

MS4 Bootcamp



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MS4 Bootcamp



Basic Training

AGENDA

- **Construction Site Stormwater Runoff Control (MCM 4)**
 - **Performance Standards**
- **Cuyahoga SWCD program**
- **Post-Construction Stormwater Management in New Development and Redevelopment (MCM 5)**
- **Cuyahoga SWCD program**

*"We do these things not because they are easy
but because they are hard"*

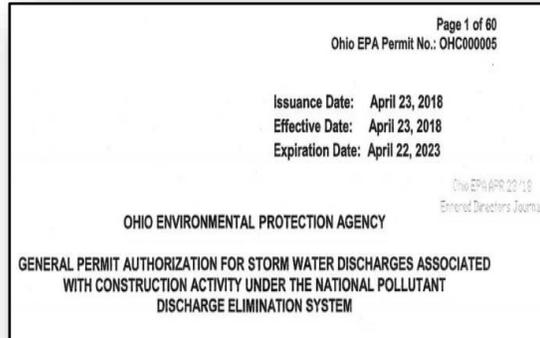
– John F. Kennedy

4

Minimum Control Measure 4

Construction Site Stormwater Runoff Control

MCM 4 – Construction Site Stormwater Runoff Control



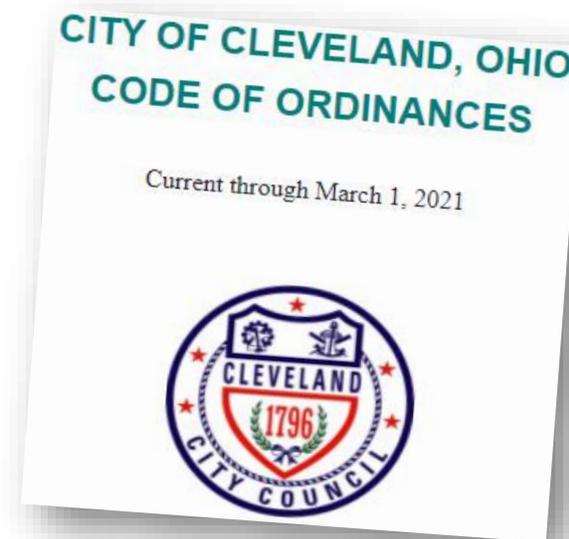
Construction
General Permit
(OHC000005)

Part III.B.4.c.i

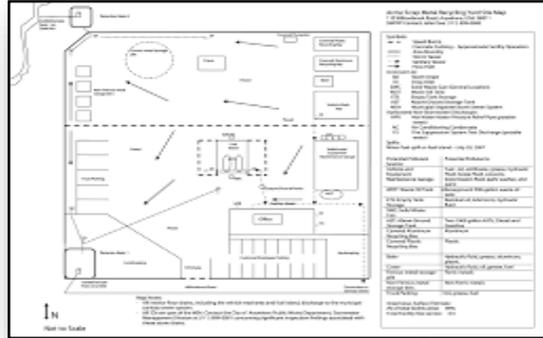
- Ordinance or other regulatory mechanism (e.g. township zoning resolution)
- Equivalent with OHC000005 Construction General Permit
- Update ordinance by April 1, 2022 (1 year from OHQ000004)



**CHAGRIN
RIVER
WATERSHED
PARTNERS**



MCM 4 – Construction Site Stormwater Runoff Control



U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE		CONSERVATION ASSISTANCE NOTES		NRCS-CPA-6 11-97
LAND USER	ADDRESS	ACREAGE	LOCATION OF UNIT	
CURRENT CONSERVATION OBJECTIVES				

arger

Stormwater
Pollution Prever
Plan Review

"Larger common plan of development or sale" - means a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan.

EPA's Construction General Permits define a larger common plan of development or sale as "a contiguous area where multiple separate and distinct construction activities are occurring under one plan." The "plan" is broadly defined as any announcement or piece of documentation or physical demarcation indicating construction activities may occur on a specific plot.

(c) the impervious area and percent imperviousness created by the construction activity?				
(d) storm water calculations (pre and post-construction volumetric				

MCM 4 – Construction Site Stormwater Runoff Control



SWP3 Plan Review

- Plan Review could be a multi-day class. Some checklist items require deeper investigation
- Part III.G.1.e – Information about site soils, quality of stormwater runoff

SWP3 Checklist

Ohio Environmental Protection Agency		Construction General Permit OHC00005	
Storm Water Pollution Prevention Plan Checklist		State of Ohio Environmental Protection Agency Division of Surface Water	
Facility Name:	Date Received:		
SWP3 Reviewer:	Date Reviewed:		
Part III.G.1. – Site Description			
<i>Does the SWP3 describe, show or include:</i>			
(a) the nature and type of construction activity (e.g., low density residential, shopping mall, highway, etc.?)	Y	N	NA
(b) the area of the site to be disturbed?			
(c) the impervious area and percent imperviousness created by the construction activity?			
(d) storm water calculations, (pre and post-construction volumetric runoff coefficients and resulting water quality volume; design details for post-construction storm water facilities and pretreatment practices (e.g. drainage areas, capacities, elevations, outlet details and drain times) and if applicable, explanation of the use of existing post-construction facilities?			
(e) any existing data describing the soil?			
(f) any information on the quality of the storm water discharge from the construction site?			
(g) any information about prior land uses at the site (e.g., was the property used to manage solid or hazardous waste?)			
(h) a description of the condition of on-site streams (e.g. prior channelization, bed instability or bankcuts, channels on public infrastructure, or natural channels)?			
(i) an implementation schedule which describes the sequence of major construction operations (i.e., grubbing, excavating, grading, utilities infrastructure installation and others) and the implementation of erosion, sediment and storm water management practices or facilities to be employed during each operation of the sequence?			
(j) the name(s) or location(s) of the natural and subsequent surface water bodies receiving the storm water discharge?			
(k) the most extent and description of the wetland or other special aquatic sites which will be disturbed and/or will receive the storm water discharge?			
(l) a detail drawing of a typical individual lot showing sediment and erosion controls or storm water control practices? (This does not remove responsibility to designate control practices in a SWP3 for critical areas such as steep slopes, stream banks, drainage ways & riparian zones.)			
(m) the location and description of storm water discharges associated with dedicated asphalt and/or concrete batch plants covered by the NPDES construction storm water general permit?			
(n) a cover page identifying the name and location of the site, the name and contact information for site operators and SWP3 authorization agents as well as preparation date, start date, and completion date?			
(o) a log documenting grading & stabilization activity as well as SWP3 assessments that occur after construction commencement?			

- Part III.G.1.f – Prior land use
 - (e) any existing data describing the soil?
- Part III.G.1.g – Information about site soils, quality of stormwater runoff
 - (f) any information about prior land uses at the site (e.g., was the property used to manage solid or hazardous waste)?
 - (h) an implementation schedule which describes the sequence of major construction operations (i.e., grubbing, excavating, grading, etc.)
- Part III.G.1.h – Information about site streams, rivers, lakes, or wetlands
 - Table 4b Do planned infiltrating practices show an appropriate design?
 - Does the site contain any streams, rivers, lakes, or wetlands?
 - If so, has the U.S. Army Corps of Engineers been contacted for a determination of impacts requiring Clean Water Act 401 or 404 permitting? (Attach any reference numbers)

MCM 4 – Construction Site Stormwater Runoff Control



Monthly Inspections

Stormwater Construction Site Inspection Report			
General Information			
Project Name			
NPDES Tracking No.		Location	
Date of Inspection		Start/End Time	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Inspector's Qualifications		Insert qualifications or add reference to the SWPPP. (See Section 5 of the SWPPP Template)	
Describe present phase of construction			
Type of Inspection:			
<input type="checkbox"/> Regular <input type="checkbox"/> Pre-storm event <input type="checkbox"/> During storm event <input type="checkbox"/> Post-storm event			
Weather Information			
Has there been a storm event since the last inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If yes, provide:			
Storm Start Date & Time:		Storm Duration (hrs):	Approximate Amount of Precipitation (in):

Standards are



Sections



MCM 4 – Construction Site Stormwater Runoff Control



TMDL Performance
Standard



Part III.B.4.c.iv

Do you have a Total Maximum Daily Load in your small MS4?:

- Total Suspended Solids
- Nutrients (N, P, NH₃)

At a minimum, applicable construction sites which have the following compliance issues shall **be inspected once every 14 calendar days instead of on a monthly basis:**

1. Construction activities have started at the site with no SWP3 completed;
2. Failure to install sediment basin(s) when the SWP3 and/or site drainage clearly indicate as a first step (within 7 days prior to grading and within 7 days of grubbing);
3. Failure to implement any sediment/erosion controls; or
4. Dewatering activities resulting in turbid discharges.

Inspections can be returned to a monthly basis for the construction site once compliance with the above compliance issues have been addressed and verified.

MCM 4 – Construction Site Stormwater Runoff Control



Annual Report

Part III.B.4.c.v

Your annual report shall document the following:

- a. Number and list of applicable sites in your jurisdiction for the reporting year;
- b. Number of pre-construction SWP3s reviewed, and number approved;
- c. Number and average frequency of site inspections;
- d. Number of violation letters/reports/notices issued;
- e. Number of enforcement actions taken; and
- f. Number of complaints (external and internal) received, and number addressed.

Does your service provider keep track of this information and provide it to you?

DOCUMENT ALONG THE WAY!

MCM 4 – Construction Site Stormwater Runoff Control



Example Program

Cuyahoga SWCD Program Highlights

- **Preliminary Project Discussion (Coordination of City Departments)**
- **Pre-construction Meetings**
- **Phase/Transition Meetings**
- **Build Cooperative Relationships**
- **Education Always**
- **Effective Enforcement Process**

MCM 4 – Construction Site Stormwater Runoff Control



Code Enforcement

Effective Enforcement

- Put in the work to not get to this point
- Up-to-date stormwater codes with enforcement policy
- Clearly articulated & codified enforcement criteria; minor/major infractions
- Where does the authority rest? Building Dept. Engineering Dept.
- Elected officials and city staff in sync
- Don't get cold feet...you'll burn your credibility

Field Review
Technical Advisory Report
*** NOTICE OF DEFICIENCY ***
738 Days Deficiency Notice

MCM 4 – Construction Site Stormwater Runoff Control



Site Meeting

Enforcement Follow-up

- **Applicable (TMDL) sites inspected once every 14 calendar days instead of monthly**
- **Communicate corrective action priorities in monthly report; DOCUMENTATION!**
- **3-day follow-up / 10-day follow-up; within city not terribly difficult**
- **Request corrective action photos**

NEW

5

Minimum Control Measure 5

**Post-Construction
Stormwater
Management in
New Development and
Redevelopment**

MCM 5 – Post Construction Program

- Address Stormwater Runoff from 1 ac or greater
- Structural and Non-Structural BMPS
- Ordinance or other regulatory mechanism
- Ensure Long-Term O&M
 - Document – decision process – agreement for operation and maintenance, responsible party, evaluate success
 - Performance Standards – pre-construction review and approval, inspection to ensure properly installed, long-term O&M manual and agreements
- Annual reporting – Number of sites, Number of plan reviews, number of LTOM plans developed and agreements signed, number of inspections for proper installation

United States Office of Water EPA 833-F-00-009
Environmental Protection Agency (4203) January 2000 (revised December 2005)
Agency Fact Sheet 2.7

 **Stormwater Phase II Final Rule**

Post-Construction Runoff Control Minimum Control Measure

Stormwater Phase II Final Rule Fact Sheet Series

Overview

1.0 – Stormwater Phase II Final Rule: An Overview

Small MS4 Program

2.0 – Small MS4 Stormwater Program Overview

2.1 – Who's Covered? Designation and Waivers of Regulated Small MS4s

2.2 – Urbanized Areas: Definition

This fact sheet profiles the Post-Construction Runoff Control minimum control measure, one of six measures that the operator of a Phase II regulated small municipal separate storm sewer system (MS4) is required to include in its stormwater management program in order to meet the conditions of its National Pollutant Discharge Elimination System (NPDES) permit. This fact sheet outlines the Phase II Final Rule requirements for post-construction runoff control and offers some general guidance on how to satisfy those requirements. It is important to keep in mind that the small MS4 operator has a great deal of flexibility in choosing exactly how to satisfy the minimum control measure requirements.

Why Is The Control of Post-Construction Runoff Necessary?

Post-construction stormwater management in areas undergoing new development or redevelopment is necessary because runoff from these areas has been shown to significantly affect receiving waterbodies. Many studies indicate that prior planning and design for the

MCM 5 – OEPA MS4 PERMIT UPDATES



Post-Construction Storm Water
Management

Changes:

- Ensure Long-Term O&M including when **property changes ownership**
- Ordinance compliant with **construction general permit**
- Additional emphasis to **document correct installation and enforcement actions**
- Clarified a minimum of **one inspection per permit cycle**

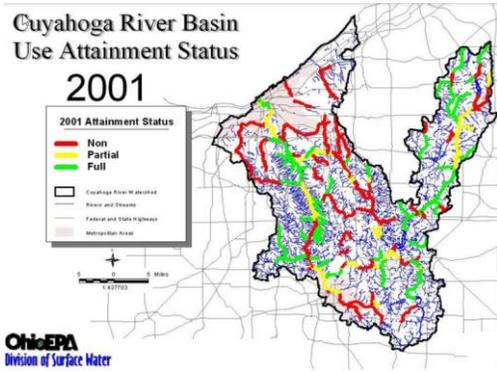
MCM 5 – OEPA MS4 PERMIT UPDATES



Changes:

- SCM type included in mapping
- Annual reporting – number of enforcement actions for installation and/or maintenance, number of inspections performed for maintenance
- MS4 needs to maintain records of LTOM agreement and inspections

MCM5 - Ohio EPA MS4 Permit Updates



TMDL Performance Standard

TMDLs:

- Total Suspended Solids
- Nutrients

Provide an educational opportunity to contractors, SWP3 designers, and/or employees on OHC000005 Table 4b practices and/or other green infrastructure practices.

In addition, your program shall include, at a minimum, one of the following performance standards:

- a. Retrofit an existing peak-discharging storm water practice;
- b. Perform restoration of at least 300 feet of a channelized stream where natural channel stability and floodplain restoration will reduce stream erosion; or
- c. Update facility design requirements to require OHC000005 Table 4b practices where feasible.
- d. Install one (1) or more Table 4b practices to treat a minimum of 1 acre of existing impervious area developed prior to 2003.



CUYAHOGA SWCD PROGRAM



Cuyahoga SWCD Program

- Since 2009
- 1350+ SCMs
- 21 Jurisdictions
- Review plans for SCM design
- Transition Meeting
- Annual Inspection of SCMs for maintenance
- Reports sent to Landowners
- Provide education and follow up
- Annual Reporting to Community (mapping, reports, summary)

CUYAHOGA SWCD PROGRAM

- Ensure Long-Term O&M including when property changes ownership
 - Agreement clearly states responsibility and transfer of ownership
 - Stormwater Easement
 - Documented/Recorded with the land



EXAMPLE INSPECTION AND MAINTENANCE AGREEMENT FOR STORMWATER CONTROL MEASURES

PLEASE NOTE:

- This is an **example Inspection and Maintenance Agreement** containing typical language used by communities.
- Agreements are tailored to each development project to list the specific stormwater control measures covered by the agreement, and the funding and operation and maintenance conditions accepted by the community.

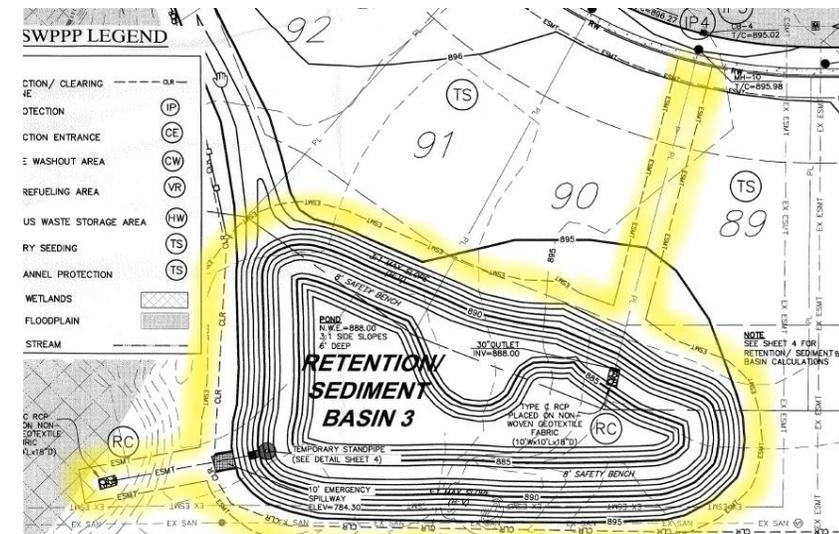
This Inspection and Maintenance Agreement, made this _____ day of _____, 20____, by and between the [party responsible for the project on which the stormwater control measure (SCM) will be located] (hereafter referred to as the Owner) and the [Community] hereafter referred to as the Community, provides as follows:

WHEREAS, the Owner is responsible for certain real estate shown as Tax Map No. (*parcel number*) that is to be developed as (*development's official name*) and referred to as the Property; and,

WHEREAS, the Owner is providing a stormwater management system consisting of the following stormwater control measures (SCMs) (*all components of the stormwater management system listed here*) as shown and described on the attached Comprehensive Stormwater Management Plan (*attach copy of development's approved plan*); and,

WHEREAS, to comply with Section XXXX.XX of the Codified Ordinances of the [Community] Comprehensive Stormwater Management, pertaining to this project, the Owner has agreed to maintain the SCMs in accordance with the terms and conditions hereinafter set forth.

NOW, THEREFORE, for and in consideration of the mutual covenants and undertaking of the



CUYAHOGA SWCD PROGRAM



- Ordinance compliant with construction general permit (within one year of the update)
 - Work with communities to update ordinance when CGP is updated

Page 1 of 60
Ohio EPA Permit No.: OHC000005

Issuance Date: April 23, 2018
Effective Date: April 23, 2018
Expiration Date: April 22, 2023

Ohio EPA APR 23 '18
Entered Directors Journal

OHIO ENVIRONMENTAL PROTECTION AGENCY

GENERAL PERMIT AUTHORIZATION FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the federal Water Pollution Control Act, as amended (33 U.S.C. Section 1251 et. seq. hereafter referred to as "the Act") and the Ohio Water Pollution Control Act [Ohio Revised Code ("ORC") Chapter 6111], dischargers of storm water from sites where construction activity is being conducted, as defined in Part I.B of this permit, are authorized by the Ohio Environmental Protection Agency, hereafter referred to as "Ohio EPA," to discharge from the outfalls at the sites and to the receiving surface waters of the state identified in their Notice of Intent ("NOI") application form on file with Ohio EPA in accordance with the conditions specified in Parts I through VII of this permit.

It has been determined that a lowering of water quality of various waters of the state associated with granting coverage under this permit is necessary to accommodate important social and economic development in the state of Ohio. In accordance with OAC 3745-1-05, this decision was reached only after examining a series of technical alternatives, reviewing social and

CUYAHOGA SWCD PROGRAM



- Additional emphasis to document correct installation and enforcement actions
 - Transition Meetings
 - Require As-built drawings
 - Document Enforcement Actions and How Resolved

CUYAHOGA SWCD PROGRAM



- Clarified a minimum of one inspection per permit cycle
 - Develop an inspection cycle
 - Type of Practice
 - Data Collection Software

Wet Pond or Wet Extended Detention Basin Inspection and Maintenance Checklist

Facility:			
Location/Address:			
Date:	Time:	Weather Conditions:	Date of Last Inspection:
Inspector:		Title:	
Rain in Last 48 Hours <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, list amount and timing:			
Pretreatment: <input type="checkbox"/> vegetated filter strip <input type="checkbox"/> swale <input type="checkbox"/> forebay <input type="checkbox"/> other, specify:			
Site Plan or As-Built Plan Available: <input type="checkbox"/> Yes <input type="checkbox"/> No			

Inspection Item		Comment	Action Needed
1. PRETREATMENT			
Sediment has accumulated.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		<input type="checkbox"/> Yes <input type="checkbox"/> No
Trash and debris have accumulated.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		<input type="checkbox"/> Yes <input type="checkbox"/> No
2. DEWATERING			
The water quality orifice is visible.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		<input type="checkbox"/> Yes <input type="checkbox"/> No
3. INLETS			
Inlets are in poor structural condition.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		<input type="checkbox"/> Yes <input type="checkbox"/> No
Sediment has accumulated and/or is blocking the inlets.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		<input type="checkbox"/> Yes <input type="checkbox"/> No
Erosion is occurring around the inlets.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		<input type="checkbox"/> Yes <input type="checkbox"/> No
3. EMBANKMENT			
Sinkholes, cracks or seeps are visible in the embankment.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		<input type="checkbox"/> Yes <input type="checkbox"/> No
Trees or woody vegetation present on the dam or embankment.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		<input type="checkbox"/> Yes <input type="checkbox"/> No
4. BASIN PERMANENT POOL			

CUYAHOGA SWCD PROGRAM



- SCM type needs to be included in mapping
 - Identify type of SCM (detention, retention, bioretention, permeable pavers, etc.)



CUYAHOGA SWCD PROGRAM



- Annual reporting
 - Provide annual reporting to each community
 - Provide numbers
 - Identify enforcement actions
 - Work with landowners for compliance

Bay Village
Post-Construction Stormwater Control Measure
2020 Summary

Sites Inspected: 7
Total Stormwater Control Measures: 11

Site List

1. Bay Village/Avon Lake Shared Basin (NPDES Unknown)
2. Bay Village City Hall (Grant Funded)
3. Bay Village High School (NPDES #G00000*AG)
4. Bay Village Police Department (NPDES Unknown)
5. Bay Village Service Garage (SCM included as part of SWPPP for Service Building)
6. Bradley Bay Expansion (NPDES #G00000*AG) *
7. St. Raphael Catholic Church (NPDES #G00000*AG)

* Indicates a follow up inspection was performed.

Status

Not Inspected (0 sites)
Bay Village Service Garage

Baseline Maintenance (0 sites)
Bay Village/Avon Lake Shared Basin
Bay Village High School
Bay Village Police Department
Bradley Bay Expansion
St. Raphael Catholic Church

Site Compliance (7 sites)
Bay Village City Hall

Recommended Follow Up

Follow up recommended on the Bay Village Service Garage site. The stormwater areas are not properly draining. CSWCD will work with the City to ensure the necessary maintenance is performed on this site.

SOIL & WATER conservation district

3311 Perkins Avenue, Suite 100
Cleveland, Ohio 44114
216.524.6580
www.cuyahogawcd.org

Field Review
Technical Advisory Report
Long-Term Operation & Maintenance

Report Delivered:

Site Name: Bay Village City Hall	Report Date: 2020-06-19
Location: 359 Dover Center	Inspection Date: 2020-05-29
Permit Holder: City of Bay Village - Service Department	Reviewed By: Carla Regener, CPESC, CESSWI
Contact: Jonathan Liskovec	Site NPDES Number: N/A
Address: 350 Dover Center Road Bay Village OH 44140-2299	Application No: N/A

Stormwater Control Measure Field Review of Conditions and Compliance Activities performed through a Memorandum of Understanding in accordance with Ohio Revised Code, Chapter 603 and Bay Village Codified Ordinances

Site Condition Summary

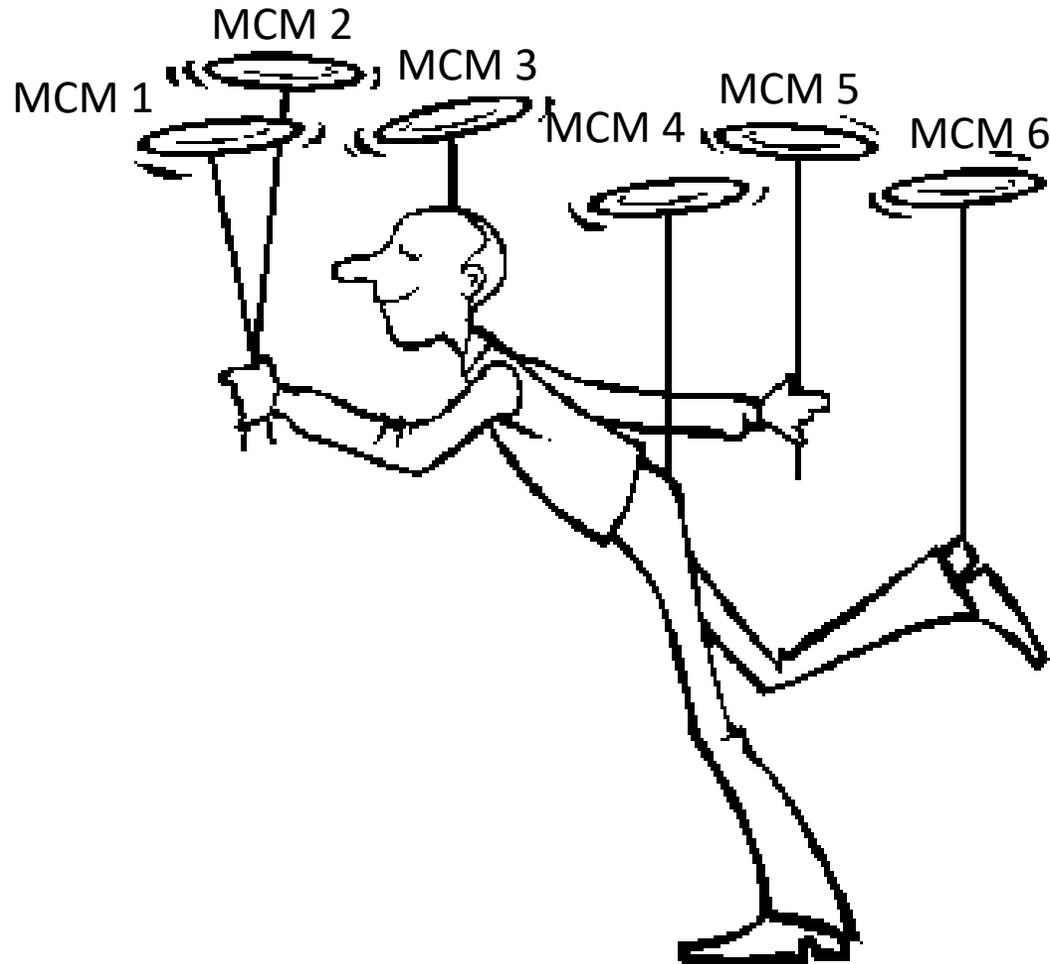


CUYAHOGA SWCD PROGRAM



- MS4 needs to maintain records of LTOM agreements and inspections
 - Help communities with proper documentation

MS4 Bootcamp



QUESTIONS?

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cuyahoga

SOIL & WATER

conservation district