

#9: STORMWATER

CORE METRIC FOR CATEGORY A & B & C COMMUNITIES

METRIC

- 9.1 Assessment score from the GreenStep Municipal Stormwater Management Assessment (%)
- 9.2 Climate Adaptation Stormwater Score (%)

METRIC DEFINITION

- **The GreenStep Municipal Stormwater Management Assessment Tool** was designed for Minnesota municipalities and developed in concert with GreenStep's Stormwater Best Practice.
- **Alternative metrics:** if you have been gathering different stormwater metrics that directly measure community-wide stormwater volume and pollutant loading, report those in the notes section of the metrics survey form and explain why you think they are a better measure than this GreenStep metric.
- **Climate Adaptation:** adapting to changing climate by having a climate adaptation plan and including more green stormwater infrastructure such as green roofs and rain gardens. Learn more at the [Minnesota Stormwater Manual](#).
- **Green stormwater infrastructure:** for purposes of this measure is acreage of pervious land, public or private, that is characterized by any of the individual green infrastructure best management practices (BMPs) in the [Minnesota Stormwater Manual – Overview of Minimal Impact Design Standards \(MIDS\) – design considerations](#). The specific "Design criteria" must contain actual design content (in other words, all the listed and linked BMPs except: turf, and trees not installed in tree trenches and tree boxes) which reasonably describes the acreage.

DATA SOURCES

- Public works/engineering records, and common knowledge of planning and other staff
- GreenStep Municipal Stormwater Management Assessment <https://greenstep.pca.state.mn.us/bp-action-detail/81838>, under "Implementation Tools" (Metric 9.1 and 9.2)

METRIC CALCULATION AND PUBLIC REPORTING

- **Report your total scores (as a percentage) upon completion of the assessment.** The "Snap Survey" will provide the total possible points available and your score based off of your answers. Record the percentage scores for both metrics (NOTE: Follow the print instructions before closing the survey to save a copy) (Metric 9.1 and 9.2)

METRIC RATIONALE

Increased stormwater runoff and associated water pollution are often a result of land use changes and urbanization, largely affected by local regulations, education, assistance, and infrastructure choices, which can negatively impact water quality. Increased runoff can compromise clean drinking water and fishable, swimmable waters that support plants, animals and our local quality of life. Using the low-impact development, green stormwater infrastructure and maintenance approach reflected in the Assessment, pollutant loading from stormwater sources is minimized, water is managed on-site in such a way as to mimic predevelopment hydrology, and water quality benefits are recognized in the receiving waters. Cost savings are typically realized through this approach.

Minnesota GreenStep Cities & Tribal Nations Performance Metrics for Recognition at Steps 4 and 5

The status of city surface water bodies (into which stormwater flows) has been assessed in many cities, with extensive data available. Cities are at various points in a many-years' process of meeting, as they are established, TMDLs (Total Maximum Daily Loads) of allowable pollutants under the U.S. Clean Water Act. Data and reports from these regulatory activities are generally difficult for community members to understand and act on.

This GreenStep stormwater metric, in contrast, aims to “go back ‘upstream’” to reflect, with one number, the totality of regulatory standards and actions a city has in place to both prevent the generation of stormwater volume and pollutants and to keep them from reaching bodies of water (including groundwater). Extensive evidence exists for the stormwater volume and pollutant efficacy of the specific regulatory/management practices in the Assessment. The Assessment questions, however, do not get directly at city-wide stormwater volumes and total pollutant loads, direct measurement of which is extremely complex and expensive. Thus the Assessment number is an indicator and not an outcome/direct results measure as are other GreenStep metrics such MWh of renewably generated energy within a city.

Because stormwater infrastructure is so necessary for a city to function properly, this stormwater metric includes specific questions regarding a city’s resilient stormwater infrastructure. These actions are designed to help prepare Minnesota communities and ecosystems for extreme precipitation events and increased average precipitation associated with climate change. Learn more at:

https://stormwater.pca.state.mn.us/index.php?title=Multiple_benefits_of_green_infrastructure_and_role_of_green_infrastructure_in_sustainability_and_ecosystem_services

STEP 5 METRIC TARGETS

Individual cities are best equipped to set realistic goals for metric improvement. Feel free to discuss your score, ways to improve it, and comparison issues with other cities and with the metrics advisor listed below.

The assessment is also an action under [Best Practice Action 17.2](#). Under that action, the star levels are as follows:

- ★ Report your assessment score
- ★★ Score between 50 and 79
- ★★★ Score 80 or above

Minimal Impact Design Standards (MIDS: see GreenStep action [17.1](#)) represents the State of Minnesota’s guidance on cutting-edge stormwater management. MIDS contains three main elements: (1) a higher clean water performance goal for new development and redevelopment, focused on infiltrating rainwater, that provides enhanced protection for Minnesota’s water resources; (2) new modeling methods and credit calculations that standardize the use of a range of innovative structural and nonstructural stormwater techniques; (3) a credits system and ordinance package that will allow for increased flexibility and a state-approved streamlined approach to regulatory programs (TMDLs, impaired waters) for developers and communities.

LEED FOR CITIES & COMMUNITIES

<https://www.usgbc.org/leed/rating-systems/leed-for-cities-communities>

WE Prerequisite: Water Access and Quality

- Stormwater Quality
 - Demonstrate compliance with U.S. EPA’s National Pollutant Discharge Elimination System (NPDES) permit program for stormwater pollution prevention from construction and industrial activities and municipal sources or local, state, or national regulations.

WE Credit: Stormwater Management

- Option 1. Green Stormwater Infrastructure
 - Path 1. Demonstrate that 35% of the city's land area has designated green stormwater infrastructure providing bioretention and infiltration services that are interconnected. OR
 - Path 2. Demonstrate that no more than 50% of the city's land area is covered by impervious surfaces.
- Option 2. Stormwater Management regulations
- Implement a stormwater management regulation or code with a supporting manual establishing criteria and specifications engineers and planners use to plan, design, and construct regulated sites and stormwater Best Management Practices (BMPs) within the city. Ensure that the regulation or code includes at least two of the following:
 - Minimum stormwater management control requirements, and low-impact development standards/practices to preserve predevelopment run-off conditions using infiltration, evapotranspiration, rainwater harvesting, and reuse to the maximum extent practicable.
 - Mandate preparation of stormwater management plan development for various types of development and redevelopment activities within the city.
 - Provision of implementing integrated BMPs on publicly owned buildings, parking lots, parks, streets and other facilities to demonstrate effectiveness and performance to developers, residents and other stakeholders.
 - Provision of incentives available for natural ecosystem preservation and implementing on-site and off-site Best Management Practices (BMP) such as green roofs, rain gardens, cisterns, and permeable pavement.

WE Credit: Integrated Water Management

- 3. Water Supply
 - Measure the total amount of water supplied through various sources for past twelve consecutive months (one full year) sources of water supply may include, but not be limited to the following:
 - Harvested rainwater – For each of the sectors identified in Water Demand, identify the quantity of stormwater harvested. For harvesting stormwater at city or community level provide stormwater infrastructure. Support stormwater harvesting for areas within the scope of the development authority's direct execution, such as at building or community level by adopting appropriate regulations, policies or ordinances.

[NEED HELP? CONTACT](#)

Paula Kalinosky, Hydrologist, MN Pollution Control Agency: paula.kalinosky@state.mn.us and
Joanne Boettcher, Stormwater Research Liaison, MN Pollution Control Agency: joanne.boettcher@state.mn.us

Nov. 2023