

Minnesota Stormwater Steering Committee

Stormwater Management Roadmap for Minnesota

Adopted by the Minnesota Stormwater Steering Committee

November 20, 2008



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Executive Summary

Pollution in Minnesota waters (lakes, rivers, streams, wetlands, and groundwater) is transported primarily through rainwater runoff. Minnesota is among national leaders in creating and implementing stormwater management programs; innovation that has measurably improved water quality. Yet improvement remains slow and in some cases is still outpaced by factors that worsen stormwater volume, velocity, and water quality. Moreover, the myriad stormwater programs, overlapping regulatory authorities, and uncoordinated research and education efforts are inefficient or even work at cross-purposes. These factors threaten the future of Minnesota waters in an era of diminishing opportunities and resources.

The Stormwater Steering Committee (SSC), a coalition of parties committed to improving stormwater management in Minnesota, proposes a *Roadmap* to guide future stormwater management efforts in Minnesota. The Roadmap is needed to address the disjointed stormwater regulations, programs, and research efforts. The Roadmap describes key milestones and outlines the steps necessary to create an integrated, effective stormwater management system.

The Roadmap addresses regulatory, programming, budgeting, research, and education activities that comprise Minnesota's stormwater management system. Extensive stakeholder input, through multiple outreach efforts and from SSC members, guided the creation of the Roadmap. The Roadmap also directly incorporates the vision, goal, and principles of the SSC. The Roadmap provides guidance for state agencies, watershed districts, local governments, city engineers, and SSC work groups.

The organizational hierarchy of the Roadmap includes stormwater management **Themes**, **Action Categories**, and **Action Items**. Based on stakeholder priorities, three *Themes* emerged to organize the Roadmap:

Theme I. Stormwater Management Systems

Theme II. Stormwater Research and Education

Theme III. Stormwater Management Efficiencies

Each Theme contains 2 or 3 *Action Categories* specifying major tasks to be undertaken.

Theme I. Stormwater Management Systems

Action Category I.A. Create funding principles and coordinate funding efforts.

Action Category I.B. Identify the form and content of a watershed-based statewide stormwater management process.

Theme II. Stormwater Research and Education

Action Category II.A. Create appropriate mechanisms to monitor and measure effort, progress, and environmental conditions.

Action Category II.B. Coordinate research efforts and disseminate research results.

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Action Category II.C. Link education and assistance resources with the greatest needs.

Theme III. Stormwater Management Efficiencies

Action Category III.A. Reduce conflicts and duplication in regulatory requirements and standards consistent with consensus goals, objectives, and implementation priorities.

Action Category III.B. Improve the efficiency of stormwater planning processes.

Action Category III.C. Improve the effectiveness and efficiency of state and local stormwater compliance and enforcement entities to better meet stormwater management and water quality goals.

Each Action Category contains detailed *Action Items* - smaller tasks to be undertaken to achieve the goal of the Action Category. The Roadmap provides the following details for each Action Item:

- *Priority*: Which Item should be accomplished first, second, etc.
- *Readiness*: How ready the SSC and other stakeholders are to complete the item
- *Sequencing*: Based on priority and readiness, how Items should be sequenced
- *Responsible Parties*: Tasks and level of involvement of identified lead and secondary parties
- *Research and Data Needs*: Needs necessary to achieve the goal of the Action Category
- *Obstacles*: Possible obstacles to achieving the goal of the Action Items
- *Solutions*: Possible solutions to overcoming identified obstacles
- *Funding*: Sources and recipients of current funding, amounts, and additional resources needed

The intent of the SSC is that the Roadmap will evolve as work is completed and new data becomes available.

Section 1: Definition of a Roadmap

A roadmap identifies the path to arrive at a desired destination. It establishes key milestones along the route and describes the necessary steps to achieve each milestone. The Minnesota Stormwater Management Roadmap establishes the path that the stormwater community (managers, regulators, responsible parties, and other stakeholders) will take to create an integrated, statewide stormwater management system. The Roadmap identifies eight *Action Categories* summarizing the key steps needed to create the system. While the Roadmap is specific enough to provide general direction for actions, it is expected to evolve as additional research and planning work is completed.

Why is the Roadmap needed now?

Minnesota's current stormwater management approach fails to provide systematic, effective and understandable protection of water resources. Current stormwater regulations and programs function in a disjointed manner, sometimes conflicting with one another or duplicating efforts. Moreover, stormwater research efforts are disconnected from each other and frequently not linked to the information needs of stormwater managers or to priorities set in state policy. The Roadmap addresses these issues by outlining the necessary steps to create an integrated, effective stormwater management system.

Organization of the Roadmap

The Roadmap consists of eight *Action Categories* organized into three *Themes*: Stormwater Management Systems, Research and Education, and Management Efficiencies. Within each Action Category are listed *Action Items*, smaller tasks that will contribute to achieving the Action Category. The following figure illustrates the organization of the Roadmap.

Theme: Themes describe broad issues that need to be addressed to achieve Minnesota's water quality and stormwater management goals. There are three Themes.

Action Category: Action Categories specify major tasks to be undertaken to create an integrated stormwater management system. There are two or three Action Categories listed under each Theme.

Action Items: Action Items are smaller tasks that contribute to the achievement of the Action Category. There are three to eight Action Items listed under each Action Category.

Section 5: Actions and Products includes complete descriptions of each Theme, Action Category, and Action Items.

Section 2: Stormwater Steering Committee

The Stormwater Steering Committee (SSC) is responsible for the creation of the Roadmap. The SSC was formed in 2004 to replace the Stormwater Design Team, a stakeholder advisory body created to advise state agencies on implementing Minnesota's stormwater policies and regulation. The SSC's immediate goal is to improve stormwater regulation, making it more efficient, effective, and understandable. A long-term goal of the SSC is to implement stormwater planning on a watershed basis.

The SSC consists of 26 member groups, including state agencies, local and regional governments, non-profits, and industry associations. By involving the various groups and entities involved in stormwater management, the SSC provides a forum for communication between different governmental units and stakeholders. The SSC seeks to improve the effectiveness and coordination of groups involved in stormwater management and to ensure fairness (real and perceived) between groups working to improve our state's water quality.

The SSC creates work group subcommittees when a particular task needs special attention or in-depth investigation and recommendations. The work groups are ad hoc rather than standing committees. The SSC has nine ad hoc work groups that were created to address the following issues/topics: education, Minnesota's Stormwater Design Manual, research and monitoring, the industrial stormwater permit, Low-Impact Development, the construction stormwater permit, watershed-based management approaches, non-degradation, committee operations. The work groups provide technical expertise and recommendations on their respective issues to the SSC. Some of the work groups are formed to meet a specific task, such updating the Construction Stormwater permit or revising the State's Stormwater Design Manual. Other work

Stormwater Steering Committee Charter

December 21, 2004

Protecting Minnesota's waters requires addressing the problem of stormwater runoff, which is rainfall or snowmelt moving over and through any type of land carrying natural and/or human-made pollutants into surface or ground waters.

The Stormwater Steering Committee (SSC) is a group of public and private stakeholders charged with building on the work of the Minnesota Stormwater Design Team, to inform, advise, and coordinate stormwater management efforts across the state. An immediate goal of the SSC is to enhance the effectiveness of existing and emerging state and local stormwater regulatory management programs, in order to build an efficient and understandable regulatory and implementation framework. Long-term goals include conducting stormwater program planning and implementation on a watershed basis.

The SSC will focus on, and provide subcommittee support for, activities within the current stormwater regulatory and implementation framework of the Minnesota Pollution Control Agency and other state agencies. As part of its larger goals, the SSC will provide support for other programs with stormwater components such as:

1. Impaired waters
2. Federal funding programs
3. Shoreland management
4. Ground water recharge
5. Drinking water source water protection
6. Nondegradation
7. Surface water management plans
8. Wetland management
9. Watershed organizations
10. The Minnesota Nonpoint Source Management Plan
11. Other research

groups are ongoing in nature, such as the Operations Committee, which sets the agenda for the larger SSC and administers tasks such as the Roadmap project. The current Stormwater Steering Committee work groups are described below.

Education. The Education work group focuses on educating Minnesotans about the importance of stormwater. They have inventoried stormwater education programs in Minnesota and identified unmet needs.

Stormwater Manual. The Stormwater Manual work group created and maintains a user guide for stormwater management in Minnesota. The manual provides information on best management practices. It is divided into a stormwater management section and a technical information section.

Research and Monitoring. The Research and Monitoring work group directs rigorous, peer-reviewed stormwater research and promotes standardized monitoring.

Industrial. The Industrial work group works with Minnesota Pollution Control Agency staff to develop the general industrial stormwater permit and program. The permit is scheduled to be issued in Spring 2009.

Low-Impact Development. The Low-Impact Development work group focuses on encouraging the construction of stormwater-aware homes, businesses and developments. The work group has researched barriers to low-impact development and is investigating methods to address these barriers.

Construction Stormwater Permit Compliance. The Construction Permit work group focuses on the steps needed to achieve greater compliance with the construction stormwater general permit.

Watershed-Based Approach. The Watershed-Based Approach work group recently completed a report exploring the possibility of a new framework for stormwater permitting. The group researched barriers and opportunities to implementing a watershed permitting approach to stormwater management in Minnesota. The report on the various options for watershed-based stormwater approaches in Minnesota is entitled *A Framework for Integrated Watershed-Based Stormwater Management in Minnesota*, and is available on the SSC website.

Non-degradation Standards. The Non-degradation work group assists the Minnesota Pollution Control Agency with developing Minnesota's non-degradation policy and regulations.

Operations. The Operations work group supports the Stormwater Steering Committee by organizing meetings and setting agendas. The Operations work group lead the effort to develop the Stormwater Roadmap.

Section 3: Vision, Goal, and Principles

The Stormwater Design Team, Minnesota's previous advisory committee on stormwater (described in Section 2) created a set of guiding and defining statements for its work: a vision statement, a goal statement, purpose statements, and tenets. As its successor, the Stormwater Steering Committee reviewed the Design Team statements as part of the Roadmap process. The SSC reviewed the vision statement, reaffirming much of the vision while making small changes that recognize the current stormwater environment and the State's water quality goals. The SSC reorganized the goal, purpose statements, and tenets into a new goal and principles.

Vision

To ensure a high quality of life, Minnesotans will view stormwater as a resource and will manage stormwater to protect or restore our rivers, lakes, streams, wetlands and groundwater.

Goal

Design a long-term statewide effort to manage stormwater using expertise from a diverse group of stakeholders.

Principles

We will take decisive action to protect our 92,000 miles of rivers and streams, 14,000 lakes, over 9.2 million acres of wetlands, and groundwater from multiple threats and growing resource demands by:

- 1. Promoting efforts to help all Minnesotans take responsibility to understand, protect, and treasure the water that establishes our identity*
- 2. Building an efficient, understandable, and equitable implementation framework*
- 3. Using a watershed approach that recognizes regional variability*
- 4. Addressing water quality and quantity issues*
- 5. Striving for healthy and sustainable ecosystems*
- 6. Establishing monitoring and measurement criteria and protocols to evaluate the effectiveness of implementation efforts*
- 7. Ensuring equitable distribution of funding responsibilities and benefits*
- 8. Managing stormwater as a vital resource*

The Stormwater Steering Committee Vision provided direction during the Roadmap process for identifying appropriate actions and products. The Vision describes the endpoint that the SSC wishes to arrive at - the future conditions that are to be achieved through the actions identified in the Roadmap. The Goal describes the general purpose of the SSC, and the Principles guide the specifics on how the SSC will take action and make recommendations on stormwater issues.

The Stormwater Design Team vision became the launching point for the Roadmap process. The SSC used the Design Team purpose statements to begin creating action categories and the action hierarchy described in Section 5.

Section 4: Creation of the Roadmap

Process

The Roadmap was created through a collaborative process within the Stormwater Steering Committee. The process originated in 2007 when the SSC Operations Committee began formulating their vision for a Roadmap. Many of the SSC's work groups had completed individual studies of their respective issues and their findings and recommendations were ready to be incorporated into the Roadmap. The SSC contracted a consultant to facilitate the creation of the Roadmap. Through 2008, the SSC created and refined the material that forms the Roadmap. The process included:

- Reaffirming and revising the vision, goal, and policy statements that guide SSC work
- Reviewing recent stakeholder participation processes on stormwater priorities, problems, and potential solutions, as conducted by the SSC, the Minnesota Pollution Control Agency (MPCA), and the Minnesota Environmental Initiative (described in detail below)
- Categorizing recommendations by stakeholders and SSC members for responses to problems and issues in the existing stormwater management regulation, research, and education efforts
- Creating a hierarchy of inter-related actions for the SSC, state agencies, and others to undertake over short, medium, and long-term time frames
- Reviewing each action item within the hierarchy and assessing obstacles and solutions to completing the action, cost or funding issues, and stakeholder and organizational readiness for accomplishing the action.

The Operations Committee took primary responsibility for discussing material and making decisions on priorities and structure. The Roadmap was reviewed by the full SSC several times during the project. The full SSC made substantial recommendations to enhance and refine the work of the Operations Committee. The SSC approved the Roadmap on November 20, 2008.

Stakeholder Input

A key component of the Roadmap process was the desire to address concerns of a broad range of stormwater stakeholders. Rather than create a new stakeholder input process, the SSC reviewed the existing record of recent stakeholder input efforts to create a Roadmap that is responsive to the needs of all stakeholder groups. The SSC reviewed three key sources of stakeholder input: Minnesota Environmental Initiative's focus groups on natural resource conservation efforts; the MPCA's Stormwater Program Review outreach efforts; and the SSC's own World Café event.

Each of the three stakeholder outreach efforts involved gathering comments from a range of organizations and individuals regarding stormwater management planning, programs, research, regulation, and enforcement. Each effort included a somewhat different set of stakeholders and used a different process for gathering input. The MPCA Program Review process and the Minnesota Environmental Initiative (MEI) focus groups were relatively more in depth

processes than the World Café. The MEI focus groups were unique in that they involved only stakeholders from the 11 county Twin Cities metropolitan region and addressed a wide range of natural resource issues rather than solely focusing on stormwater management. The three stakeholder processes, and the results of processes, are described below.

MPCA Program Review Process

Stakeholders involved: MPCA stormwater management customers, including local government staff, officials, contractors, advocates, watershed organizations, and other stakeholders.

Process: 12 focus groups (9 external, 3 internal) held in fall 2007. Interviews conducted to follow up on gaps in the focus group conversations. Extensive recommendations were incorporated from two SSC workgroups (Construction Permit Compliance, Watershed-based Stormwater Management), as well as the main points from the SSC World Café.

Goal: Gather input on the current status of stormwater programs and the MPCA's vision for stormwater.

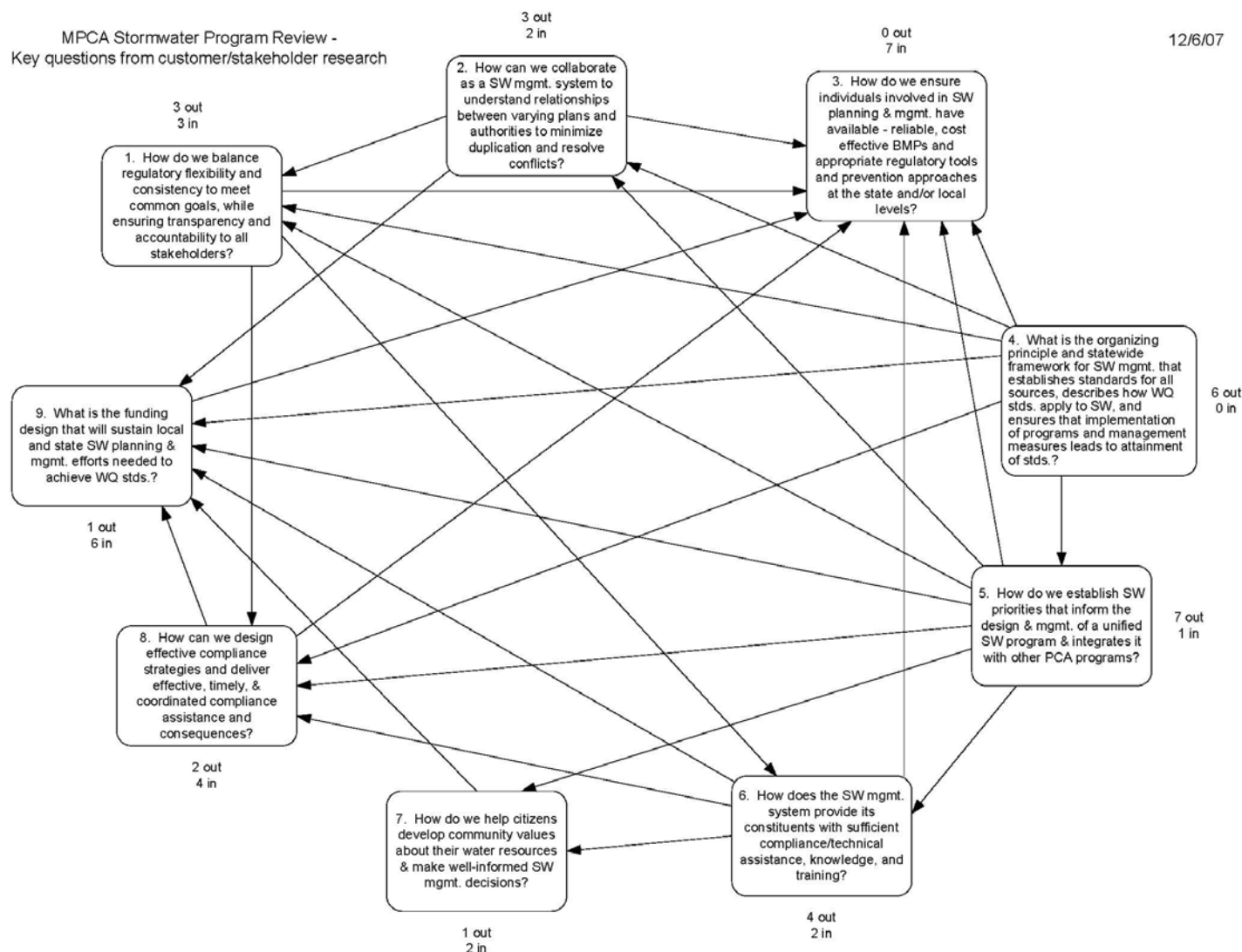
Of the three processes, the MPCA's stakeholder process was the most intensive and engaged the greatest number of stakeholders. MPCA staff conducted twelve focus groups that included a wide range of "customer groups" of stormwater regulation and other programs. Additional interviews were conducted to follow up on the focus groups and to get feedback from organizations that did not participate in the focus groups. MPCA staff worked to categorize and refine the results. The final product is summarized in nine "key messages" identifying inter-related categories of issues and outcomes that affect stormwater priorities.

Nine Key Messages MPCA Stormwater Stakeholder Focus Group Process

- 1. Framework/Standards.** Establish a statewide framework for stormwater management. Apply standards to the Framework.
- 2. MPCA's Program.** Establish a unified MPCA stormwater approach by integrating all programs.
- 3. Assistance.** Develop a statewide delivery system to provide constituents with compliance/technical assistance and learning.
- 4. Coordination.** Establish a collaborative stormwater mgmt. system so varying authorities and plans work to minimize conflicts and duplication.
- 5. Regulatory Approach.** Balance regulatory flexibility and consistency to meet common goals, while ensuring transparency and accountability.
- 6. Compliance.** Design effective compliance strategies and deliver timely and coordinated assistance and consequence (+/-).
- 7. Citizen Values.** Help citizens develop community values around their water resources, so they make well informed decisions.
- 8. Funding.** Develop a funding approach that will sustain local and state planning and mgmt. efforts towards water quality standards.
- 9. Tools.** Ensure individuals involved in planning and mgmt. have available, reliable, cost effective BMPs, prevention approaches and tools.

Source: MPCA presentation to Stormwater Steering Committee, 01/22/08

Based on the same stakeholder research, the MPCA also developed key questions for directing future stormwater management efforts, and identified how the questions were inter-related. The key messages and key questions directly informed the creation of the Roadmap.



Source: MPCA presentation to the SSC, 01/22/08

Minnesota Environmental Initiative Focus Groups

Stakeholders involved: Local government staff and elected officials, watershed district staff, and builders/developers.

Process: Five focus groups held in October 2007.

Goal: Understand the current status of natural resource protection in the 11-county Twin Cities metropolitan region.

The Minnesota Environmental Initiative conducted a series of focus groups engaging only stakeholders in the eleven-county area and addressing a range of natural resource issues that

extended well beyond stormwater and water quality. The process engaged 38 people in five focus groups that included city and other local government staff, watershed organizations, developers, and consultants. The results of the focus groups included 14 “key findings” and made five broad recommendations for addressing natural resource concerns. Many of the key findings and recommendations corresponded to MPCA Program Review Key Messages and key questions.

Stormwater Steering Committee World Café Process

Stakeholders involved: Stormwater Steering Committee members.

Process: One-time, 2 hour event.

Goal: Gather input from steering committee members on the needs and priorities for stormwater management in Minnesota.

The SSC conducted its own issue identification process via a “World Café” process. The SSC members identified lists of needs and priorities through this process that were then grouped into like categories. The categories were compared to the findings of the MEI and MPCA stakeholder focus groups.

Reviewing Stakeholder Input Efforts and Identifying Action Priorities

As part of the Roadmap process the SSC reviewed and compared the results of the three stakeholder involvement and issue identification efforts. Based on the nine Key Messages from the MPCA process, the SSC conducted a review of common issues and concerns among the three efforts, and differences between the themes identified in each effort. The common elements in all three efforts included concerns such as:

- Regulatory duplication and redundancy in planning or monitoring efforts
- Conflicts between regulatory goals of different state programs
- A mismatch of resources (both financial and technical) resulting in limited success at meeting goals
- A lack of research on, and monitoring of, the effectiveness of best management practices to meet water quality goals

Based on the results of the stakeholder input processes and the SSC principles described earlier, the SSC identified a series of issues and grouped them into eleven action categories. Over a series of meetings SSC members discussed the action categories and their relative priorities, then engaged the full SSC via a detailed survey and discussion to identify lower priority items and assess opportunities for focusing on high priorities. The initial eleven categories were eventually reduced to eight categories and grouped into the three action themes. The details of the themes, categories, and action items are provided in Section 5.

Section 5: Actions and Products

The Action Theme/Category/Item Hierarchy

The Stormwater Roadmap identifies an overarching vision, goals, principles, and action priorities. The action priorities are organized into a hierarchy of:

- I. Action Themes
 - A. Action Categories
 - 1. Action Items

Introduction to Action Themes

The top tier of the action hierarchy, Action Themes, includes three themes which are described in detail below:

- Theme I. Stormwater Management Systems
- Theme II. Stormwater Research and Education
- Theme III. Stormwater Management Efficiencies

Theme I. Stormwater Management Systems

Minnesota has a system of stormwater management that involves regulatory and programmatic efforts, and governmental and private sector stakeholders. Government entities with regulatory or enforcement roles range from the Federal government to the smallest local government. The system also includes regulated parties, which include local governments, industries, developers, and the general public. The system of regulators and the regulated even has significant overlap, where some entities (mostly local governments) are both regulators and subject to the regulation.

Minnesota's stormwater management system also includes non-regulatory efforts, where the ultimate goals of improving water quality are implemented via education, incentive, and management programs. As with the regulatory system, a wide variety of entities are engaged as both implementors and target markets or audiences.

To achieve Minnesota's water quality goals the pieces of Minnesota's stormwater management system need to be evaluated, reorganized, and reconnected. Theme I. Stormwater Management Systems considers how to better connect the components of the stormwater management system to make the system move Minnesota toward its water quality vision. The two Action Categories under the Management Systems theme look at:

- A. The dilemma of sustaining funding for the integrated components of the stormwater management system.
- B. The opportunities for integrating political (state and local) authorities with watershed and natural resource systems.

Theme II. Stormwater Research and Education

The science behind Minnesota's stormwater management system is, like all science, changing as we develop a better understanding of how actions relate to consequences. The term "Best Management Practice" (BMP) describes both technologies and management strategies. Stormwater regulation and education efforts are built upon our understanding of what is a BMP. Yet what is considered to be "best" is evolving as we monitor and test the effectiveness of BMPs to improve water quality and to address changing land development and land use management practices. The BMPs of 1990 are, in many cases, no longer considered appropriate strategies or technologies.

Theme II. Stormwater Research and Education addresses three elements of the research and education process which are critical to ultimately achieving water quality goals:

- A. What are the most effective means of providing technical assistance and education on documented best management practices to the people who are closest to on-the-ground stormwater management?
- B. How are new research efforts directed and results disseminated?
- C. What are the priorities for monitoring implementation efforts as they achieve, or fail to achieve, water quality goals?

These elements ultimately affect the efficacy and efficiency of Minnesota's stormwater management system. Within this theme, the SSC has identified actions that need to occur for research and education efforts to have the greatest positive impact on Minnesota's water quality goals.

Theme III. Stormwater Management Efficiencies

The reason Minnesota has a stormwater management system is to achieve Minnesota's water quality goals. Achieving water quality goals must, however, be done in recognition of limited resources and of other goals that can conflict with efforts to improve water quality. If funding and staffing is unlimited, meeting water quality goals would be straightforward. Minnesota must not only create a stormwater management system that meets water quality goals, Minnesota must create a system that we can afford.

Moreover, the stormwater management system does not operate in a policy and funding vacuum – Minnesota also has a need to create housing and jobs, to provide recreation and protect community character, and to protect or restore natural systems beyond those associated with water quality. Other regulatory efforts, incentives, and education programs sometimes appear to run at cross purposes to the goal of protecting water quality. The stormwater management system must fit into the mosaic of regulatory and education programs while still moving toward achieving water quality goals.

Theme III. Stormwater Management Efficiencies considers three elements of efficiency:

- A. Reducing duplication in regulatory requirements and conflicts between agency regulations.

- B. Coordinating required water and stormwater planning efforts and eliminating duplication and redundancy.
- C. Improving the efficiency of compliance and enforcement efforts, primarily at the local level.

The Action Themes are not intended to provide sufficient detail for taking action, but rather to recognize the broad SSC action priorities for meeting Minnesota water quality goals, and to demonstrate how more specific actions are grouped to achieve results. The Action Themes have substantial overlap but they help identify interrelationships between the next tier of the action hierarchy – Action Categories.

Action Categories

The SSC identified eight Action Categories that define a more specific scope of action for improving Minnesota’s stormwater management system. Each Action Theme has two or three Action Categories. The eight categories are:

Theme I. Stormwater Management Systems

Action Category I.A. *Create funding principles* and coordinate funding efforts.

Action Category I.B. *Identify the form and content* of a watershed-based statewide stormwater management process.

Theme II. Stormwater Research and Education

Action Category II.A. *Create* appropriate mechanisms to monitor and measure effort, progress, and environmental conditions.

Action Category II.B. *Coordinate research* efforts and disseminate research results.

Action Category II.C. *Link education and assistance* resources with the greatest needs.

Theme III. Stormwater Management Efficiencies

Action Category III.A. *Reduce conflicts and duplication* in regulatory requirements and standards consistent with consensus goals, objectives, and implementation priorities.

Action Category III.B. *Improve the efficiency* of stormwater planning processes.

Action Category III.C. *Improve the effectiveness and efficiency* of state and local stormwater compliance and enforcement entities to better meet stormwater management and water quality goals.

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As with the Action Themes, the Action Categories overlap one another. Action Category I.A. on funding principles, for instance, overlaps with all the other Action Categories. Action Category II.B, coordinating research, similarly overlaps with many of the other categories. Yet each category provides a focus for actions by the SSC and other agencies, stakeholders and participants in Minnesota's stormwater management system.

Each Action Category is described below in Section 5.

Action Items

The third tier of the Roadmap's hierarchy describes Action Items. To allow detailed prioritization and sequencing of actions, the SSC has identified a number of Action Items that relate to each of the eight Action Categories. The Action Items define discrete actions or products that need to be completed in order to meet the objective of the action category.

As with the Action Themes and Action Categories, many of the Action Items are inter-related. The Roadmap identifies priorities and sequencing considerations for the Action Items within each Action Category. Moreover, Action Items in one category may need to be completed before working on a high priority item in another category. The Roadmap therefore also identifies priorities and sequencing between Action Categories and the items that help define the category.

The Roadmap provides the following details for each Action Item:

- *Priority*: Which Item should be accomplished first, second, etc.
- *Readiness*: How ready the SSC and other stakeholders are to complete the item
- *Sequencing*: Based on priority and readiness, how Items should be sequenced
- *Responsible Parties*: Tasks and level of involvement of identified lead and secondary parties
- *Research and Data Needs*: Needs necessary to achieve the goal of the Action Category
- *Obstacles*: Possible obstacles to achieving the goal of the Action Items
- *Solutions*: Possible solutions to overcoming identified obstacles
- *Funding*: Sources and recipients of current funding, amounts, and additional resources needed

Each Action Items is described in detail below in Section 5.

Action Category I.A. Create funding principles and coordinate funding efforts.

1. Description of action category and action items.

Funding for stormwater research, planning, and implementation comes from a variety of sources. Each source of funding, each program, may have a different set of goals. The SSC needs to identify the common elements of funding goals and develop a strategy for better integration of funding around a consensus set of principles. **Action Category I.A.** includes the creation of a unified set of funding principles and coordination with funding agencies to apply the principles in coordinating funding priorities. The Action Category also suggests research into new funding sources and methods as public policy priorities evolve and new models for local funding become accepted. The following actions and outcomes define this Action Category:

- a. *Develop funding principles* that address: common goals and needs; the relationship between cost-causers and cost-payers; minimizing inter-generational inequities; balancing between project and administration funding; and improving partnership opportunities (e.g. leveraging private funds).
- b. *Identify short- and long-term strategic funding needs consistent with funding principles.*
- c. *Identify existing sources of stormwater funding in Minnesota* and the allocation of those funds to support existing stormwater activities. Identify potential gaps in funding such as activities listed in Municipal Separate Storm Sewer System (MS4) permit, Total Maximum Daily Load (TMDL) regulatory implementation, and other regulatory obligations.
- d. *Recommend changes in existing funding* based on the funding principles and strategic needs.
- e. *Identify potential new funding sources* and create a plan for obtaining the new/increased funding.
- f. *Identify opportunities and best practices to supplement local funding* methods that link operation and maintenance costs to stormwater generation sources.
- g. *Identify sources of research funding* and methods to link funding to statewide priorities.
- h. *Examine funding related to agricultural best management practices* and create a forest-stewardship like process for implementing agricultural BMPs.

2. Relationship to the SSC vision, goal, and principles.

Vision and Goal

The funding principles will provide guidance necessary to achieve the SSC's Vision of protecting and restoring Minnesota's waters. The funding principles and framework will allow stormwater management to be financially sound and effective, in the long-term, as described in the Goal.

Principles

Action Category I.A. reflects SSC Principle 7 -- *Ensuring equitable distribution of funding responsibilities and benefits*. The funding principles created through Action Category I.A. will reflect the ideal of fair and equitable funding upheld in SSC Principle 7.

3. Priorities and staging of products or actions.

Actions and products are ranked in priority order (which items need to be accomplished first), described in terms of how ready the SSC and other stakeholders are to complete the action or product, and what sequencing considerations are necessary to complete the task. Three components of readiness are described for each Item. The readiness elements are associated with Subsection 6 (obstacles). Sequencing considers the necessary order of the action items in addition to research and resource needs (Subsections 5 and 7).

Items I.A.a and I.A.b are short term actions because other items are dependent on their completion. However, item I.A.a must be completed first, so that the principles can be used to inform the creation of the funding framework. Item I.A.f can be started soon because it is ongoing and is not dependent on the completion of other items.

Item I.A.d is a mid-term action because it is dependent on the completion of the funding principles. Items I.A.e and f are also mid-term actions.

Priority	Action Item	Readiness			Approach & Sequencing
		<i>Organizational Commitment</i>	<i>Supporting Products</i>	<i>Level of Understanding</i>	
#1	I.A.a. Develop funding principles.	Medium. SSC and individual members are committed. We need interagency participation to reach agreement.	None needed.	Medium. Well understood within agencies, but little cross agency, state/local understanding exists.	Must be completed before other items.
#2	I.A.b. Identify strategic short- and long-term funding needs consistent with funding principles.	High. SSC and individual members are committed. Commitment needs to be renewed after I.A.a	Need funding principle examples. Prioritization of funding to be protected.	Low. Unclear form and content	Must be completed after Item I.A.a, but before the other items.

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Priority	Action Item	Readiness			Approach & Sequencing
		<i>Organizational Commitment</i>	<i>Supporting Products</i>	<i>Level of Understanding</i>	
#3	I.A.c. Identify existing sources of stormwater funding, existing allocation and gaps in funding	Medium. Commitment to goal exists, but we need to develop a process for state and locally funded entities.	Available budget information from identified state and local entities.	High. Understood by individual entities.	Must be completed before changes in funding allocations can be made (Item I.A.d.).
#4	I.A.d. Recommend changes in existing funding based on the funding principles and strategic needs.	Medium. Uncertainty of commitment of individual entities to reallocate funds. Commitment to the Principles and Framework will be the first step.	None needed.	Low. Need agreement on priority of activities to be funded.	Begin directly after the completion of Items I.A.a, I.A.b. and I.A.c.
#5	I.A.e. Identify potential new / increased funding sources and create a plan for obtaining funding.	Medium. Uncertainty of commitment of individual entities for new and increased funds.	None needed.	Low. Need to develop agreement on need for new and increased funding.	This item should be done in concert with Item I.A.d.
#6	I.A.f. Identify opportunities, best practices to supplement local funding methods linking O&M costs to stormwater generation sources.	High. SSC and individual members are committed. There is strong desire for information at all levels.	Info on opportunities needs to be developed. Clean Water Legacy Act; Various grant funding programs.	Medium. Well understood.	Dependent on research or inventory of local funding models.
#7	I.A.g. Identify methods to link research funding to statewide priorities.	Medium. SSC should be involved once Items I.A. c., d. and e. are completed.	None needed.	Medium. Research needs are understood. Funding sources and methods to coordinate and collaborate are not clear.	Begin after to completion of Items I.A.a and I.A.b.

Priority	Action Item	Readiness			Approach & Sequencing
		<i>Organizational Commitment</i>	<i>Supporting Products</i>	<i>Level of Understanding</i>	
#8	I.A.h. Examine funding related to agricultural BMPs.	Low. Many barriers on multiple fronts. Commitment needs to be developed. Ag entities need to be engaged. However, there is strong desire at state and local levels to address ag. non-point sources.	Many supporting products will be needed.	Medium. Not well understood. Understanding of Ag BMPs is better in rural areas.	May need to be led by the Clean Water Council with cooperation/ support from the SSC. Consider leadership issue when creating the strategic funding framework.

4. Entities responsible for taking action.

Achieving Action Category I.A. will require participation from a number of entities. Their tasks and level of involvement are summarized in the table below. Primary parties take the lead in the process or action. Secondary parties are critical participants, but not responsible for leading.

Action Item	Responsible Parties	
	<i>Primary Parties</i>	<i>Secondary Parties</i>
I.A.a. Develop funding principles.	<ul style="list-style-type: none"> • SSC members who receive funding and provide funding. • SSC, MPCA, BWSR, conservation districts 	Neutral third-party facilitator needed. <ul style="list-style-type: none"> • LGUs, WMOs/WDs, SWCDs, MDA, MDH, DNR, MnDOT
I.A.b. Identify strategic short- and long-term funding needs.	<ul style="list-style-type: none"> • SSC members who receive funding and provide funding. • SSC, MPCA, BWSR 	Neutral third-party facilitator needed. <ul style="list-style-type: none"> • LGUs, WMOs/WDs, SWCDs, MDA, MDH, DNR, MnDOT
I.A.c. ID existing sources of funding, existing allocation and gaps in funding	<ul style="list-style-type: none"> • SSC members who receive funding and provide funding 	Neutral third-party facilitator needed.
I.A.d. Recommend changes in existing funding based on the funding principles and strategic needs.	<ul style="list-style-type: none"> • SSC members who receive funding and provide funding. • SSC, MPCA, BWSR 	Neutral third-party facilitator needed. <ul style="list-style-type: none"> • LGUs, WMOs/WDs, SWCDs, MDA, MDH, DNR, MnDOT

Action Item	Responsible Parties	
	Primary Parties	Secondary Parties
I.A.e. Identify potential new / increased funding sources.	<ul style="list-style-type: none"> • SSC members who receive funding and provide funding. 	Neutral third-party facilitator needed.
I.A.f. Identify opportunities, best practices to supplement local funding.	<ul style="list-style-type: none"> • SSC members who receive funding and provide funding • BWSR, LGUs, WMOs/WDs, SWCDs • Clean Water Council 	Neutral third-party facilitator needed. <ul style="list-style-type: none"> • SSC Workgroup • MPCA • METC
I.A.g. Identify methods to link research funding to statewide priorities.	<ul style="list-style-type: none"> • SSC members who receive funding and provide funding. • SSC, SSC Research Workgroup, MPCA 	Neutral third-party facilitator needed. <ul style="list-style-type: none"> • BWSR, LGUs, WMOs/WDs, SWCDs, MnDOT
I.A.h. Examine funding related to agricultural BMPs.	<ul style="list-style-type: none"> • Agricultural sector representatives • Clean Water Council • SSC members • MDA, MPCA, BWSR 	Neutral third-party facilitator needed. <ul style="list-style-type: none"> • NGOs, SWCD's, LGUs, WMOs/WDs, SWCDs

5. Research and data needs.

Several research and data needs are identified in the action items:

- Stormwater infrastructure needs survey (SWINS) identifies needs and should be extended to the level of investment by all levels of government on stormwater.
- Identifying stormwater spending by all entities and infrastructure needs at all levels will enable us to evaluate whether and how to re-allocate spending, as discussed in Item I.A.d.
- Existing sources of funding and existing allocation of funds need to be collected and organized.
- To accomplish Item I.A.f conduct a survey and evaluation of current local funding methods.
- To accomplish Item I.A.g conduct a survey of how state agencies link research funding to state research priorities in other areas such as health, education, etc.
- Item I.A.h discusses an application of an existing funding model (forest-stewardship) to a new venue (agricultural BMPs). Other states may have implemented similar programs already.

6. Obstacles to Action Items and possible solutions

Obstacles to achieving Action Category I.A. exist and must be overcome. The SSC has identified obstacles to each item within the category and possible solutions to those obstacles.

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Action Item	Obstacle	Solution
I.A.a. Develop funding principles.	<ul style="list-style-type: none"> • Commitment of time from the SSC. • Need for a neutral facilitator. • Need knowledgeable individuals from all levels of government involved in discussion • No previous effort – new territory • Sensitive subject – involves state and local tax impacts • Lack of commitment to stormwater management may influence individual opinion of funding responsibility. • Lack of existing staff and resources. 	<ul style="list-style-type: none"> • Schedule the time needed. • Agree on process to select and hire neutral facilitator. • Identify funding source and allocate resources. • Carefully select participants • Obtain thorough review from others during process • Complete literature search for past similar efforts
I.A.b. Identify strategic short- and long-term funding needs.	<ul style="list-style-type: none"> • Agreement on what is a strategic funding framework. • Agreement on what needs have funding priority. • Commitment of time. 	<ul style="list-style-type: none"> • Develop working partnerships that involve all affected players. • Solicit possible examples. • Schedule the time needed.
I.A.c. ID existing sources of funding, existing allocation and gaps in funding	<ul style="list-style-type: none"> • State and local government entities may not want to share funding info. • Agreement on what should be funded in order to identify gaps. • Collecting and organizing a large volume of information. • Resources (money and people) 	<ul style="list-style-type: none"> • Stakeholder-driven process with neutral third party facilitator. • Hire a contractor to collect and organize information. • Work with entities to commit to principles.
I.A.d. Recommend changes in existing funding based on the funding principles and strategic needs.	<ul style="list-style-type: none"> • Turf protection and lack of cooperation. • Resources (money and people). • May need legislative changes. 	<ul style="list-style-type: none"> • Stakeholder-driven process with neutral third party facilitator. • Encourage entities to commit to principles. • Lobby state agency boards and law makers.
I.A.e. Identify potential new / increased funding sources.	<ul style="list-style-type: none"> • Resources (money and people) • Ideas are easy, implementing them are hard. 	<ul style="list-style-type: none"> • Entities need to commit. • Stakeholder-driven process with neutral third party facilitator.

Action Item	Obstacle	Solution
I.A.f. Identify opportunities, best practices to supplement local funding.	<ul style="list-style-type: none"> Identifying opportunities. Selecting best practice. Lack of resources. Need strong LGU involvement Need metro and outstate watershed district involvement. 	<ul style="list-style-type: none"> Survey and evaluate local funding methods. Agree on selection criteria. Develop programs that supplement what is already being done on the local level. Allocate resources Involve LMC & MN Stormwater Coalition Coordinate with Mn Assoc. of Watershed Districts
I.A.g. Identify methods to link research funding to statewide priorities.	<ul style="list-style-type: none"> Identify various methods to link priorities and research funding Parochial view of LGUs Resources Challenge to agree on “Statewide priorities.” Research funding is in constant state of flux – need consistent funding source to plan progress. Priorities change quickly – need process to respond & reassess annually. 	<ul style="list-style-type: none"> Survey state agencies to find out how they link research funding to research priorities. Educate local leaders on the relationship between state goals and local efforts. Need representative group to identify needs and agree on priorities. Establish a Stormwater Research Council – with a charge for this task.
I.A.h. Examine funding related to agricultural BMPs.	<ul style="list-style-type: none"> Willingness of the Agricultural Community to participate. Ability to communicate concerns and issues in a positive way. Role of the Clean Water Council regarding the agriculture non-point issues. Need knowledgeable participants Need Federal involvement Need strong Watershed District/Watershed Management Organization/ SWCD involvement 	<ul style="list-style-type: none"> Open dialogue with ag community on the issue. Stakeholder-driven process with neutral third party facilitator. Engage the Clean Water Council to gauge willingness to lead or co-lead. Involve NRCS, WMOs/WDs, SWCDs

7. Resource needs

Accomplishing the Action Items within this category will require funding, staffing, and sometimes other resources. The table below provides a sense of existing and required resources for each item. The table identifies whether the item currently has resources assigned to that task and what type of resources, and whether additional resources are likely to be needed and an approximation of the magnitude of the new resources needed.

Action Item	Currently Funded? If so, source of funding?		Resource Amount/ Type	Additional resources needed?	Range of needed increase
	Source	Recipient			
I.A.a. Develop funding principles.	Not funded	N/A	Staffing commitments from SSC members	Yes Staff time.	Low – if people resources are committed. Possible consultant
I.A.b. Identify strategic short- and long-term funding needs.	Not funded	N/A	Staffing commitments from SSC members	Yes Staff time; partnership	Low – if people resources are committed. Possible consultant
I.A.c. ID existing sources of funding, existing allocation and gaps in funding	Not funded	N/A	Staffing commitments; Third party facilitator Contractor	Yes	Medium – need for facilitator and contractor in addition to staff
I.A.d. Recommend changes in existing funding based on the funding principles and strategic needs.	Not funded	N/A	Staffing commitments from SSC members	Yes Educate/ lobby at decision-making level	Low – if people resources are committed.
I.A.e. Identify potential new / increased funding sources.	Not funded	N/A	Staffing commitments from SSC members	Yes	Low – if people resources are committed.
I.A.f. Identify opportunities, best practices to supplement local funding.	Not funded	N/A	Staffing commitments from SSC members	Yes	Low – if people resources are committed
I.A.g. Identify methods to link research funding to statewide priorities.	LCCMR	U. of Minnesota	Staffing commitments from SSC members	Yes	Low – if people resources are committed

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I.A.h. Examine funding related to agricultural BMPs.	319, Clean Water Legacy Act, BWSR	MDA WMOs WDs SWCDs LGUs NRCS	A small part of existing staff responsibility in several agencies.	Yes	Med/Hi – multiple implementation fronts
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8. Related policies or programs that may need to be revised.

Completing this Action Category may require changes to existing programs or policies. Because the funding principles should be applied consistently, all water related programs are relevant to this action category.

Action Category I.B. Identify the form and content of a watershed-based statewide stormwater management process.

1. Description of a Action category and action items.

Achieving the SSC vision requires an effective blending of incentives, education, ordinances, zoning and enforcement between governmental units on a watershed basis as well as political basis. Political boundaries do not conform to watershed drainages making basin management a multi-jurisdictional necessity. Secondly, a given municipality or county may contribute to more than one watershed drainage, and hence, have different watershed management goals and requirements. **Action Category I.B.** examines how an emphasis on watershed-based processes can be integrated into the variety of watershed and non-watershed based entities that oversee stormwater management. The actions to create systemic change include:

- a. *Set principles* that will guide the establishment of a watershed-based stormwater management framework. The principles should guide integrating watershed perspectives with local government stormwater management, while recognizing varying relationships between LGUs and WMOs/WDs, SWCDs and varying LGU capacity.
- b. *Define an appropriate scale* for a watershed focus – subwatersheds, districts, basins – to best integrate local regulatory entities. Recognize different aquatic eco-regions and different assimilative capacities in defining the appropriate watershed focus. Recognize substantial differences between watersheds across the state in terms of area and tax base.
- c. *Identify the “soft factors” (relationships, cooperative approaches, flexibility in regulatory administration, etc.)* that make a watershed-based approach successful. Circumstances in which local decisions are made vary widely across the state. Established larger communities and smaller rapid growth cities and townships may have different approaches (e.g. retrofitting versus new developments).
- d. *Consider improvements* that would streamline stormwater management into existing local governance structures, including WMOs, WDs, and county-based structures. Identify how the existing organizational structures can be used in an improved stormwater framework.
- e. *Identify high level* governmental and stakeholder leadership structures. Identify leaders and decision-makers whose support is necessary in order for the watershed-based system to be implemented. Recognize that some high level leaders will resist the change while others may support it.
- f. *Identify methods for integrating* a watershed-based framework with a local government-based regulatory structure. Evaluate successful examples in Minnesota and elsewhere in the country.
- g. *Implement the agreed* upon watershed-based stormwater management approach consistent with the principles.

2. Relationship to the SSC vision, goal, and principles.

Vision and Goal

By striving toward the creation of a watershed-based stormwater management process, the SSC will improve the ability of Minnesotans to view stormwater as a resource and protect our lakes, rivers, streams, wetlands and groundwater, as stated in the Vision. The watershed-based stormwater management process must be created “using expertise from a diverse group of stakeholders” as recommended in the Goal.

Principles

The watershed approach to stormwater management described in Action Category I.B. will only be successful so far as it provides “an efficient, understandable, and equitable implementation framework,” as described in Principle 2 -- *Building an efficient, understandable, and equitable implementation framework*.

The SSC recognizes the importance of addressing regional variability in the watershed process, as discussed in Principle 3 – *Using a watershed approach that recognizes regional variability*. The watershed process will respond to regional variability by choosing appropriate scales of focus for different regions and by identifying the “soft factors” that make a watershed process work in different regions of the state.

3. Priorities and staging of products or actions.

Actions and products are ranked in priority order (which items need to be accomplished first), described in terms of how ready the SSC and other stakeholders are to complete the action or product, and what sequencing considerations are necessary to complete the task. Three components of readiness are described for each Item. The readiness elements are associated with Subsection 6 (obstacles). Sequencing considers the necessary order of the action items in addition to research and resource needs (Subsections 5 and 7).

Because some legislation on watershed-based management has already been introduced, the category is a priority and work on the action items should begin according to a relatively short-term schedule.

Setting guiding principles for a watershed framework, Item I.B.a., is the priority action and should be pursued in the short-term.

Priority	Action Item	Readiness			Approach & Sequencing
		<i>Organizational Commitment</i>	<i>Supporting Products</i>	<i>Level of Understanding</i>	
#1	I.B.a Set principles to guide the establishment of a watershed-based stormwater framework.	Low. While there is recognition that developing a watershed-based system is necessary, there is minimal organization commitment.	Existing process for planning and implementing as set in 103B & 103D or 103C. Watershed Approach Study Report.	Low. Need a facilitator with understanding of issues	Must be completed first and used as a filter for ideas and approaches raised in following tasks.

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Priority	Action Item	Readiness			Approach & Sequencing
		<i>Organizational Commitment</i>	<i>Supporting Products</i>	<i>Level of Understanding</i>	
#2	I.B.b. Define an appropriate scale for a watershed focus.	Medium. Little existing commitment to change in scale of management, but recognized as issue for state-wide approach	National and international watershed management research can give some guidance.	Low. alternative scales, other than WMOs/WDs, and counties, have not been evaluated	Needs to be considered after (a) and before next items. This will be part of I.B.f.
#3	I.B.c. Identify “soft factors” that make a watershed-based approach successful.	Low. No existing commitment	None	Medium. Need study – some analysis has been completed here and in other states.	Can be completed simultaneously using principles developed in (a), (b), and (c). Soft factors may also be identified during I.B.f.
#4	I.B.d. Consider improvements that would streamline existing structures.	Medium. Significant vested interest in existing structures – will be resistant to change. Some parties are committed to change.	SSC Roadmap, MPCA SW program plan, MEI Land & Water Policy Integration Project, Citizens League Water Policy Study Committee	Low. Needs principles from (a) to apply against existing government structures	Needs to follow (b) and evaluate how existing structures fit with proposed scale and if changes need to be made. This will be an integral part of ICc & ICf. May require legislation to fully realize benefits.
#5	I.B.e. Identify a high level governmental and stakeholder leadership structure.	Low. No existing agency commitment exists	Survey and analysis of MN and other state operations	Medium. Little analysis of leadership structure and decision dynamics has been completed in MN – expertise exists in other states and universities.	Can be completed simultaneously using principles developed in (a), (b), and (c). Need strong representation from agency policy makers and key people from LGUs, cities, WMOs/WDs, SWCDs and counties.

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Priority	Action Item	Readiness			Approach & Sequencing
		<i>Organizational Commitment</i>	<i>Supporting Products</i>	<i>Level of Understanding</i>	
#6	I.B.f. Identify methods for integrating watershed and local government based structures.	Medium. Existing interest in subject, but no existing commitment except for some effort in LID program.	Existing LGU examples and NEMO (local and national) products. Center for Watershed Protection products.	Medium. Existing Watershed Districts and WMOs experience as well as LID experience should help.	Can be completed simultaneously using principles developed in (a), (b), and (c).
#7	I.B.g Implement watershed-based approach based on principles.	Medium. Significant vested interest in existing structures – will be resistant to change. Some parties are committed to change.	None	Medium. Need study to develop best approach to use with agencies and local governments– some analysis has been in other states.	Last step

4. Entities responsible for taking action.

Achieving Action Category I.B. will require participation from a number of entities. Their tasks and level of involvement are summarized in the table below. Primary parties take the lead in the process or action. Secondary parties are critical participants, but not responsible for leading.

BWSR and the MPCA will have primary responsibility for identifying the form and content of a watershed-based stormwater management process. WMOs/WDs, SWCDs, counties, local governments may also be involved.

Action Item	Responsible Parties	
	<i>Primary Parties</i>	<i>Secondary Parties</i>
I.B.a Set principles for a stormwater framework.	<ul style="list-style-type: none"> • BWSR • MPCA • SSC 	<ul style="list-style-type: none"> • LGUs, state agencies, METC • WMOs/WDs, SWCDs
I.B.b. Define an appropriate scale for a watershed focus.	<ul style="list-style-type: none"> • BWSR • MPCA • SSC 	<ul style="list-style-type: none"> • LGUs, state agencies, METC • WMOs/WDs, SWCDs

Action Item	Responsible Parties	
	Primary Parties	Secondary Parties
I.B.c. Identify “soft factors” that make a watershed-based approach successful.	<ul style="list-style-type: none"> • BWSR • MPCA • SSC 	<ul style="list-style-type: none"> • LGUs, state agencies, METC • WMOs/WDs, SWCDs
I.B.d. Consider improvements to streamline existing structures.	<ul style="list-style-type: none"> • BWSR • MPCA • SSC 	<ul style="list-style-type: none"> • LGUs, state agencies, METC • WMOs/WDs, SWCDs
I.B.e. Identify a high level governmental and stakeholder leadership structure.	<ul style="list-style-type: none"> • BWSR • MPCA • SSC 	<ul style="list-style-type: none"> • LGUs, state agencies, METC • WMOs/WDs, SWCDs
I.B.f. Identify methods for integrating watershed and local government based structures.	<ul style="list-style-type: none"> • BWSR • MPCA • SSC 	<ul style="list-style-type: none"> • LGUs, state agencies, METC • WMOs/WDs, SWCDs
I.B.g Implement watershed-based approach based on principles.	<ul style="list-style-type: none"> • BWSR • MPCA 	<ul style="list-style-type: none"> • LGUs and their associations (LMC, AMC, AMT, etc.)

5. Research and data needs.

A number of action items will require a review of watershed management efforts within Minnesota to identify specific data including the following:

- Item I.B.b – Factors that determine the scale of watershed efforts and the relationship between scale of focus and success. Factors that could influence watershed scale include population, land use, and eco-region. Appropriate watershed scale could change spatially and temporally across the state.
- Item I.B.d – “Soft factors” that determine the success of a program.
- Item I.B.f – Methods of integrating watershed-based programs within local government structures.

In general, the SSC should develop a detailed understanding of how watershed management is carried out within the metropolitan area and throughout greater Minnesota and the differences between these two regions.

6. Obstacles to Action Items and possible solutions

Obstacles to achieving Action Category I.B. exist and must be overcome. We have identified obstacles to each item within the category and possible solutions to those obstacles.

Action Item	Obstacle	Solution
I.B.a Set principles for a stormwater framework.	<ul style="list-style-type: none"> Resources Understanding of issues/options Representation of multiple interests Lack of program leadership commitment and priority The groups that need to agree about this all have own agendas. Turf protection, Legal requirements 	<ul style="list-style-type: none"> Allocate resources Do research into watershed approach studies Appoint workgroup members that represent various interests Put individual agendas aside and work together Consult Watershed Report Leverage the MPCA Commissioner's Office's stated commitment to a watershed approach
I.B.b. Define an appropriate scale for a watershed focus.	<ul style="list-style-type: none"> Resources Need analysis of existing structures Mismatch between political boundaries and watershed boundaries. 	<ul style="list-style-type: none"> Allocate resources Complete study of successes and failures of existing structures
I.B.c. Identify "soft factors" that make a watershed-based approach successful.	<ul style="list-style-type: none"> Resources Need clarification of issues in different regions of the state 	<ul style="list-style-type: none"> Allocate resources Study identifying regional issues and obstacles with approaches developed in (a), (b), and (e).
I.B.d. Consider improvements for streamlining existing structures.	<ul style="list-style-type: none"> Resources Lack of thorough understanding of options Need for rule and statute changes. Overwhelming complexity Legal requirements 	<ul style="list-style-type: none"> Allocate resources Complete study of optional scales and issues Get buy-in early on from LGUs, WMOs/WDs environmental groups, state agencies. Have partners push through legislature. Hire third party facilitator
I.B.e. Identify a high level governmental and stakeholder leadership structure.	<ul style="list-style-type: none"> Resources Lack of understanding and documentation of leadership structures, issues and alternatives 	<ul style="list-style-type: none"> Allocate resources Study of leadership dynamics, issues, alternatives

Action Item	Obstacle	Solution
I.B.f. Identify methods for integrating watershed and local government based structures.	<ul style="list-style-type: none"> Resources Local government resistance to interference Need understanding of priority regulatory issues There appears to be some aversion to using what has been successful and already in place. 103B, 103D and maybe 103C. 	<ul style="list-style-type: none"> Allocate resources Analyze options, solutions, incentives for overcoming resistance. Analyze/identify priority watershed regulatory issues & conflicts or inconsistencies at local levels. Determine where it fits in the overall priority for the agencies. It seems to be a priority for most LGUs to achieve efficiency and greater effectiveness of stormwater.
I.B.g Implement watershed-based approach based on principles.	<ul style="list-style-type: none"> Resources Understanding of issues/options Representation of multiple interests Lack of program leadership commitment and priority Local government and agency resistance to change & interference Legal requirements 	<ul style="list-style-type: none"> Allocate resources Analyze options, solutions, and incentives for overcoming resistance. Develop governor and legislative support for legislation developed in (a) through (f).

7. Resource needs

Accomplishing the Action Items within this category will require funding, staffing, and sometimes other resources. The table below provides a sense of existing and required resources for each item. The table identifies whether the item currently has resources assigned to that task and what type of resources, and whether additional resources are likely to be needed and an approximation of the magnitude of the new resources needed.

Action Item	Currently Funded? If so, source of funding?		Resource Amounts	Additional resources needed?	Range of needed increase
	<i>Source</i>	<i>Recipient</i>			
I.B.a Set principles for a stormwater framework.	No	N/A	Staffing Workgroup Possible Consultant	Yes, but could be managed via reallocated staff resource	\$0 for existing staff to \$50,000 for new staff or consultant

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Action Item	Currently Funded? If so, source of funding?		Resource Amounts	Additional resources needed?	Range of needed increase
	Source	Recipient			
I.B.b. Define an appropriate scale for a watershed focus.	No	N/A	Staffing Workgroup Possible Consultant	Yes	\$0 for existing staff to \$10,000 for new staff or consultant
I.B.c. Identify “soft factors” that make a watershed-based approach successful.	No	N/A	Staffing	Yes	Low- allocate existing staff & rely on existing research
I.B.d. Consider improvements for streamlining the existing structures.	No	N/A	Staffing Workgroup Possible Consultant	Yes	\$0 for existing staff time to \$20,000 for consultant
I.B.e. Identify a high level governmental and stakeholder leadership structure.	No	N/A	Staffing	Yes	\$0 for existing staff time to \$10,000 for consultant
I.B.f. Identify methods for integrating watershed and local government based structures.	Partial funding in MPCA LID Program activities	LGUs WMOs WDs	Staffing	Yes	\$0 for existing staff time to \$20,000 for consultant
I.B.g Implement watershed-based approach according to principles.	No	N/A	Staffing, Agency and LGU Lobbying support, Long term agency implementation support	Yes, but some of the ongoing support could be existing staff resources in MPCA and BWSR	\$200,000 (Legislation and rule adoption \$100,000/yr. (Training and education) \$150,000/yr. (Implementation support))

8. Related policies or programs that may need to be revised.

Completing this Action Category may require changes to existing programs or policies. The following is a preliminary list of related programs and policies.

- NPDES MS4 Permit must be considered because some responsibilities of MS4 communities may be shared with watershed organizations.
- Metropolitan area surface water management plans (created by WMOs/WDs).

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- Local water management plans, based on the WMO/WD's surface water plan in the metropolitan area and created by counties in Greater Minnesota.
- TMDL and impaired waters policy – Currently, MS4s address TMDLs in their SWPPPs, but implementation planning will begin soon for a variety of entities.
- Nondegradation Rule – applies to a specific group of MS4s.

Action Category II.A. Create appropriate mechanisms to monitor and measure effort, progress, and environmental conditions.

1. Description of action category and action items.

Achieving the SSC vision and goals require an understanding of the effectiveness and costs of available BMPs, ordinances, education efforts, incentives, and enforcement. **Action Category II.A.** identifies the specific needs to monitor successes and failures and consider societal costs and benefits. Measuring effectiveness of existing technologies and practices requires the following actions:

- a. *Guide research to fill the knowledge gaps* in regard to performance of best management practices (BMPs), incentives, education, ordinances and enforcement and the full range of costs associated with different approaches to stormwater management.
- b. *Guide research and monitoring efforts* to fill the knowledge gaps in regard to watershed/basin management and water quality standards (i.e. mass balances of water and pollutants) recognizing the interrelationship between stormwater and the state's impaired waters effort.
- c. *Improve monitoring programs* in order to document successes and failures and identify performance indicators that can allow routine evaluation of conditions and progress toward goals.
- d. *Develop consensus* on the appropriateness, design, and costs of BMPs, ordinances, education, incentives, and enforcement.
- e. *Identify ordinance standards* for (1) Twin Cities and (2) Greater Minnesota for growing and established urban areas.
- f. *Develop an appropriate credit system* that reflects societal costs and benefits as well as environmental costs.
- g. *Identify the key potential effects of climate change* on stormwater management.

2. Relationship to the SSC vision, goal, and principles.

Vision and Goal

Monitoring environmental conditions will lead to better protection of Minnesota's water resources, thereby allowing the Vision to be achieved. Designing mechanisms to ensure appropriate monitoring is an important step toward achieving the Goal of creating a long-term stormwater management effort.

Principles

Action Category II.A. upholds Principles 2, 4, 5, 6 and 8. The monitoring mechanism described in Action Category II.A. allows for efficient and equitable implementation of the stormwater management goals, as recommended in Principle 2 – *Building an efficient, understandable, and equitable implementation framework*. Principle 4 – *Addressing water quality and quantity issues* – will also be implemented because monitoring environmental conditions will enable us to identify and address water quality and quantity issues. Identifying

water equality issues through monitoring will also enable us to prioritize restoration and conservation efforts as we strive for healthy and sustainable ecosystems, as described in Principle 5 – *Striving for healthy and sustainable ecosystems*. Principle 6 -- *Establishing monitoring, and measurement criteria and protocols to evaluate the effectiveness of implementation efforts* – will clearly be implemented by Action Category II.A. By monitoring environmental conditions, we will be able to demonstrate the results of our efforts to manage stormwater as a vital resource, as recommended in Principle 8 – *Managing stormwater as a vital resource*.

3. Priorities and staging of products or actions.

Actions and products are ranked in priority order (which items need to be accomplished first), described in terms of how ready the SSC and other stakeholders are to complete the action or product, and what sequencing considerations are necessary to complete the task. Three components of readiness are described for each Item. The readiness elements are associated with Subsection 6 (obstacles). Sequencing considers the necessary order of the action items in addition to research and resource needs (Subsections 5 and 7).

Items II.A.a, .b, and .c have already begun, and can be completed in the short-term. Item II.A.c is an on-going activity.

As consensus will be difficult to achieve, Item II.A.d is a mid-term action. Item II.A.f will be a long-term action - we may only be able to recognize the effects of climate change retrospectively.

Priority	Action Item	Readiness			Approach & Sequencing
		<i>Organizational Commitment</i>	<i>Supporting Products</i>	<i>Level of Understanding</i>	
#1	II.A.a Fill the knowledge gaps about BMPs, performance standards, and the costs.	High. The University of Minnesota is committed and moving forward.		Moderate: Improved standardization of data crunching	Already begun.
#2	II.A.b. Fill the knowledge gaps in watershed/basin management and water quality standards.	High: Being focused on by all levels of government		High. We need to integrate CWLA basin monitoring activity, e.g., look at eco-regions, and delivery ratios	Already begun.

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Priority	Action Item	Readiness			Approach & Sequencing
		<i>Organizational Commitment</i>	<i>Supporting Products</i>	<i>Level of Understanding</i>	
#3	II.A.c. Improve monitoring programs and identify performance indicators.	High. Metro-wide monitoring is underway.	A group needs to commit to permanently house the BMP monitoring data and the assessment software needs an upgrade.	Moderate: Still need to understand how O&M requirements will be met	Already begun.
#4	II.A.d. Develop consensus on the appropriateness, design, and costs of BMPs.	Medium. This is a part of the UM activity mentioned in #1 above. Accomplishing will require a long-term commitment.		Medium: Diverse geology/soils are understood but more work needs to be done on defining consensus approaches	Long-term activity.
#5	II.A.e. Identify design and ordinance standards.	Low level of commitment and understanding	Products exist from various sources, but not organized or catalogued as needed	Low	Not dependent on any other Action Items, could be addressed concurrently with I.A.a.
#6	II.A.f. Develop an appropriate credit system that reflects societal costs and benefits.	Low. Needs to move forward but there has been no activity.	The CWC initiative to develop a basic set of BMPs that everyone can use can be an element of this approach	Low: There has been no focus on this topic	Yet to be determined
#7	II.A.g. Identify the key potential effects of climate change on stormwater management.	High. Moving forward with NOAA contract funded by 7 mid-western states to update TP 40		Low	Long-term research activity.

4. Entities responsible for taking action.

Achieving Action Category II.A. will require participation from a number of entities. Their tasks and level of involvement are summarized in the table below. Primary parties take the lead in the process or action. Secondary parties are critical participants, but not responsible for leading.

The MPCA and the University of Minnesota will lead the effort to create appropriate mechanisms to monitor and measure effort, progress, and environmental conditions. The Local Road Research Board could play a primary role because they will be trusted by local implementers. Watershed districts and local units of government will also be involved. With proper funding, many different entities could do the research.

Action Item	Responsible Parties	
	Primary Parties	Secondary Parties
II.A.a Fill the knowledge gaps about BMPs, performance standards, and the costs.	<ul style="list-style-type: none"> • U of M • SSC 	<ul style="list-style-type: none"> • Other states • EPA
II.A.b. Fill the knowledge gaps in watershed/basin management and water quality standards.	<ul style="list-style-type: none"> • MPCA 	<ul style="list-style-type: none"> • SSC • CWC
II.A.c. Improve monitoring programs and identify performance indicators.	<ul style="list-style-type: none"> • WMOs/WDs • MPCA 	<ul style="list-style-type: none"> • Cities and counties
II.A.d. Develop consensus on the appropriateness, design, and costs of BMPs.	<ul style="list-style-type: none"> • U of M 	<ul style="list-style-type: none"> • Engineering consultants
II.A.e. Identify design and ordinance standards.	<ul style="list-style-type: none"> • LGUs • WMOs/WDs • SSC • MPCA • DNR 	<ul style="list-style-type: none"> • BWSR • METC
II.A.f. Develop an appropriate credit system that reflects societal costs and benefits.	<ul style="list-style-type: none"> • CWC • MPCA • LGUs • WMOs/WDs 	
II.A.g. Identify the key potential effects of climate change on stormwater management.	<ul style="list-style-type: none"> • NOAA – 9 Midwest states are updating Technical Paper #40 	

5. Research and data needs.

Several research needs are called out or suggested by the action items:

- a. Measuring and monitoring the relationship between stormwater management and water quality throughout a watershed (Item II.A.b) is an on-going research effort.
- b. The range of performance indicators available should be researched in order to identify the most appropriate as recommended in Item II.A.c.
- c. Research on BMP credit systems that have been implemented in other states, in order to move forward on Item (e).
- d. Comprehensively analyze the Met Council stream database to assess the effects of urbanization, ongoing stormwater management efforts, climate change effects, and the rural/urban gradient to assess urban and agricultural impacts to water quality.
- e. Climate change research should be ongoing (II.A.f), so as to adapt regulations to evolving climatic events.

6. Obstacles to Action Items and possible solutions

Obstacles to achieving Action Category II.A. exist and must be overcome. We have identified obstacles to each item within the category and possible solutions to those obstacles.

Action Item	Obstacle	Solution
II.A.a Fill the knowledge gaps about BMPs, performance standards, and the costs.	<ul style="list-style-type: none"> • Synthesizing data from national sources • Lack of research on Met Council stream data to assess BMP effectiveness • Implementation often occurs w/o research and assessment procedures 	<ul style="list-style-type: none"> • Establish a multi-agency, multi-interest research council to identify research needs and funding • Improve technology transfer for interstate and EPA sources of information. • Conduct research on BMPs based on Met Council database, augmented with other regional databases. • Research on BMP performance should be linked to implementation
II.A.b. Fill the knowledge gaps in watershed/basin management and water quality standards.	<ul style="list-style-type: none"> • Data management and storage and updated software assessment tools 	<ul style="list-style-type: none"> • Find a home for inventory management

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Action Item	Obstacle	Solution
II.A.c. Improve monitoring programs and identify performance indicators.	<ul style="list-style-type: none"> Standardizing protocols and databases Existing sources of monitoring data have not been fully analyzed. 	<ul style="list-style-type: none"> Better coordination/standardization between parties By analyzing existing sources of monitoring data we would gain insight on how to improve monitoring protocols.
II.A.d. Develop consensus on the appropriateness, design, and costs of BMPs.	<ul style="list-style-type: none"> Synthesizing data from national sources and pulling the parties together 	<ul style="list-style-type: none"> Better coordination/standardization between parties
I.A.e. Identify design and ordinance standards.	<ul style="list-style-type: none"> Cities will not be able to meet water quality standards with structural BMPs alone. Resource constraints 	<ul style="list-style-type: none"> Include source reduction efforts (sources include road salt, landscape nutrients, erosion) in implementation efforts. Adequate funding
II.A.f. Develop an appropriate credit system that reflects societal costs and benefits.	<ul style="list-style-type: none"> Assembling the parties to undertake the task 	<ul style="list-style-type: none"> Provide background information to move issue forward in consistent manner
II.A.g. Identify the key potential effects of climate change on stormwater management.	<ul style="list-style-type: none"> Still need national leadership to detect broad patterns 	<ul style="list-style-type: none"> Understand the confounding elements

7. Resource needs

Accomplishing the Action Items within this category will require funding, staffing, and sometimes other resources. The table below provides a sense of existing and required resources for each item. The table identifies whether the item currently has resources assigned to that task and what type of resources, and whether additional resources are likely to be needed and an approximation of the magnitude of the new resources needed.

Action Item	Currently Funded? If so, source of funding?		Resource Amounts/ Type	Additional resources needed?	Range of needed increase
	Source	Recipient			
II.A.a Fill the knowledge gaps about BMPs, performance standards, and the costs.	Yes, U of M and MPCA and partners leveraging funds	U of M and MPCA and partners leveraging funds	\$2MM	Need to keep the funding stable	Undetermined at this time

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Action Item	Currently Funded? If so, source of funding?		Resource Amounts/ Type	Additional resources needed?	Range of needed increase
	Source	Recipient			
II.A.b. Fill the knowledge gaps in watershed/basin management and water quality standards.	No, funding for integrated activity or needed software		Not funded at this time	\$125K/Y	Undetermined at this time
II.A.c. Improve monitoring programs and identify performance indicators.	Yes, local revenue and general fund.	State, WMOs/WDs, METC, counties		TBD	Undetermined at this time
II.A.d. Develop consensus on the appropriateness, design, and costs of BMPs.	Yes, from LCCMR and/or CWLA/CWC	U of Minnesota	\$400K/Y	Same amount for 10 years (3 years into the activity)	Undetermined at this time
II.A.e. Identify design and ordinance standards.	Yes, LID through MPCA	LGUs WMOs/WDs	>\$50 K	Additional \$50 K	Undetermined at this time
II.A.f. Develop an appropriate credit system that reflects societal costs and benefits.	This is an organizational process				Undetermined at this time
II.A.g. Identify the key potential effects of climate change on stormwater management.	Seven states (incl. MN)		\$1.6MM	None	Undetermined at this time

8. Related policies or programs that may need to be revised.

Completing this Action Category may require changes to existing programs or policies. The following is a preliminary list of related programs and policies with short explanations of how/why they may be required to change.

- The NPDES MS4, Construction, Industrial and Feedlot Permits should be considered. SWPPPs created through these permit programs could be used to “measure effort, progress and environmental conditions.” Effort can easily be measured by the SWPPPs because the document outlines what the community or business is doing in terms of BMPs. Environmental conditions could also be monitored through the SWPPP if water quality data was required in the SWPPP.
- Local water management plans might be another set of documents that provide data on management efforts and environmental conditions.

Action Category II.B. Coordinate research efforts and disseminate research results.

1. Description of action category and action items.

As our understanding evolves of what works and does not work to meet stormwater and water quality goals, the need arises for new technologies and practices. Conducting research on these needs, testing new technologies, and exploring new management practices is critical to sustaining the successes of previous management efforts. **Action Category II.B.** creates a framework for coordinating previous and ongoing research efforts, identifying research needs for emerging issues, and disseminating research results to the people who will benefit from it.

Coordinate research results

- a. Inventory ongoing research – parties conducting research, research categories, and research goals.
- b. Create and maintain repositories for water quality data and research results (for previous research and ongoing research).

Identify research needs and set priorities.

- c. Inventory, categorize, and specify emerging issues for future research.
- d. Inventory, categorize, and specify research needs for unresolved issues to enable coordinated future implementation efforts.
- e. Create a watershed-based or TMDL-focused research and monitoring framework to identify nonpermitted basin pollutant sources (agriculture, unregulated cities, tribal lands, or other perceived holes in the existing stormwater management system.)

Disseminate information to key parties

- f. Identify partners and methods for dissemination of existing and new research results; peer groups, demonstration projects, third party recommendations, case studies.

2. Relationship to the SSC vision, goal, and principles.

Vision and Goal

Improving the efficiency and broadening the dissemination of research efforts will increase our technological capacity to protect Minnesota's water resources according to the Vision. Research results should continue to inform our long-term stormwater management effort and we recognize research as a component of the long-term stormwater management strategy discussed in the Goal.

Principles

Action Category upholds Principles 5, 6 and 8. Research will provide us with the information and knowledge necessary to protect and restore healthy ecosystems as recommended in Principle 5 – *Striving for healthy and sustainable ecosystems*. Research findings should be used to establish the monitoring and measurement criteria referred to in Principle 6 – *Establishing monitoring and measurement criteria and protocols to evaluate the effectiveness*

of implementation efforts. Principle 8 -- *Managing stormwater as a vital resource* – will also be aided and informed by stormwater management research.

3. *Priorities and staging of products or actions.*

Actions and products are ranked in priority order (which items need to be accomplished first), described in terms of how ready the SSC and other stakeholders are to complete the action or product, and what sequencing considerations are necessary to complete the task. Three components of readiness are described for each Item. The readiness elements are associated with Subsection 6 (obstacles). Sequencing considers the necessary order of the action items in addition to research and resource needs (Subsections 5 and 7).

Items II.B.a, b, and e. are short term actions. The data repository described in Item II.B.b will require maintenance, and so it is an ongoing project. Item II.B.e is also ongoing because the framework will have to be integrated with a number of other efforts.

Items II.B.c and d. are mid-term actions because inventorying unmet research needs for these Items will be more efficient if we have completed the inventory of ongoing research described in Item II.B.a beforehand.

Priority	Action Item	Readiness			Approach & Sequencing
		<i>Organizational Commitment</i>	<i>Existing Supporting Products</i>	<i>Level of Understanding</i>	
#2	II.B.a. Inventory ongoing research.	High. The CWC Research Work Group has started this activity.	RWMWD inventory	Moderate and rising	Accomplish this Item first.
#4	II.B.b. Create and maintain repositories for water quality data and research results.	High. CWC Research Group has started.	MPCA and METC have existing programs	High	
#3	II.B.c. Inventory research needs for emerging issues.	High. CWC Research Group has started this work.		Medium. We need to develop a process for capturing emerging research and assure standard protocols for broad-based use	After completion of Item II.B.a.

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Priority	Action Item	Readiness			Approach & Sequencing
		<i>Organizational Commitment</i>	<i>Existing Supporting Products</i>	<i>Level of Understanding</i>	
#6	II.B.d. Inventory research needs for unresolved issues.	Low. Unfocussed approach(es)		Low. This requires an understanding of needs that has to mature before moving forward from anecdotal to implementation (e.g. PAH issue).	After completion of Item II.B.a.
#5	II.B.e. Create a watershed- or TMDL-focused research and monitoring framework.	High. Ongoing with the MPCA-lead integrated Agency team.	Need to access TMDL research data for use in other activities TMDL data is not readily accessible outside the MPCA.	Low: Access needed for general use plus better coordination of research needs	
#1	II.B.f Identify research partners and methods of disseminating research through the establishment of a state-level Research Council (LRRB Model).	High. Partners are assembled but dissemination element requires attention	Watershed Districts see need	High: The model (LRRB) is there; straightforward to replicate	First

4. Entities responsible for taking action.

Achieving Action Category II.B. will require participation from a number of entities. Their tasks and level of involvement are summarized in the table below. Primary parties take the lead in the process or action. Secondary parties are critical participants, but not responsible for leading.

The MPCA, the University of Minnesota, and the SSC will be primarily responsible for the coordination of research efforts and dissemination of research results. Research efforts should be coordinated with the Department of Agriculture and the Clean Water Council.

Action Item	Responsible Parties	
	Primary	Secondary
II.B.a. Inventory ongoing research.	<ul style="list-style-type: none"> • U of M • CWC 	<ul style="list-style-type: none"> • RWMWD
II.B.b. Create and maintain repositories for water quality data and research results.	<ul style="list-style-type: none"> • Monitoring agencies • U of M 	<ul style="list-style-type: none"> • WMOs/WDs • Counties
II.B.c. Inventory research needs for emerging issues.	<ul style="list-style-type: none"> • U of M • MPCA • Others in the research arena 	<ul style="list-style-type: none"> • WMOs/WDs • Counties • Cities
II.B.d. Inventory research needs for unresolved issues.	<ul style="list-style-type: none"> • U of M • MPCA • Others in the research arena 	<ul style="list-style-type: none"> • WMOs/WDs • Counties • Cities
II.B.e. Create a watershed- or TMDL-focused research and monitoring framework.	<ul style="list-style-type: none"> • TMDL Program Managers • Others in the research arena 	<ul style="list-style-type: none"> • Suggested framework could include establishing an autonomous stormwater research council that would distribute research funds.
II.B.f Identify research partners and methods of disseminating research Through the establishment of a state-level Research Council (LRRB Model).	<ul style="list-style-type: none"> • LGUs • WMOs/WDs • MPCA • METC 	<ul style="list-style-type: none"> • LRRB as a support organization to provide lessons learned and guidance

5. Research and data needs.

This category's research needs are explicitly discussed in the Action Items.

6. Obstacles to Action Items and possible solutions

Obstacles to achieving Action Category II.B. exist and must be overcome. We have identified obstacles to each item within the category and possible solutions to those obstacles.

Action Item	Obstacle	Solution
II.B.a. Inventory ongoing research.	National vs. State vs. local - how to avoid duplication and work on the right things	Inventory has to be at a higher priority
II.B.b. Create and maintain repositories for water quality data and research results.	Large databases that require specialized management that is not being utilized plus the resources to run the databases	Develop pilot effort
II.B.c. Inventory research needs for emerging issues.	No centralized clearing house	Create a clearing house.
II.B.d. Inventory research needs for unresolved issues.	No centralized clearing house	Surveys to ID these issues
II.B.e. Create a watershed- or TMDL- focused research and monitoring framework.	TMDL Program managers are not required to make their specific data available through proper packaging and gleaning of information.	Coordinate with R&D needs
II.B.f Identify research partners and methods of disseminating research through the establishment of a state-level Research Council (LRRB Model).	Difficulty in getting acceptance/funding for a new organization. Different national, state, local approaches and needs make sharing more difficult	Define the need in terms of efficiencies and savings

7. Resource needs

Accomplishing the Action Items within this category will require funding, staffing, and sometimes other resources. The table below provides a sense of existing and required resources for each item. The table identifies whether the item currently has resources assigned to that task and what type of resources, and whether additional resources are likely to be needed and an approximation of the magnitude of the new resources needed.

Action Item	Currently Funded? If so, source of funding?		Resource Amounts	Additional resources needed?	Range of needed increase
	Source	Recipient			
II.B.a. Inventory ongoing research.	No and needs to cover all areas below	The new research Council (II.B.f)		\$50K	Undetermined at this time
II.B.b. Create and maintain repositories for water quality data and research results.	Same as above	The new research Council		>\$200K	Undetermined at this time
II.B.c. Inventory research needs for emerging issues.	Same as above	The new research Council		Part of above	Undetermined at this time
II.B.d. Inventory research needs for unresolved issues.	Same as above	The new research Council		Part of above	Undetermined at this time
II.B.e. Create a watershed- or TMDL-focused research and monitoring framework.	Yes, but no constant % has been fixed				Undetermined at this time
II.B.f Identify research partners and methods of disseminating research through the establishment of a state-level Research Council (LRRB Model).	Not a funded activity but needs to be a part of an education and information dissemination program	The new research Council	>\$500K/year for the next 10 years	Approx 5% of the research activity. Source - local commitments	Undetermined at this time

8. Related policies or programs that may need to be revised.

Completing this Action Category may require changes to existing programs or policies. The following is a preliminary list of related programs and policies with short explanations of how/why they may be required to change.

The Dam Safety Program might be a candidate for research – climate change could affect the safety of dams with more violent storms causing changes in the amount of water impounded behind dams.

Action Category II.C. Link education and assistance resources with the greatest needs.

1. Description of action category and action items.

Education and technical assistance provide a critical component in the effort to protect and restore Minnesota's surface and ground waters by disseminating information on practices and technologies that have been proven in the field. Education and assistance programs will serve multiple goals, address diverse audiences, and use a wide variety of vehicles for imparting information or providing assistance. **Action Category II.C.** identifies specific needs for ensuring that education and technical assistance programs are responding to the greatest needs – who needs education or assistance, how that education or assistance is provided, and what types of programs are most effective.

- a. *Identify and prioritize the goals* of different education/assistance programs, including:
 - i. Promoting water quality and stormwater management goals;
 - ii. Enabling stakeholders to provide meaningful and informed input;
 - iii. Disseminating technical knowledge and technical opportunities;
 - iv. Engaging in social marketing;
 - v. Helping good actors claim credit for successful efforts; and
 - vi. Justifying funding for stormwater management programs.
- b. *Describe the multiple venues and vehicles* through which education efforts can reach distinct audiences, moving beyond MS4 and regulated parties and toward a statewide media campaign.
- c. *Identify needs* for technical assistance (regulated parties, MS4s, watershed districts, elected officials, other public and private stakeholders) and prioritize which needs should drive the design of technical assistance and technology transfer programs.
- d. *Create partnerships* of educational providers and entities with technical assistance capacity, including entities not typically engaged in stormwater management education, such as peer stakeholder groups, 'trusted entities' associated with specific targeted stakeholder groups, and third parties that are not perceived as self-interested.
- e. *Develop, with partners, technology transfer and education opportunities* for local governmental units that is commensurate with their planning and implementation responsibilities and covers a range of experience and resource capacities.
- f. *Evaluate* effectiveness of education methods for different audience and improve methods where needed.

2. Relationship to the SSC vision, goal, and principles.

Vision and Goal

By providing education and assistance to the people and places that need it most, we will ensure high quality water resources for all Minnesotans as described in the Vision. Providing education and assistance to people and places with the greatest stormwater management needs will enable us to involve a diverse group of stakeholders in the statewide stormwater management effort, achieving the Goal.

Principles

Action Category II.C. addresses Principles 1, 3, 5, 7, and 8.

Education and assistance programs will inspire Minnesotans to take responsibility for water resources, as outlined in Principle 1 – *Promoting efforts to help all Minnesotans take responsibility to understand, protect and treasure the water that establishes our identity.* The watershed approach, discussed in Principle 3 – *Using a watershed approach that recognizes regional variability* will be designed so that we can provide education assistance to areas of greatest need.

Education and assistance resources will provide decision makers and the general public with the knowledge necessary to achieve sustainable ecosystems as discussed in Principle 5 – *Striving for healthy and sustainable ecosystems.*

Providing education and assistance to the people and places that need it most is an important way to ensure equitable distribution of funding benefits and responsibilities as addressed in Principle 7 – *Ensuring equitable distribution of funding responsibilities and benefits.*

Education and assistance programs will help to create a cultural shift towards viewing and managing stormwater as a vital resource as suggested in Principle 8 – *Managing stormwater as a vital resource.*

3. Priorities and staging of products or actions.

Actions and products are ranked in priority order (which items need to be accomplished first), described in terms of how ready the SSC and other stakeholders are to complete the action or product, and what sequencing considerations are necessary to complete the task. Three components of readiness are described for each Item. The readiness elements are associated with Subsection 6 (obstacles). Sequencing considers the necessary order of the action items in addition to research and resource needs (Subsections 5 and 7).

Items II.C.a (i-vi), II.C.c, and II.C.e are short term. Items II.C.b and d are midterm. Item II.C.e is an ongoing action item.

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Priority	Action Item	Readiness			Approach & Sequencing
		<i>Organizational Commitment</i>	<i>Existing Supporting Products</i>	<i>Level of Understanding</i>	
#2	II.C.a. Identify and prioritize the goals of different education/assistance programs	Medium. U of M & Extension's main role is education. However, there is medium interest in funding.	<ul style="list-style-type: none"> • NEMO • StormwaterU • Manuals • Conferences • SSC • Education • Workgroup • Inventory of education programs 	Medium. Many programs have multiple goals, and sorting and prioritizing goals could be challenging	Accomplish this Item first. This item is always the U of M Extension's first priority. Work concurrently with II.C.c
	II.C.b. Describe how education efforts can reach new audiences.	Medium. Our No.1 audience remains MS4s and regulated parties.	Extension Programming such as Stormwater U, NEMO,	Very high	Immediately after II.C.a
#1	II.C.c. Identify and prioritize needs for technical assistance.	Medium. Interest is high, but resources are low	U of M & Extension current efforts in technology transfer	Medium	Start immediately, work concurrently with II.C.a.
	II.C.d. Create partnerships with non-typical educational providers and entities with technical assistance capacity.	Medium. Although important and very useful, Extension and U of M have difficulty committing and completing such tasks without funding.		Very High	After II.C.c

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Priority	Action Item	Readiness			Approach & Sequencing
		<i>Organizational Commitment</i>	<i>Existing Supporting Products</i>	<i>Level of Understanding</i>	
	II.C.e. Develop technology transfer and education opportunities	High level of commitment from all parties	<ul style="list-style-type: none"> • MN SW Manual • NEMO • U of M Extension • MPCA TMDL training • U of M Construction training • Stormwater University 	Medium. Understanding varies with technology and audience, but is improving	Not dependent on any other Action Items, could be addressed concurrently with I.A.a.
#3	II.C.f. Evaluate effectiveness of education methods for different audience and improve methods where needed.	Medium. Interest is high, but resources available are low. Evaluation is core to U of M and Extension	Evaluation is built into the Extension program development process and Extension & Peer Evaluation teams. There are a few articles and reports, but more is needed. U of M report with standardized education surveys.	Medium to low.	Should not be sequenced, but a part of each individual program as it is implemented. This should be started now, but applied to the audiences identified in II.C.c

4. Entities responsible for taking action.

Achieving Action Category II.C. will require participation from a number of entities. Their tasks and level of involvement are summarized in the table below. Primary parties take the lead in the process or action. Secondary parties are critical participants, but not responsible for leading.

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Many different entities should be involved in educational efforts. These groups include the University of Minnesota Extension Service's Stormwater University, the SSC's education work group, and the MPCA. Many NGO's are also involved in education, including 1000 Friends of Minnesota, Friends of the Mississippi, BATC, BAM, and various watershed partners. Local government units, watershed districts, industry, and peer groups also provide stormwater education.

Since there are a large number of primary parties in this action category, the parties should act as a collaborative for stormwater education. Education programs, such as Stormwater University, need to work collaboratively with education efforts outside the classroom, such as the variety of efforts undertaken by WMOs, watershed districts, and LGUs. Collaborative examples include the East Metro Water Resources Education Program, Watershed Partners, and the Northland NEMO program.

Action Item	Responsible Parties	
	Primary	Secondary
II.C.a. Identify and prioritize the goals of different education/assistance programs	A stormwater education collaborative that includes: <ul style="list-style-type: none"> • WMOs/WDs • U of M Extension • NEMO • SSC education workgroup • WRC • SAFL 	<ul style="list-style-type: none"> • Local units and educators • METC • Anyone with a training, outreach, or promotion program on stormwater management.
II.C.b. Describe how education efforts can reach new audiences.	Stormwater Education Collaborative (see above)	
II.C.c. Identify and prioritize needs for technical assistance.	Stormwater Education Collaborative (see above)	<ul style="list-style-type: none"> • LGUs • WMOs/WDs • BATC • NGOs
II.C.d. Create partnerships with non-typical educational providers and entities with technical assistance capacity.	Stormwater Education Collaborative (see above)	
II.C.e. Develop technology transfer and education opportunities	Stormwater Education Collaborative (see above)	<ul style="list-style-type: none"> • METC • LGUs • WMOs/WDs
II.C.f. Evaluate effectiveness of education methods for different audience and improve methods where needed.	Stormwater Education Collaborative (see above)	

5. Research and data needs.

Research needs are specifically identified in Items II.C.a, .b, and .c relating to creating an inventory of educational programs, the goals associated with programs, and the audiences at whom programs are targeted. Additional research or documentation may be necessary to identify where existing best practices or technologies are not being used, in order to be able to set priorities for technical assistance.

To accomplish Item II.C.d, the SSC or subcommittee may need to systematically identify non-typical education providers such as peer stakeholder groups and other third-party entities.

6. Obstacles to the Action Items and possible solutions

Obstacles to achieving Action Category II.C. exist and must be overcome. We have identified obstacles to each item within the category and possible solutions to those obstacles.

Action Item	Obstacle	Solution
II.C.a. Identify and prioritize the goals of different education/assistance programs	<ul style="list-style-type: none"> Limited staff The number of educational efforts is enormous, and identifying characteristics of all of these is a big task. There are diverse audiences, diverse locations, regional differences, and goals will change depending on the enthusiasm of the audience for training. 	<ul style="list-style-type: none"> Train the trainer Continue existing programs Fund an entity to inventory these, or an incentive to submit information to a centralized location. MS4 reports may contain some information on educational efforts, but this is limited to MS4 entities.
II.C.b. Describe how education efforts can reach new audiences.	<ul style="list-style-type: none"> Limited staff 	
II.C.c. Identify and prioritize needs for technical assistance.	<ul style="list-style-type: none"> The ability to reach all parties, The resources (money, time) to categorize complex needs, The wide range of needs possible 	<ul style="list-style-type: none"> Social marketing efforts, Funding incentives in conjunction with mass marketing campaign to all organizations
II.C.d. Create partnerships with non-typical educational providers and entities with technical assistance capacity.	<ul style="list-style-type: none"> Rarely do entities want to fund coordination type roles and tasks even though they are desperately needed Lack of communication/coordination between unknown or unfamiliar organizations 	<ul style="list-style-type: none"> Social marketing efforts, funding incentives in conjunction with mass marketing campaign to all organizations

Action Item	Obstacle	Solution
II.C.e. Develop technology transfer and education opportunities	<ul style="list-style-type: none"> Funding for new technology, Funding for evaluation of effectiveness 	<ul style="list-style-type: none"> Fund effectiveness study, Develop a market willing to pay for the development of new training technology and opportunities.
II.C.f. Evaluate effectiveness of education methods for different audience and improve methods where needed.	<ul style="list-style-type: none"> Not many individuals or organizations have a good understanding about evaluation, what to ask, how to ask, how to collect it, or what to do with it. Organizations often do not understand the importance of evaluation Many social/environmental variables interfere with robust effectiveness studies. Effectiveness studies for one program may not be relevant to another program with different goals or methods or participants. 	<ul style="list-style-type: none"> Evaluation training Extension provides program evaluation input to others as needed Fund a research project evaluating stormwater education programs. Develop cheaper, less accurate methods

7. Resource needs

Accomplishing the Action Items within this category will require funding, staffing, and sometimes other resources. The table below provides a sense of existing and required resources for each item. The table identifies whether the item currently has resources assigned to that task and what type of resources, and whether additional resources are likely to be needed and an approximation of the magnitude of the new resources needed.

Assessing funding needs for the education and technical assistance action items can be assessed in a number of ways. Simply assessing goals of different types of programs (II.C.a) requires a careful structuring of the action program. To be useful, goals of 2 to 3 programs within each program type (city, school, non-profit, trade org, etc) and audience (mass media, k-12 education, professional, community education, etc.) should be identified. This could be on the order of 70-100 programs. A marketing campaign with an incentive to submit information may be more economical than contracting with an individual to seek and survey programs, but the data may not be as good.

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Action Item	Currently Funded? If so, source of funding?	Recipient of Funding	Resource Amounts	Additional resources needed?	Range of needed increase
II.C.a. Identify and prioritize the goals of different education/assistance programs	Yes, somewhat		Grants	The U of M Extension has identified the need for stormwater education funding. The cost of identifying goals of different programs depends on the number of programs evaluated. Similar programs have different goals and a single program may have multiple goals. \$10k to \$20k cost estimated for this product.	1-12 FTE equivalent staff funding
II.C.b. Describe how education efforts can reach new audiences.	Somewhat			Many more professional staff and programs to reach the multitude of MS4s and regulated communities.	n/a
II.C.c. Identify and prioritize needs for technical assistance.	None		Grants	Funding for incentives or staff to bring people together. Funding level depends on the number or organizations and the size of the incentives needed.	\$20-100k
II.C.d. Create partnerships with non-typical educational providers and entities with technical assistance capacity.	None			Funding needed for coordinating and administering partnerships. Amounts depend on number of organizations, size of participation incentives.	
II.C.e. Develop technology transfer and education opportunities					
II.C.f. Evaluate effectiveness of	Extension evaluates its			Resources needed to roll out recently developed	

Minnesota Stormwater Management Roadmap

Action Item	Currently Funded? If so, source of funding?	Recipient of Funding	Resource Amounts	Additional resources needed?	Range of needed increase
education methods for different audience and improve methods where needed.	programs as needed. (MPCA contract with U of M for development of initial tools expired). Sources include some grants.			surveys for educational effectiveness. This could be part of other surveys or as a stand alone effort.	

8. Related policies or programs that may need to be revised.

Completing this Action Category may require changes to existing programs or policies. The following is a preliminary list of related programs and policies with short explanations of how/why they may be required to change.

The MS4 permit program is related because education is one of the Six Minimum Control Measures that must be addressed by the community and discussed in the SWPPP.

Action Category III.A. Reduce conflicts and duplication in regulatory requirements and standards consistent with consensus goals, objectives, and implementation priorities.

1. Description of action category and action items.

Regulatory requirements in different water quality and environmental protection programs sometimes result in duplicative compliance efforts or create conflicting compliance standards. Conflicts in performance and compliance standards occur in spite of broad consensus in the goals of the different programs. **Action Category III.B** recommends how perceived and real conflicts between regulatory requirements and standards can be identified and resolved. It also addresses how to improve how the regulations of various agencies relate to one another.

- a. *Conduct review* of rules, regulations, and standards of federal, state and selected local programs to identify conflicts, duplication, robustness, and effectiveness.
- b. *Identify opportunities for integrating processes* or standards between federal, state, and local programs, including WCA, groundwater, shoreland, and impaired water restoration.
- c. *Link goals to regulatory requirements* or standards to clarify the reason for what might be perceived as a conflict and make the reason for regulations more easily understood.
- d. *Test perceived conflicts* between regulatory standards to see if conflicts are goal-based or implementation-based and identify standards that cannot be merged or combined without compromising the program goals.
- e. *Evaluate* inter- and intra-agency regulatory management issues, and identify issues that can be reasonably addressed within the state-wide stormwater framework.

2. Relationship to the SSC vision, goal, and principles.

Vision and Goal

In order to achieve our Vision, we must reduce conflict between various regulatory requirements or standards so that Minnesotans have clear guidance on how manage and protect water resources. Conflicts between regulatory requirements should be taken into consideration as we strive toward our goal of designing a long-term stormwater management effort.

Principles

By reducing conflict between regulatory requirements, we will create a more efficient, understandable and equitable implementation framework, as discussed in Principle 2 (Building an efficient, understandable, and equitable implementation framework).

By reducing regulatory conflicts, we will improve the effectiveness of regulations and increase our ability to create healthy, sustainable ecosystems as described in Principle 5 (Striving for healthy and sustainable ecosystems).

3. Priorities and staging of products or actions.

Actions and products are ranked in priority order (which items need to be accomplished first), described in terms of how ready the SSC and other stakeholders are to complete the action or product, and what sequencing considerations are necessary to complete the task. Three components of readiness are described for each Item. The readiness elements are associated with Subsection 6 (obstacles). Sequencing considers the necessary order of the action items in addition to research and resource needs (Subsections 5 and 7).

Items III.A.a, and c are short term actions because their completion will enable other efforts to move ahead. Items III.A.c, b, and e are mid-term.

Priority	Action Item	Readiness			Approach & Sequencing
		<i>Organizational Commitment</i>	<i>Existing Supporting Products</i>	<i>Level of Understanding</i>	
#1	III.A.a. Conduct review of programs to identify conflicts, duplication, robustness, and effectiveness.	Medium to low.	MN Stormwater Manual Ch. 5, BWSR Watershed Report, EQB's report on programs	Medium. Entities understand their own regulations	Accomplish Items III.A.a and .c first. Ideally, the review would have been conducted during the rulemaking that is currently in progress. The review should start at the state agency level and work down.
#2	III.A.b. Identify opportunities for integrating processes or standards between programs.	Medium to low. MPCA needs to commit more fully to integrating TMDL, stormwater and MS4 programs.	MN SW Manual, MPCA Impaired waters documents and training materials. Storm-water and Wetlands '97	Low. Need science-based policy/standards. Some important concepts not well understood.	Sequenced with other impaired waters implementation process.

Minnesota Stormwater Management Roadmap

Priority	Action Item	Readiness			Approach & Sequencing
		<i>Organizational Commitment</i>	<i>Existing Supporting Products</i>	<i>Level of Understanding</i>	
#3	III.A.c. Link goals to regulatory requirements or standards to clarify the reason for what might be perceived as a conflict and make the reason for regulations more easily understood.	Medium. Time and resources constrain actions. Complexity is unavoidable. High aspirations but low follow through.	Clean Water Act, State laws/permits, local ordinances	Low. Standards are poorly defined/identified	Goals should be developed first, and then programs should be aligned. But other items will not wait due to stakeholders immediate needs. We should start and do simultaneously.
#4	III.A.d. Test perceived conflicts to see if they are goal- or implementation-based; identify standards that cannot be combined.	Medium to low	Compliance Workgroup's final report, BWSR Watershed Report,	Low	Accomplish Items III.A.a and .c first. III.A.c is closely related to III.A.a.
#5	III.A.e. Evaluate regulatory management issues; identify issues that can be addressed within the framework.	Low	None	Low. Entities only understand their own regulations	This item seems to be a part of III.A.a

4. Entities responsible for taking action.

Achieving Action Category III.A. will require participation from a number of entities. Their tasks and level of involvement are summarized in the table below. Primary parties take the lead in the process or action. Secondary parties are critical participants, but not responsible for leading.

Action Item	Responsible Parties	
	<i>Primary</i>	<i>Secondary</i>
III.A.a. Conduct review of programs to identify conflicts, duplication, robustness, and effectiveness.	MPCA, BWSR, DNR, MDH, LGUs, WMOs/WDs, SSC	Representatives of all key LGUs and regulated parties

Minnesota Stormwater Management Roadmap

Action Item	Responsible Parties	
	Primary	Secondary
III.A.b. Identify opportunities for integrating processes or standards between programs.	MPCA, BWSR, DNR, MDH, LGUs, WMOs/WDs, SSC	
III.A.c. Link goals to regulatory requirements or standards to clarify the reason for what might be perceived as a conflict and make the reason for regulations more easily understood.	MPCA, BWSR, DNR, MDH, LGUs, WMOs/WDs, SSC	
III.A.d. Test perceived conflicts to see if they are goal- or implementation-based; identify standards that cannot be combined.	MPCA, BWSR, DNR, MDH, LGUs, WMOs/WDs, SSC	
III.A.e. Evaluate regulatory management issues; identify issues that can be addressed within the framework.	MPCA, BWSR, DNR, MDH, LGUs, WMOs/WDs, SSC	

5. Research and data needs

Little research is needed for Action Category III.A. Action item a., however, identifies a detailed inventory and assessment process that must be completed prior to taking implementation steps that reduce conflict and duplication.

6. Obstacles to Action Items and possible solutions

Obstacles to achieving Action Category III.A. exist and must be overcome. We have identified obstacles to each item within the category and possible solutions to those obstacles.

Action Item	Obstacles	Solutions
III.A.a. Conduct review of programs to identify conflicts, duplication, robustness, and effectiveness.	<ul style="list-style-type: none"> • 100's-1000's LGU local ordinances/ programs for wide variety of stormwater management issues (construction, wetlands, buffers, etc.) • A lot of work, concern for limited return on investment from a comprehensive analysis • Seen as a challenge to regulatory control • Commitment and priority of agencies. 	<ul style="list-style-type: none"> • Select a representative sample of local programs to review. A consultant could be hired to do this. • Have a consultant perform pilot projects on items perceived as most troublesome • Work through SSC consensus-based approach as with past projects • Make this a priority task. • Researchers at the University of Minnesota may be interested in carrying-out this research. • It may be easier for an outsider (consultant/researcher) to do this Item than having the agencies perform the research themselves.
III.A.b. Identify opportunities for integrating processes or standards between programs.	<ul style="list-style-type: none"> • Comprehensive, state-wide stormwater standards would be a long, monumental project for many agencies • LGUs resent loss of local control of water regulations for their specific concerns. • Seen as a challenge to regulatory control 	<ul style="list-style-type: none"> • Work with SSC, start small with turbidity after EPA's construction stormwater effluent guidelines are published (2008-2009) • Develop state-wide minimum and a limited slate of higher standards to choose from at a local level along with options for trading, credits, exemptions, etc. • Work with SSC consensus-based approach as with past projects

Minnesota Stormwater Management Roadmap

Action Item	Obstacles	Solutions
III.A.c. Link goals to regulatory requirements or standards to clarify the reason for what might be perceived as a conflict and make the reason for regulations more easily understood.	<ul style="list-style-type: none"> Goals for may not align between programs/regulators Standards don't have numbers assigned, but BMPs assigned – each regulating entity has differing lists/priorities. Overall goals are ill defined for some programs as “Best Available Technology” or “Maximum Extent Practical” Comprehensive, state-wide stormwater standards would be a long, monumental project for many agencies. 	<ul style="list-style-type: none"> Use SSC to test/ validate goals through literature searches/ research/ monitoring Advance state-wide stormwater standards Advance state-wide stormwater standards Work through SSC, start small with turbidity after EPA's construction stormwater effluent guidelines are published (2008-9)
III.A.d. Test perceived conflicts to see if they are goal- or implementation-based; identify standards that cannot be combined.	<ul style="list-style-type: none"> Question validity/ importance of perceived conflicts Seen as a challenge to regulatory control Level of complexity is high and difficult to simplify 	<ul style="list-style-type: none"> ID specific resulting conflicts and degree of impacts to regulated parties in order to help prioritize Work through SSC consensus-based approach as with past projects
III.A.e. Evaluate regulatory management issues; identify issues that can be addressed within the framework.	<ul style="list-style-type: none"> Comprehensive internal review of various agency programs related to stormwater is impractical Conflicting regulations between 103B and 103D 	Brainstorming session with stakeholders to help ID priority issues for agencies to evaluate internal processes to propose to the SSC

7. Resource needs

Accomplishing the Action Items within this category will require funding, staffing, and sometimes other resources. The table below provides a sense of existing and required resources for each item. The table identifies whether the item currently has resources assigned to that task and what type of resources, and whether additional resources are likely to be needed and an approximation of the magnitude of the new resources needed.

Action Item	Currently Funded? If so, source of funding?		Resource Amounts	Additional resources needed?	Range of needed increase
	Source	Recipient			
III.A.a. Conduct review of programs to identify conflicts, duplication, robustness, and effectiveness.	No			Yes	0.5-1 FTE for 6 months (consultant)
III.A.b. Identify opportunities for integrating processes or standards between programs.	Yes (for MPCA JPA pilot)	LGUs, WMOs/WDs	Approx. 12 FTEs	Yes	1-2 state FTEs, more LGU FTEs
III.A.c. Link goals to regulatory requirements or standards to clarify the reason for what might be perceived as a conflict and make the reason for regulations more easily understood.	Yes, MPCA nondeg rule, BWSR wetland rule, DNR Shoreland rule. MDH Wellhead Protection rulemaking. This funding is only for the rulemaking - already allocated.		Several FTEs	Yes	2-4 FTEs for 3 years
III.A.d. Test perceived conflicts to see if they are goal- or implementation-based; identify standards that cannot be combined.	No			Yes	0.5-1 FTEs for 6 months
III.A.e. Evaluate regulatory management issues; identify issues that can be addressed within the framework.	No			Yes	Approx. 2 FTEs/agency with stakeholders for 6 months

8. Related policies or programs that may need to be revised.

Completing this Action Category may require changes to existing programs or policies. The following is a preliminary list of related programs and policies with short explanations of how/why they may be required to change.

- All programs should be reviewed for duplication and conflicts.
- Wetland Conservation Act programs or the Calcareous Fen Management Program may be in conflict with stormwater programs/policy. Stormwater policy tends to send stormwater toward wetlands, but some sensitive wetlands like calcareous fens may be damaged by large quantities of runoff or polluted runoff. Conversely, some types of wetland are dependent on groundwater resources, which in turn are dependent on stormwater infiltration.
- DNR's Shoreland Management rules and sample ordinance includes stormwater management language and may be inconsistent or in conflict with stormwater regulation. Is there duplication/conflict with stormwater regulation or just a need for consistency with existing urban runoff regulations and evolving regulations on "shoreline urbanization"?
- The Plumbing Plan Review Program (MN Dept of Labor) regulates stormwater intake systems and may conflict with newer stormwater management practices.
- Groundwater protection (Dept. of Health) with infiltration goals. Research is currently underway that may address conflicts.
- MS4 plans and local plans (BWSR/Met Council). The recent BWSR watershed report made recommendations of timing of planning and program requirements.
- Industrial stormwater NPDES/SDS permitting requirements duplication with existing hazardous waste, spill prevention, and other regulations.
- Construction stormwater sediment/erosion control and post construction duplication between MS4 minimum control measures and the construction stormwater NPDES/SDS permit.
- General duplication of regulations for sediment/erosion control and post construction from all LGUs (including regulated MS4s) and MPCA for construction sites.

Action Category III.B. Improve the efficiency of stormwater planning processes.

1. Description of action category and action items.

Stormwater plans at the site level, local governmental level, and regional and state levels provide the foundation for implementation actions. Stormwater regulation is not an end in itself, but is a strategy to bring about the goals or policies articulated in the plan. The multitude of overlapping planning efforts addressing stormwater and water quality have, however, created a difficult and frequently inefficient process for setting and implementing goals. **Action Category III.B.** discusses the need to identify overlap in planning processes and creating and implementing an integrated schedule for planning efforts.

- a. *Identify the overlap in planning processes* that address stormwater and the unique goals associated with each type of planning effort (ex: SWPPP, local surface water management plans, natural resource plans, comprehensive plans, basin plans)
- b. *Create an integrated schedule* for planning efforts to ensure an appropriate sequence of planning and limit duplicative planning.
- c. *Overcome barriers to implement the integrated schedule* for planning process.

2. Relationship to the SSC vision, goal, and principles.

Vision and Goal

A coordinated stormwater and water planning process will limit conflicts and reduce unnecessary duplication of planning efforts, enabling Minnesotans to better protect surface and groundwater resources as described in the Vision. Effective and efficient planning is a critical component of the long-term stormwater management effort described in the Goal.

Principles

Action Category III.B relates to Principles 1, 3, and 5.

Providing Minnesotans with the ability to effectively plan for and manage stormwater will promote responsibility for and understanding of stormwater, achieving Principle 1 – *Promoting efforts to help all Minnesotans take responsibility to understand, protect, and treasure the water that establishes our identity.*

The stormwater planning process should recognize regional variability and integrate with a watershed approach, as suggested in Principle 3 – *Using a watershed approach that recognizes regional variability.*

Efficient stormwater planning will enable Minnesotans to sustain local-to-landscape level ecosystems as discussed in Principle 5 -- *Striving for healthy and sustainable ecosystems.*

3. Priorities and staging of products or actions.

Actions and products are ranked in priority order (which items need to be accomplished first), described in terms of how ready the SSC and other stakeholders are to complete the action or product, and what sequencing considerations are necessary to complete the task. Three components of readiness are described for each Item. The readiness elements are associated with Subsection 6 (obstacles). Sequencing considers the necessary order of the action items in addition to research and resource needs (Subsections 5 and 7).

The most significant process issue for these action items is getting stakeholder buy-in at multiple levels. While buy-in is clearly needed to achieve Item III.B.c., anticipation of conflicts in III.B.c. may require more resources and a more deliberative process for Item III.B.a.

To complete Item III.B.b, statutory changes and agreements with federal agencies may be needed and local government buy-in will be necessary. Sequencing and readiness for Item III.B.c. will need to be re-assessed after completing items III.B.a. and b.

Priority within Category	Action Item or Product	Readiness			Sequencing
		<i>Organizational Commitment</i>	<i>Existing Supporting Products</i>	<i>Level of understanding</i>	
#1	III.B.a Identify overlap in planning processes that address stormwater.	Commitment to goals, but need to develop agency commitment to process.	Watershed study recently completed starts this discussion.	High. The planning process and related issues are well understood.	First. The metro area overlap analysis will be completed first. Then, move on to outstate cities and finally the rural areas.
#2	III.B.b Create an integrated schedule for planning efforts.	Commitment to process should flow from Item #1.	No product is needed other than Item III.B.a.	High. Understanding of difficulties is well understood.	After completing all of Item III.B.a. Some staff resources need to be identified.
#3	III.B.c Overcome barriers to implement the integrated schedule	Many barriers on multiple fronts. Commitment needs to be developed.	Many supporting products will be needed.	High. Well understood.	After Item III.B.b. Additional research will be needed to identify barriers including legal research. Specific barriers will likely need to be addressed in a sequential manner.

4. Entities responsible for taking action.

Achieving Action Category III.B. will require participation from a number of entities. Their tasks and level of involvement are summarized in the table below. Primary parties take the lead in the process or action. Secondary parties are critical participants, but not responsible for leading.

The SSC will create a new work group that will focus on the stormwater planning process. Other entities that need to be actively involved include BWSR, the MPCA, and the Metropolitan Council. These entities are statutorily responsible for ensuring different water planning efforts are completed, and need to be actively engaged in the both identifying overlap and in integrating planning schedules.

Counties, watershed districts, WMOs, and cities must also be involved, but at a secondary level for items III.B.a. and III.B.b.. Since many of the planning processes being considered are, however, conducted by local governments, implementation of the integrated schedule will require local government involvement as primary parties.

Action Item	Responsible Parties	
	Primary	Secondary
III.B.a. Identify overlap in planning processes that address stormwater.	New SSC work group, BWSR, MPCA, METC	LGUs, WMOs/WDs, SWCDs
III.B.b Create an integrated schedule for planning efforts.	New SSC work group, BWSR, MPCA, METC	LGUs, WMOs/WDs, SWCDs
III.B.c Overcome barriers to implement the integrated schedule	New SSC work group, BWSR, MPCA, METC, LGUs, WMOs/WDs, SWCDs	

5. Research and data needs.

No base-level research is required. The Watershed Report recently adopted by the SSC outlines a number of the planning duplication/overlap issues for the metropolitan area. For Greater Minnesota, however, some data compilation and categorization is required before making recommendations on duplication and efficiency. Specifically, the SSC must identify overlapping geographic boundaries for stormwater and water planning processes, required or approximate schedule of creating or updating plans within geographic boundaries, and non-temporal triggers that initiate a planning process. Some legal research may be needed to address administrative rules and statutory requirements at both the State and Federal level.

6. Obstacles/Barriers to Action Items and possible solutions

Obstacles to achieving Action Category III.B. exist and must be overcome. We have identified obstacles to each item within the category and possible solutions to those obstacles.

Action Item	Current Obstacles	Solutions
III.B.a. Identify overlap in planning processes that address stormwater.	<ul style="list-style-type: none"> Local public involvement can be expensive. Residents and businesses only participate during controversy. Taking the time to ensure informed involvement will slow down the process. 	<ul style="list-style-type: none"> Build on existing public outreach efforts Improved marketing and outreach techniques Build in sufficient time to allow for informed involvement.
III.B.b. Create an integrated schedule for planning efforts.	<ul style="list-style-type: none"> Resources (money and people) are lacking Turf protection and lack of cooperation Fear of end results Addressing the different goals for each effort Identity of the programs 	<ul style="list-style-type: none"> Use a stakeholder-driven process to build trust Acknowledge distinct planning goals – some processes may not be able to be integrated Having a decision-maker within agencies to champion needed action
III.B.c Overcome barriers to implement the integrated schedule	<ul style="list-style-type: none"> Doing the rulemaking to revise 8410 Rules and other state rules Resources (money and people) are lacking Legislative process Conflicts in federal requirements Getting federal buy-in 	<ul style="list-style-type: none"> Build a diverse constituency for the implementation process Include political decision-makers early in the process Having a decision-maker within agencies to champion needed action

7. Resource needs

Accomplishing the Action Items within this category will require funding, staffing, and sometimes other resources. The table below provides a sense of existing and required resources for each item. The table identifies whether the item currently has resources assigned to that task and what type of resources, and whether additional resources are likely to be needed and an approximation of the magnitude of the new resources needed.

Action Item	Currently Funded? If so, source of funding?		Resource Amount/Type	Additional resources needed?	Range of needed increase.
	Source	Recipient			
III.B.a Identify overlap in planning processes that address stormwater.	USEPA	BWSR	Some staffing is already committed for similar efforts.	Yes	Low -provided staffing resources are maintained.
III.B.b Create an integrated schedule for planning efforts.	Not funded	N/A	Some staffing could be reallocated from similar efforts.	Yes	Medium - staff time
III.B.c Overcome barriers to implement the integrated schedule	Not funded	N/A	N/A	Yes	High - multiple implementation fronts

8. Related policies or programs that may need to be revised.

Completing this Action Category may require changes to existing programs or policies. The following is a preliminary list of related programs and policies with short explanations of how/why they may be required to change.

- Source Water Protection Program – Public drinking water systems create Wellhead Protection Plans that should be integrated with other water plans, etc...
- Public water suppliers who provide more than 1,000 people with water must develop Public Water Supply Plans. In the metropolitan area these are integrated into comprehensive plans.
- Water and land use plans including the MS4 SWPPP, Nondegradation Report, Local water management plans, Metropolitan Area Surface Water Management Plan, and the Metropolitan Area Groundwater Plans. A number of these plans are already somewhat integrated with each other and may also be integrated in local governments' Comprehensive Plans.
- Regional water planning programs may duplicate other planning programs: Mississippi River Critical Area Program, Wild and Scenic River Program (St. Croix River), Lake Superior Coastal Program, Coastal Nonpoint Pollution Management Program (Lake Superior coast).

Action Category III.C. Improve the effectiveness and efficiency of state and local stormwater compliance and enforcement entities to better meet stormwater management and water quality goals.

1. Description of action category and action items.

An important part of regulation is creating enforcement procedures that improve compliance with regulation and ultimately better meet stormwater management goals. Enforcement is, however, sometimes not clearly linked with the entities that set regulation or with the goals that regulation is supposed to be achieving. **Action Category III.C.** suggests that stormwater enforcement and compliance mechanisms could be improved by improving accountability as well as by providing adequate resources for enforcement. This Action Category also recommends evaluating how enforcement and compliance elements fit together and the effectiveness of the various elements.

- a. *Test* compliance and enforcement protocols for transparency, accountability, consistency, and flexibility.
- b. *Vest authority* for compliance with adequate enforcement capacity.
- c. *Evaluate* how different compliance and enforcement entities fit together relative to stormwater goals, and identify overlaps and gaps.
- d. *Evaluate* effectiveness of compliance and enforcement strategies.

2. Relationship to the SSC vision, goal, and principles.

Vision and Goal

Compliance and control elements are important tools for preventing pollution and degradation, and by improving their effectiveness and efficiency we will be better able to achieve our Vision of protecting Minnesota's water resources. To achieve the Goal of creating a long-term stormwater management effort, we must address the effectiveness and efficiency of the major stormwater compliance and control elements.

Principles

Action Category III.C. relates to Principles 1, 4, and 8.

Effective compliance elements will inspire Minnesotans to be proud of their water resources and to take responsibility for protecting them, accomplishing Principle 1 – *Promoting efforts to help all Minnesotans take responsibility to understand, protect and treasure the water that establishes our identity.*

Improved stormwater compliance and control elements will allow us to enforce high water quality and quantity standards, as discussed in Principle 4 – *Addressing water quality and quantity issues.* Stormwater compliance and control elements should allow us to manage

stormwater as a vital resource, according to Principle 8 – *Managing stormwater as a vital resource*.

3. *Priorities and staging of products or actions.*

Actions and products are ranked in priority order (which items need to be accomplished first), described in terms of how ready the SSC and other stakeholders are to complete the action or product, and what sequencing considerations are necessary to complete the task. Three components of readiness are described for each Item. The readiness elements are associated with Subsection 6 (obstacles). Sequencing considers the necessary order of the action items in addition to research and resource needs (Subsections 5 and 7).

Item a is a short-term action because other action items depend on its completion. Items b and c are mid-term actions and d will be a long-term action.

Priority	Item Text	Readiness			Approach & Sequencing
		<i>Organizational Commitment</i>	<i>Existing Supporting Products</i>	<i>Level of Understanding</i>	
	III.C.a. Test compliance and enforcement protocols for transparency, accountability, consistency, and flexibility.	MPCA: Low (minimal benefit perceived of self evaluation – high understanding, long history, and court tested approaches). Also Action Item missing env. benefit; High to evaluate LGUs LGUs: Low now due to evolving programs	MPCA: Enforcement Response Plan, training curriculums, & legislation	MPCA: High for self; low for LGUs LGUs: Low-varied	3
	III.C.b. Vest authority for compliance with adequate enforcement capacity.	MPCA: High (JPA local partners and MS4 iterative permitting process) LGUs: Low (given limited MS4 audit data – but consistent with national trends)	MPCA: yrs. of inspection & permit data	Low	2
	III.C.c. Evaluate how different compliance and enforcement entities fit together relative to stormwater goals, and identify overlaps and gaps.	MPCA: Medium due to many competing priorities and NPDES obligations; LGUs: High	Construction Stormwater NPDES Compliance Work Group Report	Medium	1

Priority	Item Text	Readiness			Approach & Sequencing
		<i>Organizational Commitment</i>	<i>Existing Supporting Products</i>	<i>Level of Understanding</i>	
	III.C.d. Evaluate effectiveness of compliance and enforcement strategies.	MPCA: Medium	Construction Stormwater NPDES Compliance Work Group Report	Medium	4

4. Entities responsible for taking action.

Achieving Action Category III.C. will require participation from a number of entities. Their tasks and level of involvement are summarized in the table below. Primary parties take the lead in the process or action. Secondary parties are critical participants, but not responsible for leading.

The SSC should lead this effort because of its multi-disciplinary nature. The MPCA should also be involved.

Action Item	Responsible Parties	
	<i>Primary</i>	<i>Secondary</i>
III.C.a. Test compliance and enforcement protocols for transparency, accountability, consistency, and flexibility.	MPCA	Regulated MS4s and other non-regulated LGUs
III.C.b. Vest authority for compliance with adequate enforcement capacity.	MPCA	Regulated MS4s and other non-regulated LGUs
III.C.c. Evaluate how different compliance and enforcement entities fit together relative to stormwater goals, and identify overlaps and gaps.	MPCA	Regulated MS4s and other non-regulated LGUs
III.C.d. Evaluate effectiveness of compliance and enforcement strategies.	MPCA	Regulated MS4s and other non-regulated LGUs

5. Research and data needs

This category has no research needs. Some work will be necessary in identifying and inventorying enforcement and compliance best practices (after setting criteria for what constitutes successful compliance).

6. Obstacles to Action Items and possible solutions

Obstacles to achieving Action Category III.C. exist and must be overcome. We have identified obstacles to each item within the category and possible solutions to those obstacles.

Action Item	Obstacles	Solutions
III.C.a. Test compliance and enforcement protocols for transparency, accountability, consistency, and flexibility.	<ul style="list-style-type: none"> Regulated MS4 programs will evolve with successive permit cycles New JPA contracts summer 2009 (chasing moving targets) 	Start this work after 2011 MS4 permit so as to not become outdated
III.C.b. Vest authority for compliance with adequate enforcement capacity.	MPCA: <ul style="list-style-type: none"> Capacity LGUs: <ul style="list-style-type: none"> Self regulating Larger entities Conflicting local priorities, Interests Which LGUs? (watershed vs. political boundaries) 	Smaller sites addressed at local level with state oversight and assistance with larger enforcement cases. Wait for watershed-approach aspects of roadmap to be addressed
III.C.c. Evaluate how different compliance and enforcement entities fit together relative to stormwater goals, and identify overlaps and gaps.	<ul style="list-style-type: none"> Differing state and local environmental goals State-wide consistency vs. local experimentation and needs 	Develop statewide minimum standards to meet water quality, not degrade waters, and address TMDLs with consideration for additional local requirements.
III.C.d. Evaluate effectiveness of compliance and enforcement strategies.	No central data location for inspections or enforcement actions	MPCA JPA program has coordinated data sharing that could be expanded.

7. Resource needs

Accomplishing the Action Items within this category will require funding, staffing, and sometimes other resources. The table below provides a sense of existing and required resources for each item. The table identifies whether the item currently has resources assigned to that task and what type of resources, and whether additional resources are likely to be needed and an approximation of the magnitude of the new resources needed.

Action Item	Currently Funded? If so, source of funding?		Resource Amount/ Type	Additional resources needed?	Range of needed increase
	Source of Funds	Recipient			
III.C.a. Test compliance and enforcement protocols for transparency, accountability, consistency, and flexibility.	MPCA: Stormwater program funding sources (EPA, Env. Fund, Permit fees, etc.)	MPCA	MPCA: program development staffing and local program audits: ~0.1 FTE	Yes (short term)	MPCA: 0.25-3 FTE (scope dependant)
III.C.b. Vest authority for compliance with adequate enforcement capacity.	MPCA/LGUs: taxes, utility/ permit fees	LGUs/ MPCA	MPCA: 2.5 FTEs, \$500,000 JPA LGU; unknown various C/E budgets	Yes (long term)	MPCA: 2-12 FTE; LGUs: unknown
III.C.c. Evaluate how different compliance and enforcement entities fit together relative to stormwater goals, and identify overlaps and gaps.	MPCA	MPCA/ contractor	MPCA: program development staffing and local program audits: ~0.1 FTE	Yes (short term)	MPCA: 0.5-1 FTE
III.C.d. Evaluate effectiveness of compliance and enforcement strategies.	MPCA	MPCA/ contractor	MPCA: program development staffing and local program audits: ~0.1 FTE	Yes (long term)	MPCA: 0.25-1.5 FTE; LGUs: unknown to report data

8. Related policies or programs that may need to be revised.

Completing this Action Category may require changes to existing programs or policies. The following is a preliminary list of related programs and policies with short explanations of how/why they may be required to change.

- The Source Water Protection Program is related because stormwater compliance is especially important in wellhead areas. In wellhead areas we need stormwater to infiltrate, but we want it to be clean.
- *The NPDES permit programs* (Industrial, Construction, MS4, Feedlot) are related because they are the primary stormwater programs that need to be enforced.

Glossary of Acronyms

AGC – Associated General Contractors
AMC – Association of Minnesota Counties
AMT – Association of Minnesota Townships
BATC - Builders Association of the Twin Cities
BMP - Best Management Practice
BWSR – Board of Water and Soil Resources
CWLA – Clean Water Legacy Act
CWC – Clean Water Council
DNR – Department of Natural Resources
EQB - Environmental Quality Board
FTE – full time employee
JPA – Joint Powers Agreement
LCCMR - Legislative-Citizen Commission on Minnesota Resources
LGUs – Local Government Units
LID – Low Impact Development
LMC – League of Minnesota Cities
LRRB – Local Road Research Board
MDA – Minnesota Department of Agriculture
MDH - Minnesota Department of Health
MEI - Minnesota Environmental Initiative
MnDOT – Minnesota Department of Transportation
MPCA – Minnesota Pollution Control Agency
MS4 - Municipal Separate Storm Sewer System
METC – Metropolitan Council
NEMO - Nonpoint Education for Municipal Officials
NGO - Non-Governmental Organization
NOAA – National Ocean and Atmospheric Association
NPDES – National Pollution Discharge Elimination System
NRCS – Natural Resources Conservation Service
R&D – Research & Development
RWMWD – Ramsey-Washington Metro Watershed District
SSC - Stormwater Steering Committee
SAFL - St. Anthony Falls Laboratory
SDS – State Disposal System permit
SWCD – Soil and Water Conservation District
SWINS – Stormwater Infrastructure Needs Survey
SWPPP – Storm Water Pollution Prevention Plan
TBD – To Be Determined
TMDL - Total Maximum Daily Load
USEPA - United States Environmental Protection Agency
WMO – Watershed Management Organization
WD – Watershed District

**MINNESOTA STORMWATER STEERING COMMITTEE
STORMWATER MANAGEMENT ROADMAP
THEMES/ACTION CATEGORIES/ACTION ITEMS
NOVEMBER 2008**

THEME I. MANAGEMENT SYSTEMS

Action Category I.A. Create funding principles and coordinate funding efforts.

- I.A.a. Develop funding principles
- I.A.b. Identify short- and long-term strategic funding needs consistent with principles
- I.A.c. Identify existing sources of stormwater funding
- I.A.d. Recommend changes in existing funding
- I.A.e. Identify new funding sources and plan for new/increased funding

Action Category I.B. Identify the form and content of a watershed-based statewide stormwater management process.

- I.B.a. Set watershed-based management principles
- I.B.b. Define an appropriate watershed scale
- I.B.c. Identify the factors that make watershed-based management effective
- I.B.d. Consider improvements for streamlining management into local govt structures
- I.B.e. Identify high-level leadership
- I.B.f. Implement the new watershed-based approach

THEME II. RESEARCH & EDUCATION

Action Category II.A. Create appropriate mechanisms to monitor and measure effort, progress, and environmental conditions.

- II.A.a. Guide research to fill the BMP knowledge gaps
- II.A.b. Guide research and monitoring efforts
- II.A.c. Improve monitoring programs to document success
- II.A.d. Develop consensus on effectiveness of BMPs
- II.A.e. Identify ordinance standards
- II.A.f. Develop an appropriate credit system
- II.A.g. Identify key potential effects of climate change

Action Category II.B. Coordinate research efforts & disseminate research results.

- II.B.a. Coordinate research results – ongoing research and historic data sets and results
- II.B.b. Identify research needs and set priorities – for emerging and unresolved issues
- II.B.c. Disseminate information to key parties

Action Category II.C. Link education & assistance resources with the greatest needs.

- II.C.a. Identify and prioritize the goals of distinct education and technical assistance programs
- II.C.b. Describe the education venues and vehicles
- II.C.c. Identify and prioritize technical assistance needs
- II.C.d. Create education, technical assistance partnerships
- II.C.e. Develop methods for education and technology transfer method to local governments
- II.C.f. Evaluate education method effectiveness

THEME III. MANAGEMENT EFFICIENCIES

Action Category III.A. Reduce conflicts & duplication in regulatory requirements & standards consistent with consensus goals, objectives, and implementation priorities.

- III.A.a. Conduct review to identify conflicts in rules, regulations, and standards
- III.A.b. Identify opportunities for integrating processes
- III.A.c. Link goals to regulatory requirements
- III.A.d. Test perceived regulatory conflicts
- III.A.e. Evaluate inter-, intra-agency management issues

Action Category III.B. Improve the efficiency of stormwater planning processes.

- III.B.a. Identify the overlap in stormwater planning processes
- III.B.b. Create an integrated schedule for planning efforts
- III.B.c. Overcome barriers to implement the integrated schedule

Action Category III.C. Improve the effectiveness & efficiency of state & local stormwater compliance & enforcement entities to better meet stormwater management & water quality goals.

- III.C.a. Test compliance and enforcement protocols
- III.C.b. Vest authority for compliance with enforcement capacity
- III.C.c. Evaluate compliance and enforcement entities for overlaps and gaps
- III.C.d. Evaluate the effectiveness of compliance and enforcement strategies