

I. Introduction

As a requirement of the Phase II Storm Water Permit, this Public Education Plan (PEP) was developed to inform the public about their role in storm water management and in protecting water quality within their community. This plan was created for the Upper Clinton River Subwatershed, with the help of residents and professionals in the education field. It outlines goals for the Plan, and messages that must be communicated, as well as additional information that the communities thought were important for the public to understand. The PEP then describes the existing and future efforts the communities will undertake to achieve these education goals, and how these efforts will be evaluated.

The Upper Clinton River Subwatershed is comprised of seven communities:

City of the Village of Clarkston
Independence Township
City of Lake Angelus
Orion Township
Springfield Township
Waterford Township
White Lake Township

These communities decided to form a Subwatershed group to address the Phase II Storm Water Permit requirements. They agreed that approaching storm water management on a watershed basis made the most sense from an ecological perspective, as well as political and economic perspectives. It will allow them to address storm water concerns from their source, as these communities are made up of the headwater tributaries of the Clinton River. The group began working together in May, 2002, and once organized, began to develop this Public Education Plan.

II. Involving the Public in the Planning Process – PEP Visioning Session

To create a Public Education Plan, the Subwatershed Group decided that more people should be involved in the process. The group decided to host a visioning session and invite residents from their jurisdictions to provide ideas and input regarding the messages to use and the audiences that should be targeted through the PEP. Residents with special interest in natural resources, lake board representatives and riparian land owners attended the meeting, as well as people from Clarkston Community Schools, Cedar Crest Academy, Drayton Plains Nature Center and a representative from a local builders association. In addition, regional agencies were invited to attend, including:

- Michigan Department of Environmental Quality (MDEQ)
- Clinton River Watershed Council (CRWC)
- Southeast Michigan Council of Governments (SEMCOG)
- Oakland County Planning and Economic Development Services
- Oakland County Parks
- Oakland County Drain Commissioner's Office

The visioning session was conducted in July of 2002 with 27 participants, including representatives from each participating government. The meeting began with introductions, a short explanation of the Phase II permitting requirements, and a description of the subwatershed boundaries. The large group was then split into four smaller groups. Each small group was lead by a facilitator who encouraged brainstorming, kept the conversation focused, and took notes on a flip chart.

Each small group was asked to identify and prioritize the messages necessary for the public’s understanding of storm water and water quality issues. Then each group was asked to identify and prioritize the relevant audiences for these messages. Before the discussions began, the required messages and audiences for the Phase II permit were handed out to each participant.

Once the discussions were complete, the large group reconvened and a representative from each small group presented the results of their work to everyone. The following page summarizes the top priority messages and audiences. The number of votes reflects how many of the groups (out of 4) included that topic in their top five message or audience listing. Please refer to the appendix for complete results of the visioning process.

Top Messages:	No. of Votes:
• Landscaping practices, including buffers and irrigation	4
• Proper septic tank maintenance	4
• Detention/retention basin maintenance	3
• Protection/restoration of wetlands and natural areas, natural features setback	3
• “Foundation” information, such as watershed description, hydrology (where does water go?), connections between natural features, storm water filtration and infiltration, description of runoff, role of impervious surfaces, wetland functioning, water conservation.	3
• Invasive plant/animal control (Purple loosestrife/zebra mussels)	2
• Enforcement of storm water and soil erosion Best Management Practices (BMPs)	1
• Household hazardous waste disposal for residents – proper care and disposal.	1

Top Audiences:	No. of Votes:
• Developers, builders, design and real estate professionals, landscape professionals architects, grounds maintenance personnel.	4
• Businesses, business associations, private park owners	4
• Households/homeowners/homeowners associations/community groups	3
• Educators/schools/curriculum coordinators	3
• Riparian landowners/lake boards/watercourse landowners	3
• School kids	2
• Governments (Planners, elected officials, Planning Commissions, engineering departments, parks departments, nature centers, Road Commission of Oakland County, Oakland County Drain Commission)	2
• Recreational users	1

In combination with the required messages and audiences described in the Phase II permit, this information was used as a basis for developing the Public Education Plan for the Upper Clinton River Subwatershed.

III. Objectives for Public Education

The purpose of the Public Education Plan is to promote, publicize, and facilitate watershed education that will encourage the public to reduce, as much as possible, the amount of pollutants that they release into storm water.

Based on the visioning process and topics identified through the group discussions, the following are several objectives developed for this plan:

- Objective 1: Raise awareness of the headwaters and watershed area of the Clinton River, how storm water reaches natural water bodies, and how this impacts water quality, not only in our region but also in downstream communities.
- Objective 2: Improve understanding of impacts on water quality by individual and group behaviors.
- Objective 3: Educate the public regarding the high quality and importance of the headwaters region and its importance as a significant natural resource and community asset by fostering stewardship and enthusiasm for the River and its tributaries.
- Objective 4: Develop and implement public involvement and education programs for the citizens of the headwater's communities. This will require the dissemination of informational materials and coordination of activities to build awareness and foster stewardship.
- Objective 5: Encourage a change in people's behavior and practices that are currently causing storm water pollution.
- Objective 6: Increase the number of individuals, schools and other organizations in the Upper Clinton region who participate in river educational activities (e.g., River Day, etc.)

These represent the overall objectives of the Public Education Plan, which will guide implementation of the actions and programs outlined here over the duration of the permit.

One main component of meeting the objectives of this plan is the community's agreement with the Clinton River Watershed Council (CRWC) to implement their "Stormwater Action Program." The CRWC is a nonprofit organization dedicated to protecting, enhancing, and celebrating the Clinton River, its watershed, and Lake St. Clair. It works collaboratively with local governments, businesses, individuals, and other community groups to address water quality and land use issues in the watershed.

Upon the request of a number of communities, CRWC developed the Stormwater Action Program to assist its members in meeting their Phase II public education requirements. The components of the Stormwater Action Program are outlined in this Public Education Plan, along

with materials and programs offered by the community and other organizations in southeast Michigan. In subscribing to the Stormwater Action Program, each participating entity has entered into a four-year contract with the watershed council (extending through the end of the first Phase II permit cycle). CRWC has agreed to provide the programs outlined in this plan over the four-year period, November 2004 – November 2008 (see commitment letter in the Appendix.)

As outlined in this Public Education Plan, CRWC's program includes the following major components:

- Education of the public and recruitment of volunteers in each subwatershed through a variety of outreach methods (presentations, workshops, websites, cable TV, print media, etc.).
- Regular volunteer training sessions and establishment of water quality monitoring sites throughout each subwatershed.
- Annual forums for sharing information, discussing issues, and planning projects.
- Coordination of other on-going education and stewardship efforts, including River Day, Clinton Clean-Up, and the Stream Leaders student river monitoring program.
- Coordination with the Southeast Michigan Partners for Clean Water "Our Water. Our Future. Ours to Protect." campaign.
- Development and distribution of supporting print and web-based materials.

IV. Required Elements – Existing and Future Public Education Efforts

In an effort to organize existing materials and programs currently being used by the participating communities, each completed a survey describing the following:

- Watershed management topics they are currently educating the public about. Examples include hazardous waste disposal, riparian land management or water conservation methods.
- Existing audiences each community is targeting. They were asked to list groups, organizations or other audiences with which they currently communicate.
- Existing communication methods currently in place that could be used to disseminate watershed management information. Examples include a cable TV channel, web site, newsletters, and water bills.

This information was used to determine how each required element (message), as well as the additional messages from the visioning session, could be effectively communicated to meet the objectives of the Public Education Plan. Note that the full results of the survey are included in the appendix. The following describes each required element (message), and how it will be addressed through the communities' existing or new communication method:

1. Education of the public about their responsibility and stewardship in their watershed.

Potential**Messages:**

- 1) What is a watershed?
- 2) How does a watershed work?
- 3) What watershed are you in?
- 4) Why should we protect the watershed?
- 5) How are storm drains connected to our watershed?
- 6) What you can do to protect our water resources
- 7) What we as a group can do to protect our water resources.

Existing efforts:

Waterford Township sponsors a River Day event each June, which has consisted of river and bank clean up of litter, debris and illegal dumping. Waterford Schools participates in the Clinton River Watershed Council's student monitoring program. Oakland County Planning Department's presentations on land planning and development, and water resources at Waterford Township Planning Commission. Clinton River Watershed Council's efforts, including their Stormwater Tip Card series, website.

Future efforts:

- 1) Work with the Clinton River Watershed Council, SEMCOG, the Michigan State University Extension, or other educational organizations to develop, modify, or use existing informational materials describing the basics in how a watershed works. This information could be distributed through a cable TV program, newsletters, regular newspaper column, tributary signage, web sites, brochures, event displays, or other means.
- 2) Contract with and/or use the services of a qualified organization(s) like the Clinton River Watershed Council in educating the public about watershed stewardship as outlined in CRWC's Stormwater Action Package, including presentations to local community organizations, workshops, website content, newsletter articles, and the Adopt-A-Stream Program.
- 3) Sponsor a "Healthy Lawn Care" workshop for riparian land owners, homeowner's associations, garden clubs or other organizations that explains their role in protecting water resources through appropriate land management techniques such as landscaping practices, retention/detention basin maintenance, or other methods.
- 4) Support activities for school children and citizens to learn about their watershed and participate in an existing water quality monitoring program. Partner with area schools, libraries, land conservancies and the local watershed organization to participate in and/or expand the existing program.
- 5) Have information available in community library and at local government offices and on web site.

2. Education of the public on the location of residential separate storm water collection system catch basins, the waters of the state where the system discharges, and potential impacts from pollutants from the separate storm water drainage system.

Potential

- Messages:
- 1) The connection between storm drainage systems and natural water bodies.
 - 2) Environmental impacts of pollutants that enter storm drains.
 - 3) Where there storm water goes.
 - 4) Ways of keeping common substances out of storm drains.

Existing efforts: Clinton River Watershed Council's efforts, including their Stormwater Tip Card series, CRWC's Website, and Storm Drain Stenciling Guide.

- Future efforts:
- 1) Work with the Clinton River Watershed Council, SEMCOG, the Michigan State University Extension or other educational organization to develop, modify, or use existing materials explaining how storm water reaches natural water bodies, and how pollutants generated on land impact water quality. Potential approaches could include newspaper articles, newsletter articles, web articles, Cable TV spot, or other methods.
 - 2) Contract with and/or use the services of a qualified organization(s) like the Clinton River Watershed Council to educate the public about stormwater drainage systems as outlined in CRWC's Stormwater Action Package, including presentations to local community organizations, workshops, website content, newsletter articles, and the Adopt-A-Stream Program.
 - 3) Improve understanding of soil erosion and sedimentation control, its impact on water quality, and how it can be reduced by implementing appropriate controls through workshops, similar to the program developed by MDEQ Environmental Assistance Division, informational brochures, or other means. Target audiences include builder/developers, design professionals, public officials and staff, and engineering and planning staff and/or consultants. Possibly coordinate with Oakland County Planning Department's presentations on Best Management Practices (BMPs) on stormwater detention design.
 - 4) Increase awareness of where storm water ends up through catch basin stenciling/labeling program in neighborhoods and subdivisions.
 - 5) Have information available in community library and local government offices and on web site.

3. *Encouragement of public reporting of the presence of illicit discharges or improper disposal of materials into the applicant's separate storm water drainage system.*

Potential

- Messages:
- 1) Connection between storm drainage systems and natural water bodies.
 - 2) Nothing but storm water should enter a storm drain.
 - 3) What is an illicit discharge?
 - 4) The impact that illicit discharges have on the environment.
 - 5) Encourage reporting of illicit discharges (When, Where, How?)
 - 6) Consequences/penalties associated with illicit discharges and improper waste disposal.

Existing efforts: Waterford Township takes general complaints for improper releases into storm drains and wetland filling in the Building and Engineering and Fire Departments. If the problem can not be resolved at the local level the proper County or State agency is contacted. . Clinton River Watershed Council's efforts, including their Stormwater Tip Card Series, CRWC's Website and Storm Drain Stenciling Guide. Oakland County Drain Commission's Storm Water Action Team (SWAT) Pollution Hotline, refrigerator magnets, brochure and public speakers.

- Future efforts:
- 1) Oakland County Drain Commission's office has developed a centralized complaint system for reporting, responding to and tracking of environmental complaints called the SWAT Pollution Hotline. Waterford Township could coordinate reporting of spills through this hotline, or develop a similar tracking system at the local level
 - 2) As part of each community's IDEP, a complaint system could be created for the reporting of complaints to the individual community if a County-wide system is not possible.
 - 3) Work with the Clinton River Watershed Council, Michigan State University Extension or other educational organization to develop, modify, or use existing information to encourage reporting of improper disposal into storm drains. Potential approaches could include newspaper articles, newsletter articles, web articles, Cable TV spots, or other methods.
 - 4) Contract with and/or use the services of a qualified organization(s) like the Clinton River Watershed Council to educate the public about illicit discharges as outlined in CRWC's Stormwater Action Package, including presentations to local community organizations, workshops, website content, newsletter articles, and the Adopt-A-Stream Program.
 - 5) Have information available in community library and local government offices and on web site.

4. Education of the public on the need to minimize the amount of residential, or non-commercial, wastes washed into nearby catchbasins (this should include the preferred cleaning materials and procedures for car, pavement, or power washing; the acceptable application and disposal of pesticides and fertilizers; and the effects caused by grass clippings, leaf litter, and animal wastes that get flushed into the waterway).

Potential

- Messages:
- 1) Explain the connection between traditional residential car, pavement, and/or power washing and the quality of water resources.
 - 2) Describe environmentally-friendly washing techniques and cleaning materials.
 - 3) Impact of fertilizer and pesticide use on water resources.
 - 4) How to reduce the need for pesticides and fertilizers.
 - 5) Non-toxic alternatives to fertilizers and pesticides.
 - 6) How to use, store, and properly dispose of fertilizers and pesticides.
 - 7) Environmentally-friendly lawn and garden practices.
 - 8) How to use residential de-icer products.

Existing efforts: Waterford Township's brochures on yard debris composting and recycling are included in new resident packages. Waterford Township includes brochures for healthy lawn and composting practices in new resident packages and at Community Planning & Development brochure display. Waterford Township operates a community yard refuse compost site. Clinton River Watershed Council's efforts, including their Stormwater Tip Card series, CRWC Website, and the CRWC Library. Michigan State University Extension workshop on fertilizer use.

- Future efforts:
- 1) Work with the Clinton River Watershed Council, SEMCOG, the Michigan State University Extension or other educational organization on developing, modifying, or using existing materials that explain how to use, store and dispose of fertilizers and pesticides, and de-icer products to help protect water quality. Potential approaches could include newspaper articles, newsletter articles, web articles, Cable TV spot, or other methods.
 - 2) Contract with and/or use the services of a qualified organization(s) like the Clinton River Watershed Council to educate the public about reducing the impacts of residential stormwater pollutants as outlined in CRWC's Stormwater Action Package, including presentations to local community organizations, workshops, website content, newsletter articles, and the Adopt-A-Stream Program.
 - 3) Sponsor a "Healthy Lawn Care" workshop for riparian land owners, homeowner's associations, garden clubs or other organizations that

explains appropriate land management techniques and water quality protection.

- 4) Educate community staff on environmentally-friendly methods for washing community-owned vehicles, and other facilities that require outside washing. Also provide education on environmentally-friendly landscape maintenance practices and certify community staff in the storage, use and disposal of pesticides and herbicides as well as the storage and use of de-icer products. Publicize activities to increase awareness.
- 5) Have information available in community library and local government offices and on web site.

5. *Education of the public on the availability, location and requirements of facilities for disposal or drop-off of household hazardous wastes, travel trailer sanitary wastes, chemicals, yard wastes, and motor vehicle fluids.*

Potential

Messages:

- 1) How to identify household hazardous waste.
- 2) The importance of disposing of these elements properly.
- 3) Non-toxic alternatives to some hazardous materials.
- 4) Ways of reducing the amount of grass clippings and leaf litter to dispose of.
- 5) How to dispose of these elements properly.
- 6) How to compost.
- 7) Where the public can dispose of these elements.
- 8) Who to contact if they have questions.

Existing efforts:

Waterford Township is working to develop Household Hazardous Waste drop-off days either on their own or in cooperation with Oakland County and adjacent communities. Waterford Township also has a compost site for yard waste disposal. Clinton River Watershed Council's efforts, including their Stormwater Tip Card Series, CRWC's Website, River Day and Clinton Clean-Up.

Future efforts:

- 1) Implement a Household Hazardous Waste collection program through collaboration with other communities and/or the County.
- 2) Work with the Clinton River Watershed Council (CRWC), SEMCOG, Michigan State University Extension or other educational organization in developing, modifying, or using existing informational materials that describe how to store, handle and dispose of household hazardous wastes. Potential approaches could include newspaper articles, newsletter articles, web articles, Cable TV spot, or other methods.

- 3) Contract with and/or use the services of a qualified organization(s) like the Clinton River Watershed Council to educate the public about proper disposal of household and yard wastes as outlined in CRWC's Stormwater Action Package, including presentations to local community organizations, workshops, website content, newsletter articles, and the Adopt-A-Stream Program.
- 4) Work to identify potential information gaps (e.g. travel trailer sanitary wastes, materials for businesses/developers/builders) and investigate opportunities, other mechanisms, and information for promoting the water quality benefits of properly handling and disposing of these materials.
- 5) Promote the Master Composters Program through Michigan State University Extension.
- 6) Develop informational materials for display at local businesses and other locations that will accept oils or other motor vehicle fluids for recycling or travel trailer sanitary wastes.
- 7) Have information available in community library and local government offices and on web site.

6. *Education of the public concerning management of riparian lands to protect water quality.*

Potential

Messages:

- 1) How land development and management impacts water quality.
- 2) The importance of riparian corridors.
- 3) Ways to reduce your impact on your lake/stream.
- 4) Shoreline stabilization techniques.
- 5) Proper land management techniques (landscaping, waste disposal)

Existing efforts:

Efforts to this end include Oakland Land Conservancy joint efforts with Waterford Township to protect Clinton River riparian parkland and preserves from future development and Township sponsored River Day event.. The CRWC's efforts include their Stormwater Tip Care series, CRWC's Website, and the Wetland Stewardship Brochure.

Future efforts:

- 1) Work with the Clinton River Watershed Council, SEMCOG, the Michigan State University Extension, local land conservancies, or other educational organization to develop, modify, or use existing informational materials to target riparian land owners and lake boards with literature specific to their situation. Materials developed by the Rouge Program Office for riparian landowners could be used in newsletters, web sites, Cable TV spots, or other methods targeting land management near sensitive water resources.

- 2) Contract with and/or use the services of a qualified organization(s) like the Clinton River Watershed Council to educate the public about riparian land management as outlined in CRWC's Stormwater Action Package, including presentations to local community organizations, workshops, website content, newsletter articles, and the Adopt-A-Stream Program.
- 3) Sponsor a "Healthy Lawn Care" workshop for riparian land owners, homeowner's associations, garden clubs or other organizations that explains their role in protecting water resources through appropriate land management techniques such as landscaping with native plants, riparian buffers, proper fertilizer use, or other methods. Promote Oakland Land Conservancy's spring native plant sale and possibly coordinate with Oakland County Planning Department's presentations on lake and stream ecology.
- 4) Create, modify, or use existing information for developers/builders on techniques available to protect water resources, such as wetlands, water courses, and lakes. Methods such as natural features setbacks, cluster developments, reduction in impervious surfaces, and other ideas could be discussed. Possibly coordinate with Oakland County Planning Department's presentations on Best Management Practices (BMPs) for stormwater detention design including retrofitting ailing systems, and urban stream restoration.
- 5) Have information available in community library and local government offices and on web site.

V. Additional Elements – Existing and Future Public Education Efforts

As previously described, the subwatershed communities determined that additional messages should be included in the Public Education Plan. These additional messages are illustrated below, and, in some cases, are closely related to the topics covered through the required messages.

a. Landscaping Practices, including buffers and irrigation.

Potential

Messages:

- 1) Impact of traditional landscape design and technique on water resources.
- 2) How to reduce landscape maintenance and improve water quality (Limiting use of pesticides, fertilizers; composting, mulching mowers, using native vegetation, reducing lawn size, irrigation issues, natural feature buffers, rain barrels, rain gardens.)

Existing efforts: Oakland Land Conservancy and “Healthy People, Healthy Oakland” landscaping programs and workshops. Clinton River Watershed Council’s Native Landscaping Tip Card, Wetland Stewardship Brochure, Website and library information.

Future efforts:

- 1) Work with the Clinton River Watershed Council, the Michigan State University Extension, or other educational organization to modify existing informational materials describing environmentally-friendly landscaping practices for homeowners and landscape maintenance professionals. Materials developed could be used in newsletters, web sites, Cable TV spots, or other methods.
- 2) Sponsor “Healthy Lawn Care” workshops for riparian land owners, garden clubs, homeowner’s associations, landscape professionals, and other organizations that explain their role in protecting water resources through appropriate land management techniques, such as landscaping with native plants, natural feature buffers, and other methods.
- 3) Promote Oakland Land Conservancy’s annual Native Plant Sale as a means to introduce landowner’s to the benefits of landscaping with native vegetation.
- 4) Educate community staff on environmentally-friendly landscaping methods on community-owned properties such as parks and public building landscaping. Publicize activities to increase awareness.
- 5) Have information available in community library and local government offices and on web site.

b. Proper septic tank maintenance.

Potential

Messages:

- 1) How septic tanks can impact water quality (surface and ground water)
- 2) Methods of proper septic tank maintenance.
- 3) Identification of a failing septic system.
- 4) Tips for buying property with a septic system.

Existing efforts: Waterford Township has few neighborhoods remaining with septic systems. Waterford has a recently adopted Wellhead Protection Plan and efforts under this plan may include a program for testing those remaining tanks and educating owners about proper maintenance. MSU Extension Service workshop on septic system maintenance. Clinton River Watershed Council’s brochure series on septic tanks/groundwater.

Future efforts: 1) Work with the Clinton River Watershed Council, the Michigan State

University Extension, or other educational organization to develop, modify, or use existing informational materials describing proper septic tank maintenance for homeowners. Materials developed could be used in newsletters, web sites, Cable TV spots, new home-owner's packets, or other methods.

- 2) Have information available in community library, at local government offices and on web site.

c. Detention/retention basin maintenance

Potential

- Messages:
- 1) Explanation of who is responsible for maintaining a retention/detention basin.
 - 2) How retention/detention basins protect natural water features.
 - 3) Importance of regular maintenance techniques.

Existing efforts: Waterford, White Lake, Springfield, Independence, and Orion Townships have language required to be inserted in Master Deed and Bylaws, Deed Restrictions, or other recorded agreements regulating maintenance of detention/retention basins.

- Future efforts:
- 1) Work with the Clinton River Watershed Council, the Michigan State University Extension, or other educational organization to develop, modify, or use existing informational materials describing proper detention/retention basin maintenance. Materials developed could be used in newsletters, web sites, Cable TV spots, or other methods. Target audiences include Homeowner's Associations and Condominium Associations.
 - 2) Have information available in community library, at local government offices and on web site.

d. Protection/restoration of wetlands and natural areas, natural features setback.

Potential

- Messages:
- 1) How the functioning of natural features is dependent on surrounding land.
 - 2) The benefits (aesthetic, economic) of preserving natural features.
 - 3) How setbacks benefit natural features and their functioning.
 - 4) Ways of protecting natural features through land development and land management.

Existing efforts: Waterford Township has started a wetland inventory and classification project with Tilton Associates, Inc., out of which a public education project will be initiated to compliment current Wetland, Woodlands, and

Natural Feature Setback Ordinances. Clinton River Watershed Council's Wetland Stewardship Brochure and Website information.

- Future efforts:
- 1) Work with the Clinton River Watershed Council, the Michigan State University Extension, or other educational organization to develop, modify, or use existing informational materials describing protection of natural features for homeowners and developers/builders. Materials developed could be used in newsletters, web sites, Cable TV spots, or other methods.
 - 2) Sponsor "Healthy Lawn Care" workshops for riparian land owners, garden clubs, homeowner's associations, landscape professionals, and other organizations that explain their role in protecting water resources through appropriate land management techniques, such as landscaping with native plants, natural feature buffers, and other methods.
 - 3) Create, modify, or use existing information for developers/builders on techniques available to protect water resources, such as wetlands, water courses, and lakes. Methods such as natural features setbacks, cluster developments, reduction in impervious surfaces, and other ideas could be discussed. Possibly coordinate with Oakland County Planning Department's presentations on Best Management Practices (BMPs) for stormwater detention design, and urban stream restoration.
 - 4) Have information available in library, at local government offices and on web site.

e. Watershed "Foundation" information

Potential

- Messages:
- 1) What is a watershed?
 - 2) How does a watershed work?
 - 3) Hydrology of a yard
 - 4) Storm water filtering and infiltration
 - 5) Role of impervious surfaces
 - 6) Water conservation techniques.

Existing efforts: Clinton River Watershed Council's efforts, including the Stormwater Tip Card series, CRWC website, River Day, and Student River Monitoring Program.

- Future efforts:
- 1) Work with the Clinton River Watershed Council, the Michigan State University Extension, or other educational organization to develop, modify, or use existing informational materials describing basic concepts of watersheds and the land/water relationship. Materials

developed could be used in newsletters, web sites, Cable TV spots, or other methods.

- 2) Promote, participate in, and support Clinton River Watershed Council's efforts in educating the public about how watersheds work through River Day and other volunteer activities, watershed and tributary signage, or other means.
- 3) Support activities for school children and citizens to learn about their watershed and participate in an existing water quality monitoring program. Partner with area schools, libraries, land conservancies and the local watershed organization to participate in and/or expand the existing program.
- 4) Have information available in community library, at local government offices and on web site.

f. Invasive Plant/Animal Control

Potential

Messages:

- 1) What is an invasive plant/animal?
- 2) How to avoid using invasive plants.
- 3) How to protect our lakes/streams from invasive plants/animals

Existing efforts: Efforts to this end by Oakland Land Conservancy, and the Clinton River Watershed Council.

Future efforts:

- 1) Update/modify existing written materials discussing invasive plants/animals for homeowners and retail/wholesale nurseries and garden centers.
- 2) Sponsor "Healthy Lawn Care" workshops for riparian land owners, garden clubs, homeowner's associations, landscape professionals, and other organizations that explain their role in protecting water resources through appropriate land management techniques, such as landscaping with native plants, natural feature buffers, and other methods.
- 3) Have information available in library, at local government offices and on web site.

VI. Future Activities Listing

Listed below are the future activities of the Public Education Plan. The Subwatershed group intends to implement as many of these activities as possible as a coordinated group. However,

wetlands and natural areas, watershed “foundation” information, invasive plants/animals, and Best Management Practices.
 Communication method: Cable TV spots.
 Implementation timetable: Year three through five
 Responsible agency: Waterford Township
 Responsible individual: Stormwater Manager
 Permit Element: 1, 2, 3, 4, 5, 6, a, b, c, d, e, f
 Evaluation Method: Number of times information is aired.

Activity #3: Develop and install tributary signage throughout the subwatershed.

Active/Passive: Passive
 Target audience: Visitors.
 Messages: Watershed awareness.
 Communication method: Roadway signage.
 Implementation timetable: Year three through five
 Responsible agency: Waterford Township
 Responsible individual: Stormwater Manager
 Permit element: 1,e
 Evaluation Method: Number of signs installed

Activity #4: Sponsor and promote an event as part of CRWC’s annual River Day and/or Clinton Clean-Up events.

Active/Passive Active
 Target audience: Citizens.
 Messages: Watershed stewardship.
 Communication method: Workshop, web site posting, newspapers, newsletters, Cable TV
 Implementation timetable: Year one through five
 Responsible agency: Waterford Township
 Responsible individual: Stormwater Manager
 Permit Element: 1, 2, 3, 4, 5, 6, e
 Evaluation Method: Number of participants, project results (varies by event)

Activity #5: Contract with and/or use the services of a qualified organization(s) like the Clinton River Watershed Council to educate the public about watershed stewardship, stormwater drainage systems, illicit discharges, reducing the impact of residential stormwater pollutants, proper disposal of household and yard wastes, and riparian land management as outlined in CRWC’s Stormwater Action Package.

Active/Passive: Active/Passive
 Target audience: Homeowners, local leaders, businesses, local organizations, developers/builders, Home Builders Association, educators/school-age children, industries.
 Messages: Watershed stewardship, including how a watershed works, how pollutants impact the watershed, the responsibilities each person has

toward water resource protection, how storm water reaches natural water bodies, how pollutants generated on land impact water quality, encouraging the public to report illicit discharges into storm drains, how to conduct outside washing in an environmentally-friendly way, how to manage landscapes to help protect water quality, how to store, handle, and dispose of household hazardous wastes, and how to manage riparian properties to protect water quality.

Communication method: Presentations to local community organizations, workshops, website content, newsletter articles, publication of pollution hotlines, promotion of household hazardous waste collection activities, assistance with direct mailings, and implementation of the Adopt-A-Stream training and monitoring program.

Implementation timetable: Year one through five

Responsible agency: Waterford Township

Responsible individual: Stormwater Manager

Permit element: 1, 2, 3, 4, 5, 6

Evaluation Method: Varies (Number of attendees, pre- and post-surveys; number of articles distributed; website hits; hotline calls; participation in household hazardous collection; participation in Adopt-a-Stream program).

Activity #6:

Sponsor “Healthy Lawn Care” workshop.

Active/Passive: Active

Target audience: Riparian land owners, lake boards, lake property owners, garden clubs, homeowner’s associations, and landscape professionals.

Messages: Environmentally-friendly land management, watershed stewardship.

Communication method: Workshop.

Implementation timetable: Year two through five

Responsible agency: Waterford Township

Responsible individual: Stormwater Manager

Permit Element: 1, 4, 5, 6, a, d, f

Evaluation Method: Number of attendees; pre- and post-surveys

Activity #7:

Work with watershed organization to promote existing Student River Monitoring program.

Active/Passive: Active

Target audience: Citizens, students

Messages: Watershed understanding and stewardship.

Communication method: Water quality monitoring program.

Implementation timetable: Year two through five

Responsible agency: Waterford Township

Responsible individual: Stormwater Manager

Permit Element: 1, 2, 3, 4, 6, e

Evaluation Method: Number of schools/students participating; number of sites; water quality indicators; media coverage.

Activity #8: **Have watershed/water quality information developed for Phase II permit available in community libraries.**
 Active/Passive: Passive
 Target audience: Homeowners, businesses, developers/builders, educators/school kids
 Messages: Illicit discharge reporting, requirements for household hazardous waste disposal, education regarding pesticides and fertilizers, preferred cleaning methods and materials for residential car washing, ultimate discharge point for storm drainage systems, watershed stewardship, landscaping practices, proper septic tank maintenance, detention/retention pond maintenance, protection/restoration of wetlands and natural areas, watershed “foundation” information, invasive plants/animals, and Best Management Practices.
 Communication method: Written informational materials.
 Implementation timetable: Year two through five
 Responsible agency: Waterford Township
 Responsible individual: Stormwater Manager
 Permit Element: 1, 2, 3, 4, 5, 6, a, b, c, d, e, f
 Evaluation Method: Number of brochures/information sheets distributed

Activity #9: **Conduct workshop to improve understanding of soil erosion.**
 Active/Passive: Active
 Target audience: Builders/developers/design professionals, public officials and staff, and engineering and planning staff and/or consultants.
 Messages: Causes and prevention of soil erosion.
 Communication method: Workshop
 Implementation timetable: Year three through five
 Responsible agency: Waterford Township
 Responsible individual: Stormwater Manager
 Permit Element: 2, 6
 Evaluation Method: Number of workshops, attendees.

Activity #10: **Organize community service projects and conduct storm drain stenciling.**
 Active/Passive: Active
 Target audience: Homeowners, community groups, businesses, educators/school kids
 Messages: Reducing illicit discharges, ultimate discharge point of storm drains.
 Communication method: Information workshop and storm drain stenciling.
 Implementation timetable: Year two through five
 Responsible agency: Waterford Township
 Responsible individual: Stormwater Manager
 Permit Element: 2, 3
 Evaluation Method: Number of storm drains labeled; number of participants; media coverage.

<u>Activity #11:</u>	Develop coordinated complaint telephone system.
Active/Passive:	Active
Target audience:	Homeowners, businesses, developers/builders
Messages:	Illicit discharge topics and reporting.
Communication method:	Telephone hotline
Implementation timetable:	Year two through five
Responsible agency:	Waterford Township
Responsible individual:	Stormwater Manager
Permit Element:	3
Evaluation Method:	Number of calls and nature of complaints.
<u>Activity #12:</u>	Educate community staff on environmentally-friendly land maintenance practices for community-owned properties and certify staff on storage, use and disposal of pesticides and fertilizers. Educate staff on proper vehicle maintenance, repair and washing.
Active/Passive:	Active/Passive
Target audience:	Park's department, DPW, fire/police departments.
Messages:	Environmentally-friendly land maintenance techniques.
Communication method:	Land management guidelines.
Implementation timetable:	Year two through five
Responsible agency:	Waterford Township
Responsible individual:	Stormwater Manager
Permit Element:	4, a
Evaluation Method:	Number and content of workshops, participants; amount and type of landscape chemicals used; survey of community practices.
<u>Activity #13:</u>	Collaborate with other existing program to conduct a household hazardous waste collection day.
Active/Passive:	Active
Target audience:	Homeowners
Messages:	Provide venue for proper disposal of household hazardous wastes.
Communication method:	Household hazardous waste collection day.
Implementation timetable:	Year three through five
Responsible agency:	Waterford Township
Responsible individual:	Stormwater Manager
Permit Element:	5
Evaluation Method:	Amount of material collected and number of residents using this service.
<u>Activity #14:</u>	Work with MSU Extension to promote and support the Masters Composters Program.
Active/Passive:	Active
Target audience:	Homeowners, businesses, land managers, landscaping professionals
Messages:	Promote composting.
Communication method:	(TO BE DETERMINED).

Implementation timetable: Year two through five
 Responsible agency: Waterford Township
 Responsible individual: Stormwater Manager
 Permit Element: 5
 Evaluation Method: Amount of material collected and number of residents using this service.

Activity #15: **Develop informational materials for display at local businesses and other locations that will accept oils, motor vehicle fluids, travel trailer sanitary wastes. Develop informational materials for display at local garden centers on non-toxic alternatives to pesticides and fertilizers.**

Active/Passive: Passive
 Target audience: Homeowners, businesses, visitors
 Messages: Proper household hazardous waste disposal. Pesticide and fertilizer use reduction.
 Communication method: Posters.
 Implementation timetable: Year two through five
 Responsible agency: Waterford Township
 Responsible individual: Stormwater Manager
 Permit Element: 4, 5
 Evaluation Method: Number of residents receiving Master Composter designation.

Activity #16: **Create, modify, or use existing information for developers on natural resource protection and storm water Best Management Practices.**

Active/Passive: Passive
 Target audience: Developers/builders
 Messages: Natural resource preservation techniques during land design/development, storm water best management practices.
 Communication method: Information sheets.
 Implementation timetable: Year two through five
 Responsible agency: Waterford Township
 Responsible individual: Stormwater Manager
 Permit Element: 6, d
 Evaluation Method: Number of information sheets distributed to builders/developers.

Activity #17: ***Southeast Michigan Partners for Clean Water Education Materials.***

Active/Passive: Passive
 Target audience: Residents, visitors, public employees, businesses, industries, developers/builders.
 Messages: Storm drain awareness, fertilizer, car care, landscaping, household hazardous wastes, pet care, riparian protection, and water conservation.

Communication method: Brochures, tip cards, posters, website, kids' activity sheet, etc. developed for the *Our Water. Our Future. Ours to Protect.* Campaign and the *Seven Simple Steps to Clean Water.*

Implementation timetable: Year two through five

Responsible agency: Waterford Township

Responsible individual: Stormwater Manager

Permit Element: 1, 2, 4, 5, a, b, e

Evaluation Method: Number of materials distributed, website hits.

Activity #18: ***Southeast Michigan Partners for Clean Water Media Campaign***

Active/Passive: Passive

Target audience: Residents, visitors, public employees, businesses, industries, developers/builders.

Messages: Storm drain awareness, fertilizer, car care, landscaping, household hazardous wastes, pet care, riparian protection, and water conservation.

Communication method: Articles for community newsletters and websites.

Implementation timetable: Year two through five

Responsible agency: Waterford Township

Responsible individual: Stormwater Manager

Permit Element: 1, 2, 4, 5, a, b, e

Evaluation Method: Number of newspaper articles, TV spots/PSAs, website hits.

VII. Other Organizations Assisting With Public Education

The following table describes the other organizations that have agreed to partner with the Upper Clinton Watershed group to provide public education on water resource protection efforts.

Organization	Program	Contact
1. Clinton River Watershed Council	River Day, Student River Monitoring Program, Clinton Clean-Up, Written Materials, Storm Drain Stenciling, Stormwater Action Package (presentations, workshops, website content, newsletters, Adopt-A-Stream Program).	Jessica Opfer
2. Oakland County Planning & Economic Development Services	Presentations, Written Materials.	Bret Rasegan
3. Oakland County Drain Commission	SWAT Pollution Hotline	Jeffrey Holler
4. Michigan State University Extension – Oakland County	Written Materials, Workshops, Master Composters Program	Martha Ferguson
5. North Oakland Headwaters Land Conservancy	Home-A-Syst Program, Riparian Land Owner Workshop, and Watershed Short Course	Sue Topping
6. Oakland Land Conservancy	Conservation Easement and future programming at Drayton Plains Nature, native plant promotion and sales	Donna Folland
7. Rouge River Program Office	Rouge Education Materials	Josephine Powell
8. Waterford Township Public Library	Information clearing house location	Nancy Smith
9. Healthy People, Healthy Oakland	Healthy Landscapes programs	

VIII. Implementation Schedule for PEP Activities

Activity	Year 1	Year 2	Year 3	Year 4	Year 5
1. Develop, modify, or use existing written information materials.	✓	✓	✓	✓	✓
2. Translate written materials into Cable TV format.			✓	✓	✓
3. Develop and install tributary signage throughout subwatershed.			✓	✓	✓
4. Promote, participate in, and support the Clinton River Day.	✓	✓	✓	✓	✓
5. Support CRWC Stormwater Action Package.	✓	✓	✓	✓	✓
6. Sponsor "Healthy Lawn Care" workshop.		✓	✓	✓	✓
7. Work with watershed organization to promote existing water quality monitoring programs.		✓	✓	✓	✓
8. Have information available in community libraries.		✓	✓	✓	✓
9. Conduct workshop to improve understanding of soil erosion.			✓	✓	✓
10. Organize community service project and conduct storm drain stenciling.		✓	✓	✓	✓
11. Develop coordinated telephone complaint system.		✓	✓	✓	✓
12. Educate community staff on environmentally-friendly land maintenance practices for community-owned properties and certify staff on storage, use and disposal of pesticides and fertilizers. Educate staff on proper vehicle maintenance, repair and washing.		✓	✓	✓	✓
13. Organize household hazardous waste collection day.			✓	✓	✓
14. Promote MSU's Master Composters Program		✓	✓	✓	✓
15. Develop materials for businesses and other locations that will accept oil/motor vehicle fluids, travel trailer sanitary waste. Develop materials for garden centers describing non-toxic alternatives to pesticides and fertilizers.		✓	✓	✓	✓
16. Create, modify, or use existing information for developers on natural resource protection and storm water Best Management Practices.		✓			
17. Create, modify, or use existing information for developers on natural resource protection and storm water Best	✓				

Management Practices.					
18. Distribute information provided by the Southeast Michigan Partners for Clean Water program.		✓	✓	✓	✓
19. Work with SEMCOG to provide information to local media.		✓	✓	✓	✓
20. Work with MDEQ Pollution Prevention Programs to publicize programs and recruit businesses into programs.		✓	✓	✓	✓

IX. Plan for Evaluating Impacts

A variety of mechanisms were described in the “Evaluation” category after each activity. Some of these are short-term evaluation tools that quantify the usage of materials (e.g. number of materials distributed, website hits) and participation in events (e.g. number of attendees at a presentation or workshop, number of participants at an event). These mechanisms can be useful in determining whether the education effort is reaching the audience; however it is difficult to evaluate behavior change resulting from the education activity using these purely quantitative methods.

In order to evaluate the overall regional public education effort, the **[insert community name here]**, as a member of the Upper Clinton subwatershed group, is participating in the Southeast Michigan Partners for Clean Water regional water resource survey. Macomb, Oakland, and Wayne counties are helping to finance this survey in order to make it statistically significant at the subwatershed level for all of the Clinton River subwatersheds. This survey provides a baseline to gauge the overall effectiveness of the education program over time by measuring the public’s awareness and behavior on a variety of watershed and stormwater pollution topics. In the future, it will be important to conduct follow-up surveys, website tracking, and focus groups with various target audiences in order judge the success of the program.

Through CRWC’s Adopt-A-Stream and Stream Leaders monitoring programs, it is also possible to evaluate long-term changes in water quality. The results of these programs are compiled in an annual scorecard, which allows a simple mechanism for measuring improvements or declines in water quality across the various subwatersheds. Improvements in water quality cannot be attributed solely to a successful public education effort, but indicate the overall effectiveness of the stormwater management efforts in the community, subwatershed, and watershed-wide.

The impacts of the Public Education Plan will be evaluated based on how well these efforts meet the objectives of the plan. The following methods, among others, may be used:

- **Brochures and other written materials.** Number of brochures/flyers or other written materials distributed.
- **Website.** Number of website hits.
- **Newsletter articles.** Number receiving community newsletter (includes content developed as part of CRWC’s Stormwater Action Package).
- **Newspaper articles.** Number of newspaper articles used/published.
- **Complaint Hotline Data.** Number of calls and nature of complaints will be logged.
- **Participation Rates.** Number of people that attend or participate in presentations, workshops, River Day, Clinton Clean-Up, and Adopt-A-Stream.
- **Household Hazardous Waste Day and Yard Composting.** The amount of material and number of residents using this service will be recorded each year.
- **Library Materials.** Interest in library materials will be logged.
- **Water Quality Data.** Indicators of water quality from the Adopt-A-Stream and Student River Monitoring programs will be gathered and changes monitored.

X. Relationship to Watershed Management Planning

One goal of the Watershed Management Plan will most likely be effective public education regarding water quality and the public's role in protecting water resources. The efforts outlined in the Public Education Plan will be coordinated with the activities in the Watershed Management Plan. If necessary, the Public Education Plan will be modified to meet the goals and objectives of the Watershed Management Plan.

XI. Date for Annual Progress Report

The date for the Annual Progress Report will be set upon issuance of the Certificate of Coverage by the Michigan Department of Environmental Quality (MDEQ). For planning purposes, we anticipate that the first Annual Progress Report will be due on the first anniversary of MDEQ's issuance of the Certificate of Coverage, or November 1 for the Upper Clinton subwatershed communities.

Appendix

Appendix

Results of Visioning Session

As described in this report, 27 participants from the subwatershed contributed to a visioning session that defined priority messages and audiences to be addressed in the Public Education Plan (PEP). These priorities include many of the messages required by the permit, but they also include additional messages that the communities feel should be used to help their constituents understand how to effectively protect water quality.

The following lists the top five messages and top five audiences that each small group produced during the visioning session:

Group #1:

Top priority messages include:

- Proper septic tank maintenance
- Landscaping practices, including buffers and irrigation
- Enforcement of storm water and soil erosion BMPs
- Detention/retention basin maintenance
- Protection/restoration of wetlands and natural areas

Top priority audiences include:

- Households
- Developers/builders/design professionals
- Educators/schools
- School kids
- Riparian landowners
- Businesses

Additional ideas and topics discussed by this group include:

- Other potential messages:
 - Broader perspective of watershed stewardship
 - Basic education. Watershed definition and consequences of individual actions.
 - Water softener discharge
 - Irrigation
 - Agricultural practices
 - Road/parking lot/driveway salts and storage
- Other potential audiences include the Road Commission, Drain Commission, park agencies, DPW's, lake boards, planning commissions, Township Boards, City Councils, and state and federal agencies.
- Potential partners or messengers include the media, homeowners associations, school system, design professionals, Road Commission, Drain Commission, DPW, park agencies, and watershed councils.

Group #2:

Priority messages include:

- Proper septic tank maintenance
- Invasive plant/animal control (Purple loosestrife, zebra mussels)
- Landscaping practices
- Detention/retention basin maintenance
- Protection/restoration of wetlands

Priority audiences include:

- Households/homeowners
- Riparian/Watercourse landowners
- Businesses
- Educators/schools
- Recreational users
- Developers/builders

Additional ideas and topics discussed by this group include:

- Other potential messages:
 - Water softener discharges
 - Accomplish water quality improvement without fear of penalty
- Other potential audiences include golf courses, landscape companies, junkyard owners, and farmers.

Group #3:

Priority messages include:

- “Foundation” information, including watershed description, hydrology and how it works, connections between natural features, storm water filtration and infiltration, description of runoff, role of impervious surfaces, wetland functioning.
- Landscape practices
- Preservation of wetlands, natural areas. Natural features setbacks.
- Retention/detention basin maintenance
- Exotic plant control
- Septic tank maintenance

Priority audiences include:

- Homeowners (individuals, landowners, lake associations, community groups)
- Builders/developers/real estate professionals
- School children
- Local governments (Planning Commissions, elected officials)
- Businesses

Additional ideas and topics discussed by this group include:

- Other potential messages:
 - Tasks that an individual can do alone (“Me”), and tasks that a group or community can do together (“Us).
 - Back yard ecology/natural features. Michigan Natural Features Inventory (MNFI)
 - Difference between point and non-point source pollution
- Other potential audiences:
 - Local officials – training program
 - Marketing techniques, \$ incentives and training program for developers/builders to employ environmentally-sound development practices
 - Use the local newspapers (regular column?) on water quality. Make connections/relationships with media.

Group #4:

Priority messages include:

- Where does water go?
- Water conservation practices
- Landscape practices
- Septic tanks
- Hazardous waste disposal for residents – proper care and disposal

Priority audiences include:

- Government officials – planners, elected officials, RCOC, engineering departments, parks departments/nature centers
- Developers, builders, landscape professionals, architects, grounds maintenance personnel
- Lake and homeowner associations, riparian landowners, lake boards
- Schools, educators, curriculum coordinators
- Businesses, business associations, private park owners (golf)

Additional ideas and topics discussed by this group include:

- Other potential messages:
 - Homeowner practices – Daily activities that affect our water quality.
 - Landscape practices including fertilizers, lawn care, down spouts, buffers and native plants.
 - Water resource conservation – mulching, native plants, rain collection (rain barrels, down spout direction, footing drains), times of watering, duration of watering.
 - Watershed/storm drain education...”Where does our water go?”
 - Stream/lakeshore erosion
 - Impervious surfaces – effect of
 - Retention/detention maintenance
 - Wetland preservation
 - If a problem/question, who to call?
- Other potential audiences:
 - Media
 - Parks – managers and commissions

- Golf courses
- Road Commission of Oakland County
- Conservation organizations
- Riparian landowners
- Oakland County Drain Commission

Upper Clinton River Subwatershed Group
Community Public Education Survey Results

	Clarkston	Independence	Lake Angelus	Orion	Springfield	Waterford	White Lake
A. Current Educational Topics:							
1. Fertilizers			X				
2. Groundwater protection				X			
3. Habitat preservation					X		
4. Hazardous wastes		X		X			
5. Invasive species					X		
6. Lake issues						X	
7. Landscaping practices				X	X	X	
8. Local and state environmental laws						X	
9. Native plants & vegetation					X		
10. Natural features						X	
11. Open space development					X		
12. Pollution avoidance					X		
13. Riparian land management					X	X	
14. Septic systems			X	X			X
15. Soil erosion			X		X		
16. Solid wastes/recycling				X		X	
17. Surface water runoff			X	X			
18. Water conservation				X	X	X	
19. Water quality			X				
20. Well maintenance				X			
21. Wellhead protection						X	X
22. Wetlands				X		X	X

B. Existing Audience Information:

1. Board/City Council			X	X		X	X
2. Churches				X			
3. Community groups				X	X		
4. Developers					X	X	
5. Garden clubs					X		
6. General public				X	X	X	
7. Homeowners Associations		X		X	X	X	
8. Lake Angelus Water Quality Env. Board			X				
9. Lake Boards/Associations		X			X	X	X
10. Land conservancy/preservation groups					X	X	X
11. Planning Commission			X	X		X	X
12. Professional organizations		X				X	
13. Schools (public & private)		X			X	X	
14. Sportsmen's organizations		X					

	Clarkston	Independence	Lake Angelus	Orion	Springfield	Waterford	White Lake
C. Existing Communication Mechanisms:							
1. Annual Clean-up days		X		X	X	X	
2. Annual festivals (i.e. Summerfest)				X		X	
3. Annual reports (CCR, Water/Sewer Dept.)		X		X		X	
4. Assessment notices					X	X	
5. Cable TV		X		X	X	X	X
6. Community newsletter/magazine		X	X	X		X	X
7. Counter displays				X	X	X	
8. Homeowners association newsletters				X			
9. Household Hazardous Clean-up Day		X		X		X*	
10. Library displays					X	X	
11. Local newspapers				X		X	
12. Parks brochures		X			X	X	
13. Phone calls							X
14. Public notices				X		X	
15. Residents complaints						X	
16. Sewer bills		X					
17. Tax bills					X	X	
18. Water bills		X				X	
19. Web site		X		X		X	X

*In planning stages.