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## ***Toolkit for Greener Practices: Learn More About the Initiative*** **Toolkit Rationale and Concept**

The notion of pollution prevention (P2) isn't usually linked to site cleanup, but Minnesota regulatory staff and stakeholders have created an Internet-based interactive toolkit to promote P2 and sustainable activities at remediation sites. Looking for opportunities to incorporate pollution prevention techniques and sustainable activities into site cleanup might seem like an afterthought. However, a closer look reveals intriguing practical possibilities for better remedies and implementation of prevention and Smart Growth principles. This paper presents the toolkit idea and what Minnesota Pollution Control Agency (MPCA) hopes to achieve with it. A P2 Demonstration Grant provided by the U.S. Environmental Protection Agency, Region 5, supported the development of the "Toolkit for Enhanced Opportunities for Pollution Prevention and Sustainable Activities at Remediation Sites" (Toolkit).

The definition of P2 used for this project goes beyond source reduction, reuse, and recycling to include any activity that results in sustainable or enhanced environmental outcomes. The activities promoted by the Toolkit include clean up remedies that prevent cross-media transfer or promote energy conservation and resource enhancement, or that take advantage of building/parking lot footprints for exposure control. It encourages evaluation of ongoing businesses at cleanup sites for opportunities to use P2 as a means to meet compliance requirements and prevent future releases or to implement other business practices that enhance environmental outcomes. The toolkit provides resources to encourage site development using practices that enhance or protect the environment, including green building and low or no discharge stormwater management systems.

Opportunities for enhanced environmental outcomes are being overlooked at remediation sites. The cases in which P2 has been implemented at Minnesota remediation sites can be attributed to a few staff or voluntary or responsible parties who have some knowledge about P2 or how to access resources to help develop or implement P2 projects. Most staff and program users lack confidence in their ability to relate P2 and sustainable activities to cleanup site activities. There is no mandate for cleanup staff to become P2 experts. Most staff and program users are unaware of existing resources to help develop and implement P2 and sustainable activities. Lastly, many staff and program users perceive greater effort than they can afford to promote development or implementation of P2 or sustainable activities at cleanup sites. The toolkit is designed to overcome these obstacles.

An Advisory Group made up of MPCA stakeholders, ranging from representatives of the business community to environmental advocates, met monthly for a nearly a year to discuss alternatives and identify acceptable options for P2 and sustainable activity at cleanup sites. MPCA staff and the Advisory Group

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decided that the solution to the problem was an Internet-based interactive toolkit. The Toolkit targets a limited number of options, which can be related to cleanup site activities. The possibilities are presented in a step-by-step process that expedites evaluation of the options for a specific site. During this process, regulatory staff and regulated parties are referred to existing expertise and case study contacts that may help develop or implement a P2 or sustainable project. Before describing how the toolkit serves this solution, examples of selected projects in Minnesota are presented.

MPCA staff experience with P2 and sustainable activities at cleanup sites involves:

- A proposal to reuse treated groundwater for golf course irrigation;
- A project in which petroleum product was recovered from a groundwater pumpout system for reprocessing and marketing;
- Negotiations with a responsible party to include the installation of closed-loop wood treatment process as a provision within an MPCA-approved corrective action plan;
- Discussions regarding recommendations to voluntary and responsible parties and owners for more efficient remedies and management or operation protocols for treatment systems. (For example, with adequate monitoring, the impact from emissions from soil vapor extraction systems should not outweigh the system benefits. The design and/or operation of ground water treatment system should minimize total volume pumped.)
- In-situ treatment or exposure control options, including natural attenuation of groundwater solvents and strategically placed building footprints, which wed risk-management and prevention approaches to eliminate cross-media transfer.
- Referral of MPCA customers to the Minnesota Technical Assistance Program to develop pollution prevention plans at plating shops;
- Promoting smart building (i.e., green building) into brownfield redevelopment plans;
- Implementation of low/no stormwater discharge systems; and
- Green space incorporated into a brownfield redevelopment plan.

The Toolkit relates a limited number of options to the cleanup process; increases access to existing expertise capable of assisting with the development or implementation of P2 and sustainable projects; and streamlines the process of evaluating the options for a specific site.

MPCA staff and stakeholders were able to identify 18 options and organize them into three specific remediation scenarios. In this way, the options were related to cleanup activities. The three scenarios are redevelopment or renovation plans, ongoing or new business operations and remediation-only. Circumstances at a site may correspond to more than one of these scenarios.

The Remediation-Only Scenario refers to remediation sites at which a No Action remedy is not adequate and there are no plans for redevelopment in the immediate future and no existing operation on site. These sites may be vacant or undeveloped. Examples of P2 or sustainable activity include energy efficient alternatives to groundwater pumpout systems that avoid discharge to waste water treatment plants (e.g., constructed wetlands); treatment to avoid cross media transfer; and deconstruction of buildings to salvage materials for reuse. The Toolkit targets the following specific options under this scenario:

- Option 1-1: In-Situ Treatment
- Option 1-2: Innovative and More Efficient Remedies
- Option 1-3: Constructed Wetland Treatment Systems;
- Option 1-4: Natural Habitat Restoration, Enhancement or Replacement - Green Space Development;
- Option 1-5: Deconstruction; and

- Option 1-6: Recyclable or Recovered Environmental Material.

The Ongoing or New Business Operation Scenario refers to that subset of remediation sites at which a known or threatened (potential) release can be attributed to an operating business. In some cases MPCA remediation staff is advised to refer such sites to MPCA compliance programs or the MPCA Small Business Assistance Program or Ombudsmen. The Toolkit for Enhanced Opportunities for P2 and Sustainable Activity at Remediation Sites promotes the following options. Options 2-1, 2-3 and 2-4 may also be applicable in redevelopment scenarios.

- Option 2-1: Pollution Prevention Evaluation;
- Option 2-2: Materials Exchange;
- Option 2-3: Reduce Regulatory Burden;
- Option 2-4: Environmental Management System Approaches; and
- Option 2-5: Design for the Environment.

The Redevelopment/Renovation Plan Scenario refers to that subset of remediation sites, including brownfields, at which redevelopment or renovation is planned. Remediation staff can assist with appropriate referrals only to the degree that the voluntary/responsible party or owner shares details of the redevelopment or renovation plan. Opportunities for P2 and sustainable activity within direct jurisdiction of MPCA programs include preventing threatened releases of hazardous substances, storm water management, and management of air emissions and hazardous waste. MPCA staff must be sensitive to timelines required by real estate transactions and be willing to forego or abandon plans to pursue opportunities for voluntary P2 or sustainable activities. Opportunities for P2 and sustainable activities outside the strict regulatory jurisdiction should be promoted only in appropriate circumstances and when the voluntary party, responsible party, owner or client is interested. The Toolkit promotes the following options, in addition to Options 2-1, 2-3 and 2-4 listed above:

- Option 3-1: Deconstruction
- Option 3-2: Cleanup Remedy Incorporates Development Plan
- Option 3-3: Environmentally Friendly Building & Site Design
- Option 3-4: Environmentally Friendly Office & Property Management
- Option 3-5: Low/No Discharge Stormwater Management Strategies
- Option 3-6: Natural Habitat Restoration, Enhancement or Replacement - Green Space Development
- Option 3-7: Design for the Environment

The Toolkit streamlines the evaluation of options for a specific site and facilitates access to expertise. Using a Decision Tree that is linked on the Website to 18 Option Detail Sheets, the toolkit user, through a process of elimination, can determine site-appropriate options and decide whether or not to pursue developing and implementing a P2 or sustainable project.

By responding to a series of if/then statements in the Decision Tree, the Toolkit user creates a short-list of options to consider for a specific site. Because the options are grouped according to remediation scenario, the interactive Decision Tree allows the Toolkit user to skip entire sets of questions that don't relate to the site. Information in the linked Option Detail Sheets can then be used to cull the short-list of options by answering questions like:

- Does the aim of the option fit the conditions and plans for the site?
- Do site-specific circumstances favor implementation of this option?
- Do case studies indicate a good fit between the option and site plans or suggest resources useful to the development or implementation of the P2 or sustainable activity at the site?

- Do the referenced regulatory, business and technical resources complement the voluntary/responsible party or owner ability to develop or implement a project?
- In what ways could the remediation staff or other regulatory staff assist?

The MPCA hopes to impact four main areas with the Toolkit for Enhanced Opportunities for Pollution Prevention and Sustainable Activities at Remediation Sites:

- Voluntary enhanced environmental outcomes;
- Regional economic and environmental strategies, such as smart growth and community master planning;
- Complementary regulatory tools, and
- Environmental performance tracking.

The MPCA hopes to raise the awareness of possibilities for voluntary enhanced environmental outcomes at cleanup sites (or all sites under regulatory oversight) and their economic benefits. The Toolkit's greatest value at this point may be to promote the idea of looking for possibilities; facilitate existing interest among voluntary/responsible parties and owners; and develop new relationships with nontraditional partners. Members of the Advisory Group are already making an effort to apply these ideas at redevelopment sites.

The MPCA would like to consider cleanup sites within regional economic and environmental strategies. The Toolkit offers an entry point for brownfields into the Minnesota Smart Growth Initiative and the Community-Based Planning process.

The Toolkit complements existing regulatory tools that promote enhanced environmental outcomes, including the MPCA's Small Business Assistance Program; compliance program incentives to reduce regulatory burden; and enforcement program Supplemental Environmental Projects.

Lastly, the Toolkit is consistent with the effort to develop program performance measures. The Toolkit serves as an example for embedding performance measures within a program implementation plan. Measures rely on data collected in the P2/Sustainability fields in the MPCA Remediation Site Database. The ability to track enhanced environmental outcomes will increase significantly if provisions for P2 and sustainable activities are voluntarily included in remedial/corrective action approvals and liability assurances with the understanding that, being voluntary, they can be abandoned at any time as long as related compliance issues are addressed by alternate means. Specialized fields in the database can be used to promote companies for awards and recognition.