineering, Roads), Health (EHD) and Wayne County Airport Authority. Table 16 presents a summary of the suspicious discharges identified during routine Wayne County field operations. Table 17 summarizes the results of the follow up investigations to routine field operation reports. Most of the suspicious discharges identified by County field personnel are referred to the WQMD for investigation and follow up. These discharges were eliminated though working together with the reporting agency.

The WCDPS FMD Drain Office contributes to the prevention of storm water pollution to waterways by inspecting and/or maintaining County Drains. From January 1, 2009 to December 31, 2009, eight County Drains totaling 19 miles in length received a complete visual inspection for suspicious discharges and obstructions: Burnap, Ellward, Rawson, Smith, Truesdell, Tonquish, Delany and Durham During the reporting period, 82 County Drains received maintenance, and approximately 1,840.8 cubic yards of material was removed from the County Drainage System.

**Table 16: Types of Suspicious Discharges "Reported" during Routine Field Operations
January 1 through December 31, 2009**

<i>Type of Illicit Discharge</i>	
Sewage discharge	1
Dark Colored Water/Leafate	1
Suspicious Discharge	3
Sewer Odor	1
Improper Disposal	1
TOTAL	7

**Table 17: Suspicious Discharge Investigations Resulting from
Routine Field Operations Reports
January 1 through December 31, 2009**

Reporting Division	Suspicious Discharges Reported	Verified by WQMD	Source/Cause Identified	Referred To	Corrections Confirmed
DPS-WQMD	1	1 - Yes	1 – Yes	WCHD-EHD	1 - Yes
DPS-Engineering	1	1 – Yes	1 - No	N/A	1 - Yes*
DPS-FMD IPP	2	2 - No	1 – Yes 1 - No	2 – N/A	N/A**
DPS-FMD Drains	1	1 – Yes	1 – Yes	NA	NA***
DPS – Roads	2	2 – No	2 – Yes	N/A	2 – Yes

*WC Engineering took the lead and bulk headed the illicit discharge connection.

**Corrections were not required. One was discharging storm water; one the other was discharging to a combined sewer.

*** Samples were taken and tested for tannin and lignin, which found the dark colored water to be leafate.

FMD staff identified and reported two suspicious discharges into surface waters to WQMD in 2009. These discharges were investigated as previously described in the WCIDEP #2 section (see *City of Allen Park/City of Taylor - Reeck Drain* and *City of Allen Park*).

FMD staff identified and responded to three incidents of excessive erosion into surface waters in 2009. On March 20th, FMD identified an incident of excessive erosion along the Sexton Kilfoil Drain near 25275 Madden in Taylor. This accelerated erosion was determined to be part of the natural erosion process of the river and was not impacting drain function nor was it a safety concern. Staff referred the property owner to the use of stream bank stabilization techniques such as native plantings to reduce the erosion problem. On May 6th, FMD identified an incident of excessive erosion along the Bunton Drain near 14130 Haggerty, Van Buren. This accelerated erosion was part of the natural erosion process of the river and was not impacting drain function nor was it a safety concern. Staff referred the property owner to the use of stream bank stabilization techniques such as native plantings to reduce the erosion problem. On May 12th, FMD identified an incident of excessive erosion along the Fellows Creek near 1355 Willard, Canton. This accelerated erosion was partly caused by woody debris, which was impacting drain function. The woody debris was properly removed from the channel.

The Parks Division noted several incidents of household and construction trash being dumped along the ditches surrounding Crosswinds Marsh during 2009. The dumping of trash is reported to Parks maintenance and it is cleaned up and properly deposited.

IDEP Volunteer Training (WCIDEP #11)

WQMD staff provided a presentation about illicit discharges 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 WCDPS and other local agencies. FOTR has incorporated this presentation into their orientations for volunteers, teachers and team leaders. In 2009, FOTR held 10 different training and/or volunteer monitoring sessions that provided IDEP volunteer training to 616 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 MDNRE on May 22, 2007. Based on the findings of this analysis, it is the position of Wayne County and the ARC that scheduled inspection of points of discharge are not an 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 4: Illicit Discharges Found Within Wayne County* 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 System (WCIDEP #15)

Wayne County Annual Drain Inspections

In 2009, WQMD completed annual inspections of six Wayne County Drains for the DPS-Facilities Management Division (FMD) Drain office. During the surveys, outfalls are located, mapped and noted for any sign of illicit discharges. Over 11 miles of County drain was inspected and include the Ellward within the cities of Taylor and Romulus; Elwell within Sumpter Township; Rawson within Romulus; Tonquish Creek within Canton and Plymouth townships; Truesdell with Canton Township and the Wightman and Branches Drain within Sumpter Township. A total of 136 outfalls to Wayne County Drains were identified during these inspections. The inspection report, maps and data collected for each of the drain inspections completed in 2009 are available upon request.

There were several other drain inspections that were initiated in 2009. Field work and the final drain inspection report will be completed in 2010. Information from these drain inspections along with the outcome of suspicious outfall investigations will be summarized in the 2010 Annual Report.

Alliance of Rouge Communities (ARC) Outfall Mapping

As part of the ARC Technical Committee's Collaborative SWPPI Action Plan (CAP) development process, WQMD staff developed and began accepting ARC member survey responses and data regarding known municipal separate storm water sewer system (MS4) discharge points. Pursuant to the draft CAP, compiling this data initiates the development of a

watershed-wide GIS map of discharge points to “Waters of the State” and begins to develop a central warehouse for digital storm sewer maps. Centralizing this data is intended to simplify NPDES permit compliance and reporting efforts for the MDNRE and ARC members as well as improve compliant response and suspicious discharge source tracking efforts. A map of the data compiled thus far is included within the attachments for Section 2 of this report (see Section 6 for a listing of all attachments).

Wayne County Updated Storm Water System Map

As noted in Section 6, the attachments for this report include an updated GIS map of Wayne County’s storm water system including latest coverage of County Drains, County Roads, County Parks and maintenance yards. Please note that the map includes County data that is within combined sewer areas as well as separated sewer areas.

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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, 2009 – December 31, 2009** in compliance with the County's Certificate of Coverage MIG610040 under the MDNRE General Storm Water Discharge Permit MIG619000.

Educate Public Regarding Location of Residential Storm Drainage System 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 addresses this topic ; see in particular the reports for activities WCPEP #4, #6, #7, #9, #11 and #22.

Educate Public Regarding Animal Wastes (WCPEP #2)

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

Educate Public Regarding Pavement or Powerwashing (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: Under contract to the ARC and the ADW, during the reporting period, Wayne County provided over 26,750 pieces of public information materials and information relating to water pollution issues to communities within the ARC and the ADW for their use. The materials included ADW and ARC versions of the *Detention Pond Maintenance Manual*; *Value of Trees* flyer; *Our Actions Affect the River* flyer; *24 -Hour Environmental Hotline* brochure; *Tip Card* brochure; *Storm Drain Tip Card*; and *Pet Waste Tip Card*.

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 5,700 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, magnets, poster and bags; the *WCDPS 24-Hour Environmental Hotline* brochure; *Our Actions Affect the River* flyers; the *Rouge River Activity Book*, *River Friendly* brochure series and others.

The *River Friendly Partners Program* brochure continues to be distributed and the letter version of this brochure was given to all businesses and facilities visited under Wayne County's illicit discharge investigations and dye testing program. These brochures inform businesses in the Rouge River watershed how they can prevent storm water pollution and other forms of pollution by employing best management practices in their daily operations. During the reporting period,

368 brochures were distributed in this program. No new River Friendly Partners were recognized in 2009.

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.

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 300 items provided to communities for subsequent distribution to others.

Newsletter Articles and Advertisements (WCPEP #5)

During this reporting period, the WQMD requested and was given a license agreement with the Water Environment Federation (WEF) to use and distribute WEF’s *Water is Life* advertisements and ad graphics. These ads contain messages about the need to update and invest in water and wastewater infrastructure. The ads are available to the Wayne County communities for use in their newsletters, on their cable stations, in local papers, to distribute in workshop/seminar information folders.

Displays-Community/Agency Events (WCPEP #6)

During 2009, the WCDPS planned, coordinated, promoted and/or participated in 19 community events, meetings, seminars and workshops with environmental displays and educational information, including:

- *Shiver on The Rive, Detroit* – February 7, 2009
- *Canton Home Expo* – March 3 - 9, 2009
- *Family Fair, Westland* – March 25, 2009
- *University of Detroit Mercy, Earth Day Event* – April 9, 2009
- *City of Plymouth, Green Fair* – May 1 – 5, 2009
- *City of Redford Water Department* – May 4 – June 1, 2009
- *City of Redford Library* – May 4 – June 1, 2009
- *12th Annual Rouge River Water Festival at University of Michigan-Dearborn* – May 7, 2009
- *Down River Operations Managers 1st Annual Expo and Conference* - June 2009
- *Melvindale Celebration* – June 2009
- *Grosse Ile Island Festival* – June 2009
- *Dearborn Heights Spirit Festival* – June 2009

- *City of Southgate* – July 8, 2009
- *Wyandotte Street Fair* – July 8, 2009
- *Alliance of Downriver Watersheds, Various Locations* – August 8, 2009
- *Gibraltar Community Center* - August 17-31, 2009
- *City of Southgate* – September 9, 2009
- *Rouge River Water Festival at Cranbrook*– September 18, 2009
- *Grosse Ile Township Hall* – August 31 – September 14, 2009
- *Grosse Ile DPS Building* – August 31 – September 14, 2009
- *Grosse Ile School District* - August 31, 2009 – September 14, 2009
- *Flat Rock City Hall* – September 14 – 24, 2009
- *Flat Rock High School* – September 14 – 24, 2009
- *Clinton River Review* – October 2, 2009
- *Riverview City Hall* – September 24 – October 10, 2009
- *Riverview Library* – September 24 – October 10, 2009
- *Riverview High School* – September 24 – October 10, 2009
- *Woodhaven Brownstown School District* – October 9, 2009
- *City of Southgate* – November 24, 2009

Audience specific storm water educational material is distributed at most events. Additionally, Wayne County's *Resource Recovery Guides* and the *Wayne County Environmental Hotline brochure* were provided at the above events.

Displays-Static (WCPEP #7)

Wayne County created *Recreational Resource Displays* for each of the four main branches of the Rouge River. During the reporting period, these displays were stationed as follows:

- Lower Rouge: Two events/locations (2009 Rouge Water Festivals at University of Michigan-Dearborn and at Cranbrook)
- Middle Rouge: Two events/locations (2009 Rouge Water Festivals at University of Michigan-Dearborn and at Cranbrook)
- Upper Rouge: Two events/locations (2009 Rouge Water Festivals at University of Michigan-Dearborn and at Cranbrook)
- Main Rouge: Two events/locations (2009 Rouge Water Festivals at University of Michigan-Dearborn and at Cranbrook)

Wayne County's *Our Actions Affect the River Display* was also stationed throughout Wayne County and the Rouge watershed at four different locations/events during the reporting period. These included Canton Township (Home Expo and River Day); University of Michigan-Dearborn (Rouge Water Festival); Southgate (City Hall) and Wyandotte Street Fair.

The *Watershed Model* developed by WQMD was stationed at seven different locations/events during the reporting period. These included the 2009 Rouge River Water Festival at Cranbrook (Institute of Science); the 2009 Rouge Water Festival held at the University of Michigan – Dearborn; and at the Shiver on the River 2009 event in Detroit.

The *Frog and Toad* display developed by WQMD was stationed at five different events during the reporting period: Bloomfield Hills (Cranbrook Water Festival); Detroit (University of Detroit Mercy, Earthday); Dearborn (Rouge 2009, Rouge Water Festival), Redford (Public Library); and Westland (Family Fair).

Wayne County stationed the *7 Simple Steps to Clean Water* display developed by the Southeast Michigan Partners for Clean Water at 19 locations/events during the reporting period, including: Alliance of Downriver Watersheds (Various Locations); Bloomfield Hills (Cranbrook Water Festival); Detroit (Shiver on the River); Dearborn (Rouge Water Festival); Flat Rock (City Hall, Community Center, Flat Rock High School); Grosse Ile (Township Hall, Department of Public Services, School District); Grosse Pointe Woods (Earth Day Event); Redford (Water Department); Riverview (City Hall, Library, Riverview High School); Rochester Hills (Oakland University); Southgate City Hall; Taylor (Detention Pond Workshop) and Woodhaven (Woodhaven Brownstown School District).

The *Middle Rouge Green Infrastructure* and *Wayne County Green Schools Program* displays were created and stationed at the Down River Operations Managers (DROM) 1st Annual Expo and Conference in June 2009. The DROM is an association of school district facility operation managers that has formed to assist each other with operational issues. The Expo and Conference was held to allow the school facility operation managers and staff to come together and interact with various speakers and vendors that offer maintenance support services to the school districts. Approximately 200 people viewed the displays and picked up information regarding green infrastructure, green schools and storm water management.

The *Wayne County Recycling* display was set up at the Rouge Water Festival in Dearborn. LRMD staff also set up a display regarding proper disposal of medical, pharmaceutical, and mercury waste at the Garden City Hospital in cooperation with the Garden City Community Coalition.

WCDPS Environmental Information Line (WCPEP #8)

WCDPS continues to extensively 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 web page address) several departmental and division brochures, the River Friendly brochure series, and the Wayne County website. During the reporting period, materials to promote use of the *24-Hour Environmental Hotline* and the services of all WCDPS Divisions were revised and distributed.

Advertisements (WCPEP #9)

During this reporting period, the WQMD requested and was given a license agreement with the Water Environment Federation (WEF) to use and distribute WEF’s *Water is Life* advertisements and ad graphics. These ads contain messages about the need to update and invest in water and wastewater infrastructure. The ads are available to the Wayne County communities for use in their newsletters, on their cable stations, in local papers, to distribute in workshop/seminar information folders.

Point of Sale Education (WCPEP #10)

Wayne County continued its involvement and support of the 2009 *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 window sign, retailer recruitment and training support, and website promotions and information. During the reporting period, WQMD staff distributed approximately 1,300 earth-friendly fertilizer stickers to the 26 participating retailers in Wayne County. The participating retailers carried 8 of the 10 approved fertilizers. Customers had positive feedback on the program.

Workshops and Demonstration Projects (WCPEP #11)

Wayne County co-sponsors and participates in numerous workshops each year to educate a various categories of 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 held during the reporting period follows.

Grow Zones Across the Alliance of Downriver Watersheds – Mini-Grants Program

With funding from a grant from the Clean Michigan Initiative (Project No. 2006-0137), a mini-grant program was developed by the ADW Technical Committee to implement Grow Zones (native upland plantings and riparian corridor expansion plantings) across the Alliance of Downriver Watersheds to restore and protect water quality. Wayne County managed this mini-grant program under contract to the ADW. Grow Zone mini-grants were awarded to 11 different sites (four in Lower Huron, four in Combined Downriver, and three in Ecorse Creek). One of the three sites in Ecorse Creek backed out of the process. The 10 final designs included site-specific construction details, landscaping planting plans and maintenance plans for three riparian buffers, three schoolyard habitats, three native plant meadows within public parks and one site was a native plant garden adjacent to a municipal building as follows:

- GZ-ADW 1 OW Best Middle School, Dearborn Heights
- GZ-ADW 2 Labo Park, South Rockwood
- GZ-ADW 3 Village Hall, South Rockwood
- GZ-ADW 5 Frank and Poet Riparian Buffer, Trenton
- GZ-ADW 6 Prairie Buffer, Lake Erie Metro Park
- GZ-ADW 7 Wilson Middle School, Wyandotte
- GZ-ADW 8 Woods Creek, Lower Huron Metro Park
- GZ-ADW 9 Pheasant Ridge Pool, Riverview
- GZ-ADW 10 Huroc Park, Flat Rock
- GZ-ADW 11 Gudith School, Woodhaven

A three-year Operation and Maintenance agreement was developed and signed by each site coordinator. Installation of all the sites was completed in June 2009. Approximately 573 volunteers participated in the planting day events at the various sites. The plantings ranged in size from 800 square feet to 3 acres. Approximately 5.71 acres of native plant grow zones were installed. Over 2,200 feet of riparian buffer were planted at three of the sites. A total of 2,120 plants, 281 pounds of low profile native plant seed and 39 pounds of wet to mesic native plant

seed was planted. As part of this grant, WQMD is completing a Green Infrastructure Analysis on behalf of the ADW. The ADW has contracted to process the Green Infrastructure mapping data for the watersheds, covering an area of approximately 204 square miles.

Grow Zones Across the Alliance of Rouge Communities – Mini-Grants Program

Wayne County was an integral partner in the successful 2009 mini-grant program established by the ARC to assist with implementation of green infrastructure (grow zone) projects in the Rouge watershed. ARC and Wayne County staff provided design, plant material and signage for the approved projects. The Grow Zone Subcommittee received 17 proposals and funded 13 projects:

- Bloomfield Hills: Three rain gardens were installed in place of existing asphalt in subdivision near a school with mix of native and non-native species.
- University of Michigan-Dearborn: Native plant area to replace existing turf and collect water from downspouts.
- Plymouth Township: Native plants/rain garden located adjacent to Department of Public Work storage yard.
- EL Johnson Nature Center, Bloomfield Schools/Bloomfield Twp: Native plants to replace turf grass adjacent to nature center to slow runoff to pond.
- Bingham Farms: Native plants for road median.
- Farmington Hills: Native plants at Heritage Nature Center entrance and native prairie seeding in large lawn area adjacent to Nature Center.
- Dearborn Heights: Native plants installed adjacent to drain outfall to the Rouge River in Parkland Park.
- Canton Township: Riparian buffer and detention basin edge native planting at Canton Public Library.
- Lawrence Technological University, Southfield: Riparian Buffer at Evan's Drain to replace turf grass.
- Melvindale Boat Ramp: Riparian buffer/native plants behind ice arena and adjacent to the Rouge River.
- Miller Elementary, Canton (Plymouth/Canton Schools): Native plant restoration for schoolyard habitat.
- Lathers Elementary School, Garden City: Schoolyard habitat/native plants and tree planting to replace mowed turf near school.
- City of Southfield: Green roof for boat storage facility at Carpenter Lake nature preserve.

Middle Rouge RCM Grow Zones-Bennett Arboretum GI Work Day

Wayne County Parks, WQMD, Wayne County Commissioner Laura Cox, and the Wayne County Master Gardeners continued their partnership to host a third annual Native Plant Workday in Bennett Arboretum on May 9, 2009. Over 40 volunteers planted witch hazel, butternut and spicebush shrubs in the cherry and oak collections area, weeded and managed for invasive species in the Arboretum's woodland wildflower area, oak collection and along the hilltop trail. Wood chips were spread around the interpretive signs and the tree beds within the Alternative Shade Tree Collection.

Middle Rouge RCM Grow Zones-Newburgh Pointe (Ford Motor Company) GI Work Day

Wayne County Parks and WQMD continued their partnership with Ford Motor Company for

Ford Work Day/Rouge Rescue. The workday took place on June 9th, 2009. Approximately 35 Ford volunteers participated in the following activities: invasive species removal in the Newburgh Pointe Rain Garden (RG – 1); invasive species removal in the Grow Zone across from Newburgh Pointe (GZ – 5) and in the Grow Zone across from Sumac Pointe (GZ – 6) (approximately 50 bags); the garden beds under the trees at Newburgh Pointe were also weeded and re-mulched (6 yards of mulch); the interpretive Rain Garden sign was installed; and Grow Zone signs were installed at the Rain Garden (2 signs) and at Grow Zones 5 & 6 (5 signs). At the Bennett Arboretum several volunteers continued the work from a previous work day event by removing invasive species.

Wayne County Michigan Green Schools Program

Wayne County's WQMD staff has been working with the Wayne County Regional Educational Service Agency (Wayne RESA) for several years to promote and grow Wayne County's Green Schools Program. To be recognized as a "Green School", schools must implement a minimum of 10 out of 20 environmentally friendly activities established by the State of Michigan. Some of these requirements include establishing a paper - recycling program, implementing an energy savings program, holding an environmental education event, promoting neighborhood energy conservation or participating in activities promoting the health of the Great Lakes watersheds.

In 2008, 12 schools were recognized as Wayne County Green Schools. In 2009, 50 Wayne County schools were recognized. Wayne County purchased thirty trees which were distributed to Wayne County "green schools", and the trees were delivered to schools in the districts of Northville, Plymouth-Canton, Garden City, Livonia, and Dearborn. Some of the schools had tree-planting events. Each school was given an irrigation device (Ooze Tubes) to help establish the tree and an information packet, which included: tree-planting instructions; *The Value of Trees* flyer; *Schoolyard Project Profiles*; *Michigan Native Plant Nurseries*; the *Wayne County Hot Line* brochure, the *Storm Drains Aren't Garbage Cans* brochure and the *West Nile Virus FAQ* flyer. A press release was developed and released to announce the Green Schools tree plantings. A template press release was also developed for the schools to modify and use to announce their specific event. Two articles about the Green Schools tree planting efforts were published in the media.

ARC Green Infrastructure Workshops & Bus Tours

In 2009, the ARC PIE committee, with support from WQMD staff and ARC staff, held three workshops and corresponding bus tours spotlighting green infrastructure projects within three geographic areas of the Rouge River Watershed. Workshops were held as follows:

- Lower 1/Middle 1: August 11, 2009 in Canton Township,
- Middle 3/Lower 2/Main3-4: August 20, 2009 at the University of Michigan-Dearborn, and
- Main 1-2/Upper: August 25, 2009 in Southfield.

Bus tours were held as follows:

- Lower 1/Middle 1: August 15, 2009, left from Canton Township;
- Middle 3/Lower 2/Main 3-4: August 22, 2009, left from University of Michigan-Dearborn Environmental Interpretive Center; and
- Main 1-2/Upper: August 29, 2009, left from the Lathrup Village offices.

Workshop agendas, presentations, handouts materials, along with tour maps and site information are available from the ARC website at <http://www.allianceofrougecommunities.com/contact/growinggreen.html>. A more detailed summary is also provided in the ARC Executive Director Services Annual Report (see Section 6 below).

RCM Technical Advisory Committee (TAC) and Work Group (WCPEP #12)

Although there were no official meetings of the RCM TAC in 2009, WQMD continued to support the RCM TAC and Work Group efforts as described above in WCPEP #11 by coordinating, co-sponsoring, promoting and/or participating in the above workshops and demonstration projects.

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 #11 as well as by coordinating, co-sponsoring, promoting and/or participating WCPEP #9 and WCPEP #10. WQMD attended and participated in four committee meetings held in 2009 including February 17th, April 16th, September 29th, and November 4th. The meeting topics included: yard waste compost, shredded leaves, and nutrient runoff; Healthy Lawn Care Program update; Arboriculture Society of Michigan update; SOCWA “Green Garden Initiative” and Healthy Landscape tip cards; Earth Friendly Fertilizer 2010 criteria; What is municipal compost?; nutrient analysis and landscape applications; marketing compost to landscape companies; and urban tree update. Guest Speakers and topics included: Dr Robert Schultski, Michigan State University - “The Thoughtful Gardener”, Dr. Jim Cahtfield, Ohio State University, “An Intergraded Approach to Maintaining Healthy Trees and Shrubs”.

River Day/Rouge Rescue (WCPEP #14)

WQMD staff provided services and support to FOTR for River Day 2009, held June 7, 2009. Kesh Raizada from WQMD served as the site coordinator at Canton Township Site #2 (Fellows Creek at Palmer and Lotz Roads near the Meadows of Canton subdivision). Over 120 volunteers assisted in storm drain stenciling, benthic macro-invertebrate monitoring and trash removal at this location. WQMD’s Frog & Toad display was set up and a variety of educational materials were provided to all volunteers.

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 by FOTR.

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

In support to the ARC and Friends of the Rouge (FOTR), WQMD staff participated in multiple volunteer monitoring events in 2009 as follows:

- *FOTR Winter Stonefly Search*, January 24, 2009. WQMD served as team leaders for the FOTR Winter Stonefly Search. Over 81 people from around the Rouge Watershed went out into the cold to sample for the stonefly, a macro invertebrate species whose presence indicates high water quality. Stoneflies were found at 13 of the 23 sites sampled. WQMD team leaders and volunteers found stoneflies at multiple locations on the Middle Rouge River, and at Springbrook Recreation Area in Edward Hines Parkway (Southeast of M-14).

This is the furthest downstream in the main branch of the Middle Rouge River that stoneflies were found during this survey and since sampling began.

- *Wayne County Rouge River Spring Bug Hunt* was conducted over several days in May 2009. Benthic macroinvertebrates were inventoried by WQMD staff at 22 sites including 12 streambank stabilization locations throughout the Edward Hines Parkway, five sites along the Lower Rouge River, two in the Main Rouge River, and three in the Upper Rouge River. See Section 1 of this report for a summary of the water quality scores from this monitoring event.
- *FOTR Spring Bug Hunt.* WQMD served as team leaders for this event held April 25, 2009, joining approximately 65 volunteers in benthic macroinvertebrate sampling at various sites throughout the Rouge River watershed. Volunteers and WQMD staff collected and identified benthic macroinvertebrates for the purposes of gauging Rouge River water quality. See Section 1 of this report for a summary of the water quality scores from this monitoring event.
- *FOTR Fall Bug Hunt.* WQMD participated as team leaders for the FOTR fall “bug hunt” sampling event held October 17, 2009, and helped teams of volunteers in the collection and identification of benthic macro invertebrates survey at four sample areas for the purpose of using the data to gauge the water quality of the Rouge River. Over 91 people from around the Rouge Watershed participated. See Section 1 of this report for a summary of the water quality scores from this monitoring event.
- *Wayne County Rouge River Fall Bug Hunt* was conducted over several days in October 2009. Twenty-one locations were sampled by WQMD. See Section 1 of this report for a summary of the water quality scores from this monitoring event.

Volunteer Monitoring – Bug Hunts Downriver Watersheds (WCPEP #17)

During 2009, Wayne County continued its partnership with the *Downriver Citizens for a Clean Environment “Stream Team”* to implement macroinvertebrate monitoring at locations throughout the downriver watersheds of Ecorse Creek, Combined Downriver and the Lower Huron River watersheds. Work is underway with the Huron River Watershed Council, the local communities and other watershed partners to expand the monitoring locations and monitored parameters to establish an adequate ecosystem monitoring program for measuring watershed management progress in these watersheds. The Huron River Watershed Council (HRWC) initiated its volunteer macroinvertebrate monitoring program in the Lower Huron River in 1996. WCDPS and the Stream Teams began monitoring in the Combined Downriver and Ecorse Creek watersheds in 2004. Monitoring results are presented in Section 1 of this report.

Rouge Education Project (WCPEP #18)

WQMD coordinated T-shirt delivery for the Rouge Education Project (REP) Spring Monitoring Day held May 6, 2009 and participated on both the REP Advisory Task Force and the REP Public Involvement Projects Task Force. Additionally, WQMD hosted Cesar Chavez Academy at its Commerce Court demonstration garden site for the REP Spring Monitoring Day, and for the Fall Monitoring Day held October 15, 2009. WQMD assisted 30 students with monitoring the Lower Rouge River for benthic macro-invertebrates and other physical and chemical parameters. The site scored equal to its score during fall 2008, average for the site.

Storm Sewer System Labeling WCPEP #19)

WQMD stenciled storm sewers on sixteen different Canton Township subdivision streets as part of their annual River Day activities (see also report for WCPEP#14). WQMD staff also

provided assistance to the Star International Academy to stencil storm drains on Fenton Street in the City of Dearborn Heights as part of a school project. The message “Dump No Waste Drains To Rouge River” is painted on storm sewers in the subdivisions to help educate residents about the direct impact these sewers have on the river and to prevent pollution from leaking automobiles, outdoor washing activities, excessive fertilizer application, illegal dumping of household waste products and other household activities. In 2010, Wayne County will continue to offer these stencils to schools and community groups for volunteer use as well as label storm sewers at our sponsored River Day sites.

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

In 2008, WQMD staff stenciled the storm sewers at seven paved Wayne County Road Yards, two Park maintenance facilities and two Wayne County Golf Course parking lots located in areas served by separate sanitary sewers. For those County facilities from this list located in the Rouge watershed, the message “Dump No Waste Drains To Rouge River” was painted on all storm sewers at the facility. The message “Dump No Waste Drains To River” was painted on all storm sewers at the facilities located in non-Rouge watersheds. These messages help educate Wayne County employees and the public about the direct impact these sewers have on surface waters and help prevent pollution from entering the storm sewer system. Wayne County did not record any stenciling to the storm sewers at its office building parking lots or yards in 2009.

Alliance of Rouge Communities – PIE Committee (WCPEP #21)

WQMD staff participated in all 2009 Alliance of Rouge Communities Public Information and Education (PIE) Committee meetings and activities (see the 2009 Executive Director Annual Report provided in the Attachments – Section 6 for more detailed information). In addition, Wayne County participated in all 2009 activities of the Alliance of Downriver Watersheds, Public Education Committee (see the 2009 ADW Annual Report provided in the Attachments – Section 6 for more detailed information).

Information Dissemination via Websites (WCPEP #22)

During the reporting period, the *Rouge Project website* (www.rougeriver.com) experienced over 1.5 million hits from citizens, students, university staff, businesses, community groups, municipalities, and others interested in obtaining information on the Rouge River and the Rouge River National Wet Weather Demonstration Project. During the reporting period, staff responded to over 50 e-mails from the site. People have contacted us from all over the watershed; every state in the United States; England, Australia, and a variety of other places all over the world. The *Rouge Clearinghouse Order Form* has been updated and links to the *River Friendly “Slow Release Fertilizer Program”* information were added to the site. The search feature on the front page contains the most up-to-date information. This user-friendly site continues to be one of our most far reaching and most informative and inclusive method of public outreach. Other Wayne County websites are also used to inform and involve the public in storm water management and watershed awareness activities. For example, announcements of select public workshops and watershed stewardship volunteer events are shown on the front page of the main Wayne County website (www.waynecounty.com). The Department of Environment pages of the website provides information on pollution prevention and watershed management topics including recycling, composting, fertilizing, soil erosion control, storm water best management practices, and Wayne County environmental ordinances.

Rouge River Data: A web-based tool for accessing and analyzing Rouge River water quality monitoring data collected to date was developed during 2005 to replace the previous “DataView” CDs. This tool was made available at www.rougeriver.com/database in August of 2005. During the reporting period, there were 1331 visits to this portion of the website and 131 data downloads recorded.

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 11 Wayne County offices including: Department of Public Services (two locations), Environmental Health Division, Mental Health Department, Parks Headquarters, Permit and Field Engineering Office, Roads-Central Maintenance Yard, and the Wayne County Building (600 Randolph).

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 website www.waynecounty.com/doe/land and is also handed out at all public events in which DPS participates including the HHW and computer collections. Other materials to educate the public about pollution prevention include: the *Green Shopping Guide*, *Disposal Tips For Home Medical Waste and Pharmaceuticals*, recycled pencils, *Soil Erosion, Sedimentation Pollution and Your New Home*. A website link was developed to the RRG and to composting tips. Table 18 summarizes the educational materials related to proper waste disposal that were distributed at public events during the reporting period.

Table 18
Distribution of Educational Materials for Proper Waste Disposal
January 1 – December 31, 2009

Educational Item	Distributed by County at Public Events	Provided to Community Groups & Agencies for Distribution	Mailed directly to residents in response to inquiry
<i>Resource Recovery Guide</i>	5813	4640	20
<i>Disposal Tips For Home Medical Waste and Pharmaceuticals</i>	55	690	12
HHW/E-waste collection event flyers	100	430	2
CLEAN program brochures		500	
Recycled pencils	712	820	
Soil Erosion, Sedimentation Pollution		50	

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 58 community groups in Wayne County.

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 Table 19 and 20 for the Department of Public Services (WCDPS) and Environmental Health Division (EHD), respectively.

Table 19
WCDPS Staff Training in Environmental Issues
January 1 – December 31, 2009

Training Topic	Number of Staff Trained
Pesticide Applicators	16
De-icing Equipment Calibration	200
Hazardous Waste and Emergency Response (HAZWOPER)	17
MDNRE Certified Storm Water Management – Industrial Site	1

Table 20
WCEHD Staff Training in Environmental Issues
January 1 – December 31, 2009

Training Topic	Number of Staff Trained
Public Swimming Pool Inspection	27

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 (approximately 4,500) during the reporting period. All Wayne County employees with email accounts received messages encouraging their participation in the County’s Office HHW Collection events (February), Computer/Computer Peripheral Waste Collection event (March and April), *River Days* (June), and the WC office paper recycling program (July).

Signage (WCPEP #26)

Watershed and stream crossing awareness signage is made available to communities at cost through the Wayne County Publication Clearinghouse. Orders for watershed or stream crossing signs in 2009 were for Bloomfield Township (two River Crossing signs) and the City of Northville (seven River Crossing signs). Two orders for grow zone signage were filled during 2009 for the Alliance of Rouge Communities (21 signs); the Alliance of Downriver Watersheds

(26 signs) and the City of Farmington Livonia (10 signs). See also signage information reported under WCPEP #31.

Local Presentations (WCPEP #27)

Children's Education:

The 12th Annual *Rouge River Water Festival*, co-sponsored by Wayne County, was held on May 7, 2009. A total of 2,445 fifth grade students from 41 elementary schools from 15 communities attended this full day event held at the University of Michigan-Dearborn campus. Students attended a myriad of hands-on presentations focusing on the importance of water in our lives, sources of water pollution, and other related subjects from a total offering of 56 presentations and 11 exhibits. This was the seventh year that the festival was conducted in a split format of morning and afternoon sessions. This format provides the means for more students to be involved and has proven to be very successful. Approximately 127 presenters and exhibitors donated their time and skills to the festival, along with 123 volunteers from 14 different organizations. Numerous County staff participated as campus guides and completed various other tasks necessary for the successful operation of the festival. Wayne County presentations/exhibits at the 2009 *Rouge River Water Festival* included the "Don't Bug Me" presentation, an interactive experience that educates and demonstrates relationships between benthic macroinvertebrate diversity, water quality and land use. Approximately 150 students from six Rouge River watershed schools attended this presentation.

WQMD staff also volunteered at the *Cranbrook Institute of Science's Rouge River Water Festival*, held September, 17-18, 2009. WQMD presented *Seven Simple Steps to Clean Water, Watershed Model, Frogs & Toads of Michigan*. Approximately 210 students from Oakland County middle schools attended this presentation.

In 2009, Wayne County's *Dirt Doctors* appeared at two events, involving approximately 300 children and adults. This presentation focuses on soil erosion and water quality in an entertaining program that has been popular for several years. Plans for 2010 include presentations at the University of Michigan – Dearborn Rouge River Water Festival.

LRMD's Resource Recovery Program Manager provided recycling presentations to approximately 365 children at Fordson High School and West Village Academy in Dearborn. The presentation was designed to show the students how to provide an argument in favor of recycling. Students were given handouts on recycling facts, and pencils made from recycled material. Plans for 2010 will be to participate in the Rouge River Water Festival by having a recycling display; and conducting recycling presentation in local schools as requested.

WQMD staff volunteered at the *Clinton River Review*, held October 2, 2009 at Oakland University, Auburn Hills. WQMD presented *Our Action Can Affect The River* and *Frogs & Toads of Michigan* displays. Approximately 200 people participated.

Graduate Level Education: A presentation titled "Water Quality Improvements on the Rouge River Watershed" was given to a University of Michigan-Dearborn geological science graduate class. Approximately 25 students attended this presentation.

General Public Presentations:

WQMD staff made Grow Zone Green Infrastructure presentations at the ARC's Green Infrastructure workshops held in 2009. See ARC Executive Director 2009 Annual Report in Section 6 – Section 5 for more information.

LRMD Staff made recycling presentations to the Grosse Ile Garden Club (50 adults); the Hope Lutheran Church in Dearborn Heights (25 adults); and the Allen Park Rotary Club (20 adults).

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: Wayne County is a founding member of the Rouge River Gateway Partnership, formed in the summer of 1999 to represent the interests in the lowest section of the Rouge River. The Rouge meanders through five communities along this corridor, including 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. The Rouge River Gateway Partnership is exploring solutions to restore the vibrancy of the area's natural landscape while preserving the legacy of the automobile manufacturing industry. 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. Regional and national attention have given the Gateway Partnership the spark it needs to take the first steps toward creating a national model for redevelopment of historic industrial communities and restoration of an urban river. Under the Partnership's guidance, many projects from the Rouge Gateway Master Plan are underway or have been completed.

Friends of the Rouge: Wayne County actively supported and provided funding for several Friends of the Rouge (FOTR) efforts including Rouge River Day, Rouge Education Project (REP), Public Outreach Workshops, Rouge Frog & Toad Survey and Macroinvertebrate Volunteer Monitoring. Specific activities completed in support of FOTR included setting up public information displays at FOTR sponsored workshops throughout the watershed; acting as volunteer monitoring team leaders at both the Winter Stonefly Search and the Spring and Fall 2008 Bug Hunts; coordinating t-shirt delivery for the REP School Monitoring Day; hosting a school sampling site at our WQMD demonstration garden; coordinating a River Day site in Canton Township; distributing promotional flyers for FOTR events to community libraries and civic centers; and participating on the Public Involvement Projects Task Force. Kelly Cave, WQMD Division Director, was the keynote speaker at the FOTR annual meeting December 3, 2009 and presented "Rouge 2009, Preserving Our Future". This presentation summarized the water quality improvements in the Rouge and watershed restoration projects implemented by various stakeholders.

Rouge RAP Advisory Council: Wayne County staff participated in and supported efforts of MDNRE's Rouge RAP Advisory Council (RRAC) during the reporting period. Participation

included serving as vice-Chair of the RRAC. Activities included response to MDNRE information requests regarding potential Rouge AOC Delisting project ideas and opportunities.

Wayne County MSU Extension: WQMD staff continued the partnership with the Wayne County Michigan State University Extension Office. Activities conducted together included Bennett Arboretum Grow Zone Clean Up and Workday (May 2009), and support to Conservation Stewards Program.

Lawrence Technical University: In October 2008, Wayne County partnered with professor Donald Carpenter and the Alliance of Downriver Watersheds and applied for the *Water Quality Improvements Project in the Alliance of Downriver Watersheds* and the *Planning Improvements and Green Infrastructure Acquisition Across the ADW* Clean Michigan Initiative – Nonpoint Source grants. In 2009 the grant award was announced and WQMD staff worked the various partners to finalize the grant project scope of work, budget and schedule to secure the grant contract. Contract execution will begin in 2010.

Woods Creek Friends: Residents of the Lower Huron River watershed formed The Woods Creek Friends (WCF) in July 2007 with the assistance of the Huron River Watershed Council (HRWC), Van Buren Township, and Wayne County. Their mission is to assess, restore, preserve and protect the scenic beauty, wildlife habitat and water quality of the Woods Creek watershed. The group has partnered with Van Buren Township, the Ypsilanti Community Utilities Authority, the Huron-Clinton Metropark Authority and the HRWC to initiate a number of projects:

- Volunteers from the WCF monitor the quality of the creek, measuring for sediment (turbidity and total suspended solids), salinity, and phosphorus levels at seven stations in the watershed.
- Volunteers perform benthic macroinvertebrate surveys (Bug Hunts) at three stations in the watershed. These benthic macroinvertebrate surveys provide a low-cost, effective way of monitoring water quality.
- WCF installed and managed a flow monitoring station near the mouth of Woods Creek.
- WCF and partners implemented the Woods Creek Riparian Restoration Project within the Huron-Clinton Metro Park as one of the Alliance of Downriver Watersheds Grow Zone mini-grant projects in spring of 2009.

Regional PE Committee – Southeast Michigan Partners for Clean Water: WQMD has been actively participating in this initiative since its inception. In 2009, WQMD staff has been instrumental in planning and implementation of the “Our Water, Our Future, Ours To Protect” water quality public education campaign including modifying and promoting the use of the 7 *Simple Steps to Clean Water Campaign* materials. WQMD was also actively involved in the other initiatives of the Regional PE Committee including the Low Impact Development (LID) Subcommittee and the Municipal Training Subcommittee. In 2009, WQMD staff participated in nearly all of the Committees meetings and provided input to all of the Partners’ activities. See the report *Southeast Michigan Partners for Clean Water, Community Annual Report Information, October 2008-September 2009* presented in Section 6 of this report.

Stream Team/Friends of Detroit River/Riverkeeper: In 2009, Wayne County continued its partnership with *The Stream Team* and *Friends of the Detroit River* 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. Through the *Grow Zones Across the Alliance of Downriver Watershed – Mini Grants Project* Wayne County provided financial support to the Friends of Detroit River's Trenton Streambank Stabilization and Grow Zone Project located on the Frank and Poet Drain at West Road.

Lake St. Clair Regional Monitoring Project: WQMD staff is an active participant in this project coordinated by the Macomb County Health Department. In 2009, staff continued to attend or stay informed of the planning/coordination activities regarding the project.

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:

- Article in CDMNews magazine (vol 43, no 1, April 2009) “Reviving the Rouge River” discussing the 15-year Rouge Project; this magazine is distributed internationally.
- Wayne County’s IDEP program provided information regarding staff training and IDEP program implementation to DuPage County, Illinois, which has a population over 926,000 persons.
- On July 29, Wayne County staff hosted staff from Indianapolis, IN to a half day of tours and discussions about the Rouge Project, and CSO control. Sites visited include UM-Dearborn EIC, Inkster CSO basin, and Redford CSO basin.
- On November 12, Wayne County and the Alliance of Rouge Communities hosted staff from EPA, NOAA and MDEQ for a full day tour of watershed restoration projects, completed and planned.
- Wayne County staff participated as a panel speaker in an Illicit Discharge Detection and Elimination webinar sponsored by the American Public Works Association (APWA) held November 19, 2009. The panel discussed illicit discharge detection methods utilized in their jurisdictions. The WQMD presentation highlighted Wayne County’s Illicit Discharge Elimination Program and watershed based permit. The APWA is an international organization dedicated to providing high quality public works goods and services. APWA has approximately 29,000 members.
- Wayne County’s IDEP program provided information regarding staff training and IDEP program implementation to the City of Seattle, Washington. The City of Seattle has a population of over 602,000 people.
- Two staff members of the State of Washington attended the Wayne County IDEP training workshop in Livonia after receiving positive feedback about Wayne County’s nationally recognized training workshop from a participants attending the workshop at the Water Environment Federation Technical Conference in Los Angeles California.

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

Information Dissemination: Facilities Management Division (FMD) has a number of handouts and other materials used to educate the public on topics which may result in pollution prevention. These materials include: *Riparian Corridor Management Principles and Practices*, *Woody Debris Management 101 – The Clean and Open Method*, *Woody Debris Management 201 – Habitat and Structure Method*, *Riparian Corridor Management Streambank Management 101*, *Riparian Corridor Management Streambank Management 201*, *Naturescaping*, and *Site Preparation for Small Planting Areas*. These documents were distributed in response to three citizen requests. This information can also be found on the Wayne County website. FMD staff meet with the public regularly for drain improvement petition related meetings and at service request inspections.

FMD – Industrial Pretreatment Program staff made presentations regarding the importance of Industrial Monitoring to over 150 fifth graders at the Rouge River Water Festival

Industrial Pretreatment Excellence Award and Zero Discharge Club: The County's Industrial Pretreatment Program (IPP) for the Downriver Wastewater Treatment Facility recognized 21 companies as members of the *Zero Violations Club* during 2009.

Wastewater Treatment Plant Open House: Industrial users of the system are invited to learn about the importance of protecting the environment and wastewater treatment at the Annual Open House.

Staff Training: Members of the IPP staff attended the IPP seminar sponsored by the MDNRE and USEPA, Region 5.

Integrate Public Education into Roads Division (WCPEP #30)

Information Dissemination: An informational display rack is set up at the Wayne County Roads Division Central Maintenance Yard. The *Rouge River Action Plans*, *Our Actions Can Affect the Rouge River*, *Storm Drains Aren't Garbage Cans*, *Wayne County Environmental Hotline*, *7 Simple Steps Tip Cards*, *River Friendly Gardener*, *River Friendly Fertilizers*, *Rouge River Repair Kit*, *Clean Air Car Care*, and *Ozone Action Tips* brochures are available to employees and the general public.

Watershed Awareness Signage: Eighteen river crossing signs were fabricated for the WQMD Clearinghouse. Existing river crossing and watershed entry signs are being called out to be retained on road reconstruction project plans.

Road Staff Training: Sixteen DPS – Roads staff received pesticide application training and are certification in 2009. Two hundred staff were trained for equipment calibration de-icing operations.

Adopt-a-Road Program: One hundred fifty-nine groups group adopted approximately 116 miles of County Road in 2009.

Integrate Public Education into Parks 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 21 presents a summary of the environmental educational information distributed by the Parks Division, Nankin Mills Naturalists during 2009.

Table 21
Environmental Educational Information - Nankin Mills Parks Office
January 1 – December 31, 2009

Educational Item	Approximate Number Distributed
Rouge Watershed Public Recreation Areas Map and Index	50
Holliday Nature Preserve Map	300
Holliday Nature Preserve Association newsletters	200
Southeastern Michigan Butterfly Association Fliers	200
“Bennett Arboretum History” brochure	200
Bennett Arboretum Trail Map and Interpretive Guide	100
Bluebird Nesting Box Information Flier	200
“What is a Floodplain?” Park Information Bulletin	200
“Herps of the Rouge” Interpretive flier	500
“Owls of Michigan” Interpretive flier	400
Match Animal to Habitat flier	200
Fish of the Rouge River activity flier	150
Trees of the River Floodplain activity flier	150
Geology of Michigan fliers	600
Poisonous Plants and Animals fliers	150
Animal Tracks, activity flier	400
Pond Benthics and Water Quality flier	300
Animal Hibernation flier	200
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, opened in January 2001, is “The Rouge River Runs Through History”. The Center is free to the public, and open Monday through Saturday, 9am – 4pm. 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
 - **New in 2009:** 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
 - **New in 2009:** interpretive panel listing all species of fish living in the Rouge River and pictures of many species including those in the aquarium for identification.
- **New in 2009:** 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
- **New in 2009:** Turtles of the Rouge River with interpretive panel above the live turtle tanks for identification of the ten Michigan species.
- **New in 2009:** Songbirds of Michigan with over 50 bird mounts on display with labels identify each species.

Nankin Mills Interpretive Center Grounds: Labels are being made to identify native plants in the Butterfly Garden established on the site by the Southeastern Michigan Butterfly Association.

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:

<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>		

Additionally, the Nankin Mills Interpretive Center 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, endangered species are also displayed.

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.

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 2009.

<i>History of the Rouge River</i>	<i>Animals in Winter</i>
<i>Reptiles and Amphibians of the Rouge Floodplain</i>	<i>Animal Mysteries</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>	

Additionally, Nankin Mills Scout Badge Workshop Programs offered in 2008 which featured natural resources included:

<i>Watching Wildlife</i>	<i>Earth Connections</i>	<i>All About Birds</i>	<i>Wildlife Conservation</i>
<i>Earth is Our Home</i>	<i>Finding Your Way</i>	<i>Eco-Action</i>	<i>Astronomy</i>
<i>Animals</i>	<i>Outdoor Creativity</i>	<i>Orienteering</i>	<i>Environmental Science</i>
<i>Plants</i>	<i>Plants and Animals</i>	<i>Outdoor Survival</i>	<i>Water/Soil Conservation</i>
<i>Eco-Explorer</i>	<i>Rocks Rock</i>	<i>Wildlife</i>	<i>Sharing World w/Wildlife</i>
<i>Space Explorer</i>	<i>Sky Search</i>	<i>Forester</i>	<i>Nature Crafts</i>
<i>Earth and Sky</i>	<i>Water Wonders</i>	<i>Naturalist</i>	<i>Birds</i>
<i>Outdoor Adventurer</i>	<i>Wildlife</i>	<i>Geologist</i>	<i>Your Living World</i>
<i>Water Everywhere</i>	<i>Outdoor Surroundings</i>	<i>Map and Compass</i>	<i>Leaf Hike</i>

Monthly home school series natural resource related programming offered by Nankin Mills Interpretive Center included:

<i>Meet the Wild Canines</i>	<i>Seed ID/Collection</i>	<i>Maple Sugaring</i>
<i>Michigan Geology</i>	<i>Beginning Astronomy</i>	<i>Herps of the Rouge</i>
<i>Animal Tracks in Winter</i>	<i>Leaf Prints</i>	<i>Pond Life</i>
<i>Animal Signs and Skulls</i>	<i>Owls of Michigan</i>	
<i>Rouge Underground Railroad History</i>	<i>Butterfly Gardening/Rearing</i>	

New in 2009:

<i>All Things Michigan</i>	<i>Living Green/Capt'n Eco</i>	<i>WildflowerFolklore</i>
<i>Hawks of Michigan</i>	<i>Water/Soil Conservation</i>	<i>Bird Nests</i>

Family programs with natural resource themes offered in 2009 included:

<i>Seasonal Astronomy Programs</i>	<i>Nature Birthday Parties</i>	<i>Maple Sugaring</i>
<i>Live Reptiles & Amphibians of Michigan</i>	<i>Owls of Michigan</i>	<i>Spring Frogs</i>
<i>Wildlife Safari</i>	<i>Halloween Forest Fun Hike</i>	
<i>Fall Family Color Hike</i>	<i>SE Michigan Butterfly Association Family Day</i>	

Summer camp sessions at Nankin Mills offer different age groups an opportunity to experience firsthand outdoor nature activities. Natural resource related topics included in Nankin Mills Summer Nature History Day Camps during 2009 were as follows:

- Kindergarten-Third Grade Camp Topics: *Nankin Lake Hike, Water Pollution, Astronomy, Live Reptiles/Amphibians, Owls of Michigan, Nocturnal Nature, Michigan History, Outdoor Art, Predator/Prey Relationships.*
- Fourth – Sixth Grade Camp Topics: *Nankin Lake Hike, Water Pollution, Live Reptiles/Amphibians, Poisonous Plants, Water Quality Testing, Cranbrook Space Lab, Michigan History, Solar Energy*

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. We provided two staff and the topic presented was: *Live Reptiles and Amphibians of the Rouge.*

Wayne County naturalists also present *Live Reptiles and Amphibians of the Rouge* at the Canton Parks River Day festivities, for the City of Westland Turn Off the Violence, Westland Therapeutic Recreation Picnic, and many local public library summer camp programs.

Table 22
Attendance at Nankin Mills Interpretive Programs
January 1, 2008 – December 31, 2009

Number of Interpretive Programs Provided	346
Number of Children Attending	9,136
Number of Adults Attending	5,519
Total Number Attending	14,655

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

- Nankin Naturalist met with four boy scouts regarding planning projects for their Eagle Scout rank. Projects completed included two new sections of boardwalk in Koppernick Section of Holliday Nature Preserve, adding decking, steps and railing to a major trail bridge over Tonquish Creek in the Koppernick Section of Holliday Nature Preserve, and clearing invasive species of elm, cottonwood and herbaceous plants in the Grow Zone area near the Nankin Mills building. Split rail fencing was also moved and installed along the Grow Zones by Nankin Mills. Holliday Nature Preserve Association was involved with the Eagle Scout Projects in the Holliday Nature Preserve.

- Nankin Naturalist continued to work with Southeastern Michigan Butterfly Association to install a Butterfly Garden with native plants next to the building.
- Nankin Naturalist met with volunteers to inventory and clean out bluebird nesting boxes in Grow Zone areas.
- Nankin Naturalist worked with Master Gardener volunteers to enhance existing butterfly gardens on the Nankin site.
- Nankin Naturalists performed several garlic mustard pulls in Ellsworth Section entrance to Holliday Nature Preserve. Also worked with scout volunteer groups to pull garlic mustard in Ellsworth Section.
- Nankin Naturalist maintains a bird feeding station on site.
- Wayne County Parks Nankin Mills Interpretive Center Naturalist hosts monthly meetings of the Southeastern Michigan Butterfly Association with educational presentations about butterflies and butterfly gardening.
- Nankin Naturalist hosted Southeastern Michigan Butterfly Association Saturday workshops to teach butterfly identification.
- Nankin Mills hosts Motor Cities meetings involved in the preservation of the history of the Middle Rouge Parkway and other sites.
- Nankin Naturalist participated in video project with Holliday Nature Preserve Association about the Holliday Nature Preserve and Rouge floodplain.

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 Park Brochure and on the Park website. Schools also spread the information by word of mouth.
- *Outreach programs:* A flier is available in Nankin lobby and programs are listed in the Park Brochure and on the Park website. The outreach program flier is also electronically mailed to local libraries and Recreation Departments.
- *Scout programs:* A scout flier 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 and in the Parks Brochure and on the Parks website.
- *Family programs:* A seasonal family program flier is electronically mailed to those on the Parks mailing list and available in the lobby. Programs are also listed in the Park Brochure and on the Park website, 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.
- *Home school programs:* An annual flier is electronically mailed to those on the Parks mailing list, available in the Nankin Mills lobby, and program offerings are listed in the Park Brochure and on the Park Website.
- *Large Family Events:* Fliers are electronically mailed to those on the Parks mailing lists, local libraries and Recreation Departments. These events are also advertised in the Park Brochure and on the Park Website, and an illustrated advertisement is displayed on an announcement board in the Park Office lobby and on the Park electronic sign on Hines Drive.
- Co-sponsored events are advertised by the event co-sponsor. For example, Native American Day, which gets radio coverage and is listed in Native American publications.

In addition to the 14,655 visitors who came to Nankin Mills Interpretive Center to visit and attend an interpretive program in 2009, an additional 4,277 people visited the Interpretive Center exhibits without attending an interpretive program, for a total of 18,932 visitors in 2009. Total Interpretive Center attendance since opening in January 2001 through December 31, 2009:

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
Total:	160,422

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 23 presents a summary of the environmental educational information distributed from the Crosswinds Marks Parks Office during 2009.

Table 23
Environmental Educational Information Distributed From Crosswinds Marsh,
Wayne County Parks, January 1 – December 31, 2009

Educational Item	Approximate Number Distributed
The Fish of Crosswinds Marsh	175
2009 Fishing Guide	150
Wetland Ecology (info sheet)	50
Natural History of the Beaver (info sheet)	125
Natural History of the Muskrat (info sheet)	125
Rocks and Minerals Guide (Booklet)	140
Poisonous Plants and Animals of MI (booklet)	255
Conservation of the Kirtland's Warbler (booklet)	255
The Benefits of Trees (booklet)	225
Recycling Guidelines (info sheet)	150
Nature's Recycling Coloring Book (booklet)	150
Tree Identification Guides (booklet)	150
Wildflower Identification Guide (booklet)	45
Natural History of Michigan Owls (booklet)	500
Michigan Frogs (booklet)	200
Michigan Frogs (Coloring Sheet)	200
Frog Facts (Bookmark)	200

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 3,467 children and 1,323 adults participated in education programs offered by the naturalists stationed at Crosswinds Marsh.

Crosswinds Marsh School Programs:

Michigan Frogs and Toads

Spring Fling

All About Birds

Canoe Hike

Geologic Wonders of Michigan

Marsh Mammals

Michigan Owls

Michigan Reptiles and Amphibians

Nature Detective

Predators and Prey

Wetland Field Investigation

Wetland Homes and Habitats

Wetland Plant and Animal Adaptations

The Wonders of Water and Wetlands

Insect Incognito

Michigan Trees

Self Guided Canoe Hike

Fall Frolic

Crosswinds Marsh Outreach Programs:

All About Birds

Fall Frolic

Insect Incognito

Michigan Frogs and Toads

Michigan Owls

Michigan Reptiles and Amphibians

Nature Detective

Predators and Prey

Wetland Plant and Animal Adaptations

Winter Tracks

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

**Family Fishing Fun Day*

**Nature Fest*

Marsh Hike

Michigan Bigfoot

Cattail Kids

Crosswinds Marsh Scout Badge Programs:

Animals

Eco-Explorer

Outdoor Adventurer

Playing Around the World

Watching Wildlife

Water Everywhere

Plants

Science in Action

Senses

Birds, Elective #13

Your Living World, Achievement #7

Fishing (Wolf), elective #19

American Indian Life, Elective #24

Tall Tales, Achievement #4

Sharing your World with Wildlife, Achievement #5

Naturalist

Scientist

Forester

Your Outdoor Surroundings
Weather Watch
Science Discovery
Finding Your Way
Water Wonders
Earth Connections
Wildlife (Juniors)

Geologist
Wildlife Conservation (Academics & Sports)
Fishing (Academics & Sports)
Map and Compass (Academics & Sports)
Insect Study (Merit Badge)
Rocks Rock

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

Amazing Arachnids
Native Michiganders
Diggin Dinos
Nature Fun and Games

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. We provide two staff that conduct six to eight programs, for approximately 200 students and 50 adults. The Topic presented was *Aquatic Invertebrates of the Rouge Watershed*.

Crosswinds Marsh Wetland Interpretive Preserve – Workshops and Other Events

- Naturalists are currently working with an Eagle Scout on a project to construct and install Interpretive Trail signs along the boardwalks and trail system.
- Naturalist contacted the Detroit Audubon Society to discuss programming partnership projects.
- Naturalists established a partnership with Trenton Parks and Recreation to conduct their *Nature Nook Program Series and Nature Day Camp*.
- Naturalists established a partnership with Van Buren Parks and Recreation are currently conducting spring, summer and fall programs, as well as an *Urban Tree Curriculum Series*.
- Naturalists established a partnership with Flat Rock Parks and Recreation and are currently conducting a summer camp program in July.

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 the Parks Website. Currently an E-mail mailing list is being developed for school and outreach programs.
- *Crosswinds Marsh Scout Programs*: Fliers and the *Parks Events and Interpretive Programs* brochure listing all Scout Badge Programs is available at the entrance to the Park. The fliers and brochure are sent to scout groups on our mailing list. All programs are listed on the bulletin board at the entrance to the park and the Parks Website. Currently an E-mail mailing list is being developed for scout programs.

- *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 the Parks Website. A Press Release for each program is sent to the local newspapers.

Parks Website: The Wayne County Parks website promotes and advertises the Interpretive and Naturalist programming offered by the County.

Signage – Don’t Feed the Geese: Ten signs remain in place near the Middle Rouge impoundments, five signs are at Elizabeth Park and 16 signs are installed at Crosswinds Marsh.

Signage - Holliday Nature Preserve: New map and rule signage was fabricated for the Holliday 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 were maintained as part of the May 2009 work day.

Signage – Crosswinds Marsh:

- Six “No Fishing” signs have been installed in restricted areas.
- Five “No Bicycles Beyond This Point” have been installed in restricted areas.
- Two additional Endangered Species signs were installed near the bald eagle nest.

Signage - Grow Zone Areas: Interpretive Grow Zone signs remain at the Nankin Mills Grow Zone and the Bennett Arboretum Grow Zone. The Newburgh Pointe Rain Garden Interpretive sign was installed by Ford Motor Company volunteers in June 2009. Seven permanent GZ signs were installed and temporary Grow Zone boundary marker signs were replaced throughout the Grow Zones installed in Edward Hines Park. Additional signage will be installed as new Grow Zone areas are identified and established.

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.

Signage – Parks Design Section: Parks Design Section continues to initiate environmental restoration and protection initiatives through the permit process. In locations where construction is taking place that impacts Parks property, we require small interpretive signs that recognize the damage and identify the measures that are to be taken to restore and enhance the surrounding ecology and wildlife habitat upon project completion.

Staff Training: No new environmental training was reported by DPS – Parks in 2009.

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 recognized 21 companies as members of the *Zero Violations Club* during 2009.

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). These materials come in a packet that includes the "Septic Systems Record Keeping folder", "Important if You are Selling Your Home" brochure, a "Your Septic System" reference guide for homeowners brochure, and an "Evaluator Recommendations" checklist. These materials are provided to all property owners requesting OSDS permits (new or repair) and to homeowners who have their disposal systems evaluated by Wayne County EHD. These materials are also provided to those individuals who become certified OSDS inspectors under the ordinance. In the calendar year 2009, approximately 200 of these packets were distributed. The EHD implemented a webpage (June 2001) within the County's website which offers information regarding OSDS operation and maintenance as well as information summarizing services and programs offered by the EHD. The site established links to the WQMD webpage and to other environmental education sites. Environmental Health Department (EHD) staff also participated in Rouge Water Festival distributing 500 Cross Connection Control pamphlets to inform the students how to protect drinking water from contamination. EHD staff also distributed educational material to children about radon gas. Education materials included pencils, coloring books, and literature about radon and how to prevent radon gas exposure.

Land Resources Division – Soil Erosion Permits: One package of 50 *Soil Erosion, Sediment Pollution and Your New Home* brochures was distributed to a local building department upon request by the LRMD in 2009.

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. In 2007, a significantly updated version of the manual was published and provided to MDNRE. New guidance documents for the program were published and posted on the "storm water ordinance" section of the Wayne County website in April, July, and August of 2008, and in June and October of 2009.

The ordinance, administrative rules, and standards manual are available online from Wayne County's website <http://www.waynecounty.com>. Additionally, supplemental materials not included in the Standards Manual, which may be helpful in implementing the Wayne County

Storm Water Management Program, are available at http://waynecounty.wc/mygovt/doe/depts/wqd/supplement_info.aspx. Water Management Program. Information developed and published in 2009 included “Guideline for Wayne County Review of Manufactured Treatment Systems” (March 2009).

A registry of example Storm Water and Water Quality Practices Constructed/Implemented in Southeast Michigan is found at http://waynecounty.wc/mygovt/doe/depts/wqd/strm_water_pract.aspx. This section of the website presents information (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
- 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.

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, 2009– December 31, 2009** for compliance with the County's Certificate of Coverage MIG610040 under the MDNRE 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 will be created. In 2009, additional outlet and slope stabilization was performed by installing gabion baskets and riprap at the Tarabusi Creek and Middlebelt Road crossing in the Upper Rouge watershed.

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

Wetlands – Constructed (County Projects): Wayne County continued to maintain approximately seven acres of wetlands that have been created by the Wayne County Wetland Bank and Wetland Protection Fund during the reporting period.

Low Impact Development/Green Infrastructure Projects: Wayne County Parks and WQMD continued their partnership on the *Rouge River Riparian Corridor Management Project* within Hines Park. This project was initiated with Rouge River National Wet Weather Demonstration Project funding and continued with funding under a grant from the MDNRE Clean Michigan Initiative (CMI). 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 cell, two detention pond native plant retrofits, and 12 native plant grow zones. In 2009, the CMI grant was completed; a comprehensive evaluation report of the project is provided as an attachment in Section 6 – Section 4. See also activities reported under WCPEP #11 and WCSWM #27.

Road Construction – DPS Field Engineering Office (FEO): Table 24 summarizes the Wayne County road construction projects administered by the Field Engineering Office in 2009. These projects consisted primarily of an asphalt overlay of an existing concrete or asphalt roadway. Most projects also required removal (of years) 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.

Table 24
Wayne County Road Construction Projects
January 1 – December 31, 2009

Project Name	Project Limits	Project Name	Project Limits
Howe	Van Born to Michigan	Seven Mile	Southfield to Greenfield
Dix	Ferney to Detroit C.L.	Six Mile	Beech-Daly to Detroit C.L.
Haggerty	Cherry Hill to Ford	Toledo	Moran to Southfield
Inkster	Joy to Plymouth	Pav't Maintenance	Canton Township
Joy	Middle Belt to Inkster	Van Horn	Fort to Jefferson
Inkster	Corona to Ford	Warren	Inkster to Beech-Daly
Outer Drive	I-75 to Toledo	Van Born	Lilley to Haggerty
Glendale	Beech-Day to Telegraph	Intersection Improvements	Canton Township
Sheldon	Over CSX Rail Road	Pinnacle	Sibley-Vining Intersection

For the Canton Center Road project, Vortech™ swirl concentrators were installed from Palmer to Cherry Hill.

LRMD coordinated activities between the MDNRE, Canton Township and a Waste Management Company that led to the capping of a leachate discharge from an old abandoned landfill. The discharge had been active for many years and had increased levels of ammonia in the McKinstry Drain discharging into the Rouge River.

CSO Control Implementation (WCSWM #3)

Wayne County continued operation and maintenance of combined sewer overflow control facilities in Dearborn Heights, Harper Woods (Milk River RTB), 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.

SSO Control Implementation (WCSWM #4)

Wayne County continued operation and maintenance of the sanitary sewer interceptor system tributary to the County's Downriver Wastewater Treatment Facility (WWTF) and of the Rouge Valley and Northeast interceptor systems tributary to the Detroit WWTP. Any sanitary sewer overflow (SSO) control activities necessary for these systems are defined in the NPDES permits for these systems.

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 has stenciled the storm sewer manholes within maintenance yards and parking lots. Efforts continued in 2009 by WQMD to develop Pollution Prevention (P2) Action

Plans as described in the County's Storm Water Pollution Prevention Initiative. A proposed inspection checklist and template P2 Action Plan is being developed for use at inspections to be performed in 2010. Additionally, the following pollution prevention activities are undertaken at all Roads maintenance yard operated by WCDPS:

- 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 in WCSWM#10. Spills of materials on County roads are handled by an environmental cleanup company under contract to Wayne County. Michigan Department of Transportation (MDOT) is notified of spills on State trunk lines. MDOT then 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 trash is hauled to a Type II landfill.
- Storing and Handling of Inventory: Climate controlled building with storage of containerized liquids on bases with overflow spill protection. Bulk storage is typically undercover and on impervious surfaces.
- Dumpster and Loading Dock Maintenance: Thirty cubic yard and six cubic yard dumpsters are placed at maintenance yards by a contractor. These dumpsters are provides for disposal of trash and waste from the yards and roads. The contractor responds on demand to empty the dumpsters.
- Cleaning Equipment- Wayne County Roads Division: The waste water from the truck wash building at Central Maintenance yard flows into an oil water separator and then into a sanitary sewer. Oil water separators are in place at all maintenance yards and truck wash areas are constructed of impervious asphalt and drained into a sanitary sewer.
- Maintaining Landscaped Areas: Roads Forestry has 16 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. Four roadway sites with excessive erosion were repaired with 21 AA or S2 aggregate or by flowable fill concrete.

Staff Training (WCSWM #6)

See activities reported under 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 this P2 Action Plan development process,

contracts for maintenance of County facilities will be reviewed for opportunities to include specifications for pollution prevention activities and/or identify training opportunities.

P2: Fertilizer, Pesticide and/or Herbicide Application (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 process to develop P2 Action Plans for Wayne County facilities described previously, individual facility landscaping practices (done in house or under contract) will be reviewed for opportunities to minimize or improve fertilizer, pesticide and herbicide application practices.

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

During 2009, the Design Office of the WCDPS-Engineering Division generated plans and specifications for the construction of 18 road improvement projects in Wayne County. Along with improving the ride-ability of these roads, all catch basins and storm water manholes 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. The cleaning of catch basins associated with storm sewers owned by Wayne County is also performed on an as-needed basis. During 2009, the Wayne County DPS-Roads Division removed and properly disposed of 26,003 cubic yards of material from catch basins, storm sewers, roadside ditches and other features. The Roads Division has a policy 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 25 below presents a summary of roadway sweeping for this reporting period.

Table 25
2009 Roadway Sweeping Summary
Wayne County Roads Division

Type of Roadway	Cycles	Road Miles
Urban Freeway	2	1473.7
State Trunk Lines	1	32.1
County Primary Roads	1	1797.9
County Local Roads	0	0

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

P2: Snow Removal and Storage (WCSWM #11)

Consistent with each facility's PIPP, 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)

Wayne County Department of Public Services will continue to practice environmental friendly methods of deicing and store all deicing equipment, supplies, and chemicals in shelters that prevent spill and leaks that could enter the storm drain system. Staff are trained annually on winter safety and salt operations. Salt truck equipment is calibrated routinely to minimize over application.

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

Several times during the year, the DPS-Roads Division hires a contractor to clean up oil and fuel spills on roads and freeways that result from accidents. Oil-water separator tanks at maintenance yards are routinely cleaned and the material properly disposed.

Goose Control Program (WCSWM #14)

The program to control Canada Goose populations in Wayne County Parks was not conducted in 2009.

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

As an Authorized Public Agency (APA) the WCDPS-Field Engineering Office follows the SESC Procedures and supplemental manual, as approved by MDNRE in July of 2005. 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 17 Certified Storm Water Operators. Twelve of these employees have also successfully passed the exam for the MDNRE SESC (Construction) training.

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.

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 2009, the Permit Office reviewed 358 development projects to ensure compliance with the Wayne County Storm Water Ordinance. The Field Engineering Office provides inspection for approved projects. One hundred eighty construction permits were issued. One hundred thirty-five projects were completed and there are 45 approved projects under construction.

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 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)

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 0 violation notices issued under Wayne County's Municipal Civil Infraction Ordinance.

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 continued implementation of the Sewer Use Ordinance (Chapter 101 of Wayne County Code of Ordinances). In 2009, four industrial users were identified and noticed of being in significant non-compliance, no municipal civil infractions were issued and no show causes reported in the continued enforcement of the County Sewer Use Ordinance.

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 33 (an increase of two from 2008) of the 43 local communities within Wayne County. During the reporting period, LRMD issued 157 soil erosion control permits. Inspections were conducted at 100% of the projects underway and 25 major violation notices were issued. Corrections have been made or are underway for all violations. MDNRE did not perform an audit on the County's SESC Program in 2009; the program was audited by MDNRE in 2001 and received an "Approved" rating. LRMD staff also actively participate in the Wayne County Storm Water Ordinance Workgroup.

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

Wayne County's Storm Water Management Ordinance (Enrolled Ordinance No. 2000-652) and Administrative Rules (Resolution No. 2000-653), adopted in October 2000 and revised in August 2003, requires that storm water runoff from regulated development projects must meet certain performance standards for flood protection and water resources protection. There is a companion document, Wayne County Standards Manual, to assist with compliance with the Storm Water Ordinance and Administrative Rules. The Wayne County Storm Water Work Group (consisting of representatives from DPS-Administration, DPS-Engineering, DPS-Permits, DPS-Parks, WCDPS-LRMD, Corporation Counsel, and chaired by the WCDPS-WQD) periodically publishes a document entitled "Program Clarifications, Errata, And Revisions", along with other miscellaneous guidance. A significantly updated version of the manual was published in February 2007 and was submitted to MDNRE with last year's report.

The Wayne County Storm Water Management regulations are implemented through the existing review and permit processes of the Permit Office of the Wayne County Department of Public Services, Engineering Division. Efforts to publicize these regulations are ongoing (see PEP#9) and include periodic mailings to local communities, developers, and other interested parties; posting of materials on the Wayne County website and workshops with developers, communities, and other interested parties. Copies of the ordinance, rules, and standards manual are available from the Permit Office (33809 Michigan Avenue, Wayne, MI), or from the Wayne County website <http://www.waynecounty.com>.

In 2009, the Permit Office reviewed 358 development projects to ensure compliance with the Wayne County Storm Water Ordinance. The Field Engineering Office provides inspection for approved projects. One hundred eighty construction permits were issued. One hundred thirty-five projects were completed and there are 45 approved projects under construction.

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

WCDPS-FMD staff implemented woody debris management as part of all 2009 County Drain maintenance activities. Every maintenance project undertaken by FMD staff that involves management of woody debris is evaluated for the potential use of WDM 101 and WDM 201 techniques. Staff regularly uses banking of material as well as the clean and open method as an option in daily drain maintenance activities.

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

See activities summarized above in WCPEP #11, WCSWM #2, WCSWM #24 and WCSWM #25.

Habitat Restoration (Protection) (WCSWM #27)

Grow Zone Initiative: WCDPS-Parks Division with support from the WQMD continues efforts of expanding the Grow Zones Initiative into all of its park areas in support of storm water management and improvement of riparian corridors along river tributaries. Late in 2009, discussions began with the Roads Division and MDOT regarding implementation of grow zones along select County and State roads. See activities summarized in WCPEP #11 and WCSWM #2.

Detroit River International Wildlife Refuge: Many elements of the Wildlife Refuge Gateway site are still in the planning stages. The first phase of development was completed in 2009 with the day-lighting of the Monguagon Drain as it bisects the Gateway site. This project collects storm water runoff and discharges it into a sedimentation basin. The water then flows into a wetland and ultimately into the Detroit River. This project was funded in part through a MDNRE Clean Michigan Initiative grant.

Wayne County Native Plant and Backyard Composting Demonstration Site: WQMD has developed a native plant and backyard composting demonstration site at its Commerce Court office location in the City of Wayne. Staff developed a comprehensive plan that showcases composting techniques, native plantings and erosion control measures on a parcel of land immediately adjacent to the Lower Rouge River and WQMD office. This site was created in 2003 as a staff training effort, a public education effort, an element of the County's River Friendly Partners Program and as a habitat restoration effort. The site also serves as a monitoring location for the Rouge Education Project as we welcomed in students from Cesar Chavez Academy in Detroit to perform chemical and benthic monitoring along the Lower Rouge River adjacent to the garden. Benthic scores at the site appear to be trending upward with Spring scores rising from a score of 20 to almost 30 and fall scores rising from 20 to a score of over 35. Maintenance of the garden and trail system continued along with routine wildlife monitoring. Future activities planned include further expansion of the native plant garden, installation of birdhouses, and continued utilization of the site for school educational activities.

Collaboration with the Detroit District US Army Corps of Engineers (COE): Wayne County continues to collaborate with the US Army Corps of Engineers to improve riverine habitat along the paved channel section of the Rouge River, from Michigan Avenue to the confluence with the Detroit River. The preliminary restoration plan for modification of the concrete channel between Michigan Avenue and Interstate 94 was approved in August 2002 by COE district management. Detailed analysis for this project was started in 2003 and the hydraulic modeling analysis of the channel modification and report was completed by the COE and submitted to Wayne County in December 2005. Meetings between the COE, Wayne County and Gateway Partners continued to be held periodically during 2009 to discuss financing and technical issues associated with the future construction of this project.

Nankin Mills Interpretive Center: Bluebird nesting boxes are being maintained in the Grow Zone areas. The (mostly native plant) butterfly garden was maintained on 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 50 blue bird nesting boxes installed by an Eagle Scout.
- Crosswinds Naturalists continue to monitor, clean and repair 28 bat houses previously installed.
- Crosswinds Naturalists continue to implement our invasive species control program for autumn olive, phragmites, purple loosestrife and Eurasian water milfoil.
- Crosswinds Naturalists continue to implement our control program for Cottonwoods 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.

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. Design work for two projects initiated in 2009, Blakely Drain and North Branch Ecorse Creek, may have potential for these features.

Other Activities And Projects

Other activities and projects of importance to watershed management, pollution prevention and habitat restoration are summarized below.

Elizabeth Park:

- Continued development of the River Walk.
- Development of the boat landing and assembly area.
- Design of restoration plans for the Elizabeth Park canal shoreline, bike path and riparian corridor restoration.

Detroit River International Wildlife Refuge:

- Design and development of boat dock and adjoining pier
- Design and development of shoreline restoration

Active water-based recreation use within Wayne County Parks:

- 234 canoe rentals at Crosswinds Marsh
- 115 participants in Crosswinds Fishing Derby
- 200 participants in Waterford Bend Fishing Derby

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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, 2009 – December 31, 2009** in compliance with the County's Certificate of Coverage MIG610040 under the MDNRE 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.

Rouge Subwatershed Advisory Group (SWAG) Participation: Wayne County regularly participates in the meetings held by the six Rouge Subwatershed Advisory Groups (SWAGs) in the County.

Rouge RAP Advisory Council: Wayne County staff continued their active participation on the RRAC and its subcommittees. Wayne County staff served as Vice Chair of the RRAC and actively participated in on-going efforts to implement the RRAC's *Delisting Targets for Fish and Wildlife Habitat and Population Beneficial Use Impairments for the Rouge River Area of Concern* report published in December 2008.

Alliance of Rouge Communities: On August 5, 2003 the Rouge watershed communities and counties formed the *Rouge River Watershed Local Management Assembly (Assembly of Rouge Communities)* to guide the Rouge River restoration into the future as the federal grant funding diminishes. The Assembly of Rouge Communities (Assembly) was based on a Memorandum of Agreement (MOA), signed by each local community, which outlined voting and funding shares for the new working arrangement. The Assembly successfully operated for more than two years, with 38 community members and three county (Wayne, Oakland and Washtenaw) members. The annual budgets, on the order of \$600,000 per year, were 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 were used to provide technical guidance and facilitation for the Assembly, its committees and the seven Subwatershed Advisory Groups. Wayne County served as fiduciary for the Assembly of Rouge Communities during 2003-2005.

In December 2005, the Assembly formally became the Alliance of Rouge Communities (ARC) when 20 eligible members approved bylaws modeled after the former MOA for operation of the Assembly. The group now acts as a legal public entity under the new Watershed Alliance Act, Public Act 517 of 2004. There are 42 ARC members and one associate member that have approved the bylaws, including Wayne County. The County served as fiduciary for the ARC during 2006 and 2008 under inter-agency agreements. Fiduciary duties for 2009 were

transferred to the ARC via an interagency agreement executed in December 2008; this agreement also provided Rouge Project grant funding for 2009 to the ARC.

The ARC structure involves a General Assembly that meets at least twice a year, an Executive Committee that meets as necessary, and three standing committees (Finance, Technical, Public Involvement/Education (PIE)). A special committee, the Organization Committee is also currently active. Each of these committees meets as needed.

Wayne County was a founding member of the ARC, is an active participant on every committee, serves as co-chair of the Organization Committee, and provides many of the services being provided to this new entity to guide Rouge River watershed restoration efforts into the future. Wayne County participated in virtually every activity described in the *ARC Executive Director 2009 Annual Report* is included in the attachments for this report (Section 6). For 2009, key activities completed by Wayne County and ARC Committees included ongoing development of a collaborative SWPPI Action Plan for the Rouge Watershed, a significant update to the Collaborative Action Plan, continued implementation of the new 5-year monitoring plan for the watershed, watershed land cover acquisition and analysis, update of the Rouge Watershed Management Plan, implementation of the green Infrastructure campaign, and numerous public education activities. Additional information about the activities of the ARC can be found on the website www.allianceofrougecommunities.com.

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. In 2008, Huron Township and City of Inkster joined bringing the total membership up to 26 of the 26 potential ADW member communities.

Wayne County was a founding member of the ADW, is an active participant on every committee and provides many of the services being provided to the ADW. Wayne County activities ADW activities are summarized in the report, *Alliance of Downriver Watersheds - 2009 Summary of Activities/Accomplishments* provided in the Attachments (Section 6) to this report. Additional information about the activities of the ADW can be found on the website <http://www.allianceofdownriverwatersheds.com>.

Activities in Lake St. Clair (Direct Drainage) Watershed

Wayne County actively participates in the Lake St. Clair Watershed Advisory Group facilitated by Macomb County, who received grant funding from the US Army Corps of Engineers to assist

with the effort. The watershed management plan was developed to meet Clean Michigan Initiative and 319 requirements and submitted to MDNRE on November 1, 2006. Throughout 2008, WQMD staff worked with Macomb County, the consultant and the other watershed partners to modify the watershed management plan for this area based on feedback from the MDNRE. The plan was approved by MDNRE in June 2008 for both CMI and 319. In 2009, WQMD staff continued to participate in the watershed management and pollution prevention activities of the Lake St. Clair Watershed.

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SECTION 6 LIST OF ATTACHMENTS

Wayne County Annual Report: January 1, 2009 – December 31, 2009

SECTION 1: DETERMINATION OF EFFECTIVENESS

- The *2008 Rouge River Ecosystem Monitoring and Assessment Report*, along with previous years reports, are available online at: www.rougeriver.com
- The Rouge Watershed Monitoring Database is available online at: <http://online2.cdm.com/detroit/rougeriver/query/query.cfm>

SECTION 2: ILLICIT DISCHARGE ELIMINATION PLAN

- Table 2.1: Facilities with Confirmed Corrections (2009)
- Table 2.2: Facilities with Outstanding Illicit Discharges (2009)
- Table 2.3 Suspicious Outfalls found during Annual Drain Inspections
- Alliance of Rouge Communities (ARC) Outfall Map
- Updated Wayne County Storm Water System Map

SECTION 3: PUBLIC EDUCATION PLAN

- 2009 brochure updates include the *Resource Recovery Guide, Disposal Tips for Home Medical Waste and Pharmaceuticals*.
- New brochure – *Mercury Thermometers and Your Families Health*
- Revisions to WQMD web sites are available at: http://www.waynecounty.com/mygovt/doe/depts/wqd/pollution_prvnt.aspx
- Southeast Michigan Partners for Clean Water, *Community Annual Report Information, October 2008 - September 2009*.

SECTION 4: ADDITIONAL STORM WATER MANAGEMENT ACTIVITIES

- *Calculating the Value of Grow Zones and Riparian Corridor Management* – Evaluation Report Middle Rouge Riparian Corridor Management Project (CMI-2004-0150).
- Wayne County Storm Water Management Program materials are available online at: http://www.waynecounty.com/mygovt/doe/depts/wqd/strm_water_mang.aspx

SECTION 5: WAYNE COUNTY WATERSHED PLANNING

- *Alliance of Downriver Watersheds - 2009 Summary of Activities/Accomplishments* available online at: <http://www.allianceofdownriverwatersheds.com>
- Alliance of Rouge Communities *Executive Director 2008 Annual Report* available online at: <http://www.allianceofrougecommunities.com/>

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@co.wayne.mi.us with any questions or inquires regarding the content of this report.