



STORMWATER CONTROL MEASURES

PUBLIC WORKS DEPARTMENT
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BACKGROUND

In 1972, the Federal Water Pollution Control Act (also referred to as the Clean Water Act (CWA)) was amended to provide that the discharge of pollutants to Waters of the United States from any point source be prohibited unless the discharge complies with a National Pollutant Discharge Elimination System (NPDES) permit.

In 1987, further amendments to the CWA added Section 402(p), which established a framework for regulating municipal and industrial stormwater discharges under the NPDES program through a two-phase implementation plan.

Phase I regulations promulgated in 1990 require metropolitan areas with a population greater than 100,000 (medium and large municipal separate storm sewer systems (MS4s)) and specific categories of industrial facilities to obtain a NPDES permit for stormwater discharges. Phase II regulations promulgated in 1999 require permits for stormwater discharges from small MS4s (population less than 100,000) and from construction sites disturbing between one and five acres of land.

CITY REQUIREMENTS

The City of Davis (City) has a population of 64,401 (as of January 1, 2005), so it is subject to Phase II stormwater regulations under NPDES General Permit No. CAS000004, also known as the Phase II General Permit (Permit).

Under provision D.2.e. of the Permit, the City is required to develop, implement, and enforce a Stormwater Management Plan (Plan). In part, this Plan is to address the stormwater runoff from new development and redevelopment projects by ensuring that controls are in place to prevent or minimize future impacts to stormwater quality. The Plan emphasizes all aspects of pollution control including, but not limited to, regulatory mechanisms, public education, low impact design strategies, source controls, treatment controls, and adequate long-term operation and maintenance of these controls. The City's Plan was submitted in 2003, and approved in September 2006.

The Plan requires the City to specify controls for post-construction runoff from new development and redeveloped areas. The *Manual of Stormwater Quality Control Standards for New Development and Redevelopment (Manual)* establishes standards for stormwater quality control measures and provides guidance on their design and implementation.

The City is requiring developers/contractors to inventory and report on the stormwater controls that will be used at their sites. This inventory will facilitate the City's mandated requirement of reporting to the State Water Resources Control Board on the status of implementing our approved Stormwater Management Plan.

The following two pages provide the format for the inventory, and the general control measures required as specified in the City's *Manual*.

The inventory and checklist will be cross-referenced with the project plans submitted, will be verified by field inspection during installation and by periodic post construction inspection for vegetative cover, maintenance and repair requirements.

The *Manual of Stormwater Quality Control Standards for New Development and Redevelopment* is available at the City's website <http://cityofdavis.org/> for printing. The stormwater control worksheet (pg 3) is also available at the City's website to fill out electronically.

REQUIRED STORMWATER CONTROL MEASURES BY PROJECT TYPE

Project Type (definitions below)	<i>General Site Design Control Measures</i>				<i>Site-Specific Source Control Measures</i>						<i>Treatment Control Measures</i>
	D-1	D-2	D-3	D-4	S-1	S-2	S-3	S-4	S-5	S-6	
Conserve natural areas	Protect slopes & channels	Minimize impervious areas	Minimize effective imperviousness	Storm drain message & signage	Outdoor storage area design	Trash storage area design	Loading dock area design	Wash area design	Fueling area design		
Significant Redevelopment	●	●	●	●							
Commercial Development	●	●	●	●	●	●	●	●	●	●	●
Automotive repair shop	●	●	●	●	●	●	●		●	●	●
Retail gasoline outlet	●	●	●	●	●	●	●		●	●	●
Restaurant	●	●	●	●	●	●	●	●	●		●
Home subdivision (≥ 10 units)	●	●	●	●	●	●					●
Parking lots (≥ 5,000sf or ≥ 25 spaces)	●	●	●	●	●	●	●				●

DEFINITIONS OF PROJECT TYPE:

SIGNIFICANT REDEVELOPMENT – Significant redevelopment is defined as a net increase in impervious area of **5,000 square feet or more** on an already-developed site. Significant redevelopment includes, but is not limited to: expansion of a building footprint or addition or replacement of a structure; structural development including an increase in gross floor area and/or exterior construction or remodeling; replacement of impervious surface that is not part of a routine maintenance activity; and land disturbing activities related with structural or impervious surfaces.

COMMERCIAL DEVELOPMENT – Commercial development is defined as any development on undeveloped private land that is not for heavy industrial or residential use where the total impervious area created is greater than or equal to 5,000 square feet. The category includes, but is not limited to: hospitals, laboratories and other medical facilities; educational institutions; recreational facilities; commercial nurseries; multi-apartment buildings; car wash facilities; mini-malls and other business complexes; shopping malls; hotels; office buildings; public warehouses; and other light industrial facilities.

AUTOMOTIVE REPAIR SHOPS – This category is defined as a facility that is categorized in any one of the following Standard Industrial Classification (SIC) codes: 5013, 5014, 5541, 7532-7534, or 7536-7539 and where the total impervious area for development is greater than or equal to 5,000 square feet.

RETAIL GASOLINE OUTLETS – A Retail Gasoline Outlet is defined as any facility engaged in selling gasoline with 5,000 square feet or more of impervious surface area.

RESTAURANTS – This category is defined as a facility that sells prepared foods and drinks for consumption, including: stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC code 5812), where the total impervious area for development is greater than 5,000 square feet.

HOME SUBDIVISIONS of 10 HOUSING UNITS OR MORE – This category includes single-family homes, multi-family homes, condominiums, and apartments.

PARKING LOTS – A parking lot is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce with 5,000 square feet or more or with 25 or more parking spaces and potentially exposed to stormwater runoff.

TREATMENT CONTROL MEASURES – grass swale, grass filter strip, wet pond, constructed wetlands basin, extended detention basin, infiltration trench/vault, infiltration basin, vegetated swale, stormwater planter, media filter, porous pavement, and filter.

MAINTENANCE OF POST-CONSTRUCTION BMPs:

Submit a Maintenance Plan and Maintenance Agreement for the stormwater control measures. Items that should be included in maintenance agreements can be found in Chapter 6 of the Manual and example Maintenance Agreements have been provided in Appendices C-1 and C-2 of the Manual. The property owner or his/her designee is responsible for compliance with the Agreement. Attach a copy of the Maintenance Plan with contact information to this packet.

STORMWATER WORKSHEET

GENERAL INFORMATION (Print or Type)

Name of Proposed Project	Assessors Parcel No
Applicant/Contact Name	Phone No:
	Fax No.
Address	Email Address
Location of Project	Property Owner
Description of Project	Type of Project

Identify the stormwater control measures used for your project below:

√	Measure required	Explanation of how project is complying.*
<input type="checkbox"/>	D-1: Conserve Natural Areas	
<input type="checkbox"/>	D-2: Protect Slopes & Channels	
<input type="checkbox"/>	D-3: Minimize Impervious Areas <input type="checkbox"/> Minimize Sidewalk & Street Widths <input type="checkbox"/> Minimize Impervious Footprint <input type="checkbox"/> Cluster Development <input type="checkbox"/> Use Porous Paving Materials	
<input type="checkbox"/>	D-4: Minimize Effective Imperviousness <input type="checkbox"/> Grass Channel / Swale <input type="checkbox"/> Grass Filter Strip <input type="checkbox"/> Stormwater Planter <input type="checkbox"/> Porous Pavement Filter <input type="checkbox"/> Vegetated Swale <input type="checkbox"/> Trench Vault	
<input type="checkbox"/>	S-1: Storm Drain Message & Signage	
<input type="checkbox"/>	S-2: Outdoor Storage Area Design	
<input type="checkbox"/>	S-3: Trash Storage Area Design	
<input type="checkbox"/>	S-4: Loading Dock Area Design	
<input type="checkbox"/>	S-5: Wash Area Design	
<input type="checkbox"/>	S-6: Fueling Area Design	
<input type="checkbox"/>	Treatment control measure <input type="checkbox"/> grass swale <input type="checkbox"/> grass filter strip <input type="checkbox"/> wet pond <input type="checkbox"/> constructed wetland basin <input type="checkbox"/> extended detention basin <input type="checkbox"/> infiltration trench / vault <input type="checkbox"/> infiltration basin <input type="checkbox"/> vegetated swale <input type="checkbox"/> stormwater planter <input type="checkbox"/> media filter <input type="checkbox"/> porous pavement filter <input type="checkbox"/> Alternative / Proprietary Treatment (explain)	

INFORMATION EXPECTED FOR EXPLANATION

Provide Design Data Summary Sheet(s) for each control measure. In addition, provide the following:

- A narrative description of the proposed measure to be used, and the area it will serve. Measure(s) should be identified with the appropriate alpha/numeric # (e.g. D-3) or as a treatment control measure.
- Reference to plan sheets showing where the control measure is located within the project (by plan sheet and detail numbers).
- A complete list of plants used (including quantities and spacing) for each control measure.
- Provide separate information for each area served by the same type of control measure.
- Include calculations for each proposed measure unless otherwise approved by the City Engineer.