

## Chapter 7: Middle One Subwatershed Action Plan

Developing this Subwatershed Action Plan has been an iterative and inclusive process. After discussing river threats and impairments and developing subwatershed goals, the Middle One Subwatershed Advisory Group began looking at what actions could improve river quality in the subwatershed. The Management Alternatives Menu (Appendix C) was created as a group effort to identify a variety of Best Management Practices (BMPs) for managing stormwater in the various urban and rural communities represented in the geographic area. This “menu” was then used as a planning tool as communities met internally to discuss which BMPs were most appropriate and feasible for their community. From this exercise, individual SWAG members began developing community-based Action Plans, or Stormwater Pollution Prevention Initiatives (SWPPIs) which are a required component for the Michigan Voluntary General Stormwater Permit. These individual Action Plans were then discussed within monthly SWAG meetings to compare actions, find gaps and combine similar efforts within the subwatershed. The results of this process are both the individual community and agency SWPPIs, which include tasks, timelines, and methods for measuring progress, and the Subwatershed Action Plan summarized in **Table 7.1** below.

It should be noted that the majority of the actions listed below have either already been implemented or will be implemented within the first five years of implementing community and agency SWPPIs (by 2005), which is defined for the purposes of this management plan as the short term. In the long term, ongoing programs will be reviewed and monitored for effectiveness and modified if necessary, and structural projects will be maintained on a regular basis. These efforts with estimated timelines and estimated costs are fully outlined in community and agency SWPPIs. Actions are listed under the long term goals and objectives that they address. See the Summary of Ongoing and Proposed Actions (**Table 7.1**) at the end of this chapter for a summary of communities and agencies in the subwatershed and the types of actions that they are planning to commit to for the short and long term.

### Long Term Goal 1: Reduce flow variability.

#### Objective 1.A. Develop water resource protection and management ordinances to manage peak flow rates.

**7.1 Stormwater Management Ordinances:** Increasing development in the subwatershed and the negative impacts of stormwater due to land use changes is of great concern. Increased impervious surfaces, increase of non-point source pollutants and loss of natural features to slow and filter pollutants, if not controlled, will lead to further degradation of the subwatershed’s water resources. To mitigate these impacts, Washtenaw County and Wayne County have both developed and adopted Stormwater Management Ordinances that control both the quantity and quality of stormwater that is permitted to leave a developed site. Many communities within these counties either have adopted the ordinance or are considering adopting at the local level. Communities in the western and northern headwaters communities that are experiencing high growth pressures are especially interested in this approach to protecting high quality waters. For example, Salem Township has developed an aggressive model local stormwater ordinance that requires developers and planners to design sites that do not exceed predevelopment stormwater flow rates, volumes or nutrient loading.

**7.2 Other Water Resource Protection Ordinances:** Protecting existing natural features in the subwatershed is a key goal, especially in less developed communities. Wetlands, woodlands and the riparian corridor are key areas to protect. Local communities are developing, sharing and adopting ordinances that reflect the community’s desire to accommodate planned growth while protecting natural resources and their hydrologic and water quality function. Superior Township has adopted an aggressive wetland protection ordinances that give the Township authority to regulate and restrict actions in wetlands smaller than those regulated by the state. Superior

Township has also instituted a local Wetland Board that meets regularly to review site plans and supervise wetland protection in the community. This process is being considered as a model. Salem Township is working with the Washtenaw County Drain Commissioner to develop a model Natural Features Setback ordinance that protects the vegetated buffer along watercourses and wetlands.

**Objective 1.B. Study and implement BMPs for low impact development for undeveloped areas.**

7.3 Ongoing Education for Land Use Decision Makers: Many communities are planning on developing and distributing stormwater BMP “guidebooks” to complement regulations with recommended BMPs for site designers/planners. This will aid in site planning decisions about which BMP (porous pavement, constructed wetlands, infiltration basins, wet ponds, etc.) should be utilized to meet or exceed the community stormwater regulations or priorities. In conjunction with a stormwater ordinance, stormwater standards and easy-to-understand check lists to meet or exceed stormwater requirements will be designed and distributed to decision makers so that ordinances can be easily translated into day-to-day practice and site-specific recommendations. Canton Township’s Watershed Management Strategy is a good example of this effort. Also, many communities are finding ways to incorporate an annual stormwater workshop or presentation for local boards and councils and planning commissioners so that water quality and planning issues remain linked and in high priority. For example, the Washtenaw County Drain Commissioner’s Office offers its communities these presentations upon request. This ongoing effort will increase local officials’ understanding of the issues as well as how their responsibilities can contribute to the protection of local creeks and the river. Also, the Oakland County Planning Department conducts a SmartGrowth program that can present to local decision-makers.

**Objective 1.C. Study and implement BMP programs for developed areas.**

7.4 Retrofitting Existing Detention Systems: The more urbanized areas of the subwatershed are considering improving and updating built stormwater systems such as detention basins for greater stormwater flow control as well as water quality improvement. Retrofitting basins may be in the form of a simple outlet structure modification, or may be a conversion to a wetland system from a pond. Communities, such as Canton and Plymouth Townships have done or will undertake an inventory and study of existing basins before retrofitting. In addition, some developed communities in the subwatershed, such as Canton, will be studying options for “ultra-urban” BMPs such as underground storage vaults to control flow problems.

7.5 Stormwater Standards for Redevelopment: In addition to setting standards for new development, many of the subwatershed’s more urbanized communities have or will develop stormwater standards for redevelopment projects. This may range from requiring oil/grit separators in catch basins to the creation of new detention if imperviousness is added to the site.

7.6 Streambank Stabilization projects: In areas where upstream flow can be controlled and/or reduced, communities such as Novi, Northville Township and Canton are considering vegetative and/or structural streambank stabilization to assist in dissipating flow energy within the channel as well as increasing water quality, aesthetics and wildlife habitat.

7.7 Log Jam Inventory and Management: The City of Novi, Canton, and other communities are proposing to inventory their local tributaries and the river to identify problem log jams acting as restrictors to flow leading to flooding problems. This work will be coordinated with streambank stabilization and improvement considerations so that woody and other debris acting as habitat or positively stabilizing slopes will be modified to benefit flow as well as habitat.

7.8 Rain Barrel/Downspout Disconnection projects: A Friends of the Rouge/RPO residential rain barrel study located in Dearborn will help guide communities as to the effectiveness of this voluntary BMP in local neighborhoods. However, even if the flow mitigation benefits are low,

some communities agree that a rain barrel project, assisted by the community or other organization, is worth supporting if only for public awareness and involvement purposes. The City of Novi and Canton are considering implementing such a demonstration project. Downspout disconnection projects apply mostly to older, urban communities such as the City of Northville, where buildings often were built with downspouts connecting directly into the storm sewer, thus contributing excess flow from rooftop runoff into area creek systems. This project entails contacting individual property owners and following up to be sure downspouts are disconnected and discharge stormwater onto vegetated areas such as a lawn or garden.

7.9 Wetland/Natural Areas Restoration: Based on findings from the Middle One/Johnson Creek Wetland Resource Protection Plan<sup>69</sup>, there are opportunities in the subwatershed for restoration of wetland areas. Certain communities that may need to utilize the stormwater capacity of a restored wetland area, will study this potential restored wetland function. For example, the Salem Township hydrologic study has identified areas in the Township suitable for the creation of naturalized detention ponds or wetland areas to control flow to Johnson Creek. In Wayne County, restored wetlands may be considered for the Wayne County Wetland Bank. Communities will also encourage the restoration of upland areas, focusing on woodlands and prairies. For example, the City of Northville is continuing its successful Prairie Day where a piece of land in the city is restored to native prairie with volunteer labor and City leadership. Other communities will encourage native landscaping to replace lawns and may consider revising local weed and landscaping ordinances to enable this stewardship.

## **Long Term Goal 2: Reduce nutrient loading, especially with regard to all impoundments of the Middle Rouge River, upstream of and including Newburgh Lake.**

### **Objective 2.A. Develop ordinances for reducing nutrient loading.**

Stormwater Management Ordinances: As described above.

Other Water Resource Protection Ordinances: As described above.

Ongoing Education for Land Use Decision Makers: As described above.

7.10 Local Fertilizer Ordinances: To supplement public education and involvement programs, certain communities will propose the development and adoption of a local fertilizer application ordinance to regulate the concentration of nutrients (primarily phosphorus) that land owners as well as commercial lawn care companies place on lawns. West Bloomfield Township has implemented their Fertilizer Ordinance to protect local lakes, which serves as a model for the Rouge River watershed communities. Canton is investigating this possibility to strengthen an educational program.

7.11 On-Site Sewage Disposal System Ordinances: Both Washtenaw and Wayne Counties will be working with local communities to implement their new OSDS Time of Sale Inspection Ordinances which require septic system inspection and correction for failure at the time of property sale. Oakland County communities will not have the same support from the county, so some communities, like Lyon Township, will be considering the development of a local time of sale OSDS inspection ordinance. Oakland County Health Department will provide inspection and correction services to communities for a fee. All communities and agencies, through their Illicit Discharge Elimination Plans have developed complaint systems so that failing OSDS can be identified locally and then, in most cases, reported to county health departments for correction.

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<sup>69</sup> A Wetland Protection Plan for the Headwaters of Johnson Creek and the Middle Rouge River, RPO – NPS – TM25.00, October, 1997)

7.12 Revising Local Weed Ordinances: Some local communities believe that one method of decreasing over-fertilization problems for lawns is to encourage the reduction of lawns themselves. Natural or native vegetation does not need the intense maintenance, such as irrigation and fertilization, that lawn does and thus can offer an often cost-effective alternative for commercial and residential property owners. Some local weed ordinances prevent natural or native landscapes due to plant heights that may exceed limits (often no taller than 12"-16"). Some communities, such as Canton Township, will be reviewing these weed ordinances to find ways to encourage natural landscapes while meeting the public safety requirements of the weed ordinance.

**Objective 2.B. Develop education, incentive, and public stewardship programs promoting source control and treatment of nutrients.**

7.13 Lawn Care Behavior Change Programs: Controlling the phosphorus loading to creeks, the river and impoundments are a priority in the subwatershed. Most communities will be implementing a combination of several methods to encourage the public to reduce their fertilizer use on their lawns as this has been cited as a major source of phosphorus in urban areas. Wayne County has proposed a point of sale marketing and education program where fertilizer purchasers will be informed through literature, signs and/or on-product stickers indicating which fertilizers are "river-friendly". Communities will assist in this effort. In addition, many communities will be more actively promoting Wayne, Oakland and Washtenaw County MSU Extension services for testing the existing nutrient content of soils. Through this program, homeowners can have scientific information to guide them in selecting the best fertilizer for their particular lawn. All communities, through their Public Education Plans, have committed to regular, seasonal public education in the form of newsletter articles, tip cards, or other media to repeat fertilizer messages to the public. Communities and Counties are working with existing outreach organizations like the Southeastern Oakland County Waste Authority (SOCWA) and the Metro Detroit Landscapers Association (MDLA) to coordinate educational materials. Many communities in the subwatershed are interested in providing Lawn Care Workshops on an annual basis. The City of Novi in partnership with Friends of the Rouge held such a workshop in March of 2000 and have suggested that a standard workshop be created and then hosted and shared in various communities throughout the subwatershed.

7.14 Septic System Maintenance Programs: In communities where septic systems still exist, educational messages will be fed through newsletters as well as Washtenaw County's "Rural Living Guidebook", which includes tips on this issue as well as other river-friendly management practices. Most communities have requirements that failing systems must be connected to the sanitary system if one is accessible.

7.15 Animal/Pet Waste Management Programs: These programs, although very different in each community, will deal with source reduction of bacteria as well as nutrient sources in the subwatershed. In rural areas such as Salem Township where local horse and livestock farms still exist, the local community will commit to working more closely with the Michigan Department of Agriculture and existing MSU Extension programs such as Farm-A-Syst and state recommended Generally Accepted Agricultural Management Practices (GAAMPs) to encourage proper manure and nutrient management on site. In more developed communities, programs to reduce pet and waterfowl waste include a border collie roundup program at Canton golf courses to reduce Canadian geese populations, detention basin vegetation recommendations in Canton and Northville Townships to plant taller native vegetation to deter geese, as well as a program in Canton and other communities to locate plastic refuse baggies on posts with educational signs near waste receptacles in areas where residents may walk their dogs.

**Objective 2.C. Study and implement BMP programs or projects for developed and undeveloped areas for source control and treatment of nutrients.**

Retrofitting Existing Detention Systems: As described above.

7.16 Detention Basin Maintenance Programs: Most of the communities in the subwatershed have detention basins that need to be maintained for the life of the pond, usually by the private property owner or manager. In order for basins to function effectively for water quality, there needs to be management accountability. For some communities, as in Canton and Northville Townships, this will mean regular education of the Homeowners Associations and neighborhoods. Canton is planning an annual workshop that will provide a focus on management options for detention basins such as reducing fertilizer and irrigation, buffer plantings, emergent and submerged vegetation, pest insect control, and other issues. Canton and Northville Townships are both considering a traveling presentation for Homeowners Associations that can be made upon request throughout the year. In addition to these efforts, Washtenaw County's "Homeowners Association Handbook" includes recommendations for pond maintenance.

7.17 Golf Course Nutrient Management: There are several golf courses within the subwatershed, some of which are public courses. With intensive turf management programs, these areas are suspected as large sources of phosphorus loading. Canton Township will be conducting a golf course stormwater management study to assist the subwatershed in working with local courses to improve stormwater management practices. Improvements will explore turf management, watercourse and wetland buffers, as well as detention basin maintenance and buffer vegetation. Canton will work with MSU Extension's turf management staff to design the program.

7.18 Street Sweeping and Catch Basin Cleaning: Research has shown that streets in urban areas are large contributors of phosphorus and sediment to water resources. Most communities, county road commissions and MDOT have at least a basic semi-annual street sweeping program for paved roads. Many communities are committed to researching a more aggressive street sweeping program and/or catch basin cleaning program to pick up finer sediments and debris that may reach surface waters. Four communities in the Rouge watershed, Redford Township, Dearborn Heights, Garden City and Livonia, are currently conducting studies of street sweeping and catch basin cleaning efforts to determine if more powerful equipment and/or more frequent cleaning schedules have a significant impact on sediment and debris removal. These results will be used by Middle One subwatershed communities to determine changes in current practices. Also, some communities will investigate the possibilities for encouraging the management/sweeping of private roads, especially in subdivisions, to control sedimentation.

### **Long Term Goal 3: Reduce soil erosion and sedimentation.**

#### **Objective 3.A. Develop or revise ordinances to prevent, minimize and reduce soil erosion and sedimentation, especially from construction sites.**

7.19 Soil Erosion and Sedimentation Control Ordinances: Those communities and counties that have jurisdiction over SESC regulation and inspection either already have or are revising or developing new SESC ordinances to control soil erosion, especially from construction sites. These ordinances should limit the soil exposed during development or redevelopment, limit the rate at which water is transported across the exposed land, and allow for on-site capture of the sediment prior to discharging water from the site. Washtenaw County has a model SESC ordinance for the Rouge. Some communities in the headwaters like Lyon and Commerce Townships are also considering requiring the submittal and approval of engineered grading plans before construction to better control SESC problems during and after construction. Washtenaw County already requires this.

7.20 Natural Features Setback Ordinance: Salem Township is working with the Washtenaw County Drain Commissioner's office to develop a model Natural Features Setback ordinance that protects the vegetated buffer along watercourses and wetlands. Protecting the riparian corridor in

this manner will help prevent streambank erosion as well as filter sediments carried in stormwater runoff.

**Objective 3.B. Implement BMPs for effective soil erosion and sedimentation prevention and mitigation, addressing both upland sources as well as sources from streambank erosion.**

Streambank Stabilization: As described above.

7.21 Study/Recommend new innovative SESC techniques: In developing communities, such as Northville Township, there is an interest in studying and implementing innovative SESC practices that go beyond the silt fence and sedimentation basin. In mostly developed communities, such as Canton Township, there is a commitment to researching, and including in standards, innovative underground BMPs that serve as “ultra-urban” filters for sediments and other stormwater pollutants.

7.22 Encourage Agricultural BMPs: For communities with active farming, livestock, and horse farms, work with Natural Resources Conservation Service (NRCS) and Michigan Department of Agriculture (MDA) to understand generally accepted agricultural management practices (GAAMPs) and how the community can assist in water quality efforts. This will be applicable in Salem Township.

Street Sweeping and Catch Basin Cleaning: As described above.

**Objective 3.C. Improve soil erosion and sedimentation control inspection and enforcement, as well as education for parties responsible.**

7.23 Improvement of Inspection and Enforcement Practices: Counties, in most cases, are the jurisdiction responsible for SESC inspection and enforcement. These counties are often cited, however, as being understaffed for this purpose given the rate of construction and development in many communities. Communities concerned about the need for more frequent and reliable inspection and enforcement will work with counties to improve this service.

7.24 SESC Education: To improve the process for preventing SESC, communities are considering ongoing education for planning departments and commissioners so that SESC practices are considered as an integrated part of the site planning and design process. Communities are also interested in educating local developers as well as community staff, especially building inspectors, about proper SESC practices. An educational video created by the City of Farmington Hills as an RPO grant project (the Pebble Creek Erosion and Sedimentation Control Project<sup>70</sup>) may be used to serve as an educational tool for these audiences.

**Long Term Goal 4: Protect and mitigate the loss of natural features.**

**Objective 4.A. Develop natural features inventories and/or assessments to determine plans for preservation and/or restoration of natural features.**

7.25 Conduct Natural Features Inventory or Assessments: Communities, especially those within the rural fringe, will conduct or review local and county inventories and assessments, such as the Johnson Creek and Middle Rouge Wetland Resource Protection Plan, to assess areas of priority for preservation and/or restoration. Salem Township, for example, is committed to working more closely with area land trusts and conservancies to identify key areas and work toward funding for purchase of easement or property. Continue to nurture new relationship between planning departments/commissions and the Johnson Creek Protection Group so that

<sup>70</sup> Rouge Program Office Community Project, City of Farmington Hills, 10/05/98, 36+ pgs, Order Number: CP-SP10-02.00

site design considers stormwater and the benefit of preserving and protecting natural features on site. Encourage ongoing restoration programs such as the Washtenaw County Road Commission's work with Pheasants Forever to establish roadside natural plantings to increase wildlife habitat and stormwater benefits, as well as streambank stabilization projects to restore the riparian corridor.

7.26 Develop Restoration Plans and Programs: Most communities are focusing on the restoration of the riparian corridor which is a priority area for protection and improvement. Novi and Canton are committed to ongoing streambank stabilization projects, which will include re-vegetation of riparian land. Other communities, such as the City of Northville, are committed to working with riparian landowners to encourage the voluntary conversion of streamside lawn to more natural vegetation to support habitat and water quality.

**Objective 4.B. Develop ordinances for managing natural features to benefit stormwater quality and quantity.**

7.27 Wetlands, Woodlands/Tree Replacement, Natural Features Setback, and Zoning Ordinances: Communities in the subwatershed have various provisions for some or all of these regulations. Most communities are committed to reviewing and revising existing ordinances or developing/adopting new ordinances to reflect this goal in their community. Communities with the most existing natural features are setting models and standards that reflect their concern for the planned preservation of these systems. When ordinances and regulations are added or changed, planning commissions, departments and local officials will be educated about their role in using these ordinances to protect natural features and water quality in the community.

**Long Term Goal 5: Increase opportunities for passive and active recreational uses.**

**Objective 5.A. Eliminate/correct sources of bacteria that are harmful to public health and that limit river use, including illicit connections, failing septic systems and other sources.**

7.28 Continue Programs to Eliminate Sources of Bacteria that prevent desired recreational activities: So that local watercourses can strive to meet the designated use of partial body contact recreation, and certain appropriate portions of the river can strive to meet the designated use of total body contact recreation between May 1 and October 31, communities and counties are committed to continuing aggressive programs already in place, as well as implementing new programs, to control and eliminate sources of bacteria and nutrients in the subwatershed. These programs include OSDS inspection, ordinances, and maintenance education programs; as well as Illicit Discharge Elimination Plan implementation, inspection of outfalls, investigations of complaints, correction of illicit discharges, and pet and waterfowl waste management/education programs.

**Objective 5.B. Identify key areas to protect and plan for recreational and interpretive opportunities in appropriate communities, especially along the river.**

7.29 Identify and prioritize key potential recreational areas and desired activities: This may be done both on a community level and a subwatershed level. Riparian areas will be of major interest in terms of protecting the corridor and creating new public access to local creeks and the Rouge River, as well as linking greenways for both human recreation and protecting wildlife corridors. Wayne County communities are committed to working with Wayne County Parks Department to prioritize areas and create local recreational opportunities in the Rouge headwaters. Communities, such as Canton Township are also investigating passive recreational/educational opportunities that can be facilitated in local wetlands, especially those located near schools. In addition to finding new recreational areas, many communities, such as

Plymouth Township, are utilizing existing riparian parkland to develop interpretive signage and education programs. Larger restoration activities proposed include the restoration of Meadowbrook Lake in the City of Novi, which will remove sediments as well as improve habitat and recreational uses. The City of Northville is working with the Johnson Creek Protection Group to improve and promote Fish Hatchery Park, which is located on Johnson Creek. Counties and communities are actively distributing Rouge Recreation Guides that show the Rouge watershed and existing recreation areas.

7.30 Develop measures to protect Johnson Creek's Coldwater Fishery and Warmwater Fisheries: One of the designated uses that could be threatened by pending land use changes in the subwatershed is the cold water fishery provided by Johnson Creek. Special measure will be considered in the communities and counties that comprise the creekshed – Northville Township, Salem Township, City of Northville, Plymouth Township and Washtenaw and Wayne Counties. The Johnson Creek Protection Group's activities will help direct these special protection measures which will include BMPs to protect the creek's temperature regime and limit certain pollutant increases. Salem Township's aggressive Stormwater Management Ordinance is based on the protection of this vital resource. Another designated use that is threatened is the warmwater fisheries provided by all other Middle One tributaries as well as the Middle Rouge and its impoundments. Measures to control nutrients, sediments, flow will all contribute to restoring and protecting these resources.

**Objective 5.C. Develop or restore recreational uses - such as fishing, canoeing, hiking, biking - where feasible, appropriate and desired, especially along the river and certain creeks.**

7.31 Improve aesthetics of river: In order to attract the public to the river and increase stewardship and awareness, communities recognize that river aesthetics need to improve. Many programs mentioned under other goals will work toward this effort, including the control of soil erosion and sedimentation, the re-vegetation of the riparian corridor, and the elimination of bacterial sources such as failing OSDS, illicit connections and pet and animal waste. Conducting aesthetic surveys regularly under the Long Term Monitoring Plan will also assist in the identification and clean up of debris, log jams, sediment islands, odors and other barriers to aesthetics.

## **Long Term Goal 6: Improve water quality, water quantity and biological monitoring in the subwatershed to measure progress.**

**Objective 6.A. Review existing and historical monitoring; identify and secure additional long-term monitoring needs.**

7.32 Work with MDEQ and RPO to review existing programs: Communities and agencies, through the SWAG as well as through the Rouge Watershed Steering Committee, will work with the MDEQ and the RPO to coordinate these two existing monitoring programs. MDEQ monitors several locations within the subwatershed for benthic macroinvertebrates (aquatic insects), fish and habitat. The RPO monitors mostly dissolved oxygen (DO), temperature, and E. coli bacteria at few locations within the subwatershed.

7.33 Identify specific desired uses to direct monitoring: As a subwatershed, identify uses for the river and tributaries (such as fishing, wading, aesthetics, canoeing, etc.), in order to develop the parameters for a comprehensive monitoring program to determine what community actions can make these uses possible. This will be done through the SWAG review of this management plan, SWPPIs and the Long Term Monitoring Plan.

7.34 Establish additional long-term monitoring program: If the existing monitoring programs of the MDEQ and RPO are found to be inadequate for the subwatershed's needs, the subwatershed

or the whole watershed will work together to consider how to implement and fund the monitoring program that is needed. The following chapter sets forth a recommended long-term, in-stream monitoring program that if implemented fully, would measure water quality, quantity, biological health, as well as aesthetics and recreational use. Through the use of this recommended plan and their SWPPIs, the SWAG communities and agencies will review, revise and implement this monitoring program as new data is gathered and understood.

## **Long Term Goal 7: Increase public understanding of their role in protecting water quality.**

### **Objective 7.A. Develop and/or promote existing public involvement programs (workshops, events, etc.) to improve the public's understanding of their role in protecting water quality.**

7.35 Ongoing Events and Stewardship/Involvement Activities: In general, communities and agencies will continue to implement their Public Education Plans, in addition to new programs. Some of these existing and new programs include the City of Northville's Prairie Day, Canton Township's Wetland Day, support of FOTR's Frog and Toad survey and in-school Rouge Education Project work, FOTR and community supported Lawn Care Workshops conducted annually throughout the subwatershed, the Wayne County point of sale marketing for river-friendly lawn care, Washtenaw County's Community Partners for Clean Streams and Environmental Awards program for river-friendly businesses, Washtenaw County's Adopt a Catch Basin program, Salem's initiative to begin regular Town Hall Meeting formats to discuss water quality and other relevant information, utilizing Household Hazardous Waste collection days as an educational opportunity with booths/surveys/etc., and Canton will continue their successful presentations of the Enviroscape watershed model to local schools upon request.

7.36 Support of local Creek Protection Groups: The Johnson Creek Protection Group has formed under the leadership of Northville Township and is becoming a local force for the protection and restoration of this important Rouge resource. Northville Township, the City of Northville, Plymouth Township and Salem Township will work to support the stewardship of this group. Canton will continue supporting the efforts, if desired by the group, of the established Canton's River Environmental Excellence Committee (CREEC) citizen's group. This group has been meeting bi-monthly to assist in the development of this Subwatershed Management Plan.

### **Objective 7.B. Develop and/or continue Information and Education programs (brochures, newsletters, etc.) to disseminate water quality messages to the public.**

7.37 Developing and Disseminating Written Materials and utilizing other Media: Within and in addition to components of community and agency Public Education Plans, continued and new public education initiatives include newsletter articles, tip cards, citizen guidebooks (Washtenaw County's Rural Living and Homeowners Association Handbooks), developing stronger relationships to local newspapers for consistent coverage of water issues, Cable TV talk shows and running of videos, Washtenaw County's weekly public radio show "Issues of the Environment", continuing to update the subwatershed page of the rougeriver.com website and other local websites with Rouge information, continuing to place educational displays at public places such as libraries and city/township halls, and developing interpretive signage in public parks, and signs at road/tributary crossings and upon entering the watershed to create awareness/visibility and educate citizens about water quality issues.

Ongoing Education for Land Use Decision Makers: As described above.

## **Long Term Goal 8: Integrate stormwater management in planning and land use approval process.**

**Objective 8.A. Develop water resource ordinances, site plan review processes, education and incentive programs to encourage stormwater management in planning.**

Wetlands, Woodlands/Tree Replacement, Natural Features Setback, and Zoning Ordinances: As described above.

Support of local Creek Protection Groups: As described above.

**Objective 8.B. Develop plans/programs for ongoing education about stormwater management tools for local officials, planning commissioners and others.**

Ongoing Education for Land Use Decision Makers: As described above as well as institute annual or regular joint planning commission and board/council meetings as a subwatershed so that communities understand the watershed partnership and how they can benefit from working together.

7.38 Develop Ordinance/Incentive explanations/handbook: Some communities feel that a developer/planner is more likely to comply with local resource protection ordinances and take advantage of incentives if they can easily understand these requirements and options. Canton Township's Watershed Management Strategy is a good example of an easy-to-follow explanation of their stormwater requirements as well as examples and illustrations; they are committed to updating this guidebook regularly. Salem Township is also planning a similar guidebook and/or checklist of ordinance requirements for developers as well as planning commissioners.

**Long Term Goal 9: Establish financial and institutional arrangements for the fulfillment of the management plan.**

**Objective 9.A. Develop creative financing programs to support local stormwater management systems.**

7.39 Develop Local Financial Arrangements: Most communities and agencies, as they have begun implementing new and enhanced programs for stormwater management, have realized the need for creative funding mechanisms, especially for the maintenance of privately owned and managed stormwater BMPs such as private roads, private storm sewers and detention ponds. Some communities are implementing or investigating fees for builders/developers for pond and street maintenance.

7.40 Explore Need for New Staffing: To meet the additional work that communities and agencies will take on as this plan is implemented, many will be considering hiring and/or contracting additional staff. Communities may decide that in order to do the work listed in their local Stormwater Pollution Prevention Initiatives (SWPPIs), they will need to hire either an Education/Communications Director to develop, implement and measure the effectiveness of public education programs or an Environmental/Stormwater Coordinator to oversee ordinance compliance and revision, natural features protection and other related activities. Some communities may investigate staff sharing for this purpose.

**Objective 9.B. Continue involvement with the Rouge River Advisory Council (RRAC) and the Rouge River Steering Committee as advisory and decision-making bodies to guide watershed-wide decisions so that standards, ideas, programs are shared.**

7.41 Determine entity to produce and coordinate technical watershed-wide information: In the long term, the technical work provided by the Rouge Program Office under the Rouge River National Wet Weather Demonstration Project will be phased out. Thus, Rouge River Watershed communities and agencies will need to identify what entity will conduct certain technical work to

coordinate and measure efforts across the watershed. For example, the subwatershed recognizes that there should be one coordinated entity to implement a long-term watershed-wide monitoring program for the Rouge. The watershed communities and agencies will need to work together to agree on how to manage this kind of work for the long term.

## **Long Term Goal 10: Enforce action plans and increase accountability for stormwater management.**

**Objective 10.A. Develop and implement enforceable Stormwater Pollution Prevention Initiatives (SWPPIs), acceptable to regulatory agencies as well as local communities and agencies.**

7.42 Continue involvement in the Michigan Voluntary General Storm Water Permit program: This continued involvement includes the annual review and revision, if needed, of the Subwatershed Management Plan and the SWPPI.

**Objective 10.B. Develop and adopt water resource protection ordinances that are enforceable.**

7.43 Enhance ordinance compliance, inspection and enforcement procedures: For all water resource protection and management ordinances on the community and county level, work to enhance the ability of the staff responsible for enforcement. Provide education and assistance for developers, site planners and site plan reviewers, planning commissioners, SESC inspection officers, and other relevant staff so that ordinance requirements are understood and applied in the planning process as well as enforced during development and maintenance. Where there is a need for additional staff to meet compliance and enforcement needs, investigate opportunities for increasing staff or creating partnerships. A good example of this process is Wayne County's new Civil Infractions Ordinance which enables on site ticketing of violators of the County's new Stormwater Ordinance.

**KEY:**  
 E = ongoing during last two yrs.; continuing  
 P = planned within 5 yrs.  
 L = planned to begin after 5 yrs.  
 NA = not applicable  
 ? = data or decision not available  
 Co. Std. = County standards applied  
 NP = not currently planned  
 \* = will be evaluated

**Table 7.1:  
 Summary of Ongoing and Proposed Actions**

**Middle One Subwatershed Advisory Group Members<sup>71</sup>**

#	Actions (note: specifics are listed within each individual SWPPI <sup>72</sup> )	SWAG Goals Addressed	Canton Community	Commerce Township	Farmington Hills	Lyon Township	City of Novi	City of Northville	Northville Township	City of Plymouth	Plymouth Township	Salem Township	Walled Lake	City of Wixom	Oakland County	Washtenaw County	Wash. Co. Rd. Comm.	Wayne County	MDOT <sup>73</sup>
1	Stormwater Management Ordinance	1-3, 8, 10	E/P	P	E	P	P	NP	P	P	E	E/P	P	*	Co. Std	E/P	NA	E	NA
2	Other Water Resource Protection Ordinances	1-5, 8, 10	E/P	P	NP	P	E/P	NP	P	NP	NP	E/P	E/P	P	Co. Std	E/P	NA	E	NA
3	Education for Land Use Decision Makers/staff	7, 8, 10	E/P	P	E/P	P	P	NP	P	NP	P	E/P	E/P	NP	Co. Std	E/P	NA	E/P	NA
4	Retrofitting Existing Detention Systems	1-3, 7	P	*	*	NA	P	NA	P	NA	P	NA	NA	P	?	NA	NA	NA	NA
5	Stormwater Standards for Redevelopment	1-3, 8, 10	P	P	*	NA	E	P	P	P	P	NA	P	P	Co. Std	E/P	E	E	NA
6	Streambank Stabilization Projects	2-3, 4	P	?	NP	NA	E/P	NP	P	NP	P	E/P	P	NA	E/P	NP	NP	E/P	E/P
7	Log Jam Inventory and Management	1, 5	E/P	NA	NP	NA	P	NP	NP	NP	NA	NP	NA	NA	NP	E/P	NA	E/P	NA
8	Rain Barrel Demonstration	1, 7	P	NA	NP	NA	P	E/P	P	NP	NA	NP	NP	NP	NP	NP	NA	NA	NA

<sup>71</sup> Note: The City of Livonia is not included in this table. Due to their small area in the Middle One subwatershed, the City chose to highlight their programs within the Upper Subwatershed Management Plan. Most of the actions listed in the Upper plan apply throughout the City, and thus in the Middle One subwatershed portion of the community as well.

<sup>72</sup> Note: As part of the requirements of the Michigan General Storm Water Permit, the communities and agencies represented here are developing a Storm Water Pollution Prevention Initiative (SWPPI) outlining specific actions. The action items listed here have been developed using drafts of these SWPPIs and so may change in the future.

<sup>73</sup> Note: At the time of plan development, the Michigan Department of Transportation does not have a General Storm Water Permit for the area of the Middle One Subwatershed. MDOT only has Permit coverage for the City of Livonia, which is located in part in the Middle One Subwatershed. However, as the agency considers applying for coverage for the entire Rouge River Watershed, MDOT has participated with the Middle One SWAG in the development of this plan.



#	Projects (downspout disconnect) <b>Actions</b> (note: specifics are listed within each individual SWPPI)	SWAG Goals Addressed	Canton Community	Commerce Township	Farmington Hills	Lyon Township	City of Novi	City of Northville	Northville Township	City of Plymouth	Plymouth Township	Salem Township	Walled Lake	City of Wixom	Oakland County	Washtenaw County	Wash. Co. Rd. Comm.	Wayne County	MDOT
9	Wetland/Natural areas Restoration	1-5	NP	*	NP	NP	P	E/P	P	NA	NA	P	NA	P	?	NP	NA	E/P	NA
10	Local Fertilizer Ordinance	2, 7, 10	P	?	*	NP		NP	NP	NP	NP	NP	NP	*	NA	NA	NA	NA	NA
11	On-Site Sewage Disposal System Ordinance	5, 10	Co. Std.	P	*	P	P	P	Co. Std	P	Co. Std	Co. Std	E	P	?	E/P	NA	E	NA
12	Revising Local Weed Ordinances	1-4, 7, 10	P	NP	NP	NP	NP	NP	NP	NP	NP	NA	NP	P	NA	NA	NA	NA	NA
13	Lawn Care Behavior Change Programs	3, 7	E/P	P	E/P	P	E/P	P	P	P	P	P	E/P	P	E/P	E/P	NA	E/P	NA
14	Septic System Maintenance Programs	5,7	NA	P	P	P	P	P	P	NA	Co. Std	Co. Std	NP	NA	NA	E/P	NA	E/P	NA
15	Animal/pet Waste Management Programs	5, 7	P	?	NP	NP	P	NP	NP	E	NP	E/P	E/P E/P	NP	E/P	NP	NA	E	NA
16	Detention Basin Maintenance Programs	1-4, 7	E/P	E	*	?	E/P	NA	P	NA	P	NA	NA E/P	P	E/P	E/P	NA	E/P	NA
17	Golf Course Nutrient management	2-5, 7	P	NP	E	NA	NA	NA	P	NA	NP A	E/P	NA	NA	NA	NA	NA	E	NA
18	Street Sweeping and Catch Basin Cleaning	2, 3	E/P	E	E/P	E	E/P	P	NP	E	NA	NA	E/P	E/P	E/P	NA	E	E	E
19	Soil Erosion and Sedimentation Control Ordinances	3, 8, 10	Co. Std.	E	E/P	E/P	E/P	Co. Std	Co. Std	E	Co. Std	Co. Std	E/P	P	E	E/P	NA	E	NA
20	Natural Features Setback Ordinance	1-4, 8, 10	E	P	NP	NP	P	NP	P	NP	NP	P	NP	P*	?	NA	NA	NA	NA
21	Study/Recommend new SESC Techniques	3, 10	NP	P	NP	P	NP	NP	P	NP	NP	Co. Std	NP	P	P	P	NA	E	NA
22	Encourage Agricultural BMPs	2, 3, 7, 10	NA	NA	NA	?	NA	NA	NA	NA	NA	P	NA	NA	NA	NA	NA	NA	NA
23	Improvement of SESC Inspection and Enforcement Practices	3, 10	Co. Std. E/P	P	NP	P	E/P	Co. Std	Co. Std	P	Co. Std	Co. Std , P	E/P	P	E/P	Co. Std., E/P	NA	P	NA

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24	Soil Erosion and Sedimentation Control Education	3, 7, 8, 10	Co. Std.	P	E/P	P	P	NP	Co. Std	NP	P	P	E/P	P	E/P	E/P	E	E/P	NA
25	Conduct Natural Features Inventory or Assessments	4, 5, 8, 10	E/P	P	NP	P	P	NP	P	NP	NA	E/P	NP	NP	P	NA	NA	NA	NA
26	Develop Restoration Plans and Programs	1-5	P	NP	*	NP	P	P	P	NP	NP	E/P	NP	P	P	NA	E	E/P	NA
27	Review Wetlands, Woodlands/Tree Replacement, Natural Features Setback and Zoning Ordinances	4, 10	P	P	NP	P	P	NP	P	E	P	E/P	E/P	P	P	NA	NA	NA	NA
28	Encourage Conservation Easements to protect Natural Features	4, 5, 7, 9	E/P	E	NP	?	P	NP	P	NP	NP	E/P	E/P	NP	E/P	NA	NA	NA	NA
29	Identify and Prioritize key potential recreational areas and activities	4,5	P	E	P	?	P	P	P	E/P	NP	P	E	NA	E	NA	NA	?	NA
30	Continue Programs to Eliminate Sources of Bacteria that prevent desired recreational activities	5,10	E/P	E/P	E/P	E/P	E/P	E/P	P	P	E/P	E/P	E/P	E/P	E/P	E/P	NA	E/P	NA
31	Improve aesthetics of river	4, 5, 7	E/P	NA	E/P	NA	E/P	P	P	E	NA	P	E/P	NA	E/P	NA	NA	?	NA
32	Improve potential for a recreational fishery in the Middle Rouge	5, 7	E/P	NA	NA	NA	P	P	P	NP	NA	NA	E	NA	?	E/P	NA	E/P	NA
33	Work with MDEQ and RPO to review existing monitoring programs	6, 10	P	P	P	P	P	P	P	P	P	P	E/P	P	E/P	P	P	P	P
34	Identify specific desired uses to direct monitoring	5, 6	P	P	P	P	P	P	P	NP	P	P	NP	P	E/P	P	NA	P	NA

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35	If necessary, establish additional long-term monitoring program	6, 9, 10	P	P	P	P	P	P	P	NP	P	P	P	P	?	P	NA	P	NA
36	Ongoing Events and Stewardship and Involvement Activities	6, 7	E/P	P	E/P	P	E/P	E/P	E/P	E/P	P	E/P	E/P	E/P	E/P	E/P	E/P	E/P	E/P
37	Support of local Creek/Lake Protection Groups	7, 9	E/P	?	NA	?	P	P	E/P	E/P	P	P	NA	NA	E/P	E/P	NA	E/P	NA
38	Developing and Disseminating Written Materials and utilizing other Media	7	E/P	P	E/P	P	E/P	P	P	E/P	E/P	E/P	E/P	E/P	E/P	E/P	E/P	E/P	E/P
39	Develop Ordinance and Incentive explanations handbook	7, 8, 10	E/P	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	P	E/P	NA	P	NA
40	Develop Local Financial Arrangements	9	E	NP	NP	NP	NP	NP	NP	NP	NP	P	NA	NP	?	NA	NA	P	NA
41	Explore Need for New Staffing	9, 10	P	NP	P	NP	P	NP	NP	P	NP	P	P	P	P	NA	NA	P	NA
42	Determine entity to produce and coordinate technical watershed-wide information	9	P	P	P	P	P	P	P	P	P	P	P	P	P	P	NA	P	NA
43	Continue involvement in the General Storm Water Permit program	9, 10	P	P	P	P	P	P	P	P	P	P	E/P	P	P	P	P	P	P
44	Enhance ordinance compliance, inspection and enforcement procedures	8, 9, 10	P	P	P	P	P	P	P	P	NP	P	E/P	P	P	E/P	NA	P	NA
45	Geographic Information Systems improvement/projects	8,10	E/P	P	E/P	P	E/P	NP	P	E/P	NP	E/P	P	*	E/P	E/P	P	E/P	NP