



2011 Education Plan



Members of the East Metro Water Resource Education Program:

Brown's Creek Watershed • Carnelian-Marine-St. Croix Watershed •
Comfort Lake-Forest Lake Watershed • Cottage Grove •
Dellwood • Forest Lake • Lake Elmo • Middle St. Croix Watershed •
Ramsey-Washington Metro Watershed • Rice Creek Watershed • Stillwater •
South Washington Watershed • Valley Branch Watershed • Willernie •
West Lakeland • Washington Conservation District • Washington County

**East Metro Water Resource Education Program
Education Plan 2011**

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About the East Metro Water Resource Education Program

Partners: The East Metro Water Resource Education Program (EMWREP) is a partnership that was formed in 2006 to develop and implement a comprehensive water resource education and outreach program for the east metro area of St. Paul, MN. Current members of EMWREP include Brown's Creek, Carnelian-Marine-St Croix, Comfort-Lake Forest Lake, Rice Creek, Ramsey-Washington Metro, South Washington, and Valley Branch Watershed Districts, Middle St. Croix Watershed Management Organization, the cities of Cottage Grove, Dellwood, Forest Lake, Lake Elmo, Stillwater, and Willernie, West Lakeland Township, Washington County and the Washington Conservation District. The EMWREP region covers all of Washington County as well as the portions of Valley Branch and Comfort Lake - Forest Lake Watershed Districts that stretch into Anoka, Chisago and Ramsey Counties. A map and list of EMWREP partners can be found at www.mnwcd.org/cleanwater.

Purpose: The purpose of the EMWREP partnership is to educate the public and various other target audiences within the EMWREP region about the impacts of non-point source pollution on local lakes, rivers, streams, wetlands and groundwater resources and engage people in projects that will help to protect and improve water quality in the region.

Partnership Structure: EMWREP is guided by a steering committee comprised of representatives from each of the 17 partner organizations. The committee generally meets twice a year to provide recommendations on the program budget and activities. The EMWREP educator sends a quarterly e-newsletter to all partners' staff, council members and board members, and communicates one-on-one with individual partners on projects throughout the year. The EMWREP education plan is revised every two to three years to accommodate changing priorities and new target audiences. In addition, the EMWREP educator prepares an annual report on program activities and provides outreach data and statistics for partners' MS4 Permit reports. All EMWREP reports, plans, print materials and news articles are available on-line at www.mnwcd.org/emwrep.

Water Resources: Bound by the Wild and Scenic St. Croix River on the east and the Mississippi River on the south, the EMWREP region contains seventy major lakes, including White Bear Lake, Forest Lake, Big Marine Lake and Lake Elmo. The region is also home to five designated trout streams, including Brown's Creek and Valley Creek, and countless ponds, marshes and wetlands. According to the Metropolitan Council, eight of the ten cleanest lakes in the metro area are in the EMWREP region. At the same time, approximately 40% of the region's lakes, several streams, and the Mississippi and St. Croix Rivers are listed as impaired. The two most common pollution impairments for surface waters in the region are excess phosphorus and mercury.

Groundwater resources in the EMWREP region are also very important, as they provide 100 percent of the drinking water, and virtually all of the water for commercial, industrial and irrigation needs. Groundwater and surface water resources in the region are also interdependent. The majority of the groundwater used in the area is pumped from the Prairie Du Chien and Jordan aquifers. Groundwater contamination from PFC's is an issue in some parts of southern Washington County. Additionally, projections from the Metropolitan Council warn that aquifers supplying drinking water to communities in southwestern Washington County may be depleted in the next ten years.

Connections to the Clean Water Act: The Clean Water Act, amended from the Federal Water Pollution Control Act in 1977, gives the federal government the power to regulate discharges to the waters of the United States and to identify and control non-point sources of water pollution. These non-point sources include stormwater from urban areas and runoff from rural and agricultural areas. In Minnesota, the Clean Water Act is regulated by the Minnesota Pollution Control Agency.

MS4 and SWPPP: Phase II of the Federal Clean Water Act requires municipalities and watershed districts in Minnesota that manage municipal separate storm sewer systems (MS4) to educate the public about non-point source water pollution as part of their stormwater pollution prevention programs (SWPPP). Twelve of the EMWREP partners are MS4 permit holders.

The Stormwater Pollution Prevention Program has six minimum control measures: 1) Public Education and Outreach; 2) Public Participation; 3) Illicit Discharge Detection and Elimination; 4) Construction Site Storm Water Runoff Control; 5) Post Construction Storm Water Management; and 6) Pollution Prevention and Good Housekeeping in Municipal Operations. Education is a component in all six of these measures.

[Appendix A](#) contains an outline of the six minimum control measures for the MS4 permit SWPPP as well as the EMWREP education programs that help to address these six measures.

TMDL and Non-Degradation: The Clean Water Act also requires states to monitor their lakes, rivers and streams and create a list of those that fail to meet water quality standards – impaired water bodies. Once a lake, river or stream is listed as impaired, the local units of government must work with the state to create and implement a Total Maximum Daily Load plan (TMDL) to restore that water body. For lakes, rivers and streams that are not yet impaired, Non-Degradation plans are sometimes required to protect the existing water quality. Local governments are required to engage community members and other stakeholders in the development and implementation of both TMDL and Non-Degradation plans.

The EMWREP General Education campaign raises awareness of water resource issues and can also be used to engage stakeholders in the TMDL and Non-Degradation plan process. The Blue Thumb, Go Wild! and Blue Biz programs are designed to encourage homeowners, rural landowners and commercial property owners to implement best management practices (BMPs) that will help to reduce runoff pollution and promote groundwater conservation and recharge. Some EMWREP partners choose to target outreach and BMP projects within sub-watersheds draining to high-quality lakes, rivers and streams or to those with TMDL or Non-Degradation Plans.

[Appendix B](#) contains a map of priority outreach areas for EMWREP in 2011.

Program Development and Integration with Other Regional Efforts: Since 2006, the EMWREP partnership has grown from seven members to seventeen. To accommodate these new partners and a larger geographical area, the partner agreement was modified slightly in 2009 to allow for more staff support and a larger materials budget. The program has helped to strengthen relationships between Washington Conservation District, Washington County and the eight watershed agencies and seven cities that constitute the partnership, which has resulted in better coordination and less overlap in the management of local water resources. By promoting partner's BMP programs, EMWREP has helped to increase the total number of water quality improvement projects implemented and to target these projects in priority areas.

EMWREP has also played a central role in the coordination and development of two regional education programs, Blue Thumb and WaterShed Partners. Blue Thumb is a partnership of more than 60 public and private entities in the Upper Midwest, developed to promote the use of native plantings, raingardens and shoreline plantings to conserve water resources and reduce runoff pollution. The WaterShed Partners, which manages the Clean Water Minnesota media campaign, is a collaborative of more than 50 non-profit and public entities in the Twin Cities metro area that work together to educate the public about stormwater pollution. In the coming years, EMWREP will continue to work with Blue Thumb and the WaterShed Partners in addition to seeking new partnerships within the St. Croix Basin to engage rural landowners.

Summary of EMWREP Education Programs

General Education Campaign: EMWREP engages in a number of activities aimed at increasing awareness of water resource issues, promoting a conservation ethic among local residents, and catalyzing behavior change. Many of these activities are accomplished in partnership with existing government, non-profit, and community based groups, as well through local media outlets. The general education campaign is also used to promote targeted outreach efforts and partner BMP programs.

Since 2006, EMWREP has produced weekly articles for several of the local newspapers, as well as providing material for 32 cities within the region to include in their newsletters. Articles are also featured on the blog <http://eastmetrowater.areavoices.com> and on the Washington Conservation District and Blue Thumb Facebook pages. EMWREP will continue to participate in six or more community events per year, including the Washington County Fair.

Blue Thumb Program: The Blue Thumb – Planting for Clean Water program (www.BlueThumb.org) was developed by the Rice Creek Watershed District in 2006 and is now a dynamic coalition of more than 60 partner organizations working together to raise awareness about stormwater pollution and encourage homeowners to plant native gardens, raingardens and shoreline projects to protect surface and groundwater resources.

EMWREP uses Blue Thumb to promote partner BMP programs. This outreach is a critical component of an adaptive ecosystem management approach that connects outreach with project implementation and water monitoring. EMWREP has set a goal of conducting ten to twelve Blue Thumb workshops or neighborhood parties per year. From these outreach efforts, we hope to see 50-60% of participants follow-up with a site visit request and 25% to implement projects.

Go Wild! Go Wild! is a new program being developed to engage rural property owners. The goal is to leverage public interest in birds and wildlife to engage people in planting and habitat improvement projects in targeted areas that will also reduce erosion and non-point source water pollution.

A key component of this program is collaborative outreach with local non-profits and sportsmen groups such as Ducks Unlimited, Pheasants Forever and Audubon Minnesota. EMWREP's role will be to support the outreach conducted by these groups, to help connect landowners with additional resources available through EMWREP partners, and to encourage projects that protect water as well as improving wildlife habitat.

Blue Biz: The Blue Biz program consists of a website (www.cleanwaterMN.org/businesses) and outreach materials that partners can use to engage commercial property owners in BMP projects. The EMWREP educator also works with partners to target specific property owners as needed.

Stormwater U: Stormwater U is a technical training series for municipal staff and contractors, including engineers, planners, inspectors and public works. Stormwater U workshops are hosted in collaboration with University of Minnesota Extension and the Minnesota Erosion Control Certification Program. Past workshops have included Designing for Volume Control, Protecting Water Resources through Comprehensive Planning, Stormwater Pond Management, Turf Management, Illicit Discharge Detection and Elimination and Winter Snow and Ice Management. EMWREP has set a goal of conducting two to three Stormwater U workshops per year.

NEMO: The Northland NEMO program (Non-point Education for Municipal Officials) provides local elected officials and decision makers with resources and information to make informed decisions about land use and water quality in their communities. Northland NEMO is hosted by the University of Minnesota Extension and EMWREP is one of ten to twenty partner organizations. Program offerings include several basic presentations, as well as the interactive Watershed Game.

During 2011 and 2012, EMWREP will be working with pilot communities in Washington County as part of the St. Croix Basin Minimal Impact Design Standards (MIDS) grant project. EMWREP will also continue to work with other local partners on regional outreach efforts in the basin. In addition, EMWREP has set a goal of conducting four basic NEMO workshops per year that target individual communities and providing an annual presentation or workshop for the Washington County Board.

MS4 Toolkit: EMWREP developed the MS4 Toolkit (www.cleanwatermn.org/MS4toolkit) with a grant from the Minnesota Pollution Control Agency. The toolkit includes educational materials that partners can use to meet the six minimum control measures in the MS4 permit, such as brochures, posters, slide shows, training videos and more. In addition to the on-line materials, training videos for parks and public works staff and pop-up banners for community events are available partners to borrow.

EMWREP will continue to provide basic website maintenance for the MS4 toolkit and to occasionally add new materials to the kit as they are developed. Partners can also request special printings of the materials for outreach activities.

Incorporating Community-Based Social Marketing Techniques into EMWREP Programs

To encourage behavior change among target audiences, EMWREP utilizes community-based social marketing strategies whenever possible. The term was coined by Doug McKenzie-Mohr and William Smith¹, and has been promoted by several marketing strategists, such as Les Robinson, who developed the “Seven Doors Strategy”². McKenzie-Mohr and Smith outline several components of a successful behavioral change campaign, which they differentiate from a traditional marketing campaign by the fact that the education and marketing occurs at a much more personal level. The social marketing strategies they recommend begin with an in-depth needs assessment, including literature review, qualitative research, and surveys, aimed at identifying needs and barriers in the target audiences. Program activities are then designed to meet audience needs by soliciting individual commitments to behavior change, creating prompts to remind individuals of desired behaviors, building community norms, delivering effective messages, providing incentives for behavior change and removing external barriers.

Robinson’s “Seven Doors” model provides another layer for the social marketing campaign, by outlining the actions needed to take a target audience from knowledge acquisition to behavior change. The seven components of his strategy, as shown below, are knowledge, desire, skills, optimism, facilitation, stimulation and reinforcement.



The rationale for using social marketing strategies in environmental education is that people are not always motivated to change their behavior simply because they become more knowledgeable about a particular environmental issue. Any number of barriers can prevent people from adopting model environmental behaviors, including lack of skills, money and time constraints, or simply apathy. The seven doors model allows educators to identify which elements in the behavioral change cycle are already being fulfilled, so that they can concentrate resources on the gaps.

1. **Knowledge.** The first step in Robinson’s social marketing campaign is to raise knowledge and awareness of an issue among the target audience. Before people are willing to change their behavior, they must be aware that there is a problem and that there is a practical alternative they can choose to correct the problem. For example,

¹ McKenzie-Mohr, Doug and William Smith. Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing. New Society Publishers, 1999. Gabriola Island, BC, Canada.

² Robinson, Les. “The Seven Doors Social Marketing Approach.” Social Change Media, 2004. On-line at <http://media.socialchange.net.au/strategy/>

before deciding to build a rain garden in the front yard, people need to first know that storm water runoff pollutes water resources and that rain gardens can limit some of that polluting runoff. It also helps to know that rain gardens can benefit homeowners too, by providing an attractive landscaping component and by preventing their yards from becoming swamps.

2. Desire. The second step in the seven doors model is to create desire for change among the audience. Les Robinson describes this desire as the ability to “visualize a different, desirable, future.” Advertisers for cars often use images of beautiful women cruising along Pacific coastlines to help harness the viewers’ imaginations. In much the same way, a successful environmental education program should enable people to imagine themselves in a different future – healthier, safer or more enjoyable.
3. Skills. After developing the awareness and desire to change, an educational program must provide its audience with the skills to change. In the example of building a rain garden, people will want to know how to build a garden, where to put it and what kinds of plants to use. This can be achieved by holding workshops or demonstrations or by creating a detailed and illustrated brochure.
4. Optimism. The next step in the social marketing cycle is to create optimism that behavioral change will produce environmental change. Environmental educators often face the challenge of convincing the public that individual actions will have an impact on overwhelming problems such as global warming, deforestation or species extinction. Yet, in the case of non-point source water pollution, it is collective individual actions that cause (or hopefully solve) the problem. To create optimism, an educator can present people with data detailing exactly how much impact their action will make and enlist the participation of many people so that one individual’s actions become part of a larger change movement. One rain garden may prevent 9000 gallons of storm water from entering the local river, but ten could prevent 90,000 gallons of polluted water!
5. Facilitation. Even if people are equipped with the knowledge, desire, skills and optimism to change, they will not be able to do so if they are limited by time, money or other constraints. Besides educating the public about an issue, a social marketing campaign should help to facilitate that change. In the case of the rain gardens, this might include offering cost-share grants to homeowners or providing technical assistance during construction of the gardens.
6. Stimulation. Stimulation can be either negative or positive. It is well known that people are spurred to action by crises and catastrophes such as forest fires or floods. While these events are obviously not desirable, an education campaign can tap into the collective energy they produce. After a major flood, for example, people in town may be more likely to build rain gardens and stabilize shoreline property to prevent future flooding. In the absence of a crisis, a social marketing campaign can use a special event or public meeting to harness people’s community spirit.
7. Feedback and reinforcement. The final step in the seven doors strategy is to provide people with feedback and reinforcement for their behavior change. This may mean staying in contact with a resident who has recently built a rain garden to trouble-shoot

problems that arise after installation or even connecting that person with a volunteer group that organizes stream clean-ups in the area.

The EMWREP education plan is designed to make use of community based social marketing strategies and the “Seven Steps” model. Additionally, formative and summative evaluation components are included where practicable. The EMWREP plan identifies short term learning goals, medium-term behavior change goals and long-term water quality improvement goals. Although there is very little staff and funding capacity for evaluation, these goals provide a vision for the program and can be used to measure success of the program if funding for evaluation becomes available.

General Education Campaign

Minimum Control Measure Addressed

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|---|---|
| <input checked="" type="checkbox"/> Public education & outreach | <input type="checkbox"/> Construction site runoff controls |
| <input checked="" type="checkbox"/> Public participation & involvement | <input type="checkbox"/> Post-construction storm water management |
| <input checked="" type="checkbox"/> Illicit discharge detection and elimination | <input type="checkbox"/> Municipal pollution prevention & good housekeeping |

Audience: General Public

Description: EMWREP will use a variety of activities to increase public awareness of water resource issues, promote a conservation ethic among local residents, and catalyze behavior change. These activities will be accomplished in partnership with existing government, non-profit, and community groups, as well as through local media outlets. The general education campaign will also be used to promote other EMWREP efforts.

Program Goals:

1. Provide education on water resource issues and stormwater pollution prevention for people living and working in the east metro area.
2. Collaborate with state and local government as well as non-profit and community groups to carry out educational activities.
3. Utilize master gardeners and other citizen volunteers to help conduct education and outreach.
4. Promote EMWREP partners and their BMP (Best Management Practices) programs.
5. Engage community members and other stakeholders in TMDL (Total Maximum Daily Load) and Non-Degradation Plan processes.

Educational Goals:

Learning

1. Increase the overall understanding and awareness of water resources and storm water runoff among the general public.
2. Increase understanding of the connection between individual actions and water resource quality among the general public.
3. Increase awareness of storm water best management practices among the general public.
4. Increase understanding of the roles that cities, watershed agencies, counties and conservation districts play in managing water resources.

Behavior Change

1. Engage the public in the prevention of storm water pollution at home.
2. Increase the utilization of storm water best management practices and adoption of desirable clean water practices among the general public.
3. Engage the public and other stakeholders in creating and implementing watershed, TMDL and Non-Degradation plans.
4. Unite government, non-profit and community based organizations with a common clean water theme.
5. Develop leaders among citizens and other water related organizations that can carry water resource education to the general public.

Water Quality Improvement

1. Reduce and prevent non-point source pollution of surface and groundwater resources.
2. Maintain adequate groundwater and drinking water resources.

Activities used to reach goals:

Maintaining and developing educational partnerships: EMWREP will work collaboratively with community and civic groups including Master Gardeners, garden clubs, Rotary, Chamber of Commerce, community park boards, local non-profits and nature centers.

Regular articles in print media: EMWREP will write regular news columns for the Stillwater Gazette, Lake Elmo-Oakdale Review, Woodbury-South Maplewood Review and South Washington County Bulletin, as well as sending occasional articles and press releases to the Hugo Citizen, Country Messenger, Forest Lake Times and Pioneer Press.

Newsletter articles, flyers and brochures for cities: Print materials such as newsletter articles, flyers and brochures will be created for the 32 cities within the EMWREP area to distribute to their citizens. These materials will be used to conduct general education about water resources and to publicize EMWREP member activities.

Websites and social media: EMWREP will use partner websites and social media tools such as Facebook, Twitter and blogs to deliver information to the general public. A list and map of partners with link to their websites and information about grants and upcoming workshops can be found at www.mnwcd.org/cleanwater. News articles are featured on the blog <http://eastmetrowater.areavoices.com> and on the Blue Thumb and Washington Conservation District Facebook pages.

Clean Water Minnesota media campaign: EMWREP will partner with Metro WaterShed Partners on the Clean Water Minnesota media campaign, which includes the www.cleanwatermn.org website as well as television, radio and mass media advertising.

Community events: EMWREP will participate in community events and will give presentations to local community groups.

Evaluation: EMWREP will use surveys, focus groups and interviews when possible to measure the knowledge, attitudes and behaviors of the general public and to gauge the success of outreach efforts.

Blue Thumb

Planting for Clean Water

Minimum Control Measure Addressed

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|--|---|
| <input checked="" type="checkbox"/> Public education & outreach | <input type="checkbox"/> Construction site runoff controls |
| <input checked="" type="checkbox"/> Public participation & involvement | <input type="checkbox"/> Post-construction storm water management |
| <input type="checkbox"/> Illicit discharge detection and elimination | <input type="checkbox"/> Municipal pollution prevention & good housekeeping |

Audience: Homeowners

Description: The Blue Thumb – Planting for Clean Water program (www.BlueThumb.org) was developed by the Rice Creek Watershed District in 2006 and is now a dynamic coalition of more than 60 partner organizations. EMWREP will use Blue Thumb to promote partner BMP programs and to encourage homeowners to plant native gardens, raingardens and shoreline projects to protect surface and groundwater resources.

Program Goals:

1. Promote native gardens, raingardens and shoreline plantings in targeted areas within EMWREP partner communities.
2. Coordinate Blue Thumb outreach with partner BMP programs and TMDL implementation.
3. Coordinate with landscapers, nurseries, Master Gardeners, and others to conduct outreach and implement projects.
4. Publicize and utilize demonstration gardens created by the program to increase educational benefit. Create signage, conduct tours and highlight demonstration projects.

Educational Goals:

Learning

1. Provide a visible “hook” to discuss and encourage people to think about stormwater and water resources.
2. Increase understanding of native plants, raingardens and shoreline stabilization as best management practices for clean water.

Behavior Change

1. Engage the public in preventing non-point source water pollution.
2. Increase the utilization of native plantings, raingardens and shoreline stabilization by local residents.

Water-quality Improvement

1. Reduce and prevent non-point source pollution of surface and groundwater resources.
2. Maintain adequate groundwater and drinking water resources.

Activities used to reach goals:

Regional collaboration: The Blue Thumb partnership includes more than 60 public and private entities - nurseries, landscaping companies, watershed agencies, cities, non-profits and citizen groups. Program partners meet four times annually and agree to contribute \$1500 or 30 volunteer hours toward promoting the program. Program partners help to maintain the www.BlueThumb.org website, attend special events, develop marketing and educational materials, purchase advertising and coordinate workshops and trainings.

The collaborative nature of the Blue Thumb program ensures a consistent message for the public and maximizes the outreach efforts of all program partners. EMWREP will continue to play a lead role in the Blue Thumb program by serving on the regional steering committee.

Workshops: EMWREP will hold community workshops to promote native gardens, raingardens and shoreline plantings. These workshops will be open to interested community members and will be promoted through flyers, press releases and community newsletters. In addition, EMWREP will give presentations for community groups as requested.

Neighborhood Parties: Neighborhood parties will be used as a strategy to promote Blue Thumb in priority neighborhoods. The parties will be hosted by someone living in the neighborhood and will generally have 10-15 invited guests. A Blue Thumb party kit, party guide and invitations have been created so that volunteers such as Master Gardeners can facilitate Blue Thumb parties as well.

Targeted homeowner outreach: EMWREP partners will identify priority areas to target with Blue Thumb outreach efforts. Outreach techniques may include postcard mailings, door-knocking or neighborhood parties.

Integration with partner BMP programs: Outreach efforts will be coordinated with partners' BMP programs so that homeowners have access to free site visits, cost-share grants and technical assistance to implement their Blue Thumb projects.

Promotional materials: EMWREP has created Blue Thumb kiosks to display flyers, brochures and manuals at Washington County libraries and regional parks. Interactive displays, digital photo frames, posters and banners are available to use at community events. There is also a suite of print materials and brochures available to promote Blue Thumb.

Evaluation: EMWREP will use surveys, focus groups and interviews when possible to measure the knowledge, attitudes and behaviors of people living in target neighborhoods and to gauge the success of outreach efforts.

Go Wild!

Bringing Birds and Wildlife to Woodlands, Farmlands and Big Backyards

Minimum Control Measure Addressed

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|--|---|
| <input checked="" type="checkbox"/> Public education & outreach | <input type="checkbox"/> Construction site runoff controls |
| <input checked="" type="checkbox"/> Public participation & involvement | <input type="checkbox"/> Post-construction storm water management |
| <input type="checkbox"/> Illicit discharge detection and elimination | <input type="checkbox"/> Municipal pollution prevention & good housekeeping |

Description: Go Wild! is a new program being developed to engage rural property owners. The goal is to leverage public interest in birds and wildlife to engage people in planting and habitat improvement projects in targeted areas that will also reduce erosion and non-point source water pollution.

A key component of this program is collaborative outreach with local non-profits and sportsmen groups such as Ducks Unlimited, Pheasants Forever and Audubon Minnesota. EMWREP’s role will be to support the outreach conducted by these groups, to help connect landowners with additional resources available through EMWREP partners, and to encourage projects that protect water as well as improving wildlife habitat.

Program Goals:

1. Use birds and wildlife as a hook to engage people in planting and habitat improvement projects in targeted areas to improve habitat and also reduce erosion and non-point source water pollution.
2. Promote habitat improvements on sensitive and highly erodable lands, such as steep slopes, ravines and bluff tops; encourage buffer plantings on streams, lakes and wetlands; and help people to restore wetlands and natural stream corridors.
3. Coordinate outreach with partner BMP programs and TMDL implementation.

Educational Goals:

Learning

1. Increase awareness about watersheds and water resource issues in the East Metro, as well as the causes of non-point source water pollution.
2. Increase awareness of and knowledge about bird species in the St. Croix and Mississippi River flyways and their habitat requirements.
3. Increase awareness of and knowledge about wildlife habitat requirements.
4. Increase public knowledge about forest, prairie and wetlands systems, including;
 - a. The roles that plants, animals and non-living components such as soil and water play in ecosystems; and
 - b. The threats posed by invasive species, habitat fragmentation and degradation and loss of natural processes.

5. Educate local residents about how to improve existing and create habitat on their property to attract wildlife and reduce runoff pollution.

Behavior Change

1. Engage private property owners in projects that will improve habitat and reduce non-point source water pollution. Specific actions may include:
 - a) Removing buckthorn and other invasive plant species, especially on steep slopes, ravines and bluff tops, and in floodplains and drainage paths.
 - b) Planting native trees, shrubs and plants, especially on steep slopes, ravines and bluff tops, and in floodplains and drainage paths.
 - c) Repairing ravines, gullies and other erosion areas with native plants that also provide habitat.
 - d) Establishing buffer plantings on streams, lakes and wetlands.
 - e) Restoring wetlands and natural stream corridors.

Water-quality Improvement

1. Reduce and prevent non-point source pollution of surface and groundwater resources.
2. Maintain adequate groundwater and drinking water resources.

Activities used to reach goals:

Collaboration with local non-profits and sportsmen groups: EMWREP will collaborate with local non-profits and sportsmen groups such as Ducks Unlimited, Pheasants Forever and Audubon Minnesota. EMWREP's role will be to support the outreach conducted by these groups, to help connect landowners with additional resources available through EMWREP partners, and to encourage projects that protect water as well as improving wildlife habitat.

Workshops: EMWREP will coordinate several bird and wildlife workshops during the year and will also develop a Rural Lands curriculum for the local community education programs. Topics covered in the workshops will include bird and wildlife habitat, invasive species, woodland management, prairie plantings, land and livestock, and groundwater.

Targeted homeowner outreach: Direct outreach to specific landowners through mailings, phone calls and site visits will be used as needed.

Integration with partner BMP programs: Outreach efforts will be coordinated with partners' BMP programs so that homeowners have access to free site visits, cost-share grants and technical assistance to implement their habitat and clean water projects.

Promotional materials: EMWREP will use existing outreach materials and work with Audubon Minnesota and other project partners to create new materials as needed.

Evaluation: EMWREP will use surveys, focus groups and interviews when possible to measure the knowledge, attitudes and behaviors of people living in target areas and to gauge the success of outreach efforts.

Blue Biz

Helping local businesses go blue

Minimum Control Measure Addressed

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|--|--|
| <input checked="" type="checkbox"/> Public education & outreach | <input type="checkbox"/> Construction site runoff controls |
| <input type="checkbox"/> Public participation & involvement | <input checked="" type="checkbox"/> Post-construction storm water management |
| <input type="checkbox"/> Illicit discharge detection and elimination | <input type="checkbox"/> Municipal pollution prevention & good housekeeping |

Audience: Commercial property owners, business owners, property managers and commercial developers

Description: The Blue Biz program consists of a website (www.cleanwaterMN.org/businesses) and outreach materials that partners can use to engage commercial property owners in BMP projects. The EMWREP educator will also work with partners to target specific property owners as needed.

Program Goals:

1. Promote stormwater BMP’s for businesses in targeted areas within EMWREP partner communities.
2. Encourage use of LID techniques for new commercial development.
3. Coordinate commercial outreach with partner BMP programs and TMDL implementation.
4. Publicize and utilize demonstration projects created by the program to increase educational benefit. Create signage, conduct tours and highlight demonstration projects.

Educational Goals:

Learning

1. Help business owners, property managers and commercial developers to understand that impervious surfaces on commercial properties contribute significantly to stormwater pollution in local water bodies.
2. Increase understanding of best management practices and low impact development techniques.

Behavior Change

1. Engage commercial entities in preventing non-point source water pollution.
2. Involve local businesses as active partners in watershed and TMDL plan implementation.
3. Increase the utilization of BMP’s and LID by local businesses.

Water-quality Improvement

1. Reduce and prevent non-point source pollution of surface and groundwater resources.
2. Maintain adequate groundwater and drinking water resources.

Activities used to reach goals:

Website: EMWREP has developed a website (www.cleanwatermn.org/businesses) where commercial entities can go to find information about Low Impact Development and BMP's, as well as case studies and links to resources for cost-share and technical assistance.

Print materials: EMWREP has developed a one-page fact sheet that summarizes information available on the website and several one-pg fact sheets about local commercial BMP projects. These materials can be used when meeting one-on-one with commercial property owners or at Chamber and Rotary events.

Targeted outreach: EMWREP will work with local partners to target specific commercial property owners as needed.

Coordination: EMWREP will coordinate with the Minnesota Pollution Control Agency, Metro Conservation Districts and others to develop commercial outreach materials and conduct outreach.

Stormwater U

Minimum Control Measure Addressed

| | |
|---|--|
| <input type="checkbox"/> Public education & outreach | <input checked="" type="checkbox"/> Construction site runoff controls |
| <input type="checkbox"/> Public participation & involvement | <input checked="" type="checkbox"/> Post-construction storm water management |
| <input checked="" type="checkbox"/> Illicit discharge detection and elimination | <input checked="" type="checkbox"/> Municipal pollution prevention & good housekeeping |

Audience: Municipal staff, consultants, and contractors

Description: Stormwater U is a technical training series for municipal staff and contractors, including engineers, planners, inspectors and public works. Stormwater U workshops are hosted in collaboration with University of Minnesota Extension and the Minnesota Erosion Control Certification Program.

Program Goals:

1. Provide technical training for municipal staff, consultants and contractors to help them meet MS4 Permit requirements and reduce stormwater pollution.
2. Work with local communities and EMWREP partners to identify training needs and topics.
3. Develop high-quality trainings that can be carried to communities outside the EMWREP region by the University of Minnesota Extension and other partners.
4. Encourage EMWREP partners and local MS4 communities to send at least one staff person or contractor to each Stormwater U workshop.

Educational Goals:

Learning

1. Increase understanding of non-point source water pollution and water resource connections among municipal staff, consultants and contractors.
2. Increase this audience's understanding of their role in achieving and maintaining clean surface and groundwater resources.

Behavior Change

1. Through training, enable EMWREP partners and local communities to reduce stormwater pollution through illicit discharge detection and elimination, construction site runoff controls, post-construction stormwater management and municipal pollution prevention.

Water-quality Improvement

1. Reduce and prevent non-point source pollution of surface and groundwater resources.
2. Maintain adequate groundwater and drinking water resources.

Activities used to reach goals:

Coordination with University of Minnesota Extension Programs: In 2006, EMWREP partners identified key audiences and topics for Stormwater U workshops. Workshops were developed and held during the next three years for engineers, planners, construction contractors and public works staff. In 2007, University of Minnesota Extension created a staff position to develop and coordinate Stormwater U workshops throughout the Twin Cities metro area. EMWREP will continue to work with UM Extension to plan and host future trainings.

Hosting workshops: EMWREP will host technical trainings developed by University of Minnesota Extension and other partners and will promote these workshops to EMWREP partners and local communities.

Developing new workshops: EMWREP will work with local communities and EMWREP partners to inventory and evaluate current trainings available and to develop new trainings if needed.

Evaluation: Workshop evaluations will be used to identify training needs, improve workshops and evaluate participant learning.

Northland NEMO

Minimum Control Measure Addressed

| | |
|--|--|
| <input type="checkbox"/> Public education & outreach | <input type="checkbox"/> Construction site runoff controls |
| <input type="checkbox"/> Public participation & involvement | <input checked="" type="checkbox"/> Post-construction storm water management |
| <input type="checkbox"/> Illicit discharge detection and elimination | <input type="checkbox"/> Municipal pollution prevention & good housekeeping |

Audience: Local elected officials and decision makers

Description: The Northland NEMO program (Non-point Education for Municipal Officials) provides local elected officials and decision makers with resources and information to make informed decisions about land use and water quality in their communities. Northland NEMO is hosted by the University of Minnesota Extension and EMWREP is one of ten to twenty partner organizations. Program offerings include several basic presentations, as well as the interactive Watershed Game.

Program Goals:

1. Work with NEMO partners to develop outreach programs for local communities that cover a range of topics related to water resources management.
2. Use NEMO programs to provide local decision makers such as city councils, planning commissions, watershed boards and county commissioners with the information they need to make land use decisions and protect water resources.

Educational Goals:

Learning

1. Increase understanding of water resources and storm water management among elected officials and decision makers.
2. Increase understanding among elected officials and decision makers of the connection between land use and water quality.

Behavior Change

1. Increase the implementation of city ordinances, zoning and planning practices that enable low impact development and stormwater best management practices.

Water-quality Improvement

1. Prevent non-point source water pollution from new development and redevelopment.
2. Maintain adequate groundwater and drinking water resources.

Activities used to reach goals:

Regional workshops: EMWREP will work with Minnesota Department of Natural Resources, Minnesota Pollution Control Agency, University of Minnesota Extension, the St. Croix River Association and other partners to provide workshops for communities in the EMWREP region.

Community Workshops: EMWREP will conduct workshops for individual communities as requested by the community or an EMWREP partner. Available workshop topics will include Linking Land Use to Water Quality, Raingardens and Bioretention, Porous Pavement, Winter Snow and Ice Management and the Watershed Game.

St. Croix Basin Minimal Impact Design Standards (MIDS) grant project: During 2011 and 2012, EMWREP will be working with several project partners to develop and implement model ordinances, zoning codes and land use planning procedures with pilot communities in Washington County and the St. Croix Basin.

Evaluation: Focus groups and interviews will be used to determine training needs and to develop the outreach package for the St. Croix MIDS Pilot Project. The success of outreach efforts will be determined by the number of communities that make positive changes to their ordinances, zoning codes and land use planning procedures.

MS4 Toolkit

Minimum Control Measure Addressed

| | |
|---|--|
| <input checked="" type="checkbox"/> Public education & outreach | <input checked="" type="checkbox"/> Construction site runoff controls |
| <input checked="" type="checkbox"/> Public participation & involvement | <input checked="" type="checkbox"/> Post-construction storm water management |
| <input checked="" type="checkbox"/> Illicit discharge detection and elimination | <input checked="" type="checkbox"/> Municipal pollution prevention & good housekeeping |

Audience: General public, municipal staff and contractors, local elected officials, and other target audiences

Description: EMWREP developed the MS4 Toolkit (www.cleanwatermn.org/MS4toolkit) with a grant from the Minnesota Pollution Control Agency. The toolkit includes educational materials that partners can use to meet the six minimum control measures in the MS4 permit, such as brochures, posters, slide shows, training videos and more. In addition to the on-line materials, training videos for parks and public works staff and pop-up banners for community events are available partners to borrow.

EMWREP will continue to provide basic website maintenance for the MS4 toolkit and to occasionally add new materials to the kit as they are developed. Partners can also request special printings of the materials for outreach activities.

Program Goals:

1. Provide simple and effective materials to MS4 staff to use when educating target audiences.
2. Help EMWREP partners to meet MS4 permit requirements.

Educational Goals:

Learning

1. Increase understanding of non-point source water pollution and stormwater best management practices among the target audiences.

Behavior Change

1. Engage municipalities and MS4 staff as active partners toward reducing non-point source water pollution from stormwater runoff and illicit discharges.
2. Increase the utilization of stormwater best management practices among the target audiences.
3. Increase the detection and elimination of illicit discharges to storm water systems.
4. Increase the utilization of best management practices in street sweeping, salt application, landscaping and other municipal operations.

Water-quality Improvement

1. Reduce and prevent non-point source pollution of surface and groundwater resources.
2. Maintain adequate groundwater and drinking water resources.

Activities used to reach goals: EMWREP will continue to provide basic website maintenance for the MS4 toolkit and to occasionally add new materials to the kit as they are developed. EMWREP will use toolkit materials to help partners reach target audiences in their communities.

APPENDIX A: MS4 STORMWATER POLLUTION PREVENTION PROGRAM

Correlating the Six Minimum Control Measures with EMWREP Programs and Audiences

1. Public Education and Outreach

- General Education Campaign (general public)
- Blue Thumb (homeowners)
- Go Wild! (rural landowners)
- Blue Biz (commercial property owners)

2. Public Participation

- General Education Campaign
- Blue Thumb
- Go Wild!
- Blue Biz

3. Illicit Discharge Detection and Elimination

- General Education Campaign
- MS4 Toolkit (multiple audiences)

4. Construction Site Storm Water Runoff Control

- Stormwater U (municipal staff and contractors)
- MS4 Toolkit

5. Post Construction Storm Water Management

- Stormwater U
- NEMO (local elected officials and decision makers)
- Blue Biz
- MS4 Toolkit

6. Pollution Prevention and Good Housekeeping in Municipal Operations

- Stormwater U
- MS4 Toolkit

APPENDIX B: IMPAIRED WATERS AND PRIORITY OUTREACH AREAS (2011)

