



MEMORANDUM

DATE: November 1, 2011
TO: Site Development Designers
FROM: Michael Enright, Supervising Engineer *MWE*
SUBJECT: Clarification of Storm Water Related Site Design Requirements:
Integrating the requirements of the California Green Building Standards Code (CALGreen), the City NPDES Municipal Storm Water Permit, and the State Construction General Permit

The City of Santa Rosa adopted Ordinance 3957; which includes CALGreen + Tier 1 requirements (Title 24, Part 11). The ordinance went into effect on January 1, 2011. CALGreen includes provisions for storm water related aspects of site development; drainage, storm water pollution prevention, low impact development, and erosion control. These areas are also regulated by the City NPDES Municipal Storm Water (MS4) Permit which went into effect January 1, 2010 and the State Construction General Permit which went into effect June 1, 2010.

This memo is intended to provide clarification for project applicants on these requirements and how the CALGreen, MS4 and the State permit interrelate. In summary:

- All project applicants submitting for a discretionary permit must complete the "Determination Worksheet" to determine if the Municipal Storm Water Permit applies.
- All projects applying for a building permit must complete the applicable CALGreen Checklist to demonstrate compliance with CALGreen.
- All residential building permit applications for new buildings and parking lots must include plans that contain an erosion control plan, keep drainage away from buildings, reuse topsoil, and use permeable paving as specified below.
- All nonresidential building permit applications for new buildings and parking lots must include plans that contain an erosion control plan and must design permanent storm water Best Management Practices (BMPs) in conformance with the "Storm Water Low Impact Development Technical Design Manual" (Manual) as specified below.

RESIDENTIAL: Specific requirements of the CALGreen + Tier 1, as summarized on the Checklists, are described in *italics* below. City clarification on conformance follows with the “Satisfied By” section. Landscaping plan requirements not listed.

Required for Residential Projects:

4.106.2 – Storm water drainage and retention during construction.

“A plan is developed and implemented to manage storm water drainage during construction.”

Satisfied By: Projects that generate over one acre of soil disturbance must meet the requirements of the State Construction General Permit. Projects not covered under the State Construction General Permit require the submittal of a site plan showing the site topography, drainage features, and the type, location and details of erosion control BMPs. The information may be shown on the site plan or as a separate plan sheet.

4.106.3 – Surface drainage.

“The site shall be planned and developed to keep surface water away from buildings. Construction plans shall indicate how site grading or a drainage system will manage surface water flows.”

Satisfied By: Drainage pattern information and/or drainage system shall be shown on plans.

A4.106.2.3 – Topsoil protection.

“Displaced topsoil is stockpiled for reuse and protected.”

Satisfied By: Location of stockpile shall be shown on the plans. Notes detailing the protection and reuse of stockpiled topsoil shall be included on the plans.

A4.106.4 – Water Permeable surfaces.

“Permeable paving is utilized for not less than 20 percent of the total parking, walking, or patio surfaces.”

Satisfied By: Areas of permeable paving shall be shown on plans. Calculation of the total parking, walking, or patio surface impervious area and the 20 percent permeable paving area shall be shown on the plans. Design and installation shall be performed as specified in the Storm Water LID Manual. The primary driveway, primary entry walkway and entry porch or landing shall not be included when calculating the area required for permeable paving.

Electives for Residential Projects (see CALGreen checklist for when electives are required):

A4.106.2.1 – Soil Analysis.

“Soil analysis is performed by a licensed design professional and the findings utilized in the structural design of the building.”

Satisfied By: Soils report shall be prepared by a licensed professional and include recommended measures to minimize erosion during construction and after occupancy.

A4.106.2.2 – Soil protection.

“Soil disturbance and erosion are minimized by at least one of the following:

- 1. Natural drainage patterns are evaluated and erosion controls are implemented to minimize erosion during construction and after occupancy.*
- 2. Site access is accomplished by minimizing the amount of cut and fill needed to install access roads and driveways. Or,*
- 3. Underground construction activities are coordinated to utilize the same trench, minimize the amount of time the disturbed soil is exposed and the soil is replaced using accepted compaction methods.”*

Satisfied By: Plans containing erosion control measures, drainage information, grading information and / or trench details.

A4.304.2 – Rainwater system.

“A rainwater capture, storage and re-use system is designed and installed.”

Satisfied By: Design and installation shall be performed as specified in the Storm Water Manual. All other permitting and/or review must be obtained.

A4.407.1 – Drainage around foundations.

“Install foundation and landscape drains.”

Satisfied By: Discharge drains to water quality BMP, such as rain gardens, whenever possible. Provide “Impervious Area Disconnection,” as described in the Storm Water LID Manual whenever possible.

A4.407.2 – Roof drainage.

“Install gutter and downspout systems to route water at least 5 feet away from the foundation or connect to landscape drains which discharge to a dry well, sump, bioswale, rainwater capture system or other approved on-site location.”

Satisfied By: Discharge drains to water quality BMP, such as rain gardens, whenever possible. Provide “Impervious Area Disconnection,” as described in the Storm Water LID Manual whenever possible.

NONRESIDENTIAL: Specific requirements of the CALGreen + Tier 1, as summarized on the Checklists, are described in *italics* below. City clarification on conformance follows with the "Satisfied By" section. Landscaping plan requirements not listed.

Required for Nonresidential Projects:

5.106.1 - Storm water pollution prevention plan.

"For projects of one acre or less, develop a Storm Water Pollution Prevention Plan (SWPPP) that has been designed, specific to its site, conforming to the State Storm Water NPDES Construction Permit or local ordinance, whichever is stricter, as is required for projects over one acre. The plan should cover prevention of soil loss by storm water runoff and/or wind erosion, of sedimentation, and/or of duct/particulate matter air pollution."

Satisfied By: Projects that generate over one acre of soil disturbance must meet the requirements of the State Construction General Permit. Projects not covered under the State Construction General Permit require the submittal of a site plan showing the site topography, drainage features, and the type, location and details of erosion control BMPs. The information may be shown on the site plan or as a separate plan sheet. Plan shall also include notes regarding appropriate dust control provisions. No State submittal is required for projects less than one acre.

5.106.10 - Grading and Paving.

"The site shall be planned and developed to keep surface water away from buildings. Construction plans shall indicate how site grading or a drainage system will manage surface water flows."

Satisfied By: Drainage pattern information and/or drainage system shall be shown on plans.

5.408.4 - Excavated soil and land clearing debris.

"100 percent of trees, stumps, rocks and associated vegetation and soils resulting from land clearing shall be reused or recycled."

Satisfied By: Plans showing what will be reused and notes on plans indicating what will be recycled.

Electives for Nonresidential Projects (see CALGreen checklist for when electives are required):

A5.104.1.3 - No open space required in zoning ordinance.

"Provide vegetated open space equal to 20 percent of the total project site area."

Satisfied By: Provide at least 20 percent open space. Can include areas used for storm water quality features.

A5.106.2 - Storm water design.

“Design storm water runoff rate and quantity in conformance with Section A5.106.3.1 and storm water runoff quality by Section A5.106.3.2, or by local requirements, whichever is stricter.”

A5.106.2.1 - Storm water runoff rate and quantity.

“Implement a storm water management plan resulting in no net increase in rate and quantity of storm water runoff from existing to developed conditions.”

CALGreen Exception: *If the site is already greater than 50 percent impervious, implement a storm water management plan resulting in a 25 percent decrease in rate and quantity.*

A5.106.2.2 - Storm water runoff quality.

“Use post construction treatment control best management practices (BMPs) to mitigate (infiltrate, filter, or treat) storm water runoff from the 85th percentile 24-hour runoff event (for volume-based BMPs) or the runoff produced by a rain event equal to two times the 85th percentile hourly intensity (for flow-based BMPs).”

Satisfied By: Design must be consistent with the “Storm Water Low Impact Development Technical Design Manual.”

A5.106.3 - Low impact development (LID).

“Reduce peak runoff in compliance with Section 5.106.3.1 Employ at least two of the following methods or other best management practices to allow rainwater to soak into the ground, evaporate into the air, or collect in storage receptacles for irrigation or other beneficial uses. LID strategies include, but are not limited to those listed in A5.106.4.

1. Bioretention (rain gardens);
2. Cisterns and rain barrels;
3. Green roofs;
4. Roof leader disconnection;
5. Permeable and porous paving;
6. Vegetative swales and filter strips & tree preservation;
7. Volume retention suitable for previously developed sites.”

Satisfied By: BMP selection must be completed as outlined in the “Storm Water Low Impact Design Technical Manual.” Compliance to LID requirements is met through conformance to the Manual.