

Municipal Separate Storm Sewer System (MS4) Program Audit Guidance

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for
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CSC



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Introduction

Background and Purpose of the Guidance

Colorado Department of Public Health and Environment (CDPHE) issues and administers discharge permits and other control mechanisms as provided by the Colorado Water Quality Control Act. The Colorado Discharge Permit System (CDPS) regulations are promulgated in implementation of the Colorado Water Quality Control Act. A discharge from a large or medium municipal separate storm sewer system (MS4) must receive an individual permit or permit coverage from the *Stormwater Discharges Associated with Municipal Separate Storm Sewer Systems* general permit. Large municipalities and the Colorado Department of Transportation receive an individual permit to discharge from their MS4s. Medium municipalities (i.e., traditional and nontraditional) receive permit coverage under the general permit. Examples of nontraditional permittees include wastewater districts, school districts, universities, and prisons.

The purpose of this *Municipal Separate Storm Sewer System (MS4) Program Evaluation Guidance* (Guidance) is to assist MS4s in the following:

- Assess the compliance of MS4 stormwater programs,
- Determine changes that need to be made to a MS4 stormwater program,
- Provide recommendations on strengthening a MS4 stormwater program above and beyond the permit requirements,
- Provide technical assistance, and
- Prepare for an audit from a state or federal agency.

Intended Audience

Because medium and large MS4s have unique, individual permits, this Guidance is written for small MS4s covered under the *Stormwater Discharges Associated with Municipal Separate Storm Sewer Systems* general permit. The general permit requires implementing best management practices (BMPs) to the maximum extent practicable (MEP) under six program areas—public education and outreach on stormwater impacts, public involvement/participation, illicit discharge detection and elimination, construction sites, post-construction stormwater management in new development and redevelopment, and pollution prevention/good housekeeping for municipal operations.

The Guidance was adapted from U.S. Environmental Protection Agency's (EPA's) *MS4 Program Evaluation Guidance* (January 2007, EPA-833-R-07-003) and includes specific questions pertaining to CDPHE's MS4 permit requirements. For more information on how to evaluate a municipal stormwater program, download EPA's guidance from http://cfpub.epa.gov/npdes/docs.cfm?program_id=6&view=allprog&sort=name#ms4_guidance.

Preparing for an audit

A typical full-program audit lasts approximately 3 days and includes reviews in the office and in the field. In addition, program-specific and/or results based audits may occur that only look at certain programs or program components. In the office, an auditor will review all applicable documents and become familiar with the programs. In the field, an auditor will evaluate how MS4 inspectors inspect construction sites and permanent BMPs and respond to illicit discharges.

Basically, an auditor will compare written documents to what a MS4 is actually implementing. MS4 staff must follow all written procedures. Remember to include a revision history to written documents. A typical report developed by a state or federal auditor will include violations and recommendations. *Violations* arise when a MS4 is not following their own

Remember to
implement *all* written
procedures.

written procedures or a direct permit requirement. *Recommendations* arise when an auditor determines that the MS4 following their own written procedures and the permit but feels that the program could be strengthened. Remember to keep all documents for 3 years after the activity is no longer being utilized by the program. A state or federal auditor might review the following:

- Official Documents
 - Documents submitted to CDPHE, including the stormwater management program descriptions document (SMPDD) submitted in June 2008
 - SMPDD
 - Annual reports
 - Noncompliance notifications
 - Memorandums of understanding (MOUs) and intergovernmental agreements (IGAs)
 - Written procedures
 - Program description documents (e.g., illicit discharge detection and elimination manual)
 - Applicable ordinances, resolutions, and codes
 - Files (e.g., construction and illicit discharge response)
 - Public notices
 - Map of storm drain outlets
- Other Documents
 - Web site
 - Databases
 - Brochures, fact sheets, posters, newspaper articles, and other outreach materials
 - Distribution lists
 - Presentations and agendas
 - Runoff control plans
 - BMP manuals

Remember that during the interview with the auditor, everything is on the record (even if it is just a story told while in the car on the way to a construction site). If the self-audit reveals that there are violations, an MS4 should immediately inform CDPHE (this is a requirement of the MS4 permit) and develop a timeline for how the MS4 will return to compliance.

Using the worksheets

After all of the above-mentioned materials have been gathered, a MS4 can audit its own stormwater program using the worksheets provided in this Guidance. The worksheets cover the following:

- Program management
- Public education/involvement program
- Illicit discharge detection and elimination program
- Construction site runoff control program
- Post-construction program
- MS4 pollution prevention and good housekeeping program

Each worksheet contains questions pertaining to CDPHE's MS4 permit requirements. The worksheets are intended to guide MS4 staff members in conducting a detailed evaluation of their MS4 stormwater program. Many questions contain bulleted lists. These are just meant to give ideas on possible answers to the question. A MS4 does not need to implement each bulleted item. The worksheets also contain other questions that an auditor might ask and tips on how to strengthen a stormwater program.

Program Management Component Worksheet

Staff Interviewed		
Name	Department/Agency	Phone Number/E-mail

Stormwater Management Program Description Document		
Questions	Response	
Has a SMPDD been developed?	YES	NO
Does it cover the entire MS4 area, including any new "growth areas?"	YES	NO
Does the new growth area (if applicable) include implementing the public involvement/participation program, construction sites program, and post-construction program?	YES	NO
If multiple co-permittees, does each have an SMPDD document?	YES	NO
If multiple co-permittees, is there an MS4-wide SMPDD?	YES	NO
Does each program description have a general description of the program elements? <ul style="list-style-type: none"> ▪ Public education and outreach on stormwater impacts ▪ Public involvement/participation ▪ Illicit discharge detection and elimination ▪ Construction site ▪ Post-construction stormwater management ▪ Pollution prevention/good housekeeping for municipal operations 	YES	NO
Do all measurable goals have a due date of December 31 st of the applicable year?	YES	NO
Is there a waterbody with a TMDL within the jurisdiction?	YES	NO

If there is an TMDL, what sections of the SMPDD are applicable to the TMDL-affected areas?	
Has CDPHE required the MS4 to conduct water quality monitoring?	YES NO

Notes

Other questions a state or federal auditor might ask:

- Were stakeholders included in the SMPDD development process?
- How are in-house departments coordinated?
- Is there a stormwater task force or committee in place?
- Are outside groups used to implement the SMPDD?
- Do the measurable goals address water quality impact or effectiveness?

Tip for a successful program:

- Ensure that all applicable ordinances, resolutions, procedures are congruent. For example, development code allows 14 days to remediate an illicit discharge, whereas the illicit discharge ordinance requires the immediate remediate of any illicit discharges.
 - Periodically review all written procedures to ensure that they are being followed by all staff members.
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Multiple Co-Permittee Coordination		
Questions	Response	
Are roles and responsibilities for multiple co-permittees established?	YES	NO
If multiple co-permittees, is there an “umbrella group” to coordinate activities?	YES	NO
	Name of Group:	

Are there MOUs and/or IGAs between co-permittees and outside agencies?	YES	NO
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Notes

Tips for a successful program:

- Develop an organizational chart with roles and responsibilities of each agency or job title participating in the program.
 - Develop procedures for all procedures under all programs.
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Prioritization of Resources		
Questions	Response	
Have overall water quality concerns, priorities, and goals specific to the MS4 been established? If yes, what are they based on? <ul style="list-style-type: none"> • Pollutants of concern? • 303(d) list? • TMDLs? • Land uses of concern? • Existing watershed planning efforts? 	YES	NO
Have strategies specific to water quality concerns, priorities, and goals been developed in the SMPDD?	YES	NO

Notes

Other question a state or federal auditor might ask:

- How does the permittee determine program implementation priorities for resource allocation?
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Assessment and Evaluation		
Questions	Response	
Is the program measured against goals or standards annually?	YES	NO

Assessment and Evaluation		
Questions	Response	
Has CDPHE been notified of all areas of noncompliance?	YES	NO
Are results (e.g., monitoring data) from information collected and analyzed and <u>used to assess the success of the program</u> at reducing the discharge of pollutants to the maximum extent practicable submitted? Is applicable information being reported in the annual reports?	YES	NO
Have SMPDD modifications been submitted to CDPHE?	YES	NO
Has the MS4 received approval from CDPHE to modify the SMPDD? What are the changes?	YES	NO
Has the SMPDD been updated?	YES	NO
Is documentation included in the SMPDD?	YES	NO

Notes

Other questions a state or federal auditor might ask:

- When was the last time the SMPDD was updated?
- Does it contain all CDPHE-approved modifications?
- Have other types of improvements been assessed (e.g., riparian habitat, stream corridor, aquatic habitat, groundwater)?
- Have internal reporting deadlines been established?
- Are data or information from outside groups obtained?

Tip for a successful program:

- Always keep your SMPDD and other written documents up to date. Even if CDPHE has approved a change, the change must be
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included in the SMPDD and other applicable written documents.

Public Education/Involvement Program Worksheet

Staff Interviewed		
Name	Department/Agency	Phone Number/E-mail

Targeted Outreach		
Question	Response	
Have outreach materials or activities targeting specific pollutants or pollutant sources been developed? Describe:	YES	NO
What are they based on?	Pollutants of concern _____ Pollutant source of concern _____ Behavior of concern _____ Other _____	
Has illicit discharge education been addressed?	YES	NO
If the MS4 is in the Cherry Creek Basin, are educational materials addressing chlorophyll <i>a</i> (e.g., nitrogen and phosphorus) distributed?	YES	NO

Notes

Other questions a state or federal auditor might ask:

- Has an outreach strategy document been developed?
 - Are measurable goals included in the document?
 - Have target audiences established? If so, based on what factors (e.g., behavior, location/neighborhood, business type, age)?
 - Are target audiences periodically reevaluated?
 - Are materials in different languages distributed?
 - Do you partner with other organizations?
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Tips for a successful program:

- Develop an outreach strategy that identifies target audiences to address local concerns and use resources wisely.
 - Develop materials in the different languages spoken by the populations in the MS4.
 - Partner with other organizations to save resources.
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Types of Materials Developed		
Questions	Response	
What are the types of materials that have been developed? <ul style="list-style-type: none"> ▪ Brochures? ▪ Posters? ▪ E-mails? ▪ Booth at events? ▪ Door-to-door outreach? ▪ Presentations or trainings? ▪ TV and radio public service announcements? ▪ Newspaper or newsletter articles? ▪ Newspaper or newsletter advertisements? ▪ Web site? ▪ Storm drain markings? ▪ Billboard advertisements? ▪ Bus stop advertisements? 		
Do the materials describe the impacts of polluted stormwater discharges?	YES	NO
Do the materials list steps the public can take to reduce stormwater pollutants?	YES	NO
Do the materials inform the public about the prohibition and associated water quality impacts of illicit discharges?	YES	NO

Types of Materials Developed	
Questions	Response
Do the materials inform businesses about the prohibition and associated water quality impacts of illicit discharges?	YES NO

Notes

Other questions a state or federal auditor might ask:

- How are materials distributed?
 - Is the distribution tracked?
 - Is the public given the opportunity to comment on stormwater management program changes?
 - Are stormwater related volunteer activities sponsored or endorsed by the MS4?
 - What are the public education and involvement assessment methods?
 - Has a public awareness survey been performed?
 - Is there a prioritization scheme for education and outreach to the public and businesses? What is it based upon (e.g., watershed, land use, illicit discharge incident history)?
 - Does the MS4 (or other organization in partnership with the MS4) stencil or mark storm drains? If so, how often are the stencils or markings checked? Approximately how many drains are stenciled or marked?
 - Is there a procedure for replacing storm drain stencils or markings when necessary?
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Public Notice	
Questions	Response
Are there public notice requirements? <ul style="list-style-type: none">▪ Published in a community publication or newspaper▪ Posted in a public place Name of publication(s):	YES NO

Notes

Other questions a state or federal auditor might ask:

- Is there a procedure for public notices? Describe the procedure.
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Public Input	
Questions	Response
What is the mechanism for the public to review or provide input on the program? <ul style="list-style-type: none"> ▪ SMPDD posted on web site? ▪ Phone number listed on written materials? ▪ Phone number listed on web site? 	

Notes

Other questions a state or federal auditor might ask:

- Is there a procedure for considering public comments on the program?
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Illicit Discharge Detection and Elimination (IDDE) Program Worksheet

Staff Interviewed		
Name	Department/Agency	Phone Number/E-mail

Ordinance/Legal Authority	
Questions	Response
<p>Is there an ordinance or resolution that prohibits illicit discharges?</p> <p>Title and section or chapter.</p>	<p>YES NO</p>
<p>Are exclusions (non-stormwater discharges) allowed?</p> <p>Which ones (e.g., discharges from car washes, fire-fighting activities, CDPHE-permitted discharges)?</p>	
<p>Where are enforcement procedures written?</p> <ul style="list-style-type: none"> ▪ Ordinance/resolution ▪ Standard operating procedure ▪ Illicit discharge detection and elimination manual ▪ Other 	

What are the enforcement mechanisms available:	Verbal warnings	YES	NO
	Notices of Violations (NOV)	YES	NO
	Administrative fines	YES	NO
	Stop-work orders	YES	NO
	Withhold C.O.	YES	NO
	Civil penalties	YES	NO
	Criminal penalties	YES	NO
Other:			

Notes

Other questions a state or federal auditor might ask:

- Is an official enforcement escalation plan or procedure in place?
- Does the ordinance or legal authority allow MS4 access to a property to investigate an illicit discharge?
- What are the maximum potential penalties for causing an illicit discharge?

MS4 Map		
Question	Response	
Is the map of MS4 outfalls and receiving waters complete?	YES	NO
Is it current?	YES	NO
What are the procedures for updating the map with new outfall locations?		

MS4 Map	
Question	Response
<ul style="list-style-type: none"> ▪ Does the MS4 map have all components required by the permit (i.e., storm drain outfalls, name and location of receiving waters)? 	<p style="text-align: center;">YES NO</p>
<p>Does the map have all components required by additional (e.g., IDDE plan) documentation developed by the MS4?</p> <ul style="list-style-type: none"> ▪ Roads with drainage systems ▪ Municipal streets ▪ Catch basins ▪ Curbs ▪ Gutters ▪ Ditches ▪ Man-made channels ▪ Storm drains ▪ Other 	<p style="text-align: center;">YES NO</p>

Notes

Other question a state or federal auditor might ask:

- Who can access the storm drain system map and for what purpose?

 - Does the map contain additional information, such as the following:
 - Roads with drainage systems
 - Municipal streets
 - Catch basins
 - Curbs
 - Gutters
 - Ditches
 - Man-made channels
 - Storm drains

 - Are there procedures for naming the outlets?
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- Are there procedures for field verification of the outlets?
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Tips for a successful program:

- Develop a program (procedures, investigation forms, frequency) for dry weather screening.
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Investigation of Illicit Discharges		
Questions	Response	
Has an illicit discharge detection and elimination manual/document been written?	YES	NO
Have areas for illicit discharges been prioritized?	YES	NO
Criteria used:	Land use(s) in watershed	YES NO
	Waterbody impairment	YES NO
	Spills/Dumping incidents	YES NO
	Other:	
Have investigation procedures for tracing and locating illicit discharges been adopted?	YES	NO
Summary of process used:		
How are the investigations tracked?	YES	NO
Is a database used?	YES	NO
Types of data tracked:		
Does the manual/document describe how to remove the discharge? This is different from enforcement.	YES	NO

Other questions a state or federal auditor might ask:

- Describe what happens when a typical illicit discharge is reported.
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- Is a checklist or reporting form used for illicit discharge investigations?
 - Which staff (departments/agencies) are used to respond to illicit discharge reports?
 - Are MOUs or IGAs in place with all outside agencies participating in the program?
 - Do you have an illicit discharge reporting hotline? If not, what number would citizens use?
 - How are reports of illicit discharges tracked?
 - Are there records showing that each illicit discharge is addressed, remediated, and resolved?
 - Is there a procedure for septic system maintenance verification?
 - Has a spill response plan or procedures been adopted? Who responds?
 - Is there adequate equipment available to staff to clean up minor spills?
 - Are spills tracked? Is a database used?
 - Do you have an organization on contract to address hazardous waste spills?
 - Are sanitary sewer systems evaluated to determine storm sewer cross-connections or overflow locations?
 - Is the extent of infiltration and inflow into the storm drain system known? Are damaged or degraded pipes scheduled for repair or replacement?
 - Are sewer spill cleanup procedures in place?
 - Does your local or regional health department inform the MS4 when they address sewer spills? This is usually the other way around, MS4/utility notifies Health Dept.

Tips for a successful program:

- Develop procedures for investigating illicit discharges.
 - Make sure that all procedures are followed and the necessary documents are completed.
 - Make sure that the illicit discharge detection and elimination plan
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include procedures for spill response and responding to reports of illicit discharges (hazardous and non-hazardous).

- Ensure that staff members from all applicable agencies (fire, police, health) are aware of the MS4's illicit discharge procedures.
 - Implement a household hazardous waste recycling and disposal program. This program can include curbside pickup or periodic (e.g., annual, seasonal) events.
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Staff Education and Training	
Questions	Response
Are staff trained to identify illicit discharges?	YES NO
Frequency:	
What are the materials used to train staff?	

Notes

As a part of the audit, be prepared for a review of complete paperwork trails for several illicit discharge events (including a spill and an unknown illicit discharge in the storm drain system). This will determine if the investigation process was followed and documented and if adequate enforcement actions were taken when required. Consult and review three different illicit discharge investigation files.

Illicit Discharge Location or Case File Name #1:		
Summarize the illicit discharge event:		
Full investigation process documented?	YES	NO
Source determined?	YES	NO
Enforcement action taken?	YES	NO
Describe:		

Illicit Discharge Location or Case File Name #2:		
Summarize the illicit discharge event:		
Full investigation process documented?	YES	NO
Source determined?	YES	NO
Enforcement action taken?	YES	NO
Describe:		

Construction Site Runoff Control Program Worksheet

Staff Interviewed		
Name	Department/Agency	Phone Number/E-mail

Ordinance/Legal Authority		
Questions	Response	
<p>Is there an ordinance or resolution that requires stormwater BMPs at construction sites?</p> <p>Title and section or chapter:</p>	YES	NO
<p>What is the threshold for coverage (e.g., 1 acre; less than 1 acre, but part of a larger common plan of development)?</p>		
<p>Are there exclusions (e.g., single family homes, developments, "R-factor" waivers) from coverage allowed?</p>	YES	NO
<p>Are other pollutants regulated on construction sites?</p> <ul style="list-style-type: none"> ▪ Construction dewatering and wash water? ▪ Discarded building materials? ▪ Concrete truck washout? ▪ Chemicals? ▪ Litter? ▪ Sanitary wastes? ▪ Other? 		
<p>What is the permitting mechanism used to require appropriate BMPs (i.e., grading permit, building permit)?</p>		
<p>Is a plan required (erosion control plan or stormwater management plan (SWMP))?</p>	YES	NO
<p>Are minimum construction site BMPs specified?</p> <p>Based on what criteria?</p>	YES	NO
<p>Does the ordinance or legal authority allow MS4</p>	YES	NO

Ordinance/Legal Authority		
Questions	Response	
inspectors access to the construction site?		
Where are enforcement procedures written? <ul style="list-style-type: none"> ▪ Ordinance/resolution ▪ SOP ▪ Other 		
What are the enforcement mechanisms available:	Verbal warnings	YES NO
	Notices of Violations (NOV)	YES NO
	Administrative fines	YES NO
	Stop-work orders	YES NO
	Withhold C.O.	YES NO
	Civil penalties	YES NO
	Criminal penalties	YES NO
	Other:	
Are there an enforcement escalation (for recalcitrant violators) plan or procedure in place?	YES	NO
If the MS4 is in the Cherry Creek Basin, are there additional procedures to address stormwater runoff per the Cherry Creek Reservoir Control Regulation? Describe the procedures.	YES	NO

Notes

Other questions a state or federal auditor might ask:

- Are public projects designed in-house or contracted?

 - If contracted planners and engineers are used for designing MS4-owned projects, does the contract language specify that stormwater BMPs be incorporated into the design?
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- If contracted developers are used, are applicable municipal procedure requirements specified in the contract?
- If contracted inspectors are used, are minimum inspection, maintenance and reporting requirements specified in the contract?

Tip for a successful program:

- Apply the same procedures and standards for public and private projects.

Plan Review Procedures		
Questions	Response	
Are there written procedures for site plan review?	YES	NO
Do the procedures incorporate the consideration of potential water quality impacts?	YES	NO
Who performs erosion and sediment control plan reviews (i.e., planning department, building department)?		
Is there a size threshold for plan review (i.e., 1 acre)?		
Do the standard conditions of approval include erosion and sediment control?	YES	NO

Other questions a state or federal auditor might ask:

- Is a plan review criteria or checklist used? Is the same checklist used during the review of private and public construction projects?
- Are there procedures for the submittal of site plans?
- What is the number of active projects?
- Is there technical guidance provided or required for temporary BMPs? Does the guidance have selection criteria? Does the guidance include maintenance criteria?
- Is the CDPHE-issued NOI verified during the plan review?

Tips for a successful program:

- Conduct pre-project meetings with the developer.
- Assemble a pre-construction folder of information, such as copies of the ordinance, municipal inspection form, approved BMP guidance manual, and relevant fact sheets and brochures.
- Track your active construction projects. Track project status, inspection findings, enforcement actions, complaints, etc.
- Make sure each project file contains required information (e.g., plan review checklist, site plan, SWMP, municipal permit). Similar to the IDDE program, you might want to pull three

construction files to determine if procedures were followed and the proper documentation is contained in the file.

Construction Project Inspections	
Questions	Response
Are there written procedures for site inspections?	YES NO
Who performs construction stormwater inspections (i.e., building inspector, dedicated stormwater inspector)? List all if different phases or areas of the project are inspected by different staff. (i.e., public right-of-way, building footprint, grading phase, construction phase).	

Notes

Other questions a state or federal auditor might ask:

- Is a standard inspection checklist used?
- How many inspectors are there for stormwater issues at construction projects?
- On average, what is the number of projects for which each inspector is responsible?
- How often are sites inspected? What factors determine the frequency?
- Are inspections triggered by rain events? What size rain event? How soon after the event?
- How are inspection findings tracked (e.g., database.)?

Tips for a successful program:

- Prioritize site inspections using criteria such as the proximity to a waterbody, size of the project, past inspection results, slope of the
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project, and soils.

- Develop and follow procedures for construction site inspections.
 - Document each inspection conducted.
 - Provide each inspector with a camera and include applicable photographs in inspection reports.
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Enforcement/Referrals	
Questions	Response
Can construction inspectors administer enforcement actions? If no, who can (e.g., code enforcement officer)? If yes, what types of enforcement actions?	YES NO
Who does follow up on enforcement actions?	
How would the public submit information (e.g., a complaint) about a construction project?	
How is information submitted by the public tracked?	

Notes

Other questions a state or federal auditor might ask:

- How are enforcement actions tracked?
 - What is the most commonly used enforcement action?
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- How many enforcement actions (by type—notice of violations, stop work orders, etc.) were issued in the previous year?
- What is the most common compliance issue on construction projects (e.g., tracking on streets, litter, inadequate concrete washout BMPs)?
- Are there records of comments received from the public and the MS4's responses?

Tips for a successful program:

- Have a process for ensuring that each violation is tracked and remediated.
- Each violation should list a date when the issue should be fixed.
- Ensure that enforcement timeframes are within reason.
- Ensure that the construction sites program is at least as stringent at CDPHE stormwater construction general permit.

Training		
Questions	Response	
Do MS4 employees receive training?	YES	NO
What does the training cover? <ul style="list-style-type: none"> ▪ Plan review? ▪ Site inspections? ▪ Stormwater program? ▪ Other? 		
Does the training and education program require employee attendance for any of the trainings?	YES	NO
How are construction operators educated? <ul style="list-style-type: none"> ▪ Trainings? ▪ Brochures? ▪ Web site? 		

Notes

Notes

Other questions a state or federal auditor might ask:

- What is the frequency of the trainings offered?
 - How many MS4 employees were trained in the past year?
 - How many construction operators were trained in the past year?
 - Are any workshops offered to professional groups?
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During an audit, an auditor might review two to three approved projects with erosion and sediment control plans for different project types (residential, commercial, public) and sizes. Review at least one public project plan and one private project plan to ensure that the same temporary BMP standards are applied. Also make sure that the project file has the required documentation.

Project File Questions		
Are BMPs adequately incorporated into the plan to address erosion control, sediment control, and good housekeeping?	YES	NO
Are design specifications and details for all BMPs included on the plans?	YES	NO
Do standards conditions include erosion and sediment control or stormwater provisions?	YES	NO
Are maintenance requirements specified?	YES	NO
Notes:		

Project File Questions		
Are BMPs adequately incorporated into the plan to address erosion control, sediment control, and good housekeeping?	YES	NO
Are design specifications and details for all BMPs included on the plans?	YES	NO
Do standards conditions include erosion and sediment control or stormwater provisions?	YES	NO
Are maintenance requirements specified?	YES	NO
Notes:		

Project File Questions		
Are BMPs adequately incorporated into the plan to address erosion control, sediment control, and good housekeeping?	YES	NO
Are design specifications and details for all BMPs included on the plans?	YES	NO
Do standards conditions include erosion and sediment control or stormwater provisions?	YES	NO
Are maintenance requirements specified?	YES	NO
Notes:		

Post-Construction Program Worksheet

Staff Interviewed		
Name	Department/Agency	Phone Number/E-mail

Ordinance/Legal Authority	
Questions	Response
<p>Is there an ordinance or resolution used to require post-construction stormwater BMPs on new development or redevelopment projects?</p> <p>Title and section or chapter.</p>	<p>YES NO</p>
<p>What is the threshold for coverage (e.g., 1 acre; less than 1 acre, but part of a larger common plan of development)?</p>	
<p>Are there exclusions from coverage allowed?</p> <p>If so, what are the exclusions?</p>	<p>YES NO</p>
<p>What is the mechanism used to require appropriate permanent BMPs:</p>	
<p>Is a plan required?</p>	<p>YES NO</p>
<p>Where are enforcement procedures for proper design and construction of permanent BMPs written?</p> <ul style="list-style-type: none"> ▪ Ordinance/resolution ▪ Design criteria manual ▪ Other manual ▪ Certificate of acceptance ▪ Other 	

Ordinance/Legal Authority	
Questions	Response
<p>What are the enforcement mechanisms available for the design and construction of permanent BMPs:</p>	<p>Verbal warnings YES NO Notices of Violations (NOV) YES NO Administrative fines YES NO Stop-work orders YES NO Withhold C.O. YES NO Civil penalties YES NO Criminal penalties YES NO Other:</p>
<p>Where are enforcement procedures for proper maintenance of permanent BMPs written?</p> <ul style="list-style-type: none"> ▪ Ordinance/resolution ▪ Design criteria manual ▪ Other manual ▪ Other 	
<p>What are the enforcement mechanisms available for the maintenance of permanent BMPs:</p>	<p>Verbal warnings YES NO Notices of Violations (NOV) YES NO Administrative fines YES NO Stop-work orders YES NO Civil penalties YES NO Criminal penalties YES NO Other:</p>
<p>If the MS4 is in the Cherry Creek Basin, are there additional procedures to address stormwater runoff per the Cherry Creek Reservoir Control Regulation?</p> <p>Describe the procedures.</p>	<p>YES NO</p>

Notes

Other questions a state or federal auditor might ask:

- Is there an enforcement escalation procedure for violations?

 - Is there a comprehensive or watershed plan with detailed information on current and planned development and redevelopment patterns?
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Plan Review Procedures	
Questions	Response
Who performs post-construction BMP plan review (i.e., engineering department, planning department, building department)?	
Size threshold for plan review (i.e., 1 acre)?	
Are there standard conditions of approval that include post-construction BMPs?	YES NO
Do the plans have to maintain or restore hydraulic conditions at the site to minimize the discharge of pollutants and prevent in-channel impacts associated with increased imperviousness?	YES NO
How is long-term maintenance required? <ul style="list-style-type: none"> ▪ Maintenance agreement? ▪ Plat language? ▪ Ordinance? 	

Post-Construction BMP Inventory	
Question	Response
How are post-construction structural BMPs tracked?	
What is the information tracked?	Location YES NO Maintenance Requirements YES NO Inspection findings YES NO Other:
How are post-construction nonstructural BMPs tracked?	
What is the information tracked?	Location YES NO Inspection findings YES NO Other:

Notes

Other questions a state or federal auditor might ask:

- Is a plan review criteria or checklist used? Is the same checklist used during the design and/or review of public construction projects?

- How many post-construction BMPs have been implemented?

- Is there technical guidance provided or required for permanent BMPs? Does the guidance have selection criteria? Does the guidance include maintenance criteria?

Post-Construction BMP Inspection and Maintenance	
Questions	Response
How are permanent BMPs determined to be installed as designed? <ul style="list-style-type: none"> ▪ Recorded/Submitted/verification of “as built?” ▪ MS4 inspector? 	
Are there procedures to ensure the long-term maintenance of the permanent BMPs? <ul style="list-style-type: none"> ▪ Inspections? Does the ordinance or legal authority allow access to the property for MS4 inspectors? ▪ Owner submits maintenance records? 	

Notes

Other questions a state or federal auditor might ask:

- Is a standard inspection checklist used?

 - How often are permanent BMPs inspected after they are installed? What determines frequency?

 - Is there a different inspection frequency for public and private
-

BMPs?

- How are inspection findings and maintenance of the permanent BMPs tracked?
 - How many inspectors are there for permanent BMPs?
 - On average, what is the number of permanent BMPs each inspector is responsible for?
-

Tips for a successful program:

- Use the same inspection checklist for and publicly and privately owned permanent BMPs.
 - Follow procedures for permanent BMP maintenance inspections.
-

Enforcement/Referrals	
Questions	Response
Can construction inspectors administer enforcement actions for the improper construction of a permanent BMP? If not, who can (e.g., code enforcement officer)? If yes, what types of enforcement actions?	YES NO
Can inspectors administer enforcement actions if private permanent BMPs are not maintained? If not, who can? If yes, what types of enforcement actions?	YES NO
Are enforcement actions tracked? How?	
Who does follow up on enforcement actions?	

Notes

Other questions a state or federal auditor might ask:

- What is the most commonly used enforcement action?
 - What is the average number of enforcement actions (by type—notice of violations, stop work orders, and such) issued in the previous year?
 - What is the most common compliance issue involving the maintenance of permanent BMPs?
 - Is training provided to designers and engineers?
 - Are MS4 inspectors trained on BMP inspections and maintenance?
 - How do designers and engineers receive information (e.g., design criteria) on the MS4's standards for permanent BMPs?
 - How are enforcement records maintained?
-

During an audit, an auditor might review two to three approved projects with permanent BMPs for different project types (residential, commercial, public) and sizes. Review at least one public project plan and one private project plan to ensure that the same permanent BMP standards are applied. Also make sure that the project file has the required documentation.

Project File Questions		
Are BMPs adequately incorporated into a plan?	YES	NO
Are design specifications and details for all BMPs included on the plans?	YES	NO
Are maintenance requirements specified?	YES	NO
Is the maintenance history tracked?	YES	NO
Has the permanent BMP been inspected during construction?	YES	NO
Has the permanent BMP been inspected after construction to ensure that the BMP is being maintained?	YES	NO
Notes:		

Project File Questions		
Are BMPs adequately incorporated into a plan?	YES	NO
Are design specifications and details for all BMPs included on the plans?	YES	NO
Are maintenance requirements specified?	YES	NO
Is the maintenance history tracked?	YES	NO
Has the permanent BMP been inspected during construction?	YES	NO
Has the permanent BMP been inspected after construction to ensure that the BMP is being maintained?	YES	NO
Notes:		

MS4 Pollution Prevention and Good Housekeeping Program Worksheet

Staff Interviewed		
Name	Department/Agency	Phone Number/E-mail

Municipal Pollution Prevention and Good housekeeping		
Question	Response	
Are there written procedures for municipal operations? <ul style="list-style-type: none"> ▪ Catch basin cleaning? ▪ Storm drain pipe cleaning? ▪ Street sweeping/vacuuming? ▪ Vehicle maintenance? ▪ Vehicle fueling? ▪ Vehicle washing? ▪ Municipal parking lots? ▪ Material storage? ▪ Chemical storage? ▪ Fertilizer/pesticide/herbicide application? ▪ Salt/sand storage? ▪ Snow storage? ▪ Spill prevention and clean up? 	YES	NO
Do the written procedures apply to the following: <ul style="list-style-type: none"> ▪ Municipal parking lots? ▪ Maintenance and storage yards? ▪ Fleet and maintenance shops with outdoor storage areas? ▪ Salt/sand storage areas? ▪ Snow disposal areas? ▪ Waste transfer stations? ▪ Park and open space area maintenance? ▪ Building maintenance? ▪ Street maintenance? ▪ New construction of municipal facilities? ▪ Stormwater system maintenance? 	YES	NO
Are these written materials available to MS4 field staff?	YES	NO

Is there a list of MS4 owned industrial facilities?	YES	NO
Is there a list of all MS4 owned facilities?	YES	NO
Is there a list of municipal activities?	YES	NO

Notes

Other questions a state or federal auditor might ask:

- Are there procedures for auditing activities and facilities to determine the potential for water quality impacts?
 - How often are streets swept or vacuumed?
 - Where are the spoils stored?
 - Is there a chance that the spoils could wash into the MS4?
 - How often are catch basins cleaned?
 - Are the types and amount of deicers tracked?
 - How soon is sand swept up after a snow event?
 - Is there a designated stormwater contact person for each municipal facility?
 - Describe enforcement procedures used to address noncompliance on a MS4-owned facility.
 - Are staff who apply pesticides, herbicides, and fertilizers certified?
 - Are Integrated Pest Management (IPM) practices used?
 - Are contractual staff used to complete MS4 maintenance activities?
 - If contractors are used, are stormwater BMPs requirements included in the contract language?
-

Tips for a successful program:

- Ensure that each facility runoff control plan (if applicable) reflects current site conditions.
 - Inspect municipal facilities for stormwater violations.
 - Appoint an onsite representative for each municipal facility to be responsible for stormwater issues.
 - Develop a process to address issues found during an inspection.
 - Develop a hierarchy for inspecting municipal facilities (e.g., annual inspections for vehicle maintenance facilities, once a permit term inspection for a municipal administrative building).
 - Develop a checklist for municipal facility inspections.
 - Avoid storing materials outdoors outside secondary containment.
-

Staff Education and Training		
Questions	Response	
Are staff trained in the MS4's good housekeeping and pollution procedures for municipal operations?	YES	NO
Are staff trained to identify illicit discharges?	YES	NO
What materials are used to train staff?		

Notes

Other questions a state or federal auditor might ask:

- What is the frequency of the trainings?
 - Who provides the training?
-

Resources

National

EPA's web site contains helpful tools for MS4s and more information on the NPDES program.
www.epa.gov/npdes/stormwater

The Center for Watershed Protection's site provides tools for protecting waterways. They have a very popular IDDE manual.
www.cwp.org/index.html

International Stormwater BMP Database's web site contains information on stormwater BMPs.
www.bmpdatabase.org/

The Low Impact Development Center's web site provides more information on low impact development techniques.
www.lowimpactdevelopment.org/

Stormwater Authority.org provides the latest news on stormwater management and BMPs.
www.stormwaterauthority.org/

Colorado

Colorado Department of Public Health and Environment's web site contains MS4 permit information and a link to other online resources (www.cdphe.state.co.us/wq/PermitsUnit/stormwater/PhIIresource.PDF)

Colorado Stormwater Council provides a forum for MS4s in Colorado.
www.coloradostormwatercouncil.org/

Denver Regional Council of Governments provides information to MS4s including case studies and sample ordinances.
www.drcog.org/

Urban Drainage and Flood Control District's web site contains many helpful materials, including the *Drainage Criteria Manuals* (Volumes 1 through 3).
www.udfcd.org/index.html