



Chapter 2

Steps to Integrate Watershed Management and Strategic Asset Management

2-1 Overview of the Municipal Watershed Impact Assessment Process

The remainder of this guide describes the steps you can take to integrate watershed management into your strategic asset management process. These steps, the *Municipal Watershed Impact Assessment Process*, are organized in an easy-to-use format. Using this guidance, you can assess the impact of your municipality on the local waterbodies and develop a prioritized list of solutions that can be integrated into your municipality's strategic asset management goals and process. The six major steps of the *Municipal Watershed Impact Assessment Process* are as follows:

- *Step 1. Establish and refine strategic asset management goals.* Review current municipal goals, laws, and regulations and any watershed restoration action plans. You will use this information to establish or refine integrated goals and associated performance objectives.
- *Step 2. Calculate the watershed condition score for each watershed using Forms 1 and 2.* Assess the condition and vulnerability of watersheds, subwatersheds, and waterbodies; determine designated uses; and identify impairments of concern. You complete Forms 1 and 2 to identify and prioritize the watersheds, subwatersheds, waterbodies, and regional watershed partners located on or along the municipal boundary on the basis of current conditions, future vulnerability, and compliance requirements. The guide walks you through the process of documenting the designated uses and impairments of concern. At the end of

this step, you will have developed a watershed priority score (WPS) for each significant waterbody on or surrounding your municipality.

- Step 3. Calculate the total burden score for each significant infrastructure asset or municipal activity using Forms 3, 4, 5, and 6 (Parts 1, 2, and 3). Assess the potential impact of municipal activities. This part of the process is divided into three sections:
 1. Using the checklist of typical municipal activities found in Appendix C, identify those in your municipality that may contribute to the impairments of concern.
 2. Complete Form 3 to create a baseline of municipal activities by land uses. Use Form 4 to compare your municipality's land use with that of the watershed. Use Form 5 to summarize the municipality's land-use characteristics.
 3. For each activity, use Form 6, Parts 1–3, to calculate the activity's impact score, and to create a total activity burden score (TABS). The TABS is a sum of the activity impact score (AIS) and WPS. The guide pays particular attention to the amount of impervious surfaces in your municipality.
- *Step 4. Identify cost-effective solutions to mitigate high priority impacts using Form 6 (Parts 4 and 5).* Identify whether the municipality needs additional projects to mitigate high priority activities or land-use conditions. Compare the prioritized list of activities and their associated impairments with available BMPs. This guide contains references to sources of cost-effective BMPs and innovative projects that can help you mitigate an activity's potential impact on the watershed. Integrate project criteria into the municipality strategic asset management framework to rank projects. Compare improvement in asset condition (and value) and project costs to select the most cost-effective projects. Develop a project description, justification, and cost. Track funding requests and the project through completion.
- *Step 5. Identify partnerships and funding sources using Form 6 (Part 6).* Identify and develop partnerships with other stakeholders to implement the selected BMPs and other watershed restoration efforts that reduce the municipality's impact on the watershed. Form 6 allows you to list partners, agreements, benefits, addresses, and points of contact for tracking purposes. This guide provides links to groups active in watersheds around the country as well as types of groups that may provide assistance and support. Chapter 6 contains a partnership template for tracking regional and project partners.

- *Step 6. Implement solutions, track progress, and reassess as part of strategic asset management.* Incorporate the solutions into your municipality's strategic asset management decisions, implement the identified solutions, track their progress, and update the plan and project requests as required to adjust management direction as new information becomes available.

The majority of the information needed to complete the *Municipal Watershed Assessment Process* should be readily available from existing records and federal or state regulatory agencies. In particular, the EPA has created a database and interactive map site containing a wealth of information about the nation's watersheds. The database is available through the EPA's *Surf Your Watershed* website at <http://cfpub.epa.gov/surf/locate/index.cfm>. It also has created the Watershed Assessment, Tracking & Environmental Results (WATERS) website, located at <http://www.epa.gov/waters/enviromapper/index.html>. WATERS is a tool that unites water quality information previously available only on individual state agency homepages and at several EPA websites. It is a web-based geographic information system (GIS) that shows watershed delineations, waterbodies, permitted discharges to all media, TMDL status, and water quality standards. You can quickly identify the status of individual waterbodies and generate summary reports on all waters that influence your municipality.

2-2 Other Watershed Assessment Processes

Other watershed assessment processes available for municipal managers include the following:

- The **Watershed Protection Audit** establishes a baseline of current strategies and practices within a municipality's watershed. The audit can be used to determine the watershed tools currently available in a watershed. The audit is located at <http://www.cwp.org>.
- The **Watershed Vulnerability Analysis** provides guidance on delineating subwatersheds, estimating current and future impervious cover, and identifying factors that would alter the initial classification of individual subwatersheds. This guidance outlines a basic eight-step process for creating a rapid watershed plan for either a large watershed or a jurisdiction. The Watershed Vulnerability Analysis is located at <http://www.cwp.org>.
- The **Retrofit Assessment** includes the Eight Steps to Stormwater Retrofitting, which outlines the eight steps of performing a retrofit inventory. This involves examining existing stormwater management practices and pinpointing locations that might benefit from additional practices. Details

on retrofit implementation are included. The Retrofit Assessment is located at <http://www.cwp.org>.

- The **Codes and Ordinances Worksheet** is a simple worksheet used to compare local development rules in a community with the model development principles outlined in the Better Site Design. The worksheet is located at <http://www.cwp.org>.

2-3 Limited Integration with Strategic Asset Management

Although this *Municipal Watershed Impact Assessment Process* is designed to be integrated into your strategic asset management process, the integration is not seamless. Municipalities may use the outputs of the process, environmental burden improvement and project costs, as inputs to their strategic asset management systems. These inputs are then used in those systems to evaluate and rank projects based on “return on investment” (as calculated by increase in long-term asset value) and total cost (see Exhibit 1-8).

The strategic asset management approach is in its infancy, especially the use of condition assessments to value assets. The lack of a standardized asset valuation method that incorporates environmental (and watershed) burden complicates a seamless integration of the process with strategic asset management.

Over the next few years, the strategic asset management approach will mature and standardized systems are expected to be available for implementation by municipalities. At that time, we suggest updating the *Municipal Watershed Impact Assessment Process* to seamlessly integrate it with your strategic asset management process.

2-4 Future Research to Further Integrate Watershed Management with Strategic Asset Management

We suggest further research into incorporating environmental burden into strategic asset management systems. As more municipalities become familiar with GASB 34 and its modified approach, we expect techniques for valuing assets on the basis of environmental burden to improve and become more available. More research is needed to determine the best method to factor environmental burden into asset condition (and valuation) calculations.

Once a standardized method is established for valuing assets on the basis of environmental burden, we suggest revising the *Municipal Watershed Impact Assessment Process* to include asset valuation in evaluating watershed projects. In addition, the process may be updated for integration with any new standardized strategic asset management tools that become available to municipalities.