

Entering into Effective Operations & Maintenance Agreements for Stormwater Practices



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Stormwater Management Coordinator

Considerations



BMP types

Where BMPs are located?

Responsibility & Accountability

How much flexibility is needed?

Sanctions

BMP Types



- ☞ Stormwater Ponds
- ☞ Wetlands
- ☞ Infiltration Practices
- ☞ Filtering Practices
- ☞ Open Channel Practices
- ☞ Riparian Buffer Widening
- ☞ Credits

Who maintains stormwater control measures in your community?



Text a **CODE** to **37607**



Submit responses at **PolleEv.com/went**

City

44466

County

44466

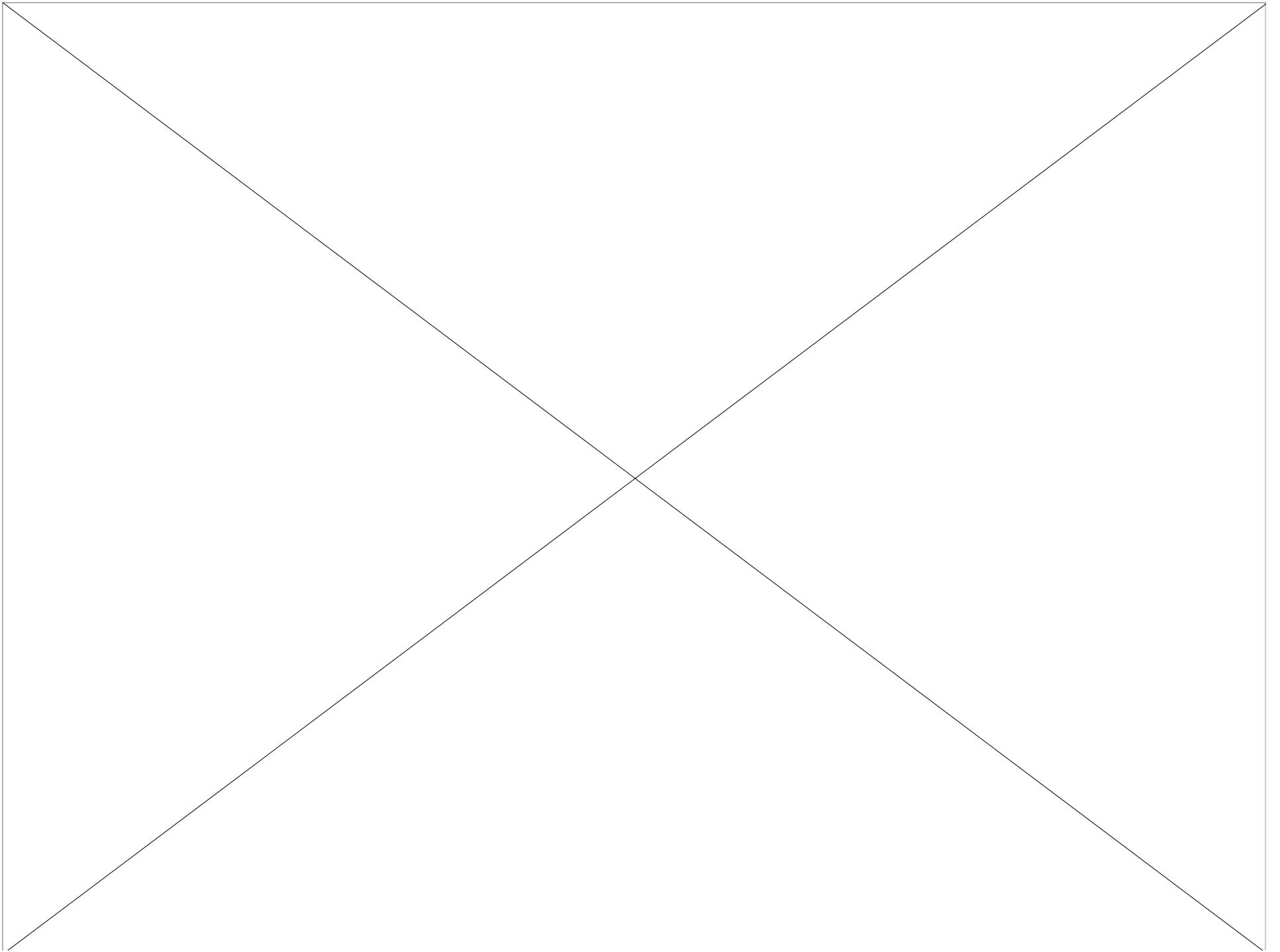
Property Owner

44466

BMP Location



- ❧ In right-of-way
- ❧ In easements on private property
- ❧ In easements on common ground
- ❧ On private property

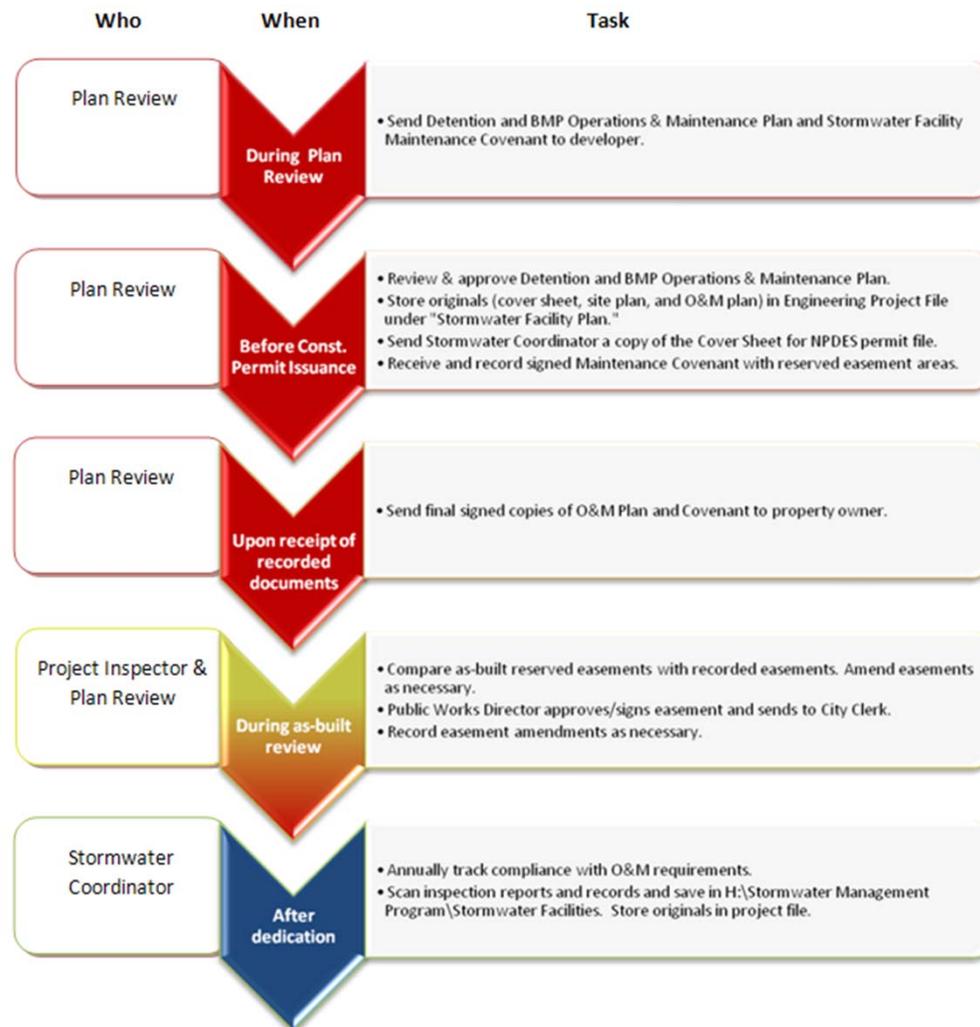


Responsibility & Accountability



- ❧ Who's responsible? (organization vs. individual)
- ❧ What are they responsible for?
 - ❧ Grey Infrastructure
 - ❧ Vegetation, Dredging, etc.
 - ❧ Inspections & Reporting (how often?)
- ❧ Financial mechanism for maintenance
- ❧ Unusual Circumstances
- ❧ Process Flow Chart

O&M Plan: Process Flow Chart



Flexibility



- ∞ Green infrastructure on individual lots
- ∞ Recorded documents
- ∞ Sanctions
- ∞ O&M Plan Templates



Maintenance Covenant



- ❧ Build and construct practice
- ❧ Perpetually located in reserved easement area
- ❧ Maintain and operate in conformance with the approved Operation & Maintenance Plan
- ❧ Annual inspection & reporting
- ❧ Written approval required before performing any alterations
- ❧ Correction notice; the City may perform work and bill the owner

STORMWATER FACILITY MAINTENANCE COVENANT

KNOW ALL MEN BY THESE PRESENTS, that owners of the property, for and in consideration of the approval of improvement plans and of the issuance of a construction permit by The City of Wentzville for stormwater management facilities according to plans approved by said City for a development known as _____ in Wentzville, Missouri, at _____ and other good and valuable considerations, do hereby agree and promise, as follows.

DUTIES OF GRANTOR(S):

1. To build and construct stormwater management facilities, including Best Management Practices (BMP), basins, drainage facilities, and other necessary appurtenances to make this a complete and usable stormwater management facility, in accordance with the approved City of Wentzville design, and report, submitted to and approved by the City of Wentzville. The stormwater management facilities are to be perpetually located within the dimensioned and reserved easement area, as shown hachured on Exhibit "A" as attached hereto and made a part hereof.
2. To maintain and operate the stormwater management facilities in conformance with the approved "Detention and BMP Operation and Maintenance Plan", for this development, on file with the Department of Public Works and incorporated herein by reference.
3. To maintain all pipes and storm drains in good working order and maintain all walls, dikes, vegetation, filter media, and any other required appurtenance and improvements for the retention, detention, treatment, and management of stormwater in good repair in accordance with the approved plans.
4. To inspect the stormwater facilities a minimum of once per calendar year and to provide copies of all inspection reports, including required/performed maintenance and/or repairs to: The City of Wentzville, Stormwater Coordinator, 200 E. Fourth Street, Wentzville, MO 63385.
5. To obtain written approval and all necessary permits (as required) from the City of Wentzville prior to grading, filling, piping, cutting or removing vegetation (except for routine and minor landscape maintenance) or performing any alterations or modifications to the stormwater facilities.

RIGHTS OF THE CITY:

1. Representatives of the City of Wentzville may enter onto the property and inspect the stormwater management facilities.
2. In the event the stormwater management facilities are not maintained in accordance with this Covenant, the City of Wentzville, shall notify the owners of said property in writing of the repairs and corrections necessary and a reasonable time in which the work must be completed. If the repairs and corrections necessary are not completed, the City may make the repairs or corrections and perform such maintenance as it deems necessary and bill the owner(s) of said property for the services performed. The bill may be a special tax bill or in addition to the annual real estate tax bill, at the collecting official's option. It is further agreed that in the event said bill or charge for the services performed is not paid within thirty (30) days, the tax bill shall be considered delinquent. The collection of the delinquent bill and any

Sanctions



- ⌘ Special tax bill (*show me the money!*)
- ⌘ Lien (*when will I see the money?*)
- ⌘ Code violations (*will the judge give back the money?*)
 - ⌘ Stormwater Pollution
 - ⌘ Littering/Dumping
 - ⌘ Mowing
 - ⌘ Nuisance

O&M Plan

Cover Sheet

	City of Wentzville Engineering Division 200 Fourth Street Wentzville, MO 63385 636-639-2037 Fax: 639-2057	Detention and BMP Operation and Maintenance Plan	OFFICE USE ONLY	
	Date Received: _____ Received By: _____ EDC Date: _____ CS&SD Date: _____			
NAME OF PROJECT/DEVELOPMENT _____				
ENGINEERING PROJECT NUMBER _____				
OWNER				
NAME _____		CONTACT _____		PHONE _____
				FAX _____
ADDRESS _____	STREET _____	CITY _____	STATE _____	ZIP CODE _____
REQUIRED INFORMATION				
1. <u>Site Plan</u> : Include a site plan showing the stormwater facility(ies).				
2. <u>Description of Financial Method to be used to cover operation and maintenance (check one):</u>				
<input type="checkbox"/> Homeowner's Association <input type="checkbox"/> Property Owner Account				
<input type="checkbox"/> Other: _____				
3. <u>Party(ies) Responsible for Maintenance and Repair:</u>				
Maintenance Contact & Address: _____				
Daytime Phone: _____ Emergency/After Hours Phone: _____				
4. <u>Type of stormwater facilities (check all that apply, include number of if more than one):</u>				
<input type="checkbox"/> Pond <input type="checkbox"/> Wetland				
<input type="checkbox"/> Infiltration <input type="checkbox"/> Filter				
<input type="checkbox"/> Open Channel <input type="checkbox"/> Riparian Buffer				
<input type="checkbox"/> Underground Detention				
<input type="checkbox"/> Proprietary BMP: _____				
<input type="checkbox"/> Other: _____				
5. <u>Facility specific operations and maintenance plans for each type of stormwater facility checked above:</u>				
General maintenance requirements and inspection checklists for all of the stormwater facilities listed above, except for Proprietary BMPs, will be provided by The City of Wentzville.				
REVISIONS				
From time to time, it may be necessary to revise the Operation & Maintenance Plan.				
1. <u>Minor Revisions</u> . Minor revisions may include but are not limited to; a change in property ownership, refinement of specific maintenance and operations procedures/practices for the stormwater facilities, a change in person responsible for maintenance, etc. Minor revisions shall be submitted to The City of Wentzville, Stormwater Coordinator, 200 E. Fourth St., Wentzville, MO 63385 for review and approval.				
2. <u>Major Revisions</u> . Major revisions are changes that will alter the stormwater facilities from the original approved plan (type, location, capacity, etc.). Major revisions shall be submitted to The City of Wentzville, Engineering Department, 200 E. Fourth St., Wentzville, MO 63385 for review and approval. Major revisions will be subject to the requirements set forth in the most current edition of The City of Wentzville Engineering Design Criteria.				



Stormwater Pond - Maintenance Requirements and Inspection Checklist

Stormwater ponds are practices that have a permanent pool, or a combination of extended detention or shallow wetland with a permanent pool equivalent to the entire volume removed from stormwater through settling and biological processes. Stormwater pond forebay(s) to settle out large particles before they enter the pond(s).

Regular inspection and maintenance of stormwater facilities is necessary to ensure proper operation. It is the responsibility of the property owner to maintain all stormwater facilities with the approved plans and the Stormwater Facility Maintenance Covenant. This provides guidance on the recommended inspection and maintenance along with the recommendations for each item.

Inspection Activities
<ul style="list-style-type: none"> After several consecutive storm events or an extreme storm event the facility should be inspected for: bank instability, signs of erosion, and damage to or clogging of the inlet/outlet structures and/or channels, etc.
<ul style="list-style-type: none"> Inspect the facility for the presence of trash and debris Inspect that the overflow structure is functioning properly Inspect the dam/embankments for the presence of burrowing animals, leakage, etc. Inspect the facility for any signs of erosion or bank instability Check sediment buildup and approximate how much sediment is present as a percentage of total water volume Check the plant/fish population, note dead and diseased plants/fish Note signs of pollution such as oil sheens, discolored water, odor, etc. Inspect signage Note any changes to the pond and areas that drain to the pond, as such changes may affect pond performance
Maintenance Activities
<ul style="list-style-type: none"> Clean and remove debris and trash from inlet/outlet pipes, overflow structure(s) channel(s), and sediment forebay(s) Repair damage to overflow structure Repair erosion, damage from burrowing animals, leakage, etc. Repair or replace signage Remove pollutants Remove dead vegetation and any invasive species Replace vegetation to its original condition per approved plans Remove sediment from forebay(s). Care must be taken to prevent downstream discharges of sediment, anoxic water, or high flows with erosive velocities. Remove sediment from pond(s). Care must be taken to prevent downstream discharges of sediments, anoxic water, or high flows with erosive velocities.



STORMWATER POND INSPECTION CHECKLIST

Location: _____
 Owner Name, Address, Phone: _____ Owner Change: Y N
 Date: _____ Time: _____ Site Conditions: _____

Inspection Item	Y/N	Comments/Corrective Action Needed
Embankment and Emergency Spillway		
Vegetation appears healthy?		
Erosion on embankment?		
Animals burrowing on embankment?		
Cracking, sliding, bulging of dam?		
Leaks or seeps on embankment?		
Other (describe)?		
Inlet/Outlet Structures and Channels		
Clear of debris and trash?		
Noticeable sediment accumulation?		
Erosion at outfall?		
Other (describe)?		
Sediment Forebay(s)		
Evidence of sediment accumulation?		
Permanent Pool Area(s)		
Invasive plant species present?		
Visible pollution?		
Shoreline erosion?		
Encroachment by other activities?		
Noticeable sediment accumulation?		
Other		
Have there been any complaints from residents?		
Public hazards?		

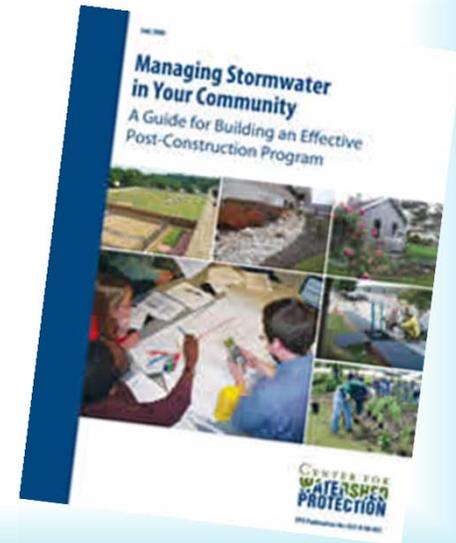
Inspector Name (printed) _____ Inspector Signature _____

Inspections shall be completed at least once per calendar year. Provide completed copies of inspection reports to The City of Wentzville, Stormwater Coordinator, 200 E. Fourth Street, Wentzville, MO 63385 – fax 636-639-2057. Documentation of the corrective action taken (date, by whom, what was done, etc.) must be provided for each item noted above.

Resources



- ❧ EPA Model Ordinances for Stormwater Control O & M
www.epa.gov/owow/NPS/ordinance/stormwater.htm
- ❧ Nashville O&M Agreement
www.nashville.gov/stormwater/docs/SWMM/Volume01_Regulations/11_AppendixC_Final.pdf
- ❧ Center for Watershed Protection's
Managing Stormwater in Your Community
www.cwp.org/documents/cat_view/76-stormwater-management-publications.html



Thank you!



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636-639-2055