



Municipal Construction Stormwater Site Inspection Toolkit Implementation Guidelines for Eastern Washington

Project and Toolkit Overview

The goal of this project was to develop a toolkit of five checklists for use by municipal stormwater inspectors to more easily track compliance with construction stormwater site inspections as required by the National Pollutant Discharge Elimination System (NPDES) Phase II municipal stormwater permit in Eastern Washington. The Municipal Construction Stormwater Site Inspection Toolkit includes a set of three checklists for erosion and sediment control (ESC) inspectors:



Initial ESC Inspection Checklist



Construction ESC Inspection Checklist



Post-Construction ESC Inspection Checklist

The toolkit also includes two checklists for inspectors addressing proper installation of permanent stormwater BMPs/facilities that focus on bioretention and permeable pavement:



Construction of Permanent Stormwater BMPs/Facilities Inspection Checklist



Post-Construction Permanent Stormwater BMPs/Facilities Inspection Checklist

Tailoring the Checklists



Step 1: Each checklist contains a header that can be modified to add City/County contact information and a logo.

Step 2: Each checklist contains a Project Information box on the first page that can be tailored to track information that a City/County needs for project tracking and enforcement. Some of this information can be completed in the office prior to going out in the field.

Step 3: The inspection questions were developed based on Elements #1-13 of a Construction Stormwater Pollution Prevention Plan. The inspection questions are intended to provide inspectors with a consistent list of items to inspect and are not intended to replace a stormwater/surface water manual or CESCL certification. New inspectors may need supplemental information when responding to these questions. These questions can be tailored to add detail or specific inspection items that a City/County would like to track as part of their program.



Post-construction infiltration rate verification for bioretention or permeable pavement facilities may not be required. These checklist items are included as placeholders, but should be adjusted according to local City/County requirements.

Step 4: The Summary of Corrective Actions at the end of each checklist is intended to provide a comprehensive list of action items that are needed following the inspection. This table can be tailored to track additional information and enforcement actions.

Tailoring the Checklists

A majority of the text included in the checklists applies statewide. For consistency with the Stormwater Management Manual for Eastern Washington, municipalities in Eastern Washington may want to consider removing language referring to “rain gardens” in the following checklists since “bioretention” is the preferred term used in the SWMMEW:



Construction ESC Inspection Checklist (reference to Construction of Permanent Stormwater BMPs/Facilities Inspection Checklist)



Post-Construction ESC Inspection Checklist (reference to Post-Construction Permanent Stormwater BMPs/Facilities Inspection Checklist)



Construction of Permanent Stormwater BMPs/Facilities Inspection Checklist



Post-Construction Permanent Stormwater BMPs/Facilities Inspection Checklist

Implementing Electronic Checklists

Due to the variety of software that is used in Eastern Washington, a set of electronic checklists were not developed as part of this project; however, this factsheet provides some considerations for implementing electronic checklists:

Many municipalities already use geographic information system (GIS) software to manage various elements of their stormwater drainage systems. GIS software can also be used to implement electronic checklists and inspection tracking. One example is ESRI, which offers two applications (Collector and Survey123) that can be used for online or offline field data collection.

Examples of useful GIS functionality include:

- Combining inspections from multiple inspectors into one centralized database
- Using the Summary of Corrective Actions checkbox “Are corrective actions needed?” as a status tracker for outstanding items
- Auto-populating record tracking information (e.g., Project Name, Project/Permit Number, Project Location, Property Owner Information, Contractor Information)
- Creating a shareable web-accessible map to track all active sites in one place and display site status in real time
- Enabling attachments for photos and reference materials to records in the inspection database
- Standardizing data collection through drop-downs and checkboxes to save time on data QA/QC back in the office

Implementing Electronic Checklists

Other specialized survey or questionnaire-focused mobile applications or other asset management software is available with varying cost-structures and functionalities. Enhanced electronic functionality that is available from certain technology providers may include:

- Using custom scripting edits to implement branching or skip logic to focus only on BMPs or issues relevant to a certain site. For example, if only bioretention is present, permeable pavement inspection items can be excluded and automatically set as “not applicable.”
- Providing collapsible “pop-up” or extra background information for complex checklist items, specific/detailed requirements, etc.
- Providing notes and corrective action fields associated with each question
- Auto-generating summary information
- Exporting customized report sheets with embedded photos to summarize key site observations
- Importing reference information from an external spreadsheet or pre-existing database to streamline project information data entry (e.g., Project Name, Project/Permit Number, Project Location, Property Owner Information, Contractor Information)
- Connecting asset management records with GIS data

Additional Resources

Stormwater Management Manual for Eastern Washington (or local equivalent):
<https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Stormwater-manuals>

Certified Erosion and Sediment Control Lead (CESCL) Training Materials

Statewide LID Training Program Materials:
www.wastormwatercenter.org/lidswtrainingprogram

Municipal Construction Stormwater Site Inspection Toolkit Training Materials
<http://www.wastormwatercenter.org/stormwater-construction-site-inspection-resources>