











## Introducing the Rouge Green Corridor

Meandering through the southeast corner of Oakland County, the main branch of the Rouge River paints a green band through neighborhoods and business districts. This urban river, with clear water flowing over smooth rocks and past shady wooded banks, has changed since the time of European settlement, but still provides a haven for wildlife and people to enjoy.

Over the past 15 years, efforts at improving the river's water quality have paid off, inspiring your community to give it a new name the Rouge Green Corridor. This segment of the Rouge River, and its tributaries, runs through Birmingham, Beverly Hills, and Southfield. To introduce you to this valuable natural resource, this poster describes the Corridor's history, and how it's changed over time, and gives you an opportunity to find out for yourself the beauty of the Rouge Green Corridor through a self-guided tour.

This endeavor is part of a larger program called Stormwater Phase II of the Clean Water Act. The Act requires certain municipalities to minimize stormwater pollutants in surface waters like the Rouge River. To accomplish this, the communities have joined forces and developed a Watershed Management Plan for this portion of the Rouge River, called The Main 1-2 Subwatershed Management Plan. One goal of the Plan is to increase awareness of the river's value in our lives. Another goal is to maximize each community's assets related to the river. The Watershed Management Plan is available for review in your community's office.

## How the Rouge Green Corridor Was Formed

Fourteen thousand years ago, the Ice Age precursor of the Rouge River flowed to the southwest, draining the front of a continental ice sheet and associated glacial ridges. Around 13,800 years ago, the ice melted back and branches of this glacial river system broke across the ridges to the southeast to form the Rouge watershed. For the next 1,500 years, these early branches of the Rouge in Oakland County emptied into a series of vast glacial lakes that were formed by advances and retreats of the glacial ice.

The illustration of the Rouge Green Corridor shows some of the land forms of the modern river valley. Ravines and bluffs were formed when the ancient glacial lake levels dropped. Other land forms, such as the widened segments of the river valley and terraces, were created in response to rising lake levels. Today's river shows a meandering pattern. Some of the loops have been abandoned by the river, creating a distinctive u-shaped land form called an oxbow.



The Rouge Green Corridor is a part of the Rouge River Watershed, which covers 467 square miles in southeast Michigan and is home to nearly 1.5 million people in 48 communities.

### The Way it Was

Before the land in the watershed was transformed by human development, rivers and streams received most of their water from groundwater. When it rained, the water was first intercepted by trees and vegetation. If it rained hard enough, excess water soaked into the ground, making it available to the plants. A relatively small amount of rain that hit hard surfaces, such as rocks or clay soils, became surface flow or runoff and ran directly into low areas like wetlands or tributaries. Any excess water in the soil was filtered by the soil particles as it worked its way to the groundwater, where underground connections directed it to streams and rivers. Streams received a slow constant flow of clean, cold water from groundwater and springfed lakes, even during dry spells. Because these conditions lasted over thousands and thousands of years, aquatic plants and animals became adapted to them.

### The Way it is Today

As the land was cleared for agriculture, and then later for homes, businesses, roads, and parking areas, a good deal of the porous soils were covered up by impermeable surfaces, or hard surfaces that water can't penetrate. Instead of soaking into the ground, much of the water became surface flow or runoff. Instead of a slow, constant flow of cold, clean water, our rivers receive high volumes of water over a short period of time — or *flashy flows*. As the water moves over hard surfaces, it picks up pollutants from cars or chemicals spread on the grass. Pavement in the summer also heats the water, making it unsuitable for certain aquatic species. The force of large volumes of stormwater piped directly to streams scours and erodes the banks of the stream, dislodging bank vegetation and degrading wildlife habitat. The Rouge Green Corridor has not been as impacted by urbanization as some other stretches of the Rouge. The main reason for this is that the existing vegetation along the river corridor was left in place as the area developed.

## Discovering Your River – A Self-Guided Tour

This self-guided tour identifies several locations for you to enjoy in the Rouge Green Corridor. The tour is designed to highlight special features along the corridor that everyone in the family can enjoy. Each point has something unique to offer, so be sure to visit as many sites as you can. You'll learn a lot about this hidden treasure, and have fun in the process!

Points along the tour described below have access to trails. Whether it's a paved or woodchip trail, remember to stay on the path. Keep your dog on a leash and be a good river steward by picking up after your pet. Enjoy!

#### Nalley Woods Nature Preserve in Southfield

Where to park: Park at the Historic Burgh Park at the northeast corner of Berg Road and Civic Center Drive. Walk west along Civic Center Drive to Valley Woods Nature Preserve. You can access the park by a ramp behind the McDonnell Tower Senior Center (North side of Civic Center Drive) or by steps at the river (South side of Civic Center Drive).

What to do: Hike north along the river, crossing over to the west side on a pedestrian bridge. This is a lovely natural area with easy hiking for all ages on the grass trail with some riverside benches along the way. The trail ends at the freeway (I-696) overpass. Return on the same trail. This is approximately a .5 mile hike.

What to see: Look for soft-shell turtles resting on the banks. Ducks and heron are often in the river, loafing on logs or fishing in the shallows. Springtime brings in migratory birds such as the belted kingfisher, the downy woodpecker and the indigo

many others.

## Linden and Booth Parks in Birmingham

Where to park: North Old Woodward at Booth Park: pick up the Rouge woodchip trail at the southwest corner of the park. You can also park at the Chester Parking Structure located at the corner of Chester and Maple. Walk west to the Rouge River and pick up the woodchip trail to Linden Park. You can also cross Maple Road at Southfield and pick up the woodchip trail just west

**What to do:** The woodchip trail meanders along the river and woodland areas for approximately 1.25 miles.

of the Museum. This will take you to Booth Park.

What to see: In the spring, look for several species of migrating birds, such as warblers (22 species!), tree swallows, and spotted sandpipers. Look for the many species of wildlife and native plants. Also view two types of stream bank stabilization methods to reduce erosion. The methods include "hard engineering" (stone and boulders) and soft engineering (logs and vegetation) in Booth Park.

#### Riverside Park in Beverly Hills Where to park: Limited parking is available at this park, which is located on Riverside Drive just

east of Evergreen Road.

**What to do:** Visitors are welcome to enjoy the small park during the daylight hours. There are two picnic tables and a grill available that overlook the Mill Pond, which was established over a century ago.

What to see: The park offers habitat and viewing opportunities for many species of birds, including herons, hawks, woodpeckers and hummingbirds. Carp can often be seen at the surface of the water, along with turtles sunning themselves and a variety of other small aquatic creatures. Recent plantings of native shrubs have now taken hold and include serviceberry, Michigan holly, red-twig dogwood, chokecherry, witchhazel, and American cranberry viburnum, among others.

To learn more about the Rouge Green Corridor's history and natural assets, visit www.oakgov.com/community/communitydevelopment/environmental-stewardship and click on the "Rouge Green Corridor" link.

**is incorporated.** The community was chartered as the Village of Beverly Hills in 1959.

of wastewater treatment for the

September 23, 1957 — Village of Westwood / 1964 — Detroit becomes provider / 1972 — Federal Water Pollution Control Act. / 1977 — U.S. EPA filed a lawsuit This act required all municipal wastewater secondary treatment of plant discharges. After being / amended in 1977, it became known as the Clean Water Act. It protects waters from pollutants as well as sets water quality standards.

to stop pollution at the Detroit By 1983, Detroit had spent \$500 million to fix the problems in sewerage

1983 — Judge John Feikens begins watershed approach to cleaning up the Rouge. Communities realized that in addition to pollution from combined sewer overflows, a major source of pollution to the Rouge River was stormwater runoff from rapidly developing areas. Judge John Feikens, a Federal District Judge in Detroit, used the EPA's 1977 lawsuit to begin a series of formal orders and regular hearings to bring together three counties and 48 communities to cooperate on a plan to restore the 126 miles of the Rouge River.

drafted and amended. A 136-page report (RAP) was created to outline the considerable progress that had been made in addressing water pollution sources in the Rouge, and outlined additional steps needed to restore uses, such as fishing and swimming, that were still impaired by pollution.

1989 — 1994 Rouge River Remedial Action Plan (RAP) / Late 1990's — Rouge River Subwatersheds begin planning. Communities within the Rouge River watershed organized themselves into // population is almost 1.2 million subwatershed groups to address water quality issues. One of these groups, / people. the Rouge River Main 1-2 Subwatershed Advisory Group, formed to coordinate the protection and restoration of this subwatershed. The Rouge Green Corridor is part of the Main 1-2 Subwatershed.

2001 — Main 1-2 Rouge River Subwatershed Management **Plan completed.** A major goal of this plan is to involve the public in reducing the amount of pollutants that

2004 — Main 1-2 Rouge River Remedial Action Plan (RAP) amended. The Rouge RAP was amended to summarize existing watershed conditions, as well as current restoration and protection efforts.

and protect it for future

adopt the Rouge Green Corrido

Challenges, Opportunities, and Actions to Enhance the Rouge Green Corridor as a Community Asset

## Current Challenges and Opportunities



#### What is a "Native" plant?

"Native" plants are plants that grew in the Rouge Green Corridor before European settlement. They have survived here for thousands of years and are uniquely adapted to the climate, soil, and water conditions of this area. Wildlife indigenous to this area has co-evolved with native plants, depending on these specific plant species for their survival. A "non-native" plant is one that was brought to this area by European settlers, and later by plant and garden enthusiasts. Many of these species don't cause any problems. But some, called "exotic invasive plants," escape into the wild, taking over natural areas and out-competing the native plants. The most common invasive plants in the Rouge Green Corridor are common buckthorn (Rhamnus cathartica) and garlic mustard (Alliaria petiolata). These invasive plants rob wildlife of the food and habitat benefits of the native plants they depend on.



#### **What is Non-Point Source Water Pollution?**

In general, water pollution is considered to come from two sources: "point sources" are readily-identifiable sources, such as an industry discharge pipe. "Non-point sources" are sources of pollutants that are not easily identifiable, such as those carried by stormwater runoff. Non-point source water pollution is created when rain falls to the ground on an impervious surface (roof or parking lot), and picks up pollutants (sediment, oil, motor fluids, fertilizers, etc.) as it travels along the surface on its way to a lake or river. The biggest source of water pollution today is stormwater



### What is a CSO?

A CSO (Combined Sewer Overflows) occurs during large rain events when the capacity of the combined storm and sewer system is exceeded. The CSO retention treatment captures excess flow and stores it until it can be conveyed to the Detroit Waste Water Treatment plant. During a very large rain event when there is a discharge into the river from the CSO basin, the effluent is screened, settled and disinfected.

#### The Plant-River Partnership

Areas where land and water meet are often rich in plant and wildlife diversity. The woodlands that grow next to the Rouge play a significant role in protecting the river. Plant roots hold the stream bank in place and help limit soil erosion. Leaves that fall into the water provide food and shelter for aquatic organisms. Branches and trunks that fall across the water provide loafing logs for ducks and turtles. Finally, large trees and shrubs growing near the water's edge shade the water, keeping it cool and hospitable for all the aquatic creatures. Plants along the river act as a riparian buffer. The wider this buffer is. the more it can do to protect the river from problems associated with stormwater runoff from parking lots, rooftops, and lawns.

Riparian buffers that contain native plants have added ecological value because they are critical sources of food, shelter, and nesting material for wildlife. Native plants still have a strong presence in the Rouge Green Corridor as was documented during a plant inventory by botanists in 2004. The natural areas inventoried along the corridor vary widely in size and condition. Larger, undisturbed sites have high-quality native plant communities, including species such as American beech, sugar maple, bitternut hickory, red oak, ironwood, trillium, and jack-in-the pulpit.

#### **An Ark of Biodiversity**

Many terrestrial (lives on land) and aquatic (lives in water) wildlife call the Rouge Green Corridor home. In fact, the Rouge Green Corridor is considered a refuge or ark for future re-colonization of the rest of the Main Branch of the Rouge River. There are two reasons for this: 1) There is a fairly intact vegetated riparian buffer that provides important protection for the aquatic community; and 2) The water is of fairly high quality, with high dissolved oxygen concentrations and low to moderate nutrient concentrations (which is also due to the riparian buffer). Continued improvements in water quality, and the restoration of riparian buffers will help enable the diverse array of plant and animal species found within the Rouge Green Corridor to re-colonize other areas along the

Recent inventories of the Corridor by biologists show that the river and its adjacent wooded uplands support five kinds of turtles, two kinds of non-poisonous snakes, eight species of frogs, and seventeen species of mammals. Aquatic invertebrates or macroinvertebrates found within the Rouge Green Corridor include flathead and small minnow mayflies, net spinner caddisflies, and several types of beetles. Another exciting find is that the Corridor has the largest and most diverse population of freshwater mussels within the entire Rouge River watershed.

### **Urbanization and Water Quality**

Over the years, the Rouge Green Corridor has been impacted by the stresses of urbanization. As land use shifted from agriculture to suburban and urban development, the Corridor was used for combined and sanitary sewer overflows, limited industrial discharges, and stormwater discharge. These uses caused problems, such as odors, non-point source water pollution and high flow variability. In 1992, the Rouge River National Wet Weather Demonstration Project ("Rouge Project"), funded by the U.S. Environmental Protection Agency, began to address the causes of these issues, and implement solutions. As part of this project, a monitoring program was begun to assess current conditions, identify primary pollutant sources, and track long-term trends.

The Rouge Project regularly monitor's bacteria levels. Rouge communities have completed several tasks to reduce bacteria levels in the Rouge Green Corridor, including the construction of retention treatment basins to control Combined Sewer Overflows (CSOs). After installation of the basins in the Rouge Green Corridor, the *E. coli* readings were cut by approximately 50%.

Like us, fish and aquatic animals need oxygen to breathe, but underwater! Dissolved oxygen can be reduced in water bodies when aquatic plants grow out of control because too many nutrients (such as phosphorus from lawn fertilizers or nutrients from human waste) have been added to the water. As the plants die, their decomposition ties up the dissolved oxygen, making it unavailable to fish. Dissolved oxygen monitoring has shown significant improvement since 1994, meeting State water quality standards more than 80% of the time.

### What is Nature Telling Us?

Another way to monitor water quality is to look at the species of fish, macroinvertebrates, and frogs and toads that live in and near a watercourse. Fish were sampled in the Rouge Green Corridor by Michigan Department of Natural Resources (MDNR) in 1995. They found a higher diversity of fish in the Rouge Green Corridor than in other sampling locations within the Rouge. Survey results also show some environmentally sensitive species, indicating good water quality and habitat conditions.

## Rights and Responsibilities of Riverfront Property Owners

The rights of riparian land owners and the waters of Michigan are protected and regulated by a number of laws. However, land owner responsibilities are generally less well defined. Be sure to read through the "River Stewardship 101" section to be well-versed on how you can be a responsible river front property

#### **General Guide to Waterfront Laws**\*

Much of the general concepts for Michigan's water use laws developed through court cases and rulings given over the past 200 years. The State Legislature also has passed comprehensive laws, such as the Natural Resources and Environmental Protection Act, 1994, PA 451 which includes Part 301, Inland Lakes and Streams, and Part 303, Wetlands Protection. Both regulate certain uses of riparian areas. The Oakland County Drain Commissioner also has jurisdiction over certain drainage ways within Oakland County to minimize flooding and ensure conveyance of stormwater.

#### **Jurisdictional Boundaries**

There are several general concepts that form the basis for Michigan's riparian laws. Several are explained here:

- A riparian land owner (or Riparian) is one who owns land or property abutting water. The Riparian also owns the submerged lands adjacent to his or her property to the center of the lake or stream. However, a Riparian does not own the water, or in most cases, the fish. These are held in public trust for the benefit of all the people. The surface of a lake, whether open or frozen, is shared equally by all riparian property owners that abut the lake. They may fish or boat on any part of it.
- ▶ The Oakland County Drain Commissioner is given jurisdiction by municipalities to establish drainage districts and implement drain projects. Application is made by a community for both tasks. Once an application is made, it is evaluated by the Drain Commissioner's office and either accepted or denied. Natural drainage ways may be designated as a County Drain, and this designation may only cover portions of a natural stream, as opposed to the entire length of the stream. A drain also can be an underground pipe, retention pond, ditch or swale that conveys stormwater.
- ▶ In general, the State of Michigan has jurisdiction over "navigable" waters, fish, and water-oriented construction operations, such as marinas, docks, canals, bridges, dredging, filling, and impoundments. The State uses the definition of navigable waters to determine if a lake or stream is public (navigable) or private (non-navigable). The definition of navigable has been developed through a series of judicial decisions, but there is significant uncertainty regarding the public or private character of most of the State's streams. Many streams are designated public or private after some type of litigation has been settled over the use of the stream by someone other than the riparian land owner.



#### Rights of Passage Within a Watercourse

If a stream is navigable, the public has the right to wade up a stream and fish, but cannot trespass on the uplands. However, if the stream is obstructed or in case of an emergency, the fisherman can make reasonable use of the upland to go around the obstruction or get help. An abutting property owner may not create obstructions to keep the public from wading, swimming or fishing a navigable stream. If the stream is not navigable, the public cannot wade up the stream, or access the stream by boat. Hunting, on the other hand, is a right that goes with land ownership and permission from the landowner

#### **Drawing Water for Irrigation**

As indicated earlier, riparian land owners do not own waters adjacent to their lands, but do have the right to reasonable use of the water for their own purposes, including irrigation. However, the landowner cannot impair the water as it passes along or decrease the benefits of the water for other riparian landowners. Non-riparian owners are not entitled to similar water use rights, and extraction of water for their own purposes is considered trespassing against the rights of the riparian owner. Further, a riparian landowner cannot permit a non-riparian landowner to withdraw water.

#### **Footbridges**

The Inland Lakes and Streams laws do not allow property owners to structurally interfere with the natural flow of a stream, nor construct anything within the bottomland of a stream without a permit from the MDEQ. In addition, the Oakland County Drain Commissioner, who is charged with ensuring drainage of stormwater throughout Oakland County, prefers that homeowners refrain from constructing footbridges because of the possibility of debris collecting under these small bridges and obstructing

#### Riparian Activities that Require a Permit

- The Inland Lakes and Streams legislation describes activities where a riparian land owner must obtain a permit from the Michigan Department of Environmental Quality (MDEQ). These include the following:
- Dredge or fill bottomland (Bottomland is the area that lies below the ordinary high-water mark and may or may not be covered by water)
- Construct, enlarge, extend, remove, or place a structure on bottomland, such as a permanent dock. Seasonal structures for noncommercial recreational use do not require a permit as long as they don't interfere with the use of the water by others entitled to use the water or interfere with water flow.
- Erect, maintain, or operate a marina
- Create, enlarge, or diminish an inland lake or stream
- ▶ Structurally interfere with the natural flow of an inland lake or stream
- ▶ Construct, dredge, commence, extend, or enlarge an artificial canal, channel, ditch, lagoon, pond, lake, or similar waterway where the purpose is ultimate connection with an existing inland lake or stream, or where any part of the artificial waterway is located within 500 feet of the ordinary high-water mark of an existing inland lake or stream.
- ▶ Connect any natural or artificially constructed waterway, canal, channel, ditch, lagoon, pond, lake, or similar water with an existing inland lake or stream for navigation or any other purpose. Wetlands and floodplains are regulated in a similar way through Part 303, Wetlands Protection, of the Natural Resources Environmental Protection Act, 1994 PA 451. This law specifically applies to wetlands connected to an inland lake, pond, river or stream, or a wetland located within 500 feet of an inland lake, pond, river, or stream. Wetlands that are not connected and are greater than five acres in size are also protected, as are non-connected wetlands of any size that the MDEQ determines are essential for protection of the State's natural resources. The property owner must obtain a permit from the MDEQ for any of the

Deposit or permit the placing of fill material in a wetland

Dredge, remove, or permit the removal of soil or minerals from a wetland Construct, operate, or maintain any use or development in a wetland

Drain surface water from a wetland

Establish and

Maintain Riparian

**Buffer Zones** 

Riparian buffers are areas

next to a stream or lake

planted in trees, shrubs and

root systems hold the stream

bank in place, protecting it

from erosion. The buffer also

helps to slow surface runoff.

This allows the buffer plants

to take up fertilizers or other

pollutants, keeping them out

of the stream or lake. When

planting buffers, make it as

little as 5 feet wide can be

beneficial). Select a variety

of species well suited for the

conditions. Also maximize the

wide as possible (ideally

25-30 feet wide, but as

flowers. The plants' deep

A guidebook, called the Permit and Licensing Guidebook, has been developed by MDEQ to explain the permit requirements for these activities. Refer to the MDEQ website or contact the Land and Water Management Division for more information.

\*Regulations about the use of water in the State are complex and continue to evolve. The information included here was gathered from a number of sources: Public Rights of Michigan Waters, published by the Law Enforcement Division of the State of Michigan, 1997; the Michigan Waterfront Alliance website; and the Michigan Lakes, Streams and Watersheds Association website. It should not be construed as legal advice, nor a comprehensive evaluation of the topics discussed. It is only meant to give general information on common questions regarding the use of riparian lands.

#### **What Waters Are Considered Navigable** (or Public)?

A navigable inland stream is (1) any stream declared navigable by the Michigan Supreme Court; (2) any stream included within the navigable waters of the United States by the U.S. Army Corps of Engineers; (3) any stream which floated logs during the lumbering days, or a stream of sufficient capacity for the floating of logs in the condition which it generally appears by nature, notwithstanding there may be times when it becomes too dry or shallow for that purpose; (4) any stream having an average flow of approximately 41 cubic feet per second, an average width of some 30 feet, an average depth of about one foot, capacity of flotage during spring seasonal periods of high water limited to loose logs, ties and similar products, used for fishing by the public for an extended period of time, and stocked with fish by the State; (5) any stream which has been or is susceptible to navigation by boats for the purposes of commerce or travel; (6) all streams meandered by the General Land Office Survey in the mid 1800's. Note that the Michigan Supreme Court designated the Rouge River navigable from its mouth to 15 miles upstream from the mouth.

Navigable is not whether a boat can be used in a lake or stream, but is based on the "floating log" test, which was a very useful tool during logging days in Michigan. If a log can float down a waterway, then it is considered navigable, and useable for commerce, travel, and trade. Navigable waters are considered public, which brings with it rights for public use. Even though we don't use rivers to float logs to market any more, this standard is still used as the legal test to define public waters.



**Environmental Stewardship in Oakland County** 

www.oakgov.com/community/community-development/

# River Stewardship 101

Ten Easy Ways to Help the Rouge Green Corridor

**Lawn Care Practices** 

Chemicals washed off of lawn

enter our lakes and streams

through storm drains and

roadside ditches. Fertilizers

cause algae blooms, which kill

fish. What can you do? Follow

these tips to maintain a green,

1) Maintain lawns at 3" or

taller. Taller grass promotes root

growth and shades out weeds.

2) Recycle clippings into the

lawn, reducing your need to

3) Test your soil to determine

4) Use slow-release fertilizers

drain, or roadside ditch.

Maintaining an attractive lawn

Instruct your lawn maintenance

also makes businesses look good.

company of the tips above. Less

mowing, fertilizers and pesticides

save you money.

what type of fertilizer you need,

river-friendly lawn:

So, have your travels through the Rouge Green Corridor gotten you excited about the river in your community? If so, there are many things you can do that will help the Rouge Green Corridor continue to improve. Since stormwater — regardless of where it falls in the watershed — could end up in the river, we all have riverfront property, and our activities in the watershed impact the river. The chart below explains how residents and businesses can help the Rouge.

Manage

**Woody Debris** 

ogjams used to be considered.

important part of a river system's

logjams in legally defined County

a problem. Now, common

thought is that properly

managed logjams are an

natural processes. The Drain

Commissioner only manages

Drains. Before taking action on

a logjam, call the Friends of the

Rouge (313-792-9900) or the

Wayne County Department of

Environment (888-223-2363).

They can assist you in assessing

of action to take. They can also

MDEQ is required. Here are tips

tell you if a permit from the

about logiams:

the situation and the best course



**Out Of Storm Drains** 

Storm drains and roadside

lakes and streams without

tips to keep pollutants out

treatment. Follow these

1) Sweep extra fertilizer,

grass clippings or dirt back

onto your lawn. Don't hose

leaves, trash, and fertilizers

away from storm drains.

3) Never dump ANYTHING

down a storm drain, such

as motor oil, pet waste,

or dirty or soapy water.

Remember: Only Rain in

4) Label storm drains in

your neighborhood. That

lets residents know they

flow directly to our lakes

5) Build a rain garden

to reduce the amount

248-288-5150 for a rain

garden information packet

In addition to the tips above,

that all floor drains discharge

businesses should be sure

to the sanitary system.

of stormwater. Call

the Drain!

and streams.

down hard surfaces.

2) Keep grass clippings,

of storm drains:

ditches empty into our











**Stabilize** 

Stream Banks

Stream bank erosion

happens when storm-

water flows scour the

dislodging vegetation

bank. This degrades in-

stream habitat and eats

away at upland property.

Stabilizing stream banks

can be done with many

engineered techniques.

However, bio-engineered

methods (methods that

include vegetation) not

only stabilize the stream

bank, but provide habitat

and aesthetic benefits

as well. Designs should

be based on the volume

and speed of flow at the

sites, and the slope and

stability of stream banks.

Note that a permit from

the MDEQ is required

and removing the stream

sides of the stream,

Support and

Participate in Local

**Environmental Groups** 

There are many local groups

Rouge Green Corridor. These

groups are non-profit and

depend on volunteers and

donations to continue their

efforts. Consider calling one of

the groups listed below and

getting involved to improve

the Rouge Green Corridor!

Oakland Land Conservancy

Oakland Audubon Society

East Michigan Environmental

Action Council (248-258-5188)

Friends of the Rouge

(313-792-9900)

(248-601-2816)

(248-647-2473)

Business or corporate

memberships in many non-

profit groups provide critical

that work to protect the

24-Hour Environmental Hotline for surface water pollution Contact: Oakland County Drain Commissioner 248-858-0931 www.oakgov.com/drain Rouge Rescue/River Day, Annual Frog & Toad Survey, Annual Bug Hunt — Benthic Macroinvertebrate Sampling

248-858-0720

Resources

environmental-stewardship

Contact: Friends of the Rouge

**Contact: Oakland County Planning** 

313-792-9900 www.therouge.org Healthy Lawn Care, Composting & Soil Health, Rain Gardens, Naturescaping & Native Plants:

Contact: Southeastern Oakland County Water Authority (SOCWA) 248-288-5150 www.socwa.org Invasive Plant Removal & Stewardship Workdays Contact: Your Municipal Offices

For more information about how you can protect water quality see: www.semcog.org/OursToProtect/OurstoProtect

Web Links for more information on water resource preservation and natural area stewardship: Rouge River National Wet Weather Demonstration Project

www.rougeriver.com Center for Watershed Protection www.cwp.org The Stewardship Network www.stewardshipnetwork.org Wild Ones Native Plants, Natural Landscapes www.for-wild.org

PROJECT PARTNERS

City of Birmingham www.bhamgov.org/ City of Southfield www.cityofsouthfield.com Village of Beverly Hills www.villagebeverlyhills.com

Friends of The Rouge www.therouge.org Southeastern Oakland County Water Authority www.socwa.org

Oakland County Drain Commissioner's Office www.oakgov.com/drain

Oakland County Planning & Economic Development Services www.oakgov.com/community/community-development



Keep an eye out for this new Rouge Green Corridor logo in your area and help get the word out about this community asset.

**Follow Healthy Help Keep Pollution** 

Carefully Store And Dispose Of Cleaners, Chemicals, And Oils Cleaners, chemicals and oils

pollute our waterways if washed or dumped into storm drains or roadside ditches. Be 1) Only purchase the amount you need. Try using less toxic

alternatives like vinegar for washing windows. 2) Keep unused products in their original containers with label intact. Store in a cool, dry place away from kids, pets,

and wildlife. 3) NEVER dump motor oil or other toxic materials down a storm drain, in a sink, or on the ground. Contact your community for local disposal

following package directions. 5) Water your lawn lightly and The State of Michigan has 6) Avoid "weed & feed" prodspecific laws regulating use ucts. This spreads pesticides and storage of toxic chemicals where they are not needed. 7) Keep chemical applications at least 25 feet away from the edge of a lake, stream, storm

for many business applications. Often, double containment, and a spill response plan are required to obtain the necessary permits. However, businesses also use many unregulated products that, if washed into a storm drain, road ditch, or floor drain could be harmful to the environment. Follow the tips above to ensure that all materials are used, stored, and disposed of properly.

Clean Up After Practice Good Car/Mechanical Your Pet & Don't **Feed Waterfowl Equipment Care** Animal waste washed into There are over four million a storm drain or road side vehicles in Southeast Michigan alone! Taking ditch has harmful bacteria

that can make our lakes unsafe for swimming. Whether on your lawn or on a walk, pick up after your pet promptly, and dispose of it in the trash or toilet where it can be treated. Lake or stream side pet owners should follow

the tips above diligently. Who wants to swim in your pet's poop?! Also refrain from feeding ducks and geese. This causes the birds to become dependent on humans. creating unnaturally high

populations and more waste. Bacteria in the waste pollute our parks, lakes, and your yard! Businesses that have lake or riverfront property may provide space for employees to enjoy the view. Encourage your employees to refrain

from feeding ducks and

geese. This practice increases

their populations, and in turn

See the column titled Establish

and Maintain Riparian Buffer

the wastes that are left on

vehicle fleet keeps dirty wash water and fluids out of our storm drains and road side ditches. Follow these simple steps: 1) Take the car to the car wash. They treat their dirty wash water. If you wash your own or company's car, do it on the grass so

good care of your car or

the soapy water doesn't drain into the storm drain, floor drain or roadside ditch. Also use less soap, or just plain water. 2) Keep the car properly tuned. If possible, take it to a shop where they can recycle used fluids and oil and clean up accidental

3) If you change the fluids or oil, label the waste container and take it to a business that accepts used vehicle fluids. Residents can take it to their community's household hazardous waste collection day. Use kitty litter to soak up any spills, and throw it in the trash.

How we plant and care for our yards can help water quality. Consider the following: Use a wide variety of plants to control pests and minimize the need for pesticides. 2) Select plants that are suitable for the soils and site

Choose

Earth-Friendly

Landscaping

Michigan. Once established. native species need less water, and are more disease resistant. Keep leaves, grass clippings and other yard debris away from storm drains, roadside ditches, streams or lakes. Compost or set out for

3) Select plants native to

5) Keep low areas free of yard debris to allow standing water to soak into the ground. Better yet, plant a rain garden! 6) Shred leaves and use as

on the river. Instruct them to fol-

low the practices outlined above.

This will save them time and your

7) Minimize impervious surfaces and encourage nfiltration of rain water into For businesses, hire a lawn care service that is aware of its impact

business money!

use of native plants, and use 1) Leave most logjams in place earth- friendly landscaping to slow river flow, reduce erosio practices. A narrow path and preserve and maintain through the buffer to the existing habitat. water's edge allows access 2) Use logjams as a natural and encourages your screen for collecting urban litter, neighbors or employees to which can be removed on a regular basis. 3) Use woody material from logjams for stream bank protection

and habitat creation. Even though you may not live right on the river, you could assist a local community group in managing woody debris (logjams) on public property. Contact your community

offices for more information.

visit your beautiful waterside Your gardening expertise

(or interest!) could be used to assist your community in planning and installing a riparian buffer on public property. Contact your community offices for more information. In any event, be sure to practice earth-friendly landscaping in your yard.

Rouge (313-792-9900).

for any stream bank stabilization work. Your community may have a volunteer opportunity available for you if you're interested in getting dirty! To be involved in a stream bank stabilization project, call vour community offices or the Friends of the

funding and opportunities for employees to give back to their communities. Supporting a local non-profit also gives the business a positive public image, and other non-tangible benefits to the business as an organization. The groups listed above work in your company's back yard and would benefit from any financial and volunteer contributions a Rouge Green Corridor business could make!