



CITY OF ONTARIO – ENGINEERING DEPARTMENT



NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS FOR NEW DEVELOPMENT

CONSTRUCTION PHASE

SHORT-TERM TEMPORARY CONSTRUCTION BMPs

On August 19, 1999, the State Water Resources Control Board (SWRCB) issued the “General Permit for Storm Water Discharges Associated with Construction Activity”, also known as the “Construction General Permit” (Water Quality Order No. 99-08-DWQ), to the State of California.

Pursuant to the New Development regulations in the Construction General Permit, all New Development projects in the City of Ontario shall be subject to Short-Term Best Management Practices (BMPs) requirements as follows:

A. NPDES Construction Phase Requirements

1. Prior to grading and start of construction, projects which disturb one acre or more of soil¹ and projects which disturb less than one acre but are part of a larger common plan of development that in total disturbs one acre or more are required to obtain coverage under the State's NPDES General Construction Permit and prepare a Storm Water Pollution Prevention Plan² (SWPPP) that is acceptable to the City of Ontario. A Notice of Intent (NOI) must be submitted to the SWRCB and a Waste Discharge Identification number (WDID #) must be included in the SWPPP. For specific General Construction coverage requirements refer to the SWRCB website for General Construction at:
http://www.swrcb.ca.gov/water_issues/programs/stormwater/gen_const.shtml
2. Projects which disturb less than one acre of soil¹ are not required to obtain coverage under the State's NPDES Construction General Permit. As such, they do not need to prepare a SWPPP, submit an NOI to the SWRCB, or obtain a WDID #. Prior to Grading Permit issuance, these projects are only required to prepare an Erosion Control Plan and submit it as part of the Grading Plans for review and acceptance.
3. Small Linear Underground Projects (LUP) disturbing at least one acre but less than five acres of soil¹ (including trenching and staging areas) must be covered by the “Statewide General Permit for Storm Water Discharges Associated with Construction Activity from Small Linear Underground/Overhead Projects”, also known as the “Small LUP General Permit” (Water Quality Order No. 2003-0007-DWQ, NPDES Order No. CAS000005). The Small LUP General Permit has varying application and permitting requirements based on the type and complexity of the project – for specific Small LUP coverage requirements refer to the SWRCB website for Linear Construction at:
http://www.swrcb.ca.gov/water_issues/programs/stormwater/linear_const.shtml
4. LUPs disturbing more than five acres of soil¹ must obtain coverage under the State's General Construction Permit and prepare a SWPPP², prior to grading. The SWPPP shall be submitted for review and acceptance, prior to Grading Permit issuance. A NOI must be submitted to the SWRCB and a WDID # must be included in the SWPPP.

¹ Construction activity includes clearing, grading, excavation, stockpiling, and reconstruction of existing facilities involving removal and replacement. Construction activity does not include routine maintenance of original line and grade, hydraulic capacity, or original purpose of the facility, nor does it include emergency construction activities required to protect public health and safety

² The SWPPP Template from the California Stormwater Quality Association (CASQA) is recommended.



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B. Short-Term Temporary Construction BMPs

All construction projects are required to protect existing and proposed storm drain inlets and conveyances (street curb-and-gutters, channels, storm drains, receiving water bodies, etc.) from sediment and other pollutants by the following means:

1. **EROSION CONTROL BMPs** – Any soil stabilization practices that protect the soil surface and prevent soil particles from being detached by rainfall, flowing water, or wind. All disturbed areas must be stabilized with a combination of one or more Erosion Control BMPs. Refer to the most recent CASQA Construction Handbook, BMP Information Sheets EC-1 through EC-13³ and include BMPs applicable to the proposed project.
2. **SEDIMENT CONTROL BMPs** – Any practice that traps soil particles after they have been detached and moved by rainfall, flowing water, or wind. These practices usually rely on filtering or settling the particles out of the water or wind that is transporting them. Refer to the most recent CASQA Construction Handbook, BMP Information Sheets SE-1 through SE-11⁴ and include BMPs applicable to the proposed project.
3. **WIND EROSION CONTROL BMPs** – Any practice that consists of applying water or other dust palliatives to prevent or alleviate dust nuisance. Refer to the most recent CASQA Construction Handbook, BMP Information Sheet WE-1.
4. **TRACKING CONTROL BMPs** – Any practice that prevents or reduces the tracking of sediment offsite by vehicles leaving the construction area. Refer to the most recent CASQA Construction Handbook, BMP Information Sheets TR-1 through TR-3⁵ and include BMPs applicable to the proposed project.
5. **NON-STORMWATER BMPs** – Any practice that prevents pollution by limiting or reducing potential pollutants at their source or eliminating offsite discharge. Refer to the most recent CASQA Construction Handbook, BMP Information Sheets NS-1 through NS-16⁶ and include BMPs applicable to the proposed project.
6. **WASTE MANAGEMENT & MATERIALS POLLUTION CONTROL BMPs** – Any practice that prevents pollution by limiting or reducing potential pollutants at their source before they come in contact with stormwater. These BMPs include day-to-day operation of the construction site and include traditional good housekeeping practices that help keep a clean and orderly construction site. Refer to the most recent CASQA Construction Handbook, BMP Information Sheets WM-1 through WM-10⁷ and include BMPs applicable to the proposed project.

³ The City of Ontario suggests special emphasis on the most recent CASQA Construction Handbook, BMP Information Sheets EC-3 through EC-8.

⁴ The City of Ontario suggests special emphasis on the most recent CASQA Construction Handbook, BMP Information Sheets SE-1, SE-2, SE-4, SE-5, SE-6, SE-7, and SE-10.

⁵ The City of Ontario suggests special emphasis on the most recent CASQA Construction Handbook, BMP Information Sheets TR-1.

⁶ The City of Ontario suggests special emphasis on the most recent CASQA Construction Handbook, BMP Information Sheets NS-1, NS-6, NS-8, NS-9, NS-10, and NS-14.

⁷ The City of Ontario suggests special emphasis on the most recent CASQA Construction Handbook, BMP Information Sheets WM-1 through WM-6 and WM-8 through WM-10.



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POST-CONSTRUCTION PHASE

LONG-TERM PERMANENT POST-CONSTRUCTION BMPs

On 2002, the Santa Ana Regional Water Quality Control Board (RWQCB) issued three municipal stormwater permits to its three counties (Orange, Riverside, and San Bernardino). The “Santa Ana Region NPDES Permit”, also known as the “Municipal Permit” (Water Quality Order No. R8-2002-0012, NPDES No. CAS618036), was issued on April 26, 2003 to the County of San Bernardino and the 16 incorporated cities of the County within the Santa Ana Region. The San Bernardino County Flood Control District is the Principal Permittee and the City of Ontario is one of its co-permittees.

Pursuant to the New Development regulations in the Municipal Permit, all New Development projects in the City of Ontario shall be subject to Long-Term BMP requirements as follows:

A. Water Quality Management Plan (WQMP) Requirement⁸: All New Development projects are required to prepare a WQMP; refer to San Bernardino County’s most recent “Model Water Quality Management Plan Guidance” and the City of Ontario’s “Water Quality Management Plan Template”. Projects fall within the Non-Category Project or Category Project classification.

1. NON-CATEGORY PROJECTS (refer to Sections 1.2 and 1.3 of the County’s Model WQMP Guidance) – Projects not listed in Table 1-1, Page 1-4 of the County’s Model WQMP Guidance. These projects are required to prepare a WQMP and install an effective combination of appropriate Site Design and Source Control BMPs only. Treatment control BMPs are not required (Section 2.5.3 of the County’s Model WQMP Guidance and Section 3.3 of the City’s WQMP Template). The identification of pollutants of concern and hydrologic conditions of concern are also not required (Sections 2.1 and 2.2 of the County’s Model WQMP Guidance and the City’s WQMP Template).
2. CATEGORY PROJECTS (refer to Sections 1.2 and 1.4 of the County’s Model WQMP Guidance) – Projects listed in Table 1-1, Page 1-4 of the County’s WQMP Guidance. They are required to identify the Primary Pollutants of Concern⁹ (POC) associated with the project (refer to Table 2-1, Page 2-3 of the County’s WQMP Guidance, most current Clean Water Act 303(d) List*, and most current Clean Water Act TMDL List**) and install an effective combination of appropriate Site Design, Source Control, and Treatment Control BMPs.

B. WQMP Components:

1. POLLUTANTS OF CONCERN (Category Projects only): The WQMP for all Category Projects must identify all the pollutants that are expected and potential from the proposed project land

⁸ The City of Ontario requires two copies of the WQMP for 1st and 2nd submittals and three copies of the WQMP for 3rd and subsequent submittals. All WQMP submittals must include one set of Grading Plans as well as one set of other applicable plans that depict BMP design.

⁹ Primary Pollutants of Concern are defined as those pollutants that are possibly generated by the project site and are also impairments in the receiving waters. Primary POC require at least medium efficiency treatment from at least one treatment control BMP.

* Clean Water Act (CWA) 303(d) List for the entire state of California can be found in the SWRCB website at:

http://www.waterboards.ca.gov/water_issues/programs/tmdl/303d_lists2006_epa.shtml

** CWA TMDL List for the Santa Ana Basin can be found in the SWRCB website at:

http://www.waterboards.ca.gov/santaana/water_issues/programs/tmdl/index.shtml#projects



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use or category (refer to Section 2.2 and Table 2-1, Page 2-3 of the County's Model WQMP Guidance). These pollutants constitute the pollutants that may be generated by the proposed project. Said pollutants are classified as Primary POCs and Secondary POCs.

- a. Primary POCs – Expected and Potential Pollutants generated by the project site and which are also listed impairments in the receiving waters. These pollutants require at least medium to high efficiency treatment from one or more treatment control BMPs (refer to Table 2-5, Pages 2-26 and 2-27 of the County's Model WQMP Guidance).
 - b. Secondary POCs – Expected and Potential Pollutants generated by the project site, and which are not impairments in the receiving waters. These pollutants require at least low efficiency treatment from one or more treatment control BMPs (refer to Table 2-5, Pages 2-26 and 2-27 of the County's Model WQMP Guidance).
2. SITE DESIGN BMPs: BMPs incorporated within the site design of a project that reduce the transport mechanism for moving pollutants offsite by reducing imperviousness and enhancing onsite infiltration (refer to Section 2.5 and 2.5.2 of the County's Model WQMP Guidance). Site Design BMPs recommended by the City of Ontario include, but are not limited to:
- Direct building roof runoff and pavement runoff into stabilized discharge points and pervious areas of the site;
 - Design all landscaped areas as non-engineered landscape swales instead of mounds and/or depress all landscaped areas at least 1-3" below the top-of-curb;
 - Install pervious pavement in parking stalls to capture pollutants in the pavement matrix and lower post-development stormwater runoff;
 - Construct pedestrian walkways, trails, patios, etc. with open-jointed pavers;
 - Incorporate natural, vegetated stormwater conveyance channels as opposed to pipes or hardened channels;
 - Incorporate vegetated infiltration strips and/or swales (4' wide) in place of a traditional paved centerline between opposing parking stall rows in parking lots.
3. SOURCE CONTROL BMPs: BMPs that control pollutants at their source or point of generation by preventing stormwater runoff and pollutants from coming in contact with one another (refer to Sections 2.5 and 2.5.2 and Table 2-3, Page 2-11 of the County's Model WQMP Guidance). Source Control BMPs recommended by the City of Ontario, if applicable to the proposed development, include, but are not limited to:

Non-Structural Source Control BMPs:

- Property Owner/Tenant Education – Property owners must familiarize themselves with the onsite BMPs and their inspection and maintenance by referring to the project WQMP and County and City educational materials. Property owners must ensure that tenants are familiarized with the educational materials from the County and/or City. Property owners must obtain updated educational materials on a yearly basis.
- Employee Training – For developments where people will be employed to perform activities that may impact water quality, BMP training and education programs must be provided by business owners within one month of hiring and on a yearly basis thereafter.



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- Activity Restrictions on Tenants – Property owners shall prohibit vehicle/equipment maintenance and cleaning activities in outside areas of the site, outside storage of chemicals and waste materials, discharges of non-stormwater into storm drains, etc. through lease agreements, CC&Rs, etc.
- Chemical Spill Contingency Plan – If hazardous materials will be handled onsite, a “Spill Contingency Plan” shall be provided in accordance with Section 6.95 of the California Health and Safety Code.
- Street and Parking Lot Sweeping and Litter Control – At a minimum, monthly sweeping of all paved areas of the site shall be performed by the property owner, occupant/tenant, Property Owner Association (POA), Home Owners Association (HOA), etc.
- Catch Basin Inspection – At a minimum, quarterly Inspections and maintenance of all onsite stormwater inlets and catch basins by the property owner, occupant/tenant, Property Owner Association (POA), Home Owners Association (HOA), etc.
- Landscape Maintenance – Practice proper fertilizer and pesticide use consistent with product label use and State Department regulations and collect all landscape maintenance waste for proper disposal.

Structural Source Control BMPs:

- Landscape Planning – All common landscaped areas must be depressed 1”-3” below the top of curb or edge of pavement in order to promote infiltration and self-contain pollutants, if any¹⁰. Fertilizer and pesticide usage must be consistent with the product label instructions and with the regulations administered by the State Department of Pesticide Regulation.
- Roof Runoff Controls – Direct building roof runoff into pervious landscaped areas prior to discharging into an inlet or catch basin or collect roof runoff and direct it into a retention or infiltration structure (IE: stormwater drywell).
- Efficient Irrigation – Irrigation equipment such as rain-triggered shut-off devices, flow reducers, sudden pressure drop shut-off valves, programmable irrigation timers, soil moisture sensors, drip irrigation, etc. shall be installed on all new development sites.
- Storm Drain Signage – Stenciling warning “No Dumping – Drains to River” shall be placed on all storm drain inlets and catch basins. The stencils must be inspected on a yearly basis and replaced if necessary.
- Trash Storage Areas – Roofed¹¹ and spill contained trash enclosures shall be routinely installed to prevent exposure of waste materials to rainwater and polluted runoff.
- Pervious Pavement – Pervious surfaces such as pavers or pervious concrete may be installed to reduce runoff.
- Loading Bays & Docks – Loading dock areas should be covered or designed to preclude runoff and run-on.

¹⁰ The City of Ontario requires landscape depression for all common landscaped areas. A note specifying this requirement must be included on all the grading plans (IE: All common landscaped areas must be depressed 1-3” below the top of curb in order to promote infiltration and self-contain pollutants, if any).

¹¹ The City of Ontario requires that all trash storage areas have a permanent, solid roof over them. An architectural detail showing this must be provided in the BMP Location Exhibit.



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4. TREATMENT CONTROL BMPs (Category Projects only): Engineered BMPs designed to remove pollutants of concern from stormwater runoff (see Section 2.5 and 2.5.3 of the County's Model WQMP Guidance). Treatment control BMPs are either flow-based or volume-based.
 - a. Flow-Based Treatment Control BMPs shall be sized according to the flow-based sizing criteria in Attachment D, Section A of the County's Model WQMP Guidance (refer to the City's "WQMP Design Worksheets" in Microsoft Excel, Q_{BMP} tab).
 - b. Volume-Based Treatment Control BMPs shall be sized according to either the volume-based sizing criteria in Attachment D, Section B of the County's Model WQMP Guidance (refer to the City's "WQMP Design Worksheets" in Microsoft Excel, V_{BMP} tab) or the CASQA volume-based sizing criteria¹² (refer to the January 2003 CASQA New Development Handbook, Section 5.5.1, Pages 5-15 through 5-17).
5. HYDROLOGIC CONDITIONS OF CONCERN (Category Projects only): The WQMP for all Category Projects must state if a hydrologic condition of concern (HCOC) is created or not by the project (refer to Section 2.3 of the County's Model WQMP Guidance).
 - a. The project does not create a HCOC if all downstream conveyance channels that will receive project runoff are engineered, hardened, and regularly maintained or if runoff rates, volumes, velocities and flow durations for the post-development condition do not exceed those of the pre-development condition for the 1-, 2-, and 5-year frequency storms.
 - b. If the project creates a HCOC, an evaluation must be performed per Section 2.3, Parts 3 and 4 of the County's Model WQMP Guidance.
6. OPERATION & MAINTENANCE (O&M) of BMPs: All Site Design, Source Control, and Treatment Control BMPs must include a detailed description of inspection and maintenance activities, frequency for each activity, and responsible party to ensure the BMPs will work efficiently throughout the life of the project.

C. Long-Term Permanent Post-Construction BMPs

1. The following treatment control BMPs are acceptable stormwater treatment devices that will satisfy all primary pollutant of concern requirements for the following developments:

Residential (Attached and Detached) Developments of 10 units or more:

- Infiltration BMPs¹³ – Infiltration trench¹⁴, infiltration basin¹⁵, underground retention/infiltration chambers, drywell (these BMPs may also be used for peak flow attenuation simultaneously, if necessary)

¹² The volume-based sizing criteria in Attachment D, Section B of the County's Model WQMP Guidance is very conservative. As a result, the City will accept CASQA's volume-sizing criteria which produces a lower required treatment volume - refer to CASQA January 2003 New Development Handbook, Section 5.5.1, Pages 5-15 through 5-17.

¹³ For infiltration BMPs, a Soils Report/Percolation Test must be performed to verify soil type, soil's infiltration rate, and groundwater location at the location where the BMP is proposed. Coordinate with the manufacturer.

¹⁴ Infiltration trenches must be designed per CASQA New Development Handbook, BMP Information Sheet TC-11 and/or the City's "WQMP Design Spreadsheets" in Microsoft Excel, "Inf Trench" tab. The City of Ontario recommends placing a pre-treatment BMP for trash & debris and oil & grease upstream of an infiltration BMP to avoid clogging. Infiltration BMPs may also be used for peak attenuation, in which case their design must also be included in the Drainage Study.

[Refer to the next page for Footnote #15]



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- Filtration BMPs – Sand filter, media cartridge filtration vault, inlet biofilter vault¹⁶
- Hydrodynamic separator¹⁷ (for pretreatment before runoff enters an infiltration BMP, where adequately sized, and where public storm drains are available for connection of onsite storm drains)

Industrial/Commercial developments of 100,000 sq. ft. or more:

- Hydrodynamic separator¹⁷ (where adequately sized and where public storm drains are available for connection of onsite storm drains)
- Biofilters – Grassy swale¹⁸, grass strip¹⁹
- Infiltration BMPs¹³ – Infiltration trench¹⁴, infiltration basin¹⁵, underground retention/infiltration chambers, drywell (where adequately sized public storm drains are not available and/or onsite stormwater sheet flows to street; thus requiring peak flow attenuation onsite)

Automotive Repair Shops:

- Hydrodynamic separator¹⁷ (where adequately sized and where public storm drains are available for connection of onsite storm drains)
- Biofilters – Grassy swale¹⁸, grass strip¹⁹
- Infiltration BMPs¹³ – Infiltration trench¹⁴, infiltration basin¹⁵, underground retention/infiltration chambers, drywell (where adequately sized public storm drains are not available and/or onsite stormwater sheet flows to street; thus requiring peak flow attenuation onsite)

Restaurants with land area of 5,000 sq. ft. or more:

- Infiltration BMPs¹³ – Infiltration trench¹⁴, infiltration basin¹⁵, underground retention/infiltration chambers, drywell (these BMPs may also be used for peak flow attenuation simultaneously, if necessary)
- Filtration BMPs – Sand filter, media cartridge filtration vault, inlet biofilter vault¹⁶

Parking Lots of 5,000 sq. ft. or more:

- Infiltration BMPs¹³ – Infiltration trench¹⁴, infiltration basin¹⁵, underground retention/infiltration chambers, drywell (these BMPs may also be used for peak flow attenuation simultaneously, if necessary)
- Filtration BMPs – Sand filter, media cartridge filtration vault, inlet biofilter vault¹⁶

¹³ For infiltration BMPs, a Soils Report/Percolation Test must be performed to verify soil type, soil's infiltration rate, and groundwater location at the location where the BMP is proposed. Coordinate with the manufacturer.

¹⁴ Infiltration trenches must be designed per CASQA New Development Handbook, BMP Information Sheet TC-11 and/or the City's "WQMP Design Worksheets" in Microsoft Excel, "Inf Trench" tab. The City of Ontario recommends placing a pre-treatment BMP for sediment, trash & debris, and oil & grease upstream of an infiltration BMP to avoid clogging. Infiltration BMPs may also be used for peak attenuation.

¹⁵ Infiltration basins must be designed per CASQA New Development Handbook, BMP Information Sheet TC-10. The City of Ontario recommends placing a pre-treatment BMP for sediment, trash & debris, and oil & grease upstream of an infiltration BMP to avoid clogging. Infiltration BMPs may also be used for peak attenuation.

¹⁶ Inlet biofilter vaults refer to manufactured BMPs such as Filterra units and Modular Wetlands units. Refer to the City's "WQMP Design Spreadsheets" in Microsoft Excel, "Inlet Biofilter" tab

¹⁷ Hydrodynamic separators must be sized to treat 80% of the 80-micron sized particle. Refer to the City's "WQMP Design Worksheets" in Microsoft Excel, "Hydro Sep" tab and coordinate directly with the manufacturer.

¹⁸ Grassy swales must be designed per CASQA New Development Handbook, BMP Information Sheet TC-30 and/or the City's "WQMP Design Spreadsheets" in Microsoft Excel, "Grassy Swale" tab to have a minimum residence time of 10-minutes. Swales that are not engineered and designed as treatment control BMPs must be referred to as "non-engineered landscaped swales" to avoid confusion.

¹⁹ Grass strips must be designed per CASQA New Development Handbook, BMP Information Sheet TC-31.



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2. The following BMP manufacturers are recognized by the City of Ontario:

Infiltration Devices:

- Underground Retention/Infiltration StormChamber, CON/STORM, CON/SPAN and Contech CMP from Contech Construction Products (909-797-1367, www.contech-cpi.com)
- Drywells from Torrent Resources (909-456-8839, www.torrentresources.com)
- Retention/Infiltration Underground Chambers from ADS (949-315-5539, www.ads-pipe.com)
- Underground Retention/Infiltration Rainstore³ from Invisible Structures, Inc. (303-395-1809 or 1-800-233-1510, www.invisiblestructures.com)
- Drywells from NDS (1-888-825-4716, www.ndspro.com)
- Underground Retention/Infiltration StormTank from Reed & Graham, Inc. (1-888-381-0800, www.rginc.com/geo)

Filtration Devices:

- Filterra Units from Filterra (1-866-349-3458, www.filterra.com)
- Modular Wetlands System from BioClean Environmental (760-433-7640, www.biocleanenvironmental.net)
- StormFilter and Catch Basin StormFilter from Contech Construction Products (909-797-1367, www.contech-cpi.com)

Hydrodynamic Separators:

- Nutrient Separation Baffle Box from BioClean Environmental (760-433-7640, www.biocleanenvironmental.net)
- Vortechs, CDS, and VortSentry from Contech Construction Products (909-797-1367, www.contech-cpi.com)
- JPHV Stormwater Interceptor from Jensen Precast (909-350-4111, www.jensenprecast.com)
- Stormceptor from Rinker Materials (951-277-2420 x302 and 1-800-909-7763, www.rinkerstormceptor.com)

Pervious Concrete and Pervious Pavers:

- Cemex USA (909-974-5500, http://www.cemexusa.com/rm/rm_pr_rm_sc12.html)
- Acker-Stone (1-800-258-2353 or 951-6740047, www.ackerstone.com)
- Sierra Building Products (909-355-6422 or 1-866-749-3038, www.sierrapavers.com)