

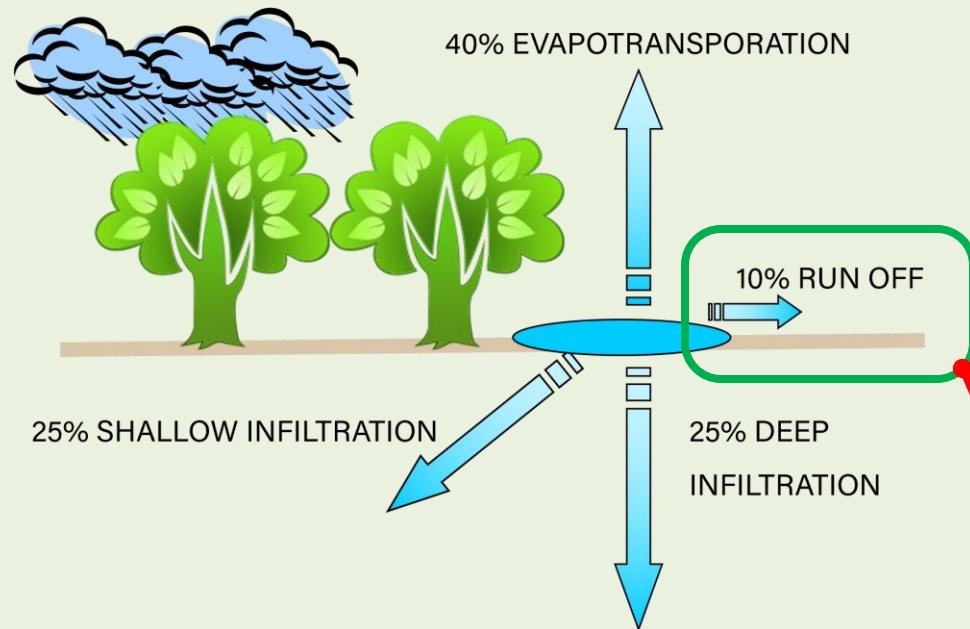
Quick facts on Stormwater Pollution Prevention...

The Importance of Post-Construction Programs

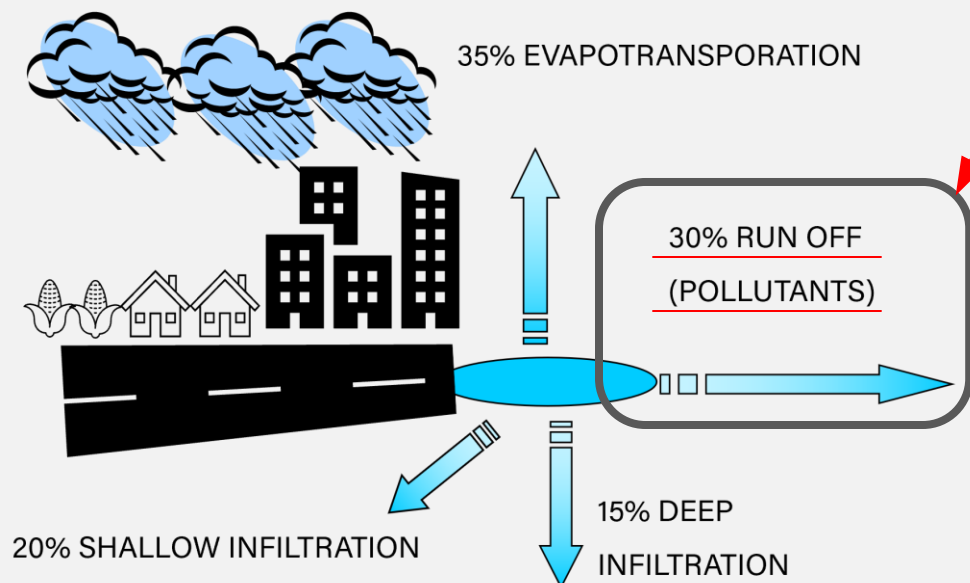
The U.S. Environmental Protection Agency has identified **stormwater runoff** as a leading source of water pollution in nearly 40% of surveyed water bodies in the United States. Contaminants in stormwater runoff include sediments, nutrients, pathogens, oils, greases, and metals. This Fact Sheet describes:

- The critical role of **Post-Construction** programs in protecting local waterways
- **Required annual training** for MS4 staff with responsibilities related to Post-Construction programing
- Resources available within the **LTAP Learning Management System** for best management practices to prevent pollution

PRE-DEVELOPMENT CONDITION



POST-DEVELOPMENT CONDITION



3 times as much runoff in the **POST-DEVELOPMENT** condition AND the introduction of **POLLUTANTS** into stormwater runoff

Role of Municipal Staff in Post-Construction Programs:

There are a wide variety of municipal functions related to the implementation of a Post-Construction program. Overall, these involve ensuring that developers have adequately planned for implementing appropriate post-construction Best Management Practices (BMPs) and that provisions are in place to ensure the long-term viability and effectiveness of the post-construction BMPs. Since post-construction BMPs are intended to function in perpetuity, the effectiveness of municipal staff in managing local Post-Construction programs will influence local water quality for generations to follow. For managing Post-Construction programs, specific municipal staff tasks include:

- Ensuring an effective local ordinance and technical standards are in place to regulate post-construction measures
- Conducting plan reviews to ensure compliance with appropriate regulations and standards
- Inspecting post-construction BMPs at the end of the construction phase to verify they were installed in compliance with the approved plans
- Inspecting 100% of all privately owned measures over a 5-year MS4 General Permit cycle
- Pursuing enforcement actions for post-construction BMPs that are out of compliance with performance standards.

Who Should be Trained?

- MS4 or Municipal Staff
- Project Developers
- Project Designers
- Contractors
- Others interested in Post-Construction Program management

Post-Construction Training **Requirements** for MS4 Entities

Within the IDEM MS4 General Permit (MS4GP), as of July 5, 2022, MS4 entities must comply with the following Post-Construction program training requirements:

- Per IDEM MS4GP Section 4.6(i): "Document **ANNUAL** training attended by MS4 staff and/or contractual staff that is specific to the responsibility (i.e. plan review, inspection, compliance, and enforcement) the individual performs for the MS4. The documentation must at the minimum include: responsibility of staff member, dates and types of training attended, list of professional certifications MS4 staff have obtained or maintained."
- Per IDEM MS4GP Section 4.3(a)(5): "Provide **ANNUAL** training for builders, developers, contractors, engineers, etc. related to the construction site run-off and post-construction MCMs. The training may be completed in cooperation with other entities."

The **LTAP Learning Management System** has been updated with new Post-Construction Training Modules and they are now available for use. These training resources provide an option for MS4s to meet these the IDEM MS4GP training deadlines.

Why would LTAP develop MS4 Training Modules?

For over 40 years, Purdue University (through LTAP, formerly HERPIC) has helped Indiana jurisdictions manage stormwater issues by developing model drainage standards and ordinances. With the additional training requirements contained in the IDEM MS4 General Permit (MS4 GP), LTAP has responded by developing MS4 Training Modules to meet this need.

Who are these tools intended for?

These LTAP Learning Management System tools are intended for use by MS4 entities as an efficient and effective method meet the training requirements related to Post-Construction MS4 elements contained within the IDEM MS4 GP. This quality, web-based, on-demand training webinar series is accessible 24/7 to ensure MS4s can meet their training requirements **at no cost**.

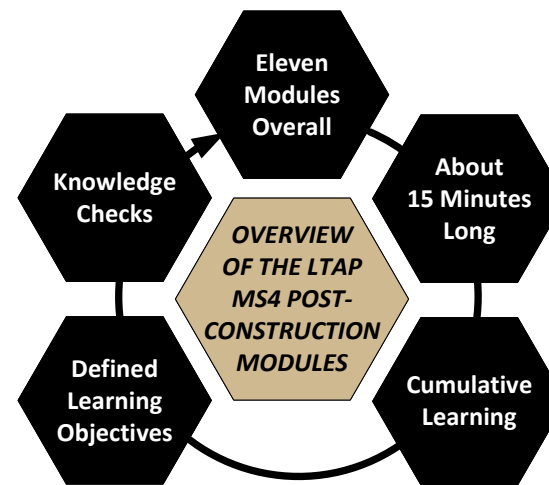
How were the MS4 Training Modules prepared?

LTAP staff worked with Christopher B. Burke Engineering, LLC, to research and compile existing stormwater pollution prevention material (guidance documents, Fact Sheets, brochures, websites, etc.), identify relevant training topics, organize topics into a training matrix, and develop content for Training Modules. Purdue University students developed questions for each module to be answered by trainees to complete a Training Module.

THE TRAINING MODULES

The LTAP MS4 Post-Construction Training Modules are:

- Organized into **Eleven Modules**,
- Approximately **Fifteen Minutes** each in duration,
- Delivered as **Cumulative Learning**,
- Based on defined **Learning Objectives**, and
- Include **Knowledge Checks**.



THE 'MS4' PROGRAM

The term 'MS4' is shorthand for Municipal Separate Storm Sewer System and describes a community's physical infrastructure that conveys stormwater. This publicly owned system includes pipes, ditches, curbs, gutters, inlets, and ponds. The MS4 system is designed for transporting stormwater; it is not designed or managed to treat runoff. Therefore, a **critical assumption** is that the stormwater runoff conveyed through local stormwater conveyance systems is **uncontaminated**.

To ensure that stormwater runoff is uncontaminated, federal and state regulations require MS4 entities to implement practices and measures to keep pollutants out of stormwater runoff. These are defined as **Minimum Control Measures** or **MCMs**. The MS4 program MCMs have been organized into six categories as follows:

MCM 1: PUBLIC EDUCATION AND OUTREACH, which includes educating the general public and selected stakeholders.

MCM 2: PUBLIC PARTICIPATION AND INVOLVEMENT, which includes engaging with the general public during meetings and events.

MCM 3: ILLICIT DISCHARGE DETECTION AND ELIMINATION, intended to minimize non-stormwater discharges by finding and fixing issues with the separate stormwater conveyance systems. This includes detailed mapping of conveyance systems and visually inspecting stormwater outfalls.












MCM 4: CONSTRUCTION SITE RUNOFF CONTROL, which includes a local ordinance requirement that enacts controls identified in the IDEM Construction Stormwater General Permit (CSGP).

MCM 5: POST-CONSTRUCTION RUNOFF CONTROL, which includes controls identified in the IDEM CSGP, along with low-impact development and green infrastructure programs.

➤ **Document annual training of municipal staff with responsibilities related to Post-Construction MS4 program elements and MS4 entities must provide annual training for builders, developers, contractors, engineers, etc. related to construction site runoff and post-construction MS4 Minimum Control Measures.**

MCM 6: POLLUTION PREVENTION AND GOOD HOUSEKEEPING, which includes:

- Requirements for maintenance of the separate storm system conveyances
- Operational controls ensuring the proper management of municipal operations and facilities

 <p>MODULE 1: MS4 POST-CONSTRUCTION PROGRAM OVERVIEW This module covers the background for the National Pollutant Discharge Elimination System stormwater permitting program and basic information about how the post-construction requirements relate water quality and quantity.</p>	 <p>MODULE 7: POST-CONSTRUCTION IN TIGHT SPACES & OTHER CHALLENGES This module examines the intricacies of post-construction challenges in linear spaces, exploring examples, specific project hurdles, typical best management practice or BMPs, inspections, and alternative solutions for unsuitable soils.</p>
 <p>MODULE 2: POST-CONSTRUCTION PROJECTS OVERVIEW Module 2 provides a general overview of some of the components of a post-construction program, including types of BMPs and planning for post-construction.</p>	 <p>MODULE 8: POST-CONSTRUCTION BMP MAINTENANCE Module 8 covers post-construction BMP maintenance, including using the operation and maintenance manual, approaches to maintenance, types of maintenance, and maintenance costs.</p>
 <p>MODULE 3: KEY COMPONENTS OF MS4 POST-CONSTRUCTION PROGRAMS BEFORE OR DURING A NEW PROJECT This module examines the tools an MS4 has at its disposal to implement an effective post-construction program for ongoing projects and projects that are in the pipeline.</p>	 <p>MODULE 9: KEY COMPONENTS OF AN MS4 INSPECTION & MAINTENANCE PROGRAM This module covers the steps involved in building a successful post-construction inspection program, as well as how to proactively work with entities to promote BMP maintenance.</p>
 <p>MODULE 4: KEY COMPONENTS OF MS4 POST-CONSTRUCTION PROGRAMS AFTER A PROJECT ENDS Module 4 examines the tools to effectively manage post-construction BMPs over their lifetime after construction has concluded.</p>	 <p>MODULE 10: INSPECTING POST-CONSTRUCTION BMPs Module 10 discusses key aspects of post-construction BMP inspections and how to navigate the critical components of documentation and enforcement.</p>
 <p>MODULE 5: STORMWATER POLLUTION PREVENTION PLANS Module 5 is intended for anyone that will be preparing or reviewing a stormwater pollution prevention plan (SWPPP).</p>	 <p>MODULE 11: BMP MAINTENANCE WORK FORCE In Module 11, the knowledge base and critical skills that are needed for post construction BMP maintenance is discussed, as well as where you might find potential staff to complete these tasks.</p>
 <p>MODULE 6: POST-CONSTRUCTION BEST MANAGEMENT PRACTICES (BMPs) This module covers the selection, the types and purposes of various post-construction BMPs, and strategies to improve pollutant removal efficiencies.</p>	<p>NOTE: Since the typical target audience may vary across the range of modules, a Fact Sheet has been prepared for each of the 11 modules to identify the topics and Learning Objectives of each module. We encourage training participants to review the Fact Sheet of each module to ensure that they do not miss any items that are relevant to their Post-Construction program responsibilities.</p>