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# *Post-construction for New Development and Redevelopment Stormwater Quality Program Standard Operating Procedures (SOP)*

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*Previous versions (2017-2023) were part  
of a combined Construction and Post-  
construction SOP*

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## Acronyms List

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BMP	Best Management Practice
C.R.S.	Colorado Revised Statute
CCR	Colorado Code of Regulations
CDPHE	Colorado Department of Public Health and Environment
CDPS	Colorado Discharge Permit System
CIP	Capital Improvement Project
CM	Control Measure
CODE	Boulder County Land Use Code
CP&P	Boulder County Community Planning and Permitting
KICP	Keep it Clean Partnership
MHFD	Mile High Flood District
MOU	Memorandum of Understanding
MS4	Municipal Separate Storm Sewer System
MS4SI	MS4 Stormwater Inspector
NDRD	New Development and Redevelopment
NOV	Notice of Violation
NDRD	New Development and Redevelopment
NPDES	National Pollutant Discharge Elimination System
O&M	operation and maintenance
RFP	Request for Proposal
SDCM	Storm Drainage Criteria Manual – Boulder County
SDI	Stormwater Detention and Infiltration Facility
SOP	Standard Operating Procedure
SWMF	Stormwater Management Facility
SWMP	Stormwater Management Plan
SWQE	Stormwater Quality Enforcement
SWQP	Stormwater Quality Permit
TSS	Total Suspended Solids
USDCM	Urban Storm Drainage Criteria Manual – Mile High Flood District
WQCD	Water Quality Control Division
WQCV	Water Quality Capture Volume

## Introduction

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Protecting the quality of stormwater runoff is important to Boulder County (County) and is required by the Colorado Discharge Permit System (CDPS) Regulations. The policy described in this procedure is pursuant to the Boulder County Land Use Code (CODE) and the Municipal Separate Storm Sewer System (MS4) Permit issued from the Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division (WQCD). The MS4 permit issued to the County requires the County to control and reduce the discharge of pollutants to protect stormwater quality and to satisfy the appropriate water quality requirements of the Colorado Water Quality Control Act and the Colorado Discharge Permit System Regulations (Colorado Regulation 61). The MS4 permit requires the implementation of a program to reduce the discharge of pollutants from public and private construction sites, including post-construction control measures. The Standard Operating Procedure (SOP) provided in this document is a part of the post-construction new development and redevelopment (NDRD) site plan review and inspection program the County is implementing in accordance with its MS4 permit requirements. Prior to 2023, the Post-construction NDRD SOP was merged with the Construction Program SOP. Since both programs have multiple requirements and processes, the County determined that a separate SOP for each program would more accurately describe the sizable program requirements and reduce confusion.

## Purpose

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This SOP constitutes the County's program description for the Post Construction Stormwater Management in New Development and Redevelopment Program (Post-construction). County staff will perform the actions indicated in this document for general compliance with the County's MS4 permit. Procedures in this document are used to meet MS4 Program requirements and provide required recordkeeping (Part 1.e.4.b in the MS4 Permit) and program descriptions (Part 1.E.4.c in the MS4 Permit).

This SOP is structured to provide exact language from the MS4 Permit (indicated by boxed text citing the permit section it came from) followed by a description of how each requirement is met by the County. In many cases, there is also information identifying who is responsible for each element of the program and how entities must work together to ensure overall compliance with the County's stormwater program.

Revisions to this SOP may be adopted annually and as often as needed by Boulder County Public Works or their approved designated representatives. This SOP is meant to be dynamic, adapting easily to changes and updates if the procedures are found to be ineffective and/or out of compliance with the County's MS4 permit requirements. This SOP will also be referenced in the County's overall MS4 Program Description Document. This SOP is meant to be a living document that can easily be changed, unlike ordinances, criteria and Land Use Code.

## Section 1: Post Construction Regulatory Mechanisms (Part I.E.4.a.ii)

This section documents the County’s post-construction regulatory mechanism to reduce the discharge of pollutants to the MS4 from applicable development sites in the County and meet the requirements of the Post-construction Stormwater Management in NDRD Program. The County implements the program within the MS4 Permit boundary (a.k.a., urbanized area) rather than countywide. The urbanized area is based on U.S. Census data and is found on the Stormwater webmap on the SWQP website <https://bouldercounty.maps.arcgis.com/apps/webappviewer/index.html?id=694f2d0836ef4f39ba046733da85fbd3&extent=-11727358.6504%2C4867266.5478%2C-11702898.8014%2C4878139.7151%2C102100>

### MS4 Permit Requirement

ii. Regulatory Mechanism: *To the extent allowable under state or local law, implement a regulatory mechanism to meet the requirements in Part I.E.4.a., including:*

*(A) Require control measures to be implemented for all applicable development sites.*

*(B) Enforce the conditions of the exclusions above if applicable.*

*(C) Require the long-term operation and maintenance of control measures*

*(D) Ensure that mechanisms are in place as necessary to meet this requirement for control measures used to meet the requirements of this permit by an applicable development site in the permit area that are located outside of the jurisdictional control of the Permittee.*

*(E) Implement sanctions against entities responsible for applicable development sites and for the long-term operation and maintenance of the control measures.*

For the purposes of this document, the terms post-construction control measure, permanent stormwater management facility, post-construction BMP, permanent BMP, and permanent stormwater control measure have the same meaning. The term “Stormwater Management Facility (SWMF)” is used for the inventory in Accela.

### 1.1 County Regulatory Mechanisms for Post-construction Controls

The following regulatory mechanisms are the stormwater quality requirements for post-construction for NDRD pertaining to sites that:

disturb one acre or more and are within the urbanized area; or

disturb less than one acre if they are part of a larger common plan of development disturbing an acre or more and are in the urbanized area unless excluded in Section 2, Exemptions and Exclusions.

The County’s MS4 stormwater regulations related to post-construction requirements for NDRD (including private development and projects performed or contracted by County departments or other government agencies) are administered by the County’s Stormwater Quality staff. CODE Article 7-900 requires the use of drainage plans and clearly describes the required elements by referencing the Storm Drainage Criteria Manual (SDCM). Article 7-904, of the CODE outlines the noncompliance remedies for failure to comply with any of the requirements in that section. Section 1204.1 of the SDCM states that permanent water quality treatment is required for all new development and redevelopment. However, the County only implements its MS4 Post-construction for NDRD program in the unincorporated urbanized area. Areas

outside of the urbanized area follow the SDCM; however, those programs are administered by other County departments and processes.

## 1.2: Post Construction Process and Procedures

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The County's process and procedures to ensure SWMFs are properly built and maintained include the following. The process used for private projects and most Capital Improvement Projects (CIPs) is similar except that a maintenance agreement is not used for CIP projects within the County road right-of-way for Boulder County projects.

1. **Referral response by CP&P Department for projects with a Land Use Process**– If the applicable development site is located within the MS4 Permit boundary (a.k.a., urbanized area) and requires permanent SWMFs to be built, CP&P Review Planners refer the application to Stormwater Quality Staff to provide conditions of approval. Example conditions of approval are as follows:
2. Example conditions of approval are as follows:
  - a. Prior to permit issuance, **an** approved drainage report which includes items in the Drainage Report Checklist (SDCM Section 1200) and the MS4 post-construction checklist (<https://bouldercounty.gov/transportation/permits/stormwater-quality-permit/>) **is required**
  - b. Prior to permit issuance, **an** approved Operations and Maintenance Plan (see Post-Construction O&M Plan Guidance (<https://bouldercounty.gov/transportation/permits/stormwater-quality-permit/>) **is required**
  - c. Prior to permit issuance, a signed and notarized maintenance agreement **using Boulder County's template is required**. The agreement must include the party responsible for maintaining the facility, inspection frequency, and proposed maintenance activities.
  - d. Prior to permit closeout, as-built survey with PE/PLS stamp (SDCM Section 206) **and certification statement that stormwater maintenance facilities were built per the approved plan(s) must be submitted to** Stormwater Quality team ([tdstormwater@bouldercounty.org](mailto:tdstormwater@bouldercounty.org)). The letter must be supported by as-built drawings. The letter and drawings must document and approve any deviations from the permitted design plans.
  - e.
3. **Referral response by Stormwater Staff for projects without a Land Use Process (i.e. Public Works roadway projects, Parks and Open Space projects, utility permits, other linear projects)** – The department in charge of the project provides notification to stormwater quality staff of the project. The stormwater quality staff then provides the post-construction requirements.
4. **3.** For projects that are not subject to land use process, applicants may also submit directly to the buildings permit portal or through the [ezbp@bouldercounty.org](mailto:ezbp@bouldercounty.org) as part of the Stormwater Quality Permit (SWQP) process.
5. **Initial entry into Accela (database) as a SWMF record**– SWMFs are added to Accela by Stormwater Quality Team. If there isn't an existing SWMF record in Accela, create one. Associate SWMF records with the applicable Stormwater Quality Permit that generated the facility. To do this, the SWMF record needs to be related to the SWQP record as a subset of the SWQP record (often referred to as a child) in Accela. Use the [Accela Wiki](#) for instructions.

Documents that are common to multiple SWMFs at the site (i.e., Drainage Report and Maintenance Agreement) should be uploaded to the parent SWQP record.

If CP&P staff did not notify the applicant of the SWMF and maintenance agreement requirement in their referral response, the Stormwater Quality staff will need to educate the applicant on the requirements as part of a SWQP application and prior to the SWQP being closed.

6. **Inspections for Construction and Acceptance**— refer to Section 5 on “Construction Inspection” process.
7. **Stormwater Quality Staff updates SWMF record in Accela**—The MS4 Permit-required SWMF inventory is maintained in Accela because of its capabilities to schedule and track inspections along with relevant documents (e.g., as-builts, O&M Plan, and inspection forms). SWMFs built prior to the inception of Stormwater Quality Permitting (August 2017) are not recorded in Accela.

The status of the SWMF is changed to “Active” once the SWMF has been accepted by the County, so that the MS4 Permit-required SWMF inventory is “real time.”

8. **Stormwater Quality Staff contacts property owner (e.g., HOA) for maintenance agreement signature**— A draft maintenance agreement (see example template) BOULDER\_COUNTY-#274681-v3-Permanent\_SWMF\_Maintenance\_Agreement-Draft\_of\_11\_27\_19.doc) is provided to the owner for notarized signature. A signed maintenance agreement needs submitted prior permit issuance and the presence of the agreement is checked a second time prior to SWQP close out.
9. **Road Maintenance GIS Specialist obtains location (e.g., point data) of SWMF and includes in GIS**— SWMF location and other information are kept in a geodatabase available in GIS at V:\gisrd\Storm Drain\Boulder County MS4.mxd. When new features such as SWMFs or outfalls are built and accepted as part of stormwater quality permitting (SWQPs), the Public Works Stormwater Quality team will contact the Road Maintenance GIS Specialist and request an update to the GIS. If necessary, the Road Maintenance GIS Specialist will take point data in the field.
10. **Recording by Boulder County Land Officer** uses the County Clerk and Recorder system to record the maintenance agreement in the real property records. Once complete, the recorded maintenance agreement is uploaded to the SWMF record Accela.
11. **Stormwater Quality Staff conducts ongoing SWMF Operation and Maintenance inspections**— refer to Section 6 on “Operation and Maintenance Inspection” process. In Accela, select the “Operation and Maintenance Inspection” category from the inspection pull-down menu and enter the results in the “Inspection Detail” tab and answer each question in the “Checklist” tab. Deficiencies identified during the inspection need corrected by the responsible party.

## 1.3: Post Construction in Existing Subdivisions

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### 1.3.1 Common Plan of Development- New Lots in Existing Subdivisions

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Per correspondence with CDPHE dated 9/10/20, permanent water quality/SWMFs are required for any infill in the urbanized area that triggers “common plan of development.” For example, if multiple lots within ¼ mile are being developed in an existing subdivision at the same time, and the land disturbance is an acre or more, then permanent water quality/SWMFs need to be built to treat these infill lots.

One option for this infill is lot-level SWMFs, typically things like rain gardens or other infiltration measures.

Another option may be retrofitting existing flood control SWMFs. Many of Boulder County's subdivisions were built prior to March 9, 2008 (pre-dating the MS4 regulations), so SWMFs exist without providing any water quality treatment.

Documentation is uploaded to Accela demonstrate compliance.

### 1.3.2 New Lots in Existing Subdivisions with Existing Permanent Facilities

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New development on lots in subdivisions with existing permanent stormwater management facilities do not need to submit a post-construction checklist if the overall filing accounted for lot development and fulfilled the permanent stormwater requirements under a previous SWQP. If the drainage report has not been evaluated, a review to verify that the existing facility meets the current requirements for water quality is conducted by the county's consultant. A drainage letter or report is required by the applicant to evaluate and demonstrate that the lot development meets the assumptions in the original drainage report and that the existing stormwater management facility meets the current requirements.

The following comment is added to the SWQP record in Accela: "Permanent SWMFs were reviewed and constructed as part of SWQP for [add SWQP number]. Permanent Stormwater Facilities were evaluated for [add development name] and were verified to support all of the lots in this filing including this lot. Specifically, SWMF-xx-xxx serves this lot"

## 1.4 Key Personnel

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See **Appendix A:** Key Actions and Responsibilities Table for Post-construction NDRD within the urbanized area.

## Section 2: Post-construction NDRD Exemptions and Exclusions (Part I.E.4.a.i and iii)

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This section documents the County's requirements for sites exempted or excluded from the Post-construction Stormwater Management in NDRD Program to ensure all exclusions meet the requirements of the County's Post-construction NDRD Program.

### **MS4 Permit requirement**

b.i. Excluded Sites: *Maintain records for activities covered under Part I.E.4.a.i. Records must include the site name, owner name, location, completion date, site acreage, reason for exclusion and any information required below.*

a.iii. Regulatory Mechanism Exemptions: Procedures must be implemented to ensure that any exclusions, exemptions, waivers and variances included in the regulatory mechanism are applied in a manner that complies with the terms and conditions of this permit.

Based on the allowed exclusions listed in the MS4 Permit, the County allows the following applicable development sites to be excluded from the requirements in the Post-construction Stormwater

Management in NDRD Program implemented in the urbanized area of the County. Multiple exclusions are allowed for a single project, if applicable to the project.

## 2.1 Excluded Sites

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**2.1.1 Pavement Management Sites:** Sites, or portions of sites, for the rehabilitation, maintenance and reconstruction of roadway pavement, which includes roadway resurfacing, mill and overlay, white topping, black topping, curb and gutter replacement, concrete panel replacement and pothole repair. The purpose of the site must be to provide additional years of service life and optimize service and safety. The site also must be limited to the repair and replacement of pavement in a manner that does not result in an increased impervious area and the infrastructure must not substantially change. The types of sites covered under this exclusion include day-to-day maintenance activities, rehabilitation and reconstruction of pavement. "Roadways" include roads and bridges that are improved, designed or ordinarily used for vehicular travel and contiguous areas improved, designed or ordinarily used for pedestrian or bicycle traffic, drainage for the roadway and/or parking along the roadway. Areas primarily used for parking or access to parking are not roadways. Projects that are considered routine maintenance will not be tracked for MS4 recording keeping. Pavement Management Sites that are not considered routine maintenance (e.g., mill and overlay that is part of a larger roadway development project) will be tracked in Accela and reported as applicable.

**2.1.2 Excluded Roadway Redevelopment:** Redevelopment sites for existing roadways, when one of the following criteria is met:

1. The site adds less than 1 acre of paved area per mile of roadway to an existing roadway, or
2. The site does not add more than 8.25 feet of paved width at any location to the existing roadway.

**2.1.3 Excluded Existing Roadway Areas:** For redevelopment sites for existing roadways, only the area of the existing roadway is excluded from the requirements of an applicable development site when the site does not increase the width by two times or more, on average, of the original roadway area. The entire site is not excluded from being considered an applicable development site. The area of the site that is part of the added new roadway area is still an applicable development site.

**2.1.4 Aboveground and Underground Utilities:** Activities for installation or maintenance of underground utilities or infrastructure that does not permanently alter the terrain, ground cover, or drainage patterns from those present prior to the construction activity. This exclusion includes, but is not limited to, activities to install, replace or maintain utilities under roadways or other paved areas that return the surface to the same condition.

**2.1.5 Large Lot Single Family Sites:** A single-family residential lot, or agricultural zoned lands, greater than or equal to 2.5 acres in size per dwelling and have a total lot impervious area of less than 10 percent. A total lot imperviousness greater than 10 percent is allowed when a study specific to the watershed and/or MS4 shows that expected soil and vegetation conditions are suitable for infiltration/filtration of the WQCV for a typical site, and the County accepts such a study as applicable within the urbanized area. The maximum total lot impervious covered under this exclusion is 20 percent.

**2.1.6 Non-Residential and Non-Commercial Infiltration Conditions:** This exclusion does not apply to residential or commercial sites for buildings. This exclusion applies to applicable development sites for which post-development surface conditions do not result in concentrated stormwater flow during the 80<sup>th</sup> percentile stormwater runoff event. In addition, post-development surface conditions must not

be projected to result in a surface water discharge from the 80<sup>th</sup> percentile stormwater runoff events. Specifically, the 80<sup>th</sup> percentile event must be infiltrated and not discharged as concentrated flow. For this exclusion to apply, a study specific to the site, watershed and/or MS4 must be conducted. The study must show rainfall and soil conditions present within the County's urbanized area and must include allowable slopes, surface conditions and ratios of impervious area to pervious area.

**2.1.7 Sites with Land Disturbance to Undeveloped Land that will Remain Undeveloped:** Permittees may exclude sites with land disturbance to undeveloped land (land with no human-made structures such as buildings or pavement) that will remain undeveloped after the project is complete.

**2.1.8 Stream Stabilization Sites.**

**2.1.9 Trails:** Bike and pedestrian trails. Bike lanes for roadways are not included in this exclusion, unless attached to a roadway that qualifies under another exclusion in this section.

Boulder County allows the Trails exclusion to apply for multi-use pathways, regardless of the surface type, that are:

- horizontally or vertically separated from the roadway; and
- are constructed as a standalone or as part of a roadway project.

The SWQP reviewer will determine if the trail is considered generally adjacent to the roadways and ensure the excluded impervious area is tracked correctly on the post-construction checklist and in Accela. For the purpose of tracking excluded impervious area for the trails exclusion, the area does not include soft surface (e.g. compacted gravel, crusher fines).

*Trails adjacent to roadways:* The trails exclusion does not automatically include the portions of trails that are immediately adjacent to roadways. Those portions may be considered under the Excluded Roadway Redevelopment (see Post-construction guidance for definition). If the trail project can demonstrate infiltration from the new impervious area that is adjacent to roadway, then it may qualify for the Trails Exclusion and if the trail cannot demonstrate infiltration it may qualify for a roadway redevelopment exclusion depending on the width and length of the trail.

**2.1.10 Oil and Gas:** The County has a separate review and permitting process for facilities associated with oil and gas exploration, production, processing, treatment operations or transmission facilities, including activities necessary to prepare a site for drilling and for the movement and placement of drilling equipment, whether or not such field activities or operations may be considered to be an applicable construction activity. These facilities are excluded from the County's Post-construction for NDRD program..

## **2.2 Facilities Located Outside the MS4 Permit Area**

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Boulder County has found that applicants install permanent Stormwater Management Facilities (SWMFs) outside of the urbanized area due to other County requirements. While these situations are not considered an exclusion from the County's post-construction program, they are unique situations that are handled outside of the MS4 regulations and warrant established procedures for consistency.

If it is a private development project, the permanent SWMF process is led by CP&P and follows the process flowchart in Appendix B.

If it is a CIP project where the permanent SWMFs will be owned and maintained by the county, the SWMF goes through the full process of submittal, review, acceptance, tracking, etc administered by the Stormwater Quality Team.

### 2.3 Documentation of Post-Construction Exclusions

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For an exclusion to be used, the following information must be documented in the project file located in Accela: site name, owner name, location, site acreage, reason for exclusion, and any of the following applicable information:

1. Pavement Management Sites: The acreage of the excluded impervious area for rehabilitation and reconstruction of pavement that are not maintenance sites.
2. Excluded Roadway Redevelopment: The acreage of the excluded impervious area.
3. Excluded Existing Roadway Areas for Roadway Redevelopment: The acreage of the excluded impervious area.
4. Non-Residential and Non-Commercial Infiltration Conditions: The acreage of the excluded impervious area.
5. Sites with Land Disturbance to Undeveloped Land that will Remain Undeveloped Redevelopment: The acreage of the excluded impervious area.
6. Stream Stabilization Sites Redevelopment: The acreage of the excluded impervious area.
7. Trails: The acreage of the excluded impervious area.

This information is captured on the Post-construction Checklist Form (Appendix C), which is posted on the County's website <https://www.bouldercounty.org/transportation/permits/stormwater-quality-permit/> and the County's server. This form is required for all projects in the urbanized area, except oil and gas facilities, that disturb greater than or equal to one acre within the urbanized area. Oil and gas facilities use the automatic exemption which does not require any record keeping. Additionally, the CODE Article 12 has specific requirements for oil and gas facilities including post-construction requirements.

The County has also developed several guidance documents to help Permittees understand the post-construction requirements. The guidance documents have been posted to the County's website.

## Section 3: Standards and Requirements (Part I.E.4.a.iv)

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This section documents the standards and requirements used for ensuring compliance with the Post-Construction Stormwater Management in NDRD Program. It also documents the requirements for submittals to ensure procedures to determine the design standards are documented.

#### MS4 Permit Requirement

Part I.E.4.a.iv. Control Measure Requirements: *The Permittee's requirements and oversight for applicable development sites must be implemented to address the selection, installation, implementation, and maintenance of control measures in accordance with requirements in Part I.B. The "base design standard" is the minimum design standard for new development and redevelopment.*

b.iv. Control Measure Requirements: *Procedures to determine which design standard applies to each applicable development site and the design specifications for each design standard (if applicable).*

Article 7-900, Drainage, of the CODE describes the standards and requirements to address the selection, installation, implementation, and maintenance of control measures.

The SDCM requires full-spectrum detention for all new development and redevelopment that does not meet one of the exceptions listed in the SDCM. For development and redevelopment that does not require full-spectrum detention, permanent water quality is still required unless the project meets one of the permanent water quality exceptions listed in the SDCM which includes exclusions from the MS4 permit. The County bases stormwater maintenance facility design on UDSCM criteria. All design standards in the permit that are based on the UDSCM are acceptable in the County, including: water quality capture volume (WQCV) Standard, Runoff Reduction Standard, Regional WQCV Control Measure, Regional WQCV Facility and Constrained Redevelopment Standard.

### 3.1 Post Construction Base Design Standards

The MS4 permit requires the following base design standard be met:

(A) **WQCV Standard:** The control measure(s) is designed to provide treatment and/or infiltration of the WQCV and:

- 1) 100% of the applicable development site is captured, except the permittee may exclude up to 20 percent, not to exceed 1 acre, of the applicable development site area when the permittee has determined that it is not practicable to capture runoff from portions of the site that will not drain towards control measures. In addition, the permittee must also determine that the implementation of a separate control measure for that portion of the site is not practicable (e.g., driveway access that drains directly to street).
- 2) Evaluation of the minimum drain time shall be based on the pollutant removal mechanism and functionality of the control measure implemented. Consideration of drain time shall include maintaining vegetation necessary for operation of the control measure (e.g., wetland vegetation).

(B) **Pollutant Removal Standard:** The control measure(s) is designed to treat at a minimum the 80<sup>th</sup> percentile storm event. The control measure(s) shall be designed to treat stormwater runoff in a manner expected to reduce the event mean concentration of total suspended solids (TSS) to a median value of 30 mg/L or less.

- 1) 100% of the applicable development site is captured, except the permittee may exclude up to 20 percent not to exceed 1 acre of the applicable development site area when the permittee has determined that it is not practicable to capture runoff from portions of the site that will not drain towards control measures. In addition, the permittee must also determine that the

implementation of a separate control measure for that portion of the site is not practicable (e.g., driveway access that drains directly to street).

**(C) Runoff Reduction Standard:** The control measure(s) is designed to infiltrate into the ground where site geology permits, evaporate or evapotranspire a quantity of water equal to 60% of what the calculated WQCV would be if all impervious area for the applicable development site discharged without infiltration. This base design standard can be met through practices such as green infrastructure. “Green infrastructure” generally refers to control measures that use vegetation, soils and natural processes or mimic natural processes to manage stormwater. Green infrastructure can be used in place of or in addition to low impact development principles.

**(D) Applicable Development Site Draining to a Regional WQCV Control Measure:** The regional WQCV control measure must be designed to accept the drainage from the applicable development site. Stormwater from the site must not discharge to a water of the state before being discharged to the regional WQCV control measure. The regional WQCV control measure must meet the requirements of the WQCV in Part I.E.4.a.iv(A).

**(E) Applicable Development Site Draining to a Regional WQCV Facility:** The regional WQCV facility is designed to accept drainage from the applicable development site. Stormwater from the site may discharge to a water of the state before being discharged to the regional WQCV facility. Before discharging to a water of the state, 20 percent of the total impervious surface of the applicable development site must first drain to a control measure covering an area equal to 10 percent of the total impervious surface of the applicable development site. The control measure must be designed in accordance with a design manual identified by the permittee. In addition, the stream channel between the discharge point of the applicable development site and the regional WQCV facility must be stabilized.

The regional WQCV facility must meet the following requirements:

- 1) The regional WQCV facility must be implemented, functional and maintained following good engineering, hydrologic and pollution control practices.
- 2) The regional WQCV facility must be designed and maintained for 100% WQCV for its entire drainage area.
- 3) The regional WQCV facility must have capacity to accommodate the drainage from the applicable development site.
- 4) The regional WQCV facility be designed and built to comply with all assumptions for the development activities planned by the permittee within its drainage area, including the imperviousness of its drainage area and the applicable development site.
- 5) Evaluation of the minimum drain time shall be based on the pollutant removal mechanism and functionality of the facility. Consideration of drain time shall include maintaining vegetation necessary for operation of the facility (e.g., wetland vegetation).
- 6) The permittee shall meet the requirements in Parts I.E.4.a.v. and vii. and Part I.E.4.b. for the regional WQCV facility consistent with requirements and actions for control measures.
- 7) The regional WQCV facility must be subject to the permittee’s authority consistent with requirements and actions for a Control Measure in accordance with Part I.E.4.a.iv.

8) Regional Facilities must be designed and implemented with flood control or water quality as the primary use. Recreational ponds and reservoirs may not be considered Regional Facilities. Water bodies listed by name in surface water quality classifications and standards regulations (5 CCR 1002-32 through 5 CCR 1002-38) may not be considered regional facilities.

**(F) Constrained Redevelopment Sites Standard:**

1) Applicability: The constrained redevelopment sites standard applies to redevelopment sites meeting the following criteria:

(a) The applicable redevelopment site is for a site that has greater than 75% impervious area, and

(b) The permittee has determined that it is not practicable to meet any of the design standards in Parts I.E.4.a.iv(A),(B), or (C). The permittee's determination shall include an evaluation of the applicable redevelopment site's ability to install a control measure without reducing surface area covered with the structures.

2) Constrained Redevelopment Sites Design Standard: The control measure(s) is designed to meet **one** of the following:

(a) Provide treatment of the WQCV for the area captured. The captured area shall be 50% or more of the impervious area of the applicable redevelopment site. Evaluation of the minimum drain time shall be based on the pollutant removal mechanism and functionality of the control measure implemented,

(b) The control measure(s) is designed to provide for treatment of the 80<sup>th</sup> percentile storm event. The control measure(s) shall be designed to treat stormwater runoff in a manner expected to reduce the event mean concentration of total suspended solids (TSS) to a median value of 30 mg/L or less. A minimum of 50% of the applicable development area including 50% or more of the impervious area of the applicable development area shall drain to the control measure(s). This standard does not require that 100% of the applicable redevelopment site area be directed to control measure(s) as long as the overall removal goal is met or exceeded (e.g., providing increased removal for a smaller area), or

(c) Infiltrate, evaporate, or evapotranspire, through practices such as green infrastructure, a quantity of water equal to 30% of what the calculated WQCV would be if all impervious area for the applicable redevelopment site discharged without infiltration.

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## **Section 4: Post Construction Site Plan Requirements and Site Plan Review**

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### **4.1 Site Plan Requirements**

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This section documents the County's requirements for site plan submittal requirements and review procedures to ensure compliance with Post-construction Stormwater Management in NDRD Program.

**MS4 Permit Requirement**

*Part I.E.4.a.v. (A) Site Plans, Site Plan Requirements: Site plans that include control measures for the applicable development sites must include the following:*

- 1) Design details for all structural control measures implemented to meet the requirements of Part I.E.4.*
- 2) A narrative reference for all non-structural control measures for the site, if applicable. “Non-structural control measures” are control measures that not structural control measures, and include, but are not limited to; control measures that prevent or reduce pollutants being introduced to water or that prevent or reduce the generation of runoff or illicit discharges.*
- 3) Documentation of operation and maintenance procedures to ensure the long-term observation, maintenance, and operation of the control measures. The documentation shall include frequencies for routine inspections and maintenance activities.*
- 4) Documentation regarding easements or other legal means for access of the control measure sites for operation, maintenance, and inspection of control measures.*

Article 7-900, 7-901, and 7-904 of the CODE provide requirements for site plan, drainage plan, phasing, and easement submittals.

As part of the Post-construction submittal for projects within the urbanized area, the following items are required:

- A final drainage plan and report that follows the County’s Storm Drainage Criteria Manual (SDCM) and includes a narrative describing the proposed post-construction controls (permanent BMPs) and methods for perpetual maintenance. This must be stamped by a Colorado Professional Engineer.
- A site plan showing the locations of the proposed post-construction controls and easements.
- Identification of the parties responsible for perpetual maintenance of proposed post-construction controls.
- Operation and Maintenance Plan and easement for County inspections and access. The County has developed Guidelines for the Preparation of an Operation and Maintenance Plan including the site plan. The guidelines are on the County’s website <https://www.bouldercounty.org/transportation/permits/stormwater-quality-permit/> and the County’s server and given in Appendix D.
- Stormwater Detention and Infiltration Facility (SDI) design data sheets (accessible at <https://maperture.digitaldataservices.com/gvh/?viewer=cswdif#> under Download SDI Design Data Sheet).
- Post-Construction Review Checklist.
- “As-Built” and certification letter documenting the SWMF was built per plan once the post-construction control has been completed.

## 4.2 Site Plan Review (Part I.E.4.a.v [B and C])

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### **MS4 Permit Requirement**

Part I.E.4.a.v (B) Site Plan Review: *The Permittee shall implement a site plan review process for applicable development sites. The site plan review shall include the following minimum requirements designed to prevent inadequate control measures from being implemented or modified:*

- 1) *Confirmation that control measures meet the requirements of Part I.E.4.*
- 2) *Confirmation that site plans meet the requirements of Part I.E.4.a.v.*

*(C) The Permittee must meet the requirements of Part I.E.4.a.v(A) and (B) before approving any modifications to the site plan.*

Applicable development sites discharging to the County's permitted MS4 are reviewed using the Post-construction Review Checklist Form. Use of the checklists confirms that control measures and site plan meet the MS4 Permit requirements in the Post-construction Program. Once the County receives the submittal, the drainage report and Operation and Maintenance (O& M) Plan (and any other supporting documents) are reviewed for general compliance with the requirements listed in Section 4.1, Site Plan Requirements.

If the submittal has addressed all requirements, acceptance is documented in Accela. If the submittal does not address the requirements, the County Stormwater Quality staff provides comments to the applicant for revision as needed.

Per the recordkeeping requirement in Part I.E.4.b.v, approved site plans (drainage reports and O&M plans) for the project are uploaded to a project-specific SWMF record in Accela.

## **Section 5: Construction Inspection and Acceptance (Part I.E.4.a.vi)**

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This section documents the County's requirements for site inspections to ensure compliance with Post-construction Stormwater Management in NDRD Program.

**MS4 Permit Requirement**

Part I.E.4.a.vi. Construction Inspection and Acceptance: *The Permittee must implement inspection and acceptance procedures to ensure that control measures are installed and implemented in accordance with the site plan and include the following:*

*(A) Confirmation that the completed control measure operates in accordance with the approved site plan.*

*(B) All applicable development sites must have operational permanent water quality control measures at the completion of the site. In the case where permanent water quality control measures are part of future phasing, the Permittee must have a mechanism to ensure that all control measures will be implemented, regardless of completion of future phases or site ownership. In such cases, temporary water quality control measures must be implemented as feasible and maintained until removed or modified. All temporary water quality control measure must meet one of the design standards in Part I.E.4.a.iv.*

*For the purpose of this section, completion of a site or phase shall be determined by the issuance of a certificate of occupancy, use of the completed site area according to the site plan, payment marking the completion of a site control measure, the nature of the selected control measure or equivalent determination of completion as appropriate to the nature of the site.*

To determine if the project owner installed and implemented the control measure in accordance with the site plan (design), the County requires the submittal of as-built drawings as well as an engineering certification (verification) stating that the stormwater management facility is built as designed and will function as designed. This submittal is required before permit closeout.

Inspections conducted during the construction of the SWMF are recorded as part of the SWQP inspection report to ensure proper installation and proper long-term operation of the control measure. If an element of the control measure is installed incorrectly, the element should be removed and replaced. After the SWMF is accepted by the County and generally after the SWQP is closed out, the post-construction inspections begin. The SWMF inspection form, given in Appendix E, is uploaded to Accela along with any associated documentation pertaining to the SWMF.

## Section 6: Long-Term Operation and Maintenance and Post Acceptance Oversight (Part I.E.4.a.vii)

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This section documents the County's process for oversight to ensure compliance with the Post-construction Stormwater Management in NDRD Program.

### **MS4 Permit Requirement**

Part I.E.4.a.vii. Long-Term Operation and Maintenance and Post Acceptance Oversight: *The County must implement written procedures which include the following minimum requirements to ensure adequate long-term operation and maintenance of control measures to ensure that they are functioning as designed.*

*(A) Procedures to enforce the requirements for the owner or operator to implement and maintain control measures when necessary.*

### 6.1 Operation and Maintenance Plan and Maintenance Agreement

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Article 7-904.H.2.a of the CODE requires that as a condition of approval of the County stormwater quality permit and its required SWMFs, the Permittee (property owner) shall agree to maintain the SWMFs to their design capacity in perpetuity.

The post-construction submittal requirements includes an Operation and Maintenance (O&M) Plan. Applicants can refer to the O&M Plan Guidance document on the SWQP website and in Appendix D for the requirements of the O&M Plan and an example.

Because the SWMFs will exist long after the stormwater quality permit is closed out, the County requires maintenance agreements for private development projects where SWMFs are built to meet MS4 requirements. Maintenance agreements are the mechanism Boulder County uses to clarify roles and responsibilities and hold HOAs/private parties accountable for long term operation and maintenance of SWMFs. Maintenance agreements are recorded by the County in the real property records of the office of the Clerk and Recorder to ensure the requirements are bound to the property and any subsequent buyer. In enforcement matters the maintenance agreement enables the use of a lien against the property and reimbursement to the County for abatement work to ensure proper functioning of the SWMFs.

## 6.2 Post Acceptance Oversight

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### **MS4 Permit Requirement**

Part I.E.3.a.vii. Long-Term Operation and Maintenance and Post Acceptance Oversight:  
*(B) Oversight shall include inspections of field conditions and control measures to confirm conformity with the site plan, identify any inadequate control measures, and identify control measures requiring routine maintenance, such as trash removal. All functional elements of control measures shall be inspected at a frequency determined by the Permittee. Inspections of each control measure shall occur at least once during the permit term except when Inspections for oversight of control measures on individual residential lots serving only the individual lot shall occur as determined by the Permittee and may rely on alternative oversight process.*

The County hired a consultant in January 2017 to assist with the County's MS4 and drainage system mapping. Specifically, the consultant was tasked with evaluating the current county drainage system records and geographic information system (GIS) data and conducting desktop and field analysis to perform GIS map updates. Additional Operation and Maintenance inspections of SWMFs are documented in Accela and GIS data is updated as needed.

To enforce the requirements for the owner to implement and maintain control measures, SWMF implemented within the County are inspected by Stormwater Quality staff at least once per 5-year permit term and if a complaint is received. The intent of the inspection is to assess whether the control measure is functioning as designed. The as-built drawing, and, if available, the O & M Plan, are checked when needed to confirm conformity with the plan. The inspection identifies any inadequate control measures and identifies control measures requiring routine maintenance, such as trash removal. County owned and/or operated control measures are tracked in the same database with privately owned control measures. County owned control measures also receive the same minimum inspection frequency that privately owned and/or operated permanent control measures meet.

If corrective action(s) or maintenance is needed, the inspector communicates these needs to the responsible party.

Inspections use the inspection form in Appendix E and are entered in Accela under the applicable SWMF record

## **Section 7: Post-Construction Enforcement Response (Part I.E.4.a.viii)**

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This section documents the County's requirements for enforcement to ensure compliance with Post-construction Stormwater Management in NDRD Program.

#### **MS4 Permit Requirement**

Part I.E.4.a.viii. Enforcement Response:

*Implement appropriate written enforcement procedures and actions to meet the requirements of Part I.E.4. The Permittee must escalate enforcement as necessary based on the severity of violation and/or the recalcitrance of the violator to ensure that findings of a similar nature are enforced upon consistently. The Permittee must have processes and sanctions to minimize the occurrence of, and obtain compliance from, chronic and recalcitrant violators of control measure requirements. Written enforcement procedures must include informal, formal and judicial enforcement responses.*

The County's enforcement procedures guide inspectors on proper escalation of enforcement, as necessary, when inspecting control measures for long-term operation and maintenance.

Per the CODE, it is unlawful for any person to violate any provision of a Stormwater Quality Permit or fail to comply with any of the requirements of Article 7-904. Any person who violates any of the provisions may be subject to one or more of the enforcement actions outlined in Article 7-904.I.

Failure to maintain permanent BMPs may include the following escalation procedures:

1. Discussion of maintenance requirements with the property owner;
2. A written request for maintenance to the property owner; and/or
3. Escalation to code enforcement procedures including a written compliance order containing a compliance schedule or fines.

Each of these items can be used in any order and can be used concurrently. See the detailed discussion in Section 6 of the latest version "Construction Stormwater Quality Program Standard Operating Procedures" describing the enforcement escalation process, which applies to the construction and post-construction programs. Documentation of any enforcement of noncompliance issues associated with long-term operation and maintenance is in Accela under the SWQE record type (Stormwater Quality Enforcement).

When stormwater non-compliance is identified by the County, enforcement actions are taken promptly. An action the County takes against the party in non-compliance is based on the nature and severity of the situation and in accordance with the CODE. The County uses professional judgment and enforcement discretion to determine the appropriate level of compliance assistance and enforcement actions in any given situation.

#### **7.1 Informal Enforcement Response**

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Informal enforcement response includes in-person warnings in response to minor violations such as control measures needing routine maintenance and is often used on sites that do not have systemic violations or are responsive to previous County inspection reports and directions.

#### **7.2 Formal Enforcement Response**

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Formal enforcement response includes written warnings in response to systemic violations and neglected control measures in need replacement. This includes compliance schedules.

### 7.3 Judicial Enforcement Response

---

Judicial enforcement response includes using the court process to obtain compliance on a site. It involves escalation to code enforcement procedures including a written compliance order containing fines and court appearances. Monetary fines are assessed as outlined in the CODE, and judicial enforcement remedies include legal enforcement authority under C.R.S. Sections 30-28-124 and 30-28-124.5; County building code enforcement under C.R.S. Section 30-28-209; and County ordinance enforcement under Part 4 of Article 15 of Title 30, C.R.S.

Judicial enforcement response is rare and is typically triggered only when a site has been through a formal enforcement response and is still not compliant.

### Section 8: Tracking (Part I.E.4.a.ix)

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This section documents the County’s tracking methods for control measures to ensure compliance with Post-construction Stormwater Management in NDRD Program.

#### **MS4 Permit Requirement**

Part I.E.3.a.ix. Tracking:

*Implement and document procedures and mechanisms to track the location of and adequacy of operation of control measures implemented in accordance with the program.*

During the 2016-2023 permit term, Operation and Maintenance inspections and stormwater GIS evaluations conducted by a consultant and the Stormwater Quality Team have been used to enhance Boulder County’s inventory of SWMFs. This SWMF inventory is a geodatabase available in GIS. Mapping of the storm drain system (e.g., SWMFs, outfalls, and other features) is an important tool because it enables the County to spatially view how these features collectively interact to influence downstream water quality. Some of these SWMFs only function for flood control purposes, but additional data were collected on all facilities to better assess retrofit potential (i.e., the ability to add water quality functionality in the future). Importantly, 19 SWMFs were identified within the unincorporated urbanized area by a GIS consultant working to identify stormwater features in the urbanized area of the County. All 19 SWMFs are located in subdivisions so Boulder County subdivision records were used for additional research. Drainage reports and other records confirmed that only one of these SWMFs provides water quality treatment and it came online prior to March 9, 2008 (pre-dating the MS4 regulations). A spreadsheet is maintained to document these results (Boulder County and Private SWMF Within 2010 UA Updated.xlsx). Inspections of these SWMFs are not required; therefore, the SWMFs are not included in Accela and are only located as part of the GIS layer.

The MS4 Permit-required SWMF inventory is maintained in Accela because of its capabilities to schedule and track inspections along with relevant documents (e.g., as-builts and inspection forms). In addition, the SWMF inventory in Accela enables us to associate SWMF records with the applicable Stormwater Quality Permit that generated the facility.

SWMFs are added to Accela when the status is changed to “Online” once the SWMF has been accepted by the County. Acceptance of the SWMF usually occurs when the final inspection is complete and accepted.

## Section 9: Training (Part I.E.4.a.x)

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This section documents the County's training for review, inspection and enforcement of control measures to ensure compliance with Post-construction Stormwater Management in NDRD Program.

### **MS4 Permit Requirement**

Part I.E.3.a.x. Training:

*Train applicable municipal staff to inspect the control measures in accordance with the Permittee's procedures in Part I.E.4.a.vi and vii. The Permittee must identify those who will be likely to inspect the control measures and provide training to those individuals. The training must also include information on trash and its effects on water quality.*

The County previously contracted out long-term operation and maintenance inspections of permanent control measures to a consulting firm; however, starting in late 2022, the inspections are performed by the County's Stormwater Quality Team.

County employees that inspect control measures are trained through on-the-job experience as well as attending classes offered by the Colorado Stormwater Training Center or other reputable training sources such as Environmental Protection Agency, the International Erosion Control Association, Center for Watershed Protection, etc. KICP and other community agencies such as Colorado Stormwater Council also periodically offer trainings using qualified staff from the Colorado Stormwater Training Center or other reputable training sources. Training certificates are stored on the County's server.

## Section 10: Overlapping Permit Areas (Part I.E.4.a.xi)

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This section details the County's stormwater procedures in cases of overlapping permit areas for compliance with the Post-construction Stormwater Management in NDRD Program.

### **MS4 Permit Requirement**

Part I.E.4.a.xi. For Applicable Development Sites that Overlap Multiple Permit Areas co-regulating MS4 Permittee), when a written agreement is in place with a co-regulating MS4 Permittee the following is required:

*(A) Control measure requirements may be imposed on the operator in accordance with the requirements of a co-regulating MS4 Permittee pursuant to the written agreement. This requirement does not apply to applicable development sites in the permit area of the Colorado Department of Transportation.*

*(B) Site plan review/acceptance and site inspection actions may be conducted by a co-regulating MS4 Permittee to meet the requirement of the permit.*

Projects with overlapping permit areas between the County and other MS4 Permit holders are handled on a case-by-case basis. Although construction responsibilities may be delegated to another jurisdiction, rarely will a post-construction control measure be delegated to another entity other than the County. The County uses written agreements to document delegations between different MS4s. Written

agreements are filed on the County’s server ((G:/STORM WATER under SWMF Determinations). This document may be reviewed by the County Attorney and signed by the County Engineer. For projects that meet exclusions for post-construction new development and redevelopment (NDRD) requirements per Part I.E.4.a, excluded impervious surfaces must be tracked for each MS4. The following is an example:

Jurisdiction	Total Disturbance (acre)	Excluded Impervious Area (acre) associated with Exclusion X	Excluded Impervious Area (acre) associated with Exclusion Y	Excluded Impervious Area (acre) associated with Exclusion Z
Municipality A				
Municipality B				
Unincorporated Boulder County (urbanized)				
Unincorporated Boulder County (non-urbanized)				

In the rare case that the County Engineer delegates post construction authority to another MS4, this is also done through a written agreement and filed on the County’s server (G:/STORM WATER under SWMF Determinations). This document may be reviewed by the County Attorney and signed by the County Engineer

## Section 11: References and Resources

- Boulder County’s Stormwater Quality Permit, <https://www.bouldercounty.org/transportation/permits/stormwater-quality-permit/>
- Boulder County Storm Drainage Criteria Manual, <https://www.bouldercounty.org/transportation/floodplain-management/storm-drainage-criteria-manual/>
- Colorado Department of Public Health and Environment, MS4 Phase 2 General Permit, [https://www.colorado.gov/pacific/sites/default/files/COR090000\\_Permit\\_Certification\\_mod\\_3.pdf](https://www.colorado.gov/pacific/sites/default/files/COR090000_Permit_Certification_mod_3.pdf)
- Colorado Stormwater Center, <http://stormwatercenter.colostate.edu/>
- EPA NPDES Stormwater program, <https://www.epa.gov/npdes/npdes-stormwater-program>
- Keep it Clean Partnership, <https://www.keepitcleanpartnership.org/>
- Mile High Flood District, <http://mhfd.org/>

## **Appendices**

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Appendix A: Key Actions and Responsibility Table

Appendix B: CP&P Detention and WQ Workflow

Appendix C: Post-Construction Checklist

Appendix D: Guidelines for Preparing the Operation and Maintenance Plan

Appendix E: EDB Inspection Form

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*Post-construction for New  
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*Standard Operating Procedures  
(SOP)*

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*Appendix A: Key Actions and  
Responsibility Table*

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## Key Actions and Responsibility Table

Key Actions	Responsibility	Process
<b>Permit Application</b>		
Determine if Post-Construction requirements apply	Stormwater Quality Team	<b>Private Development:</b> requirements are explained during development review process or during pre-application meeting. <b>CIP:</b> Department Project Manager includes requirements into Bid documents
Require permittee submit Post-Construction Checklist	Stormwater Quality Team	Supply owner/operator with checklist.
<b>Post-Construction Review and Approval</b>		
Complete review of submittal documents	Stormwater Quality Team or consultant	Review submittal documents for compliance with County requirements. Work with applicant to resolve deficiencies.
Accept the Post-Construction Checklist	Stormwater Quality Team	Sign the checklist for application acceptance
Enter information into Accela	Stormwater Quality Team	Enter all information into Accela.
<b>Inspections</b>		
Perform Initial Inspection	Stormwater Quality Team or consultant	Inspect Stormwater Management Facilities once installed
Perform Routine Inspections	Stormwater Quality Team	<u>Perform Routine Inspections.</u> Once per year is preferred and will be implemented in most cases. The maximum inspection frequency is once per permit term.
Perform re-inspections as needed	Stormwater Quality Team or consultant	Complete follow-up inspections for observed problems or maintenance.
Document Inspections	Stormwater Quality Team or consultant	Document all inspections using inspection forms.
Notify owner/operator and Project Manager of inspection results	Stormwater Quality Team or consultant	Within 2 business days of inspection, inspector should provide owner/operator and Project Manager, if applicable, copies of the inspection report. If the owner/operator does not have email the report should be mailed within 2 business days.
File Inspection Reports	Stormwater Quality Team or consultant	Inspection reports are uploaded into Accela in the SWQP record.



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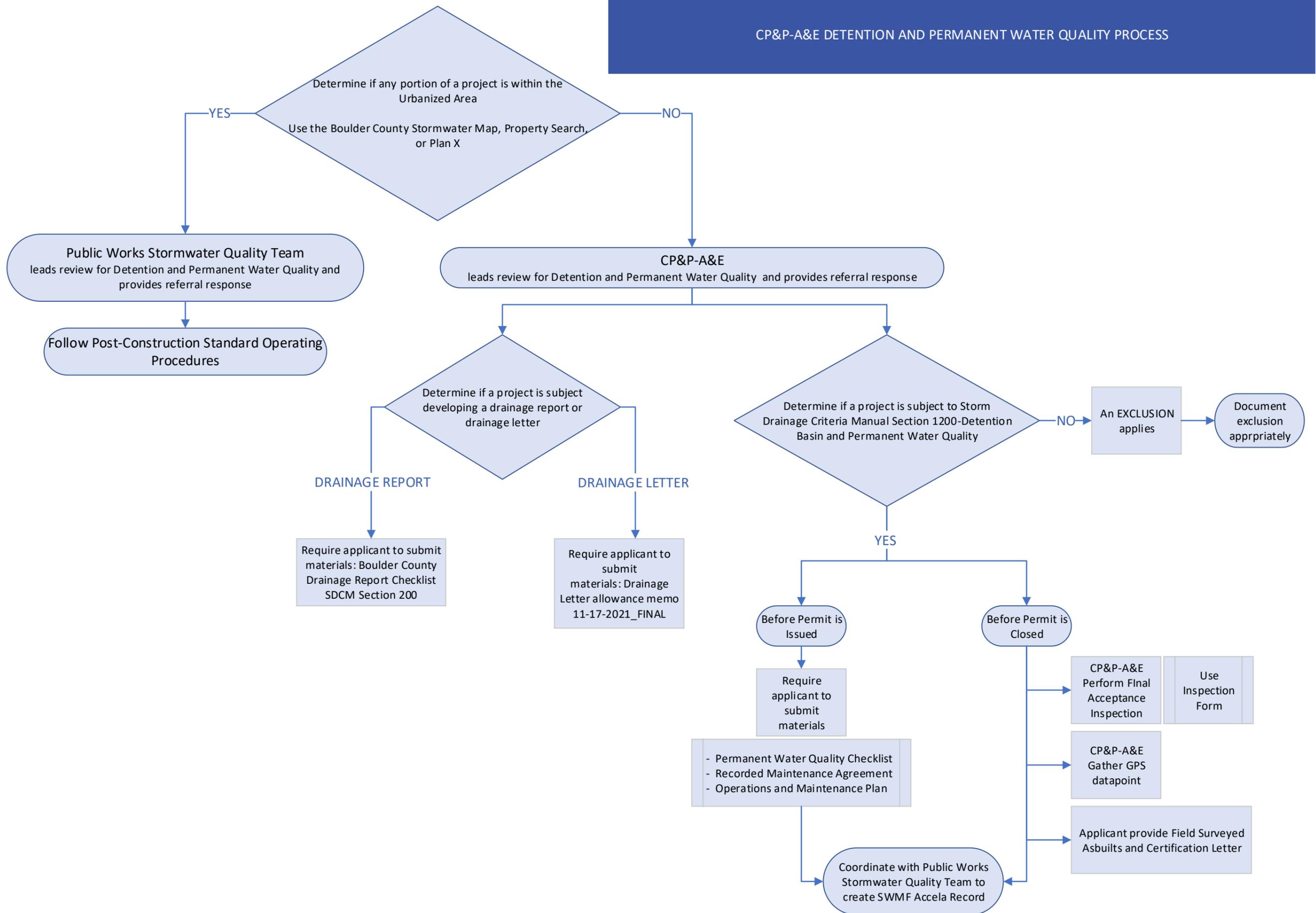
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*Appendix B:  
CP&P Detention and WQ Workflow*

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CP&P-A&E DETENTION AND PERMANENT WATER QUALITY PROCESS





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*Appendix C:  
Post-Construction Checklist*

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# Public Works

2525 13th Street • Boulder, Colorado 80304 • Tel: 303-441-3900  
Mailing Address: P.O. Box 471 • Boulder, Colorado 80306 • [www.BoulderCounty.org](http://www.BoulderCounty.org)

## PERMANENT STORMWATER MANAGEMENT FACILITY REVIEW CHECKLIST FOR SUBMITTALS OR EXCLUSIONS

A checklist is required for projects that are within the urbanized area ([link to map](#)) and disturb one acre or greater. See Post-Construction Guidance ([link](#)) for more information.

**Page 1 Checklist** for projects that do not meet exclusion requirements.

**Page 2 Checklist** for projects that are excluded from post-construction requirements.

PROJECT INFORMATION				
Project Name/ Applicant Name:				Permit #: SWQP-
Submittal Date:	(1)	(2)	(3)	(4)
Total Lot Size or Project Size (Acres):		Total Disturbed Area (Acres):		
Submitted by:	Firm:			
	Contact name:			
	Phone and email:			
SUBMITTAL REQUIREMENTS FOR PROJECTS THAT ARE WITHIN THE URBANIZED AREA, DISTURB ONE ACRE OR GREATER AND <b>DON'T MEET EXCLUSION REQUIREMENTS</b>				
ITEM				
<input type="checkbox"/>	<b>a.</b> Drainage plan and report (that meets the SDCM criteria) and includes a narrative describing the proposed post-construction controls. Final submittal must be sign and stamped by a Profession Engineer in Colorado.			
<input type="checkbox"/>	<b>b.</b> Identification of the parties responsible for perpetual maintenance of proposed permanent stormwater management facility.			
<input type="checkbox"/>	<b>c.</b> A site plan showing locations of the proposed post-construction controls			
<input type="checkbox"/>	<b>d.</b> Operating and maintenance (O&M) plan must be submitted and once project has been completed “as-built” will be required before the SWQP will be closed. See Guidance on Preparing the O& M plan. ( <a href="#">link</a> )			
<input type="checkbox"/>	<b>e.</b> Permanent easement allowing the County access to the permanent stormwater management facility.			
<input type="checkbox"/>	<b>f.</b> Recorded Maintenance Agreement for the permanent stormwater management facility.			
<input type="checkbox"/>	<b>g.</b> SDI Design Data Sheets. These sheets can be found at the State Engineer’s office (SEO) website ( <a href="#">link</a> ) (click on Download SDI Design Data Sheet). Permittee is responsible for uploading the sheets to SEO website. The County will be responsible for reviewing the sheets as part of the submittal.			
<b>County Reviewer Comments:</b>				

<b>SUBMITTAL REQUIREMENTS FOR PROJECTS THAT ARE EXCLUDED FROM POST-CONSTRUCTION REQUIREMENTS</b>	
See Post-Construction Guidance ( <a href="#">link</a> ) for more information regarding exclusions	
<b>Applicant to complete:</b> Check appropriate exclusion(s) and provide required information. Multiple exclusions may apply for a project. See Post-Construction Guidance ( <a href="#">link</a> ) for more information.	
<input type="checkbox"/>	Pavement Management Sites – <i>The excluded existing impervious area (e.g., roadway resurfacing, mill and overlay, white topping, black topping, curb and gutter replacement, concrete panel replacement, and pothole repair) if part of a larger project. Acreage cannot include any new impervious area.</i> Excluded existing impervious area (acre):
<input type="checkbox"/>	Excluded Roadway Redevelopment - <i>This area should be the amount of new impervious area that will be added</i> Excluded impervious area (acre):
<input type="checkbox"/>	Excluded Existing Roadway Areas - <i>This area should be the amount of existing impervious area that will be replaced (e.g., Full Depth Reclamation or roadway rebuild areas)</i> Excluded existing impervious area (acre):
<input type="checkbox"/>	Aboveground and Underground Utilities
<input type="checkbox"/>	Large Lot Single Family Sites Total lot imperviousness (percent):
<input type="checkbox"/>	Non-Residential and Non-Commercial Infiltration Conditions Excluded impervious area (acre):
<input type="checkbox"/>	Land Disturbance to Undeveloped Land that will Remain Undeveloped Excluded impervious area (acre):
<input type="checkbox"/>	Stream Stabilization Sites Excluded impervious area (acre):
<input type="checkbox"/>	Trails - <i>The excluded new impervious trail area (e.g. concrete, pavement not soft surface)</i> Excluded impervious area (acre):
<input type="checkbox"/>	Oil and Gas Exploration

<b>POST-CONSTRUCTION EXCLUSION JUSTIFICATION</b>	
<b>Applicant to complete:</b> Provide an explanation of why the site meets the requirements of the exclusion(s) above and provide documentation to justify the exclusion.	
<b>County Reviewer Comments:</b>	

**Does the submittal meet the requirements of County regulations?**

**Reviewer’s Name:**

**Date:**

**Reviewer’s Signature (to be signed upon final review and acceptance):**



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*Post-construction for New  
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*Appendix D:  
Guidelines for Preparing the Operation  
and Maintenance Plan*

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**Public Works Department**  
**2525 13<sup>th</sup> Street, Boulder, CO 80306**  
**Phone: 303-441-3900**  
**Fax: 303-441-4594**

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## **Guidelines for Preparing an Operation and Maintenance Plan for Post-Construction Controls**

### ***Overview***

Boulder County requires that an Operation and Maintenance (O&M) Site Plan (Plan) be submitted for all local projects including a permanent post construction control measure. The Plan shall consist of a single sheet, 22"x34" that includes all the necessary information for long-term maintenance of the site, and shall generally conform to the guidelines that follow. Graphical elements included on the sheet are to reflect as-built Record Drawing information associated with the completed project.

### ***Contents of Maintenance Site Plan***

The following outline shall be used to guide the development of the Maintenance Site Plan. Some items may not apply to all projects, and any unique features may warrant inclusion of additional information if pertinent to the anticipated maintenance of the site.

#### **Section 1 - Project Information- can be listed in drawing title**

##### **1.0 General Information**

- A. Property Owner - Including contact number
- B. Design Engineer- Including contact number
- C. Project Completion Date
- D. County Approval Block

##### **1.1 Hydraulic Information**

- A. Flow Rates- All applicable flow rates should be listed, e.g. base flow, design flow, any storm flows that were evaluated, etc. Detention facilities should include inflow and outflow rates.
- B. Facility Description- Include additional design information for the facility, including volumes, water surface elevations, and surface types for forebays and micropools.
- C. Outlet Type
- D. WQCV Drain Time

##### **1.2 Miscellaneous Information**

- A. Project Survey Information- Include survey control information and at least one on-site "Maintenance Control Point" established during construction for use during maintenance activities.
- B. Seed Mix



- C. Mow Area- Include area in acres and description of mow limits.
- D. Long Term Monitoring Requirements- If applicable, list monitoring requirements such as 404 Permit Reports or any other required monitoring.

Section 2 - Project Notes

- 2.0 General Facility Description- Include function, flow source, flow pattern through project, any special features, and any additional information that may be helpful in understanding the basic workings of the facility.
- 2.1 Maintenance Notes
  - A. Maintenance Frequency
  - B. Equipment and Special Tools Required
  - C. Power Source (*if applicable*)
- 2.2 Maintenance Procedure
  - A. Dewatering
  - B. Sediment Removal
  - C. Debris Removal
  - D. Site Inspection- List all general features and equipment that should be inspected to ascertain additional maintenance needs. See attached examples.
  - E. Materials Testing- List any contaminant testing requirements for sediment removed from the pond.
  - F. Post-Maintenance Considerations- Any additional maintenance-related tasks should be listed here. These may include restoring flow patterns, replacing or removing stoplogs, or additional cleanup requirements.

Section 3 – Site Plan

- 3.0 Vicinity Map
- 3.1 Plan View- All major features of the facility should be labeled, including the following:
  - Trickle Channel
  - Forebay, longest reach distance required from access road
  - Micropool, longest reach distance required from access road
  - Entrance Structure
  - Outlet Structure

In addition, special maintenance-related information should be identified:

- Maintenance Control Pont location and elevation



- Maintenance entrance / access road / gates / turnarounds. List applicable information such as road material, width, maximum grade, etc.
- Power source
- Weight-restricted areas
- Wetland or natural areas to avoid

### 3.2 Hydraulic Profile

- Major features
- Permanent pool elevations
- Other applicable water surface elevations
- Flow direction
- Shading identifying forebay and micropool sediment removal zones

## Section 4 – Details (relevant to the BMP on site- Rain Garden/PLD, EDB, Sand Filter Basin, etc)

### 4.0 Trickle Channel Section

#### 4.1 Maintenance Road/Access

#### 4.2 Inlet Structure(s)

#### 4.3 Forebay Release Structure

#### 4.4 Outlet Structure

### ***Submittal Requirements***

The Engineer shall submit one 22"x34" Maintenance Site Plan with the project's post-construction submittal package that is required for applicable development sites that disturb an acre or greater within the County's urbanized area. Any comments shall be addressed by the Engineer until approval has been granted by the County. Once approval has been granted, the final submittal shall include:

- One Electronic PDF of an 22"x34" Maintenance Site Plan (P.E., stamped)
- CAD Files





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*Post-construction for New  
Development and Redevelopment  
Stormwater Quality Program*

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*Standard Operating Procedures  
(SOP)*

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*Appendix E:  
EDB Inspection Form*

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