STORM WATER
QUICK REFERENCE GUIDE

TIER 2

City of Santa Barbara

OUR GOAL

Storm water (rain) is a valuable resource. During rain events, storm water runs off **impervious** (hard) surfaces such as rooftops, driveways, and parking lots, instead of soaking into the ground. It rapidly flows into our streets and storm drains, which lead to our creeks and ocean untreated. This fast-flowing runoff can carry pollutants like oil, pet waste, and litter, and contribute to flooding of our streets and creeks.

Storm water management aims to mimic the natural environment by slowing storm water down and letting it soak into the soil (**infiltration**). Undeveloped natural areas act as a sponge by soaking up rain and reducing runoff, breaking down pollutants as the water infiltrates through the soil. This also reduces the flow of water to our streets and creeks, helping to reduce flooding.

The goal of the City's storm water management program is to ensure that as development and redevelopment of buildings and paved areas takes place in Santa Barbara, the storm water runoff is captured and treated—protecting our creeks and ocean, and reducing the risk of flooding.

STORM WATER REQUIREMENTS

The City of Santa Barbara regulates storm water runoff from new and redeveloped impervious surfaces in order to comply with the Federal Clean Water Act, the State's General Storm Water Permit, and Central Coast Regional Water Quality Control Board requirements.

There are four tiers of storm water requirements, based on project size. This handout summarizes Tier 2 requirements. Detailed information can be found in the City's Storm Water BMP Technical Guidance Manual at SantaBarbaraCA.gov/SWMP.

Infiltrative Design

Non-Infiltrative Design

Is your project Tier 2?

Tier 2 projects include a total proposed new and/or redeveloped impervious area **between 500 to 2,000 square feet**.

New impervious area = hardscape surfaces such as concrete, asphalt, and roofing proposed over existing pervious area.

Redeveloped impervious area = hard surfaces proposed over existing impervious area.

Most Tier 2 projects in Santa Barbara can meet requirements with simple, affordable solutions that do not require engineering.

MANAGING STORM WATER

To meet Tier 2 requirements, your project must include Storm Water Runoff **Best Management Practices (BMPs)** to capture and infiltrate the runoff generated from 1" of rain over the project's new and redeveloped impervious area.

How much water should my BMP accommodate?

1" of rain falling on 1 square foot of impervious area generates 0.62 gallons of storm water *(e.g., 500 sq ft x 0.62 gallons/sq ft = 310 gallons)*.

The **tributary impervious area** (the area draining to your BMP) is not required to be the new and/or redeveloped impervious area, but must be an equivalent (or greater) sized impervious area on site.

The following BMP examples are the most commonly used to meet Tier 2 requirements:

- Redirecting runoff to permeable areas such as landscaping
- Removing existing impervious surfaces
- Installing rain barrels/cisterns
- Installing rain gardens/bioretention areas

BMP options can be combined, if needed, to meet the total storm water management requirement. Additional BMP options can be found in Chapters 2 and 6 of the City's Storm Water BMP Technical Guidance Manual at SantaBarbaraCA.gov/SWMP.

BMP EXAMPLES

1 DISCONNECTING DOWNSPOUTS

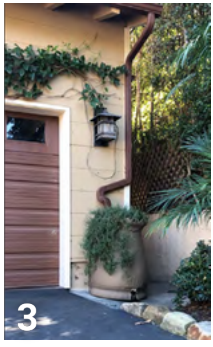
The most common and simple BMP for Tier 2 projects is redirecting runoff from roof downspouts, patios, and driveways into relatively flat (less than 7% grade) vegetated or mulched permeable areas on site. The permeable area must be at least 25% of the size of the tributary impervious area.

2 REMOVING IMPERVIOUS SURFACES

Removing existing impervious surfaces can partially or fully meet Tier 2 requirements. You can fully comply by removing an impervious area that is equal to or larger than proposed new and/or redeveloped impervious area, such as replacing a driveway with permeable pavement or replacing a concrete patio with landscaping.

3 RAIN BARRELS AND CISTERNS

These containers capture and temporarily store water for non-potable reuse such as irrigation. Rain barrels are typically small (50-100 gallons) and placed at a downspout location, while cisterns are larger and can be installed above or below ground. To meet Tier 2 requirements, they should be sized to accommodate the volume of 1" of rain running off the project's proposed new and/or redeveloped impervious area.



4 RAIN GARDENS

Rain gardens or bioretention areas use shallow depressions, natural or constructed, to retain and infiltrate storm water runoff. To determine the size for Tier 2 compliance, multiply the tributary area by a sizing factor based on soil type and basin depth (see table below). For example, to treat runoff from a 400 square foot impervious area, a rain garden with silty soil and an 8-inch-deep basin would need to be 64 square feet.

Sizing Factors for Rain Gardens		
Soil Type	**6 - 7 in. deep basin**	**8 in. deep basin**
Sandy	0.15	0.08
Silty	0.25	0.16
Clayey	0.32	0.2

For more ideas and inspiration, view our BMP Visual Guide at SantaBarbaraCA.gov/SWMP.

HOW TO COMPLY

A storm water report is not needed to satisfy Tier 2 requirements. Project plans must show the compliance methods and calculations demonstrating proposed BMPs are properly sized to meet storm water requirements (see example on the following page).

Plans typically need to include four components:

1. On your site plan, show the proposed new, redeveloped, and removed impervious areas; ensure that site surfaces are labeled and that the plan sheet is properly scaled.

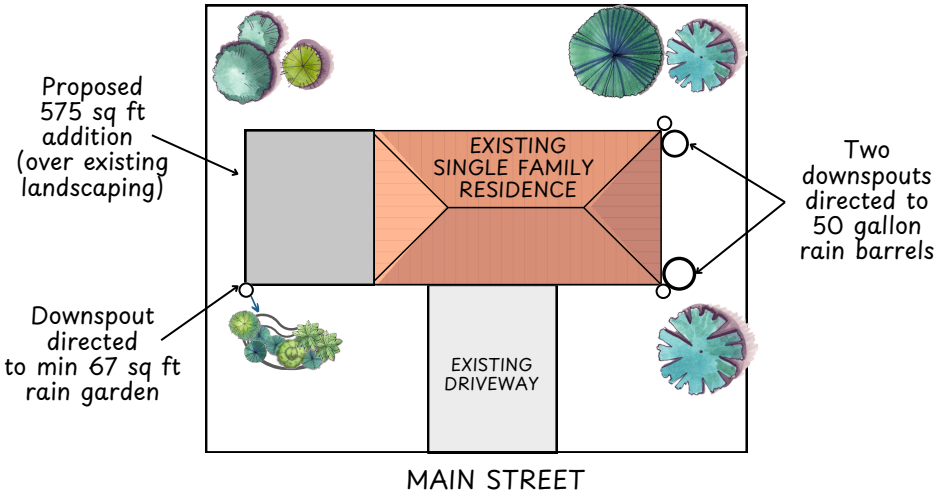
2. Include a calculation of the total proposed new, redeveloped, and removed impervious areas. For clarity you can itemize each feature (i.e., provide the square footage of each proposed change individually) and provide totals for the new, redeveloped, and removed impervious areas.

3. Show the tributary impervious areas from which runoff is draining and being directed to storm water BMPs for infiltration, or identify any existing impermeable surfaces being removed. Quantify these areas show that the managed or removed area is equal to or exceeds the proposed new and redeveloped impervious area.

4. Show the location(s) of proposed BMPs, demonstrate that they are sufficiently sized (include calculations, square footage, etc.), and show that drainage is routed correctly.

5. On your plan cover sheet, state the proposed storm water BMP(s) in the Scope of Work section (or equivalent), and include signed and dated BMP Maintenance Statement.

EXAMPLE PLANS



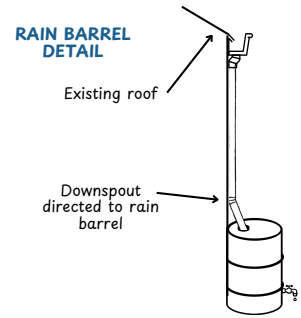
Storm Water Management

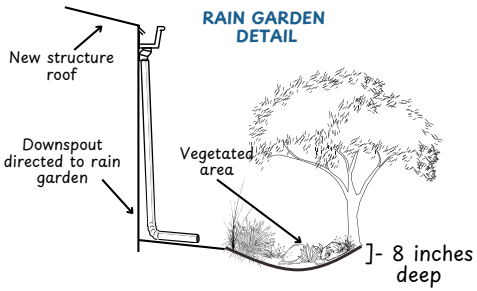
Proposed new impervious area:	575 sq ft
Proposed redeveloped impervious area:	0 sq ft
Removed impervious area:	0 sq ft
Total new & redeveloped:	**575 sq ft**

Runoff from 1" storm calculation
575 sq ft x 0.62 gallons/sq ft =
356.5 gallons

Proposed Rain Barrels* (100 gallons)
2 at 50 gallons each
*include make and model

Proposed Rain Garden (259 gallons)
Silty soil, 8 inches deep:
415 sq ft x 0.16 = 66.40 sq ft rain garden





Have questions or need help complying with the City's storm water requirements?

Email us at SWMP@SantaBarbaraCA.gov or visit SantaBarbaraCA.gov/SWMP

City of Santa Barbara
SUSTAINABILITY
& RESILIENCE

Clean Creeks
HEALTHY BEACHES
CITY OF SANTA BARBARA

City of Santa Barbara
Sustainability & Resilience Department
Creeks Division

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