

The Lower 2 Rouge River Subwatershed Advisory Group established long-term goals for its watershed management plan. Long-term goals were identified to establish a framework to guide long-term efforts to protect the existing values of the river and restore the impaired uses. Under each goal, short-term objectives were developed to identify the conditions or activities that were expected to be completed within five years, as interim steps in achieving the long-term goals. The long-term goals are listed below, along with highlighted successes. The complete list of short-term objectives can be found at www.rougeriver.com.

Rouge River Watershed Measuring Our Success



www.rougeriver.com

Goal: Improve water quality in the River and restore impaired uses

The **Lower 2 communities** participate in the Alliance of Rouge Communities (ARC) which was founded in 2003 to enable Rouge River Watershed communities to lead watershed management activities into the future. In 2005, thanks to efforts spearheaded by the ARC and supported by other watershed entities, government officials and environmental organizations, legislation was signed by Michigan's governor to institutionalize watershed alliances such as the ARC. The ARC conducts river health monitoring activities and has sponsored workshops on detention pond maintenance, public education and storm water management practices.



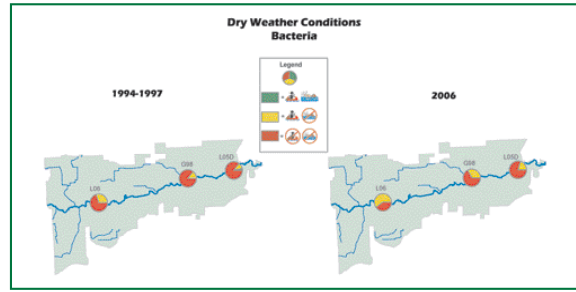
The **City of Westland** implemented a Rear Yard Catch Basin Disconnect Program and conducted a pilot footing drain removal program in 2004 with grant funding from the Rouge River National Wet Weather Demonstration Project (Rouge Project).



The **City of Wayne** replaced and reduced its City Hall parking lot and installed bioretention basins, native plants, landscape filters and rain barrels in order to reduce the contribution of pollutants like silt, oil and debris that flowed untreated into the Lower Rouge River.

The **City of Dearborn Heights** inventoried and cleaned all storm sewer catch basins.

Recent dry weather water quality monitoring in the **Lower 2 subwatershed** shows that the river is not always suitable for recreational activities like swimming, boating and wading, but conditions have improved. It is expected that current projects to control the combined sewer and sanitary sewer overflows and eliminate illicit discharges that exist in the Lower 2 should further improve conditions. The chart shows the percent of the time conditions were suitable for swimming, boating and wading based on state water quality standards for bacteria.



Ford Field Park, Dearborn

Goal: Remove sources of pollution that threaten public health

The cities of **Wayne, Westland and Garden City** completed construction of sewer separation projects to eliminate combined sewer overflows (CSOs) to the Rouge River. The projects, which were completed in 1998, cost about \$32 million dollars and were partially funded by the Rouge Project.

The **City of Dearborn** has completed its basis of design for West Dearborn CSO Control Program Phase B.

The **City of Inkster** CSO retention treatment basin began operation in 1997 and eliminates uncontrolled overflows from 10 CSOs serving 833 acres. Multiple use recreation facilities, like basketball courts, were built on top of the storage tank.

Wayne County is conducting a \$1.4 Million sewer system evaluation study on the North Huron Valley/Rouge Valley Sewerage Transport System (NHV/RV) which will ultimately lead to the correction of sanitary sewer overflows (SSOs) in the system. The NHV/RV serves seven Lower Rouge communities.

The **City of Westland** conducted manhole inspections of 480 sanitary manhole structures to identify repairs necessary for eliminating inflow and infiltration of storm water into the sanitary sewer system.

The cities of **Westland, Dearborn Heights, Dearborn, Inkster, Wayne and Romulus** created a Geographic Information System (GIS) to help with detection and elimination of illicit connections, sewer system maintenance and to update land use and mapping information.

The **City of Garden City** collected information about current sanitary sewer excess flows and the impacts on water quality.

The **City of Inkster** identified and eliminated illicit connections by dye testing residences and businesses in areas where sampling indicated the presence of illicit discharges. The city then revisited the areas to verify illicit connections were corrected.

The **City of Dearborn Heights** inspected commercial businesses as part of a pilot program for its Illicit Discharge Elimination Program (IDEP).



From 2004-2007, **Wayne County Department of Environment** conducted IDEP investigations in 821 facilities along the Lower Branch of the Rouge River. The investigation found 68 illicit connections in 26 facilities. Eliminating those illicit connections is preventing 9,171 pounds of pollutants from entering the Lower Rouge River each year.

The **City of Romulus** conducted a field survey and inspection of the city's sanitary sewer system in the Rouge River Watershed, a pilot footing drain removal, and, a manhole rehabilitation program in order to reduce SSOs.

Goal: Educate the public regarding their impact on the River and the River's potential as a community asset



The cities of **Westland, Wayne, Inkster and Canton Township** partnered with schools in the Wayne-Westland Community School District, co-sponsoring "Rooting for the Rouge". The project empowers 4th grade students to carry out tree planting and storm drain stenciling projects.

"Ours to Protect" signage has been installed at numerous tributary crossings throughout the **Lower 2 Subwatershed**.

Rouge Rescue 2007 sites in the Lower 2 Subwatershed were located at Goudy Park in the **City of Wayne** and Christ Episcopal Church in the **City of Dearborn**. Activities included invasive species removal, trail maintenance and trash/debris removal.

Schools in the cities of **Dearborn, Inkster, Wayne and Garden City** participated in Friends of the Rouge's (FOTR's) 2007 Rouge Education Project. Students examine ecological and social factors that influence water quality, learn about watersheds and ecosystems, and collect and analyze water quality data.

Seven of eight frog and toad species common to the Rouge River Watershed - American Toads, Wood Frogs, Western Chorus Frogs, Spring Peepers, Gray Treefrogs, Green Frogs and Bullfrogs - were heard in the **Lower 2 Subwatershed** during the 2005 FOTR Frog and Toad Survey.

The cities of **Westland, Dearborn, Garden City and Romulus** have information on their websites about the Rouge River and related activities.

The **Wayne County** Nutrient Reduction Program features workshops on riparian corridor management, river friendly lawn care and detention pond maintenance. The county also features an earth-friendly fertilizer program through nine local lawn care retailers who offer slow release fertilizers to customers in the Lower Rouge River Subwatersheds.

The **Dearborn Heights Watershed Stewards Commission** was created to promote public interest and participation in efforts to improve the quality of life along the Rouge River. Activities include storm drain marking, tree planting, rain barrel promotion and river cleanup days.

Garden City Public Schools used Rouge Project grant funding to develop environmental education classes about river ecology and creation and restoration of habitat using the Lower Rouge River and Wayne County's Inkster Valley Wetlands as outdoor laboratories.

Wayne County continues to promote the use of its 24-hour Environmental Hot Line (888-223-2363) for water quality complaints extensively throughout the County.



Goal: Enhance and preserve habitat for fish and wildlife, especially next to the river, compatible with land uses



The **Inkster Valley Wetland**, which was constructed in 1996 by Wayne County and the Rouge Project, is often a stop for FOTR during watershed bus tours and frog and toad survey "group listens."

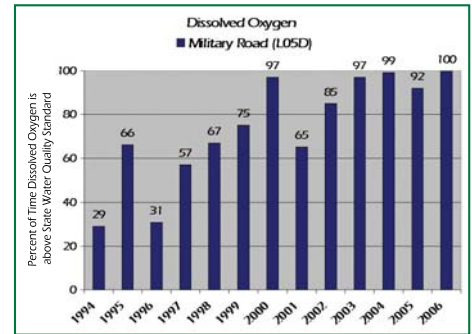


A storm water pond created in the **City of Dearborn's Ford Field** is now home to a variety of fish like Bluegills, Sunfish, Large Mouth Bass, Small Mouth Bass, Rock Bass, Yellow Perch, Sheepshead, Dogfish, Carp and Yellow Bullhead. Snapping turtles and mud, map, red-eared slider, painted, soft-shell and Blandines turtles also call the pond home. Belted Kingfisher, Blue Heron and egrets are frequent visitors.

The **City of Inkster** was awarded a Greenways Initiative Predevelopment Grant to support the planning and design of a 2.9 mile greenway along the Lower Rouge River beginning at Henry Ruff Road to the west and ending at Beech Daly Road to the east.

Dissolved oxygen in the river is important to the survival of fish and other aquatic life. Insufficient dissolved oxygen limits ecosystem diversity and can result in fish kills and produce foul odors from the decomposition of organic materials.

Michigan water quality standards require a minimum of 5.0 mg/L of dissolved oxygen to support warm water fish populations. The figure shows the percent of the time dissolved oxygen concentrations in the **Lower Rouge River** at Military Road (L05D) met the State standard at and indicates that conditions have been improving for the protection of warm water fish populations. Monitoring at Military Road (L05D) was funded by the ARC.



Goal: Minimize the amount of soil erosion and sedimentation

The **City of Dearborn** conducted the Ford Field Bridge Retrofit and Stream Valley Improvements Project which widened a narrow portion in the Lower Rouge River and restored eroded stream banks.



The cities of **Romulus, Dearborn, Inkster, Dearborn Heights and Wayne** perform regular streetsweeping activities which reduces the amount of oils, greases and debris that go into storm drains and eventually into the Rouge River.



The **City of Westland** hosted a Detention Pond Maintenance Workshop in 2005 for Rouge River Watershed residents, in cooperation with the Alliance of Rouge Communities, Wayne County and the Clean Michigan Initiative.

The **City of Westland** conducts several storm water Best Management Practices (BMPs) including a soil erosion program, a street-sweeping program and the use of phosphorus-free fertilizers on city-owned property.



The **City of Westland** hosted a "Keeping it Clean" workshop for municipal maintenance staff which provided an overview of the good housekeeping requirements outlined in the federal Phase II Storm Water Regulations and how individual actions can protect our water resources. The workshop was presented by the Southeast Michigan Council of Governments (SEMCOG) and the Southeast Partners for Clean Water, and was funded in part by the Rouge Project.



Woody debris management techniques were used to stabilize streambanks in the **City of Wayne**.



The **City of Dearborn** continues to work with volunteers from Ford Motor Company who perform river stewardship activities at Ford Field park, including stream bank stabilization, woody debris management and native plantings.

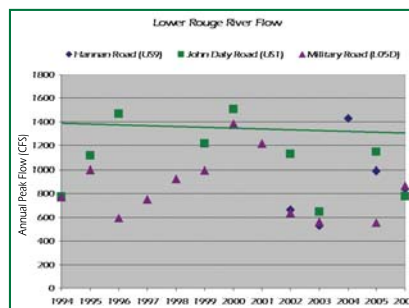
Wayne County, the **City of Dearborn Heights**, **FOTR** and Clean Michigan Initiative cosponsored a Riparian Corridor Management presentation, "Caring for Your Creek" in the City of Dearborn Heights in 2005.

Goal: Reduce water volumes and velocities during storm events

The **City of Inkster** rebuilt three regulators to route excess flow to the Inkster CSO basin without exceeding the capacity of the basin. An inflow source investigation was also completed for the Farnum Sewer area located in the southwest corner of the city. This project supports Inkster's goals to reduce the potential for basement flooding and downstream SSO.



From 1990 to 2000, residential and commercial land use in the downstream communities of the **Lower Rouge River** have increased while forest and agricultural areas have decreased by approximately 14 percent. Urban development typically results in an increase in impervious area, leading to increased runoff during storm events. Moderate, stable river flows are generally best for aquatic life and stream habitats. Extreme variations of the river flow rate during storm events can result in severe bank erosion, which can significantly degrade game fish habitats.



The figure shows that peak river flows are decreasing at John Daly Road (US1) and remaining fairly consistent at Hannan Road (US9) and Military Road (L05D) in the Lower Rouge River despite increasing development.

This indicates that the measures taken to manage storm water runoff as upstream areas are developed are helping to protect the Lower Rouge River ecosystem.

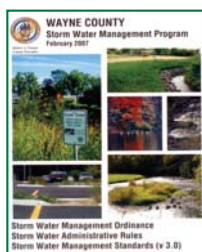
Rain water that lands on your roof is collected in gutters and is discharged to the ground by downspouts. Directing storm water from downspouts away from paved areas and to vegetated areas gives water the chance to enter the ground, instead of running across paved surfaces into sanitary sewers or storm sewers and into the Rouge River.

Lower 2 communities have distributed educational materials about downspout disconnection and conducted downspout disconnection programs.

The cities of **Wayne, Inkster and Dearborn** have a downspout disconnection program. Disconnected downspouts reduce flow in the Lower Rouge River and prevent pollutants from getting into the river.



Do Your Downspouts Lead To The Rouge?



The **Wayne County** Storm Water Ordinance was adopted in 2000, and updated in 2007, to help minimize flooding problems, streambank erosion and other impacts to natural resources downstream of development projects. The Ordinance requires that management measures be implemented as part of development projects to reduce peak river flows and remove pollution from storm water runoff. To date, storm water management measures have been implemented as part of over 3,700 development projects in the County under this program.



Funded in part by the Alliance of Rouge Communities and the Rouge River National Wet Weather Demonstration Project (U. S. EPA grants #XP995743-01 through -08 and #C995743-01)



Rouge River Subwatershed

Lower 2

The Lower 2 Rouge River Subwatershed is located entirely in Wayne County and has a drainage area of 21,024 acres, or 32.85 square miles. This subwatershed includes portions of the cities of Dearborn, Dearborn Heights, Garden City, Inkster, Romulus, Wayne, and Westland. The largest land use category is residential housing. The Lower 2 Subwatershed is almost completely built out with only 3% urban open space left in the subwatershed. An estimated 32% of the subwatershed is covered by impervious surfaces such as roads, rooftops and parking lots. The high percentage of impervious surfaces in the Lower 2 Subwatershed delivers runoff much more quickly to the Lower Rouge River which results in high peak flows, much higher velocities and an unstable stream channel. Recreation areas in the Lower 2 subwatershed include: Wayne County's Lower Rouge Parkway which runs through Wayne, Inkster, Dearborn and Dearborn Heights, Inkster Valley Golf Course, Inkster Valley Constructed Wetlands, Dearborn Hills Golf Course and Ford Field in Dearborn.

As part of the subwatershed management planning process, long-term goals and short-term objectives were established in the Lower 2 Rouge River Subwatershed Management Plan. The long-term goals of the Lower 2 Rouge River Subwatershed Management Plan are:

1. Improve water quality in the Rouge River and restore impaired uses.
2. Remove sources of pollution that threaten public health.
3. Educate the public regarding their impact on the river and the river's potential as a community asset.
4. Enhance and preserve fish and wildlife habitat, especially next to the river, compatible with land uses.
5. Minimize the amount of soil erosion and sedimentation.
6. Reduce water volumes and velocities during storm events.

The subwatershed management planning process and subwatershed projects that fulfilled Subwatershed Advisory Group goals couldn't have been completed without partnerships between the communities, the counties, non-profit organizations, stewardship groups, citizens and local schools, colleges and universities.



The Rouge-Friendly Naturalists of Westland, a volunteer group sponsored by the City of Westland, helps with public information projects and native wildflower garden maintenance.

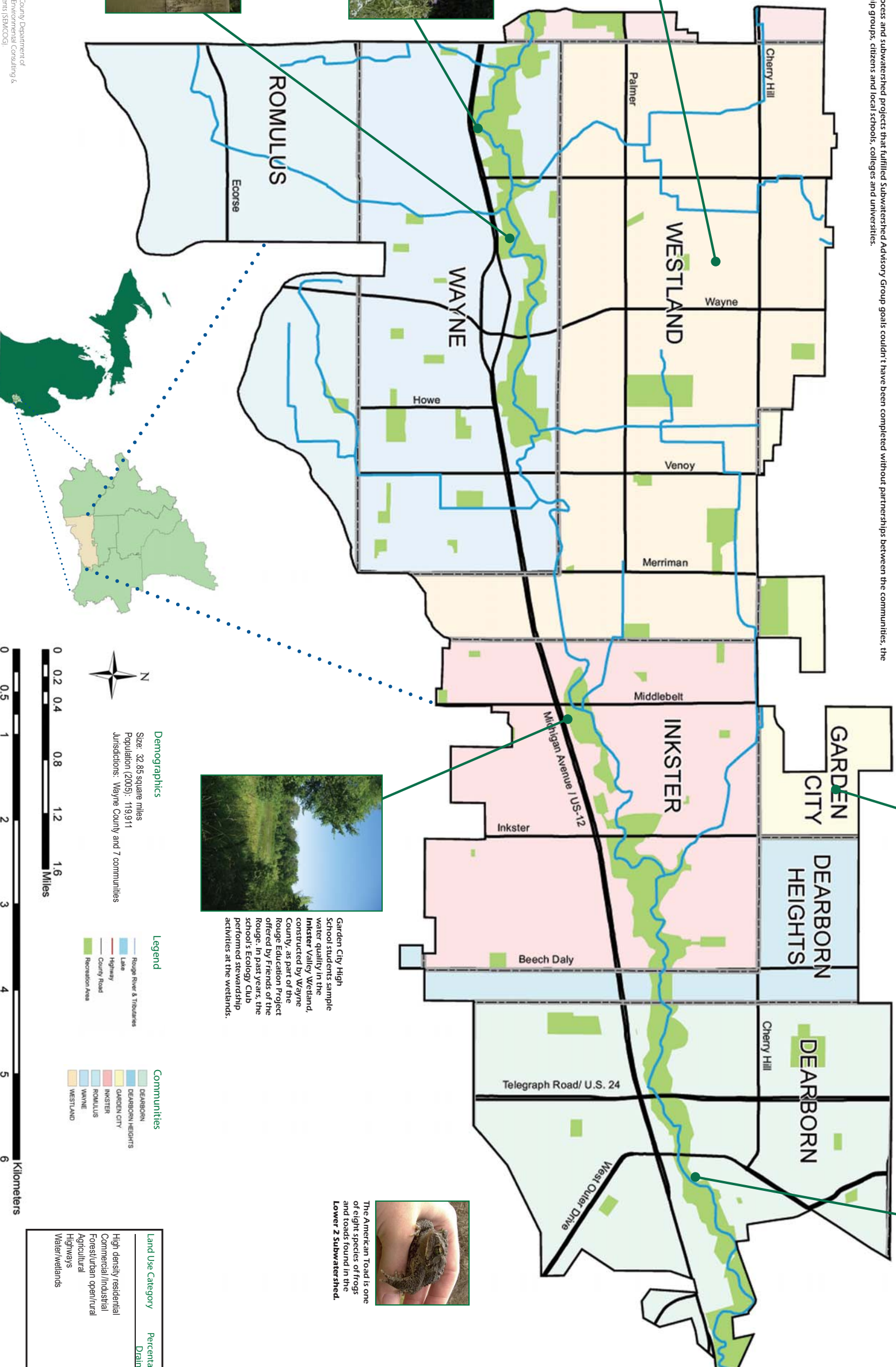


Wayne County planted a grow zone along the Lower Rouge River behind its Commerce Court office location in the City of Wayne.



In the City of Wayne, Friends of the Rouge volunteers regularly remove debris from the Lower 2 Rouge River in order to promote canoeing.

Some photos provided by: Friends of the Rouge, Wayne County Department of Environment, the Cities of Wayne and Westland, Lilian Dean, Environmental Consulting & Technology, Inc. and Southeast Michigan Council of Governments (SEMCOG).



Garden City High School participants in the Rouge Education Project sponsored by Friends of the Rouge.



Garden City High School students sample water quality in the Inkster Valley Wetland, constructed by Wayne County, as part of the Rouge Education Project offered by Friends of the Rouge. In past years, the school's Ecology Club performed stewardship activities at the wetlands.



The American Toad is one of eight species of frogs and toads found in the Lower 2 Subwatershed.



The City of Dearborn has signage at Ford Field that cautions visitors against feeding ducks and other birds.