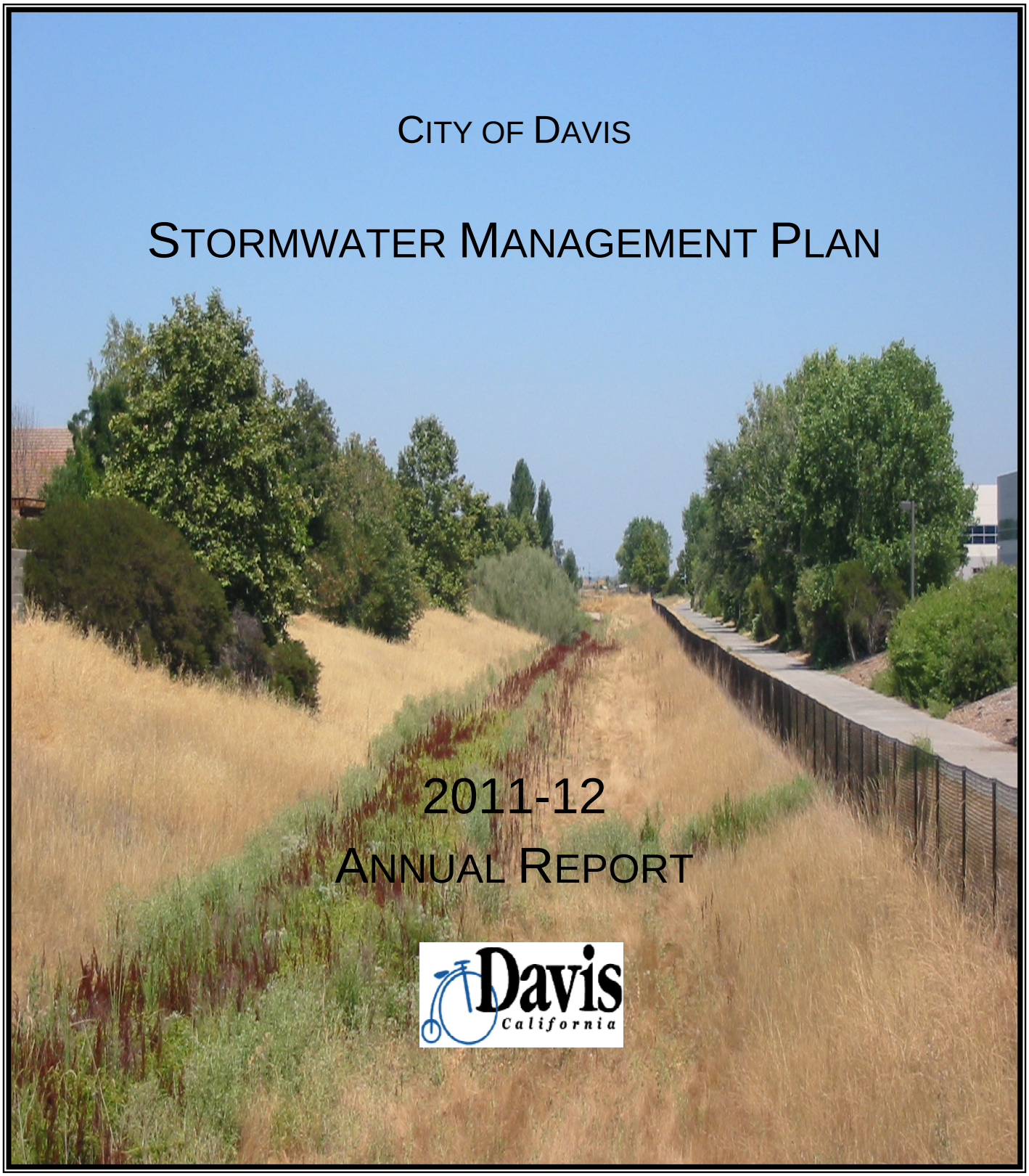
CITY OF DAVIS

STORMWATER MANAGEMENT PLAN



2011-12

ANNUAL REPORT

Davis
California

PERMITTEE INFORMATION

Municipality:	City of Davis
WDID#:	5A57NP00012
Contact Person:	Rhys Rowland, Assistant Planner II
Mailing Address:	1717 Fifth Street, Davis, CA 95616
Phone Number:	(530) 757-5686

Report Period: July 1, 2011 through to June 30, 2012

Certification by Permittee – Stan Gryczko, Wastewater Treatment Plant Superintendent

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on September 15, 2012, at the City of Davis, California.

Signature

9/5/12

Date Signed

Table of Contents

Table of Contents

Table of Contents

Table of Contents

Table of Contents

Table of Contents

Executive Summary

The City of Davis (City) developed a Stormwater Management Plan (SWMP) to address stormwater quality within the City's jurisdiction. The SWMP represents the five-year strategy for controlling the discharge of pollutants from the municipal storm drain system to the maximum extent practicable (MEP). This Annual Report provides a status of implementation of the City's SWMP and reports activities performed from July 1, 2011 through June 30, 2012.

Several of the City's services result in protecting stormwater quality; however, federal regulations have made this program a requirement. California initiated the second phase of municipal stormwater protection with the issuance of the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (Small MS4). In March 2003, the City submitted a Notice of Intent and a draft SWMP to the Central Valley Regional Water Quality Control Board (RWQCB). The SWMP was updated and resubmitted in September 2006. The SWMP is the City's plan and commitment to managing properties, facilities, and operations within its jurisdiction to protect water resources and comply with the General Permit. The Board deemed the City's SWMP to be adequate and ruled the City to have Small MS4 NPDES Permit (MS4 Permit) coverage in February of 2007.

Many of the City's existing environmental programs and activities have been incorporated into the SWMP as Program Elements. The City's SWMP is comprised of seven Program Elements with corresponding specific goals:

1. **Commercial and Industrial** – Inventories and identifies opportunities for outreach to reduce and control pollutants associated with business activities.
2. **Illicit Discharges** – Establishes a program to identify, reduce, and eliminate illicit discharge to the stormwater sewer system.
3. **Construction Activities** – Establishes controls to identify, reduce, and eliminate pollutants during construction activities.
4. **New Development and Redevelopment** – Identifies opportunities for the installation of permanent stormwater Best Management Practices (BMPs) in new development and redevelopment projects.
5. **Municipal Operations** – Improves and identifies in municipal operations at City facilities and in maintenance practices to reduce pollutant accumulation and discharge into the stormwater sewer system.
6. **Public Education, Outreach, and Participation** – Educates the general population and businesses about stormwater quality, recommend pollution prevention measures that can be implemented, and provides opportunities for public input in the development and implementation of the SWMP.
7. **Public Agency Legal Authority** – Describes the maintenance of adequate legal authority for enforcing requirements of the permit and the SWMP.

Each of the Program Element has corresponding Control Measures (See Table 1 in the Introduction Section). The Control Measure is a brief description of the activities, sources, or pollutants to be addressed. Each Control Measure includes the following:

- Description: A brief description of the activities, sources, or pollutants to be addressed by the Control Measure.
- Existing BMPs and Related Activities: Current activities being conducted by the City that address reducing or eliminating pollutants in urban stormwater runoff.
- Measurable Goals: Current and future activities conducted by the City to comply with the stormwater regulations. Activities include reviewing or developing documents or procedures, providing training, revising schedules, eliminating practices, and may be conducted or implemented by one or more of the City's departments.

- Assessment Tasks: Tasks to be conducted to help assess the effectiveness of the Control Measure to reduce pollutants in urban runoff. Many Assessment Tasks require the collection of data and records that may not directly relate to pollutant reduction in urban runoff. These Assessment Tasks address a qualitative approach to demonstrating pollutant reduction by verifying the good faith effort of the City to reduce or eliminate sources of pollutants in runoff through program implementation.
- Program Effectiveness Assessment Summary: The City assessed program effectiveness by summarizing 2011-2012 accomplishments by the outcome level achieved. The City utilized a modified version of the approach developed by the California Stormwater Quality Association (CASQA).
- Responsibility and Timeline: A timeline and the Departments or positions responsible for implementing the Control Measure are identified.

Considered together, the Program Elements, with Control Measures, form a comprehensive programmatic framework that is designed to reduce pollutants in stormwater to the maximum extent practicable. Full implementation of the SWMP will be a long-term evolutionary process. The City continues to implement the SWMP and to monitor program effectiveness with the annual assessment of the program. The Annual Report serves as the vehicle to communicate the effectiveness of the City's program and initiate appropriate changes in the SWMP as necessary to address areas of identifiable deficiency.

1.1 BACKGROUND

The City is an incorporated municipality in Yolo County located 15 miles west of Sacramento on Interstate 80 and adjacent to the University of California, Davis. It is a developed, university-oriented community surrounded by farmland, preserves, and greenbelts. The City's jurisdiction covers 9.8 square miles. The 2010 US census data shows that 65,622 people reside in the City, including the transient college population.

The 2006 approved SWMP is a five-year strategy to address a wide variety of activities that affect stormwater quality within the City jurisdiction and portions of the University of California Davis Campus.

1.1.1 Storm Drain System and Receiving Waters

The City's storm drain system is divided into 11 basins (**Figure 1-1**). Stormwater runoff sheet flows to the stormwater sewer system and is directed to detention basins or nearby drainage channels. Detention basin pump stations lift water from these facilities into regional and vegetated drainage channels. These channels consist of Covell, Mace Ranch Park, and El Macero Drainage Channels, and Channel A. These channels ultimately flow to the Yolo Bypass. A portion of the runoff is lifted from Channel A and directed to the City of Davis Restoration Treatment Wetlands.

The Willow Slough Bypass consists predominately of runoff from agricultural lands to the north of the City during the rainy season and tail waters during the irrigation season.

The Yolo Bypass, the main receiving water body, has several designated beneficial uses including irrigation, stock watering, contact and non-contact water recreation, warm freshwater habitat, warm and cold-water fisheries migration, warm water spawning, and wildlife habitat. Other local areas that provide habitat value include: marshy wetlands in slough channels; irrigation and drainage ditches; riparian woodlands along the North and South Forks of Putah Creek; the old channel of Willow Slough; parts of Dry Slough; and the City's detention ponds and the City of Davis Restoration Treatment Wetlands.

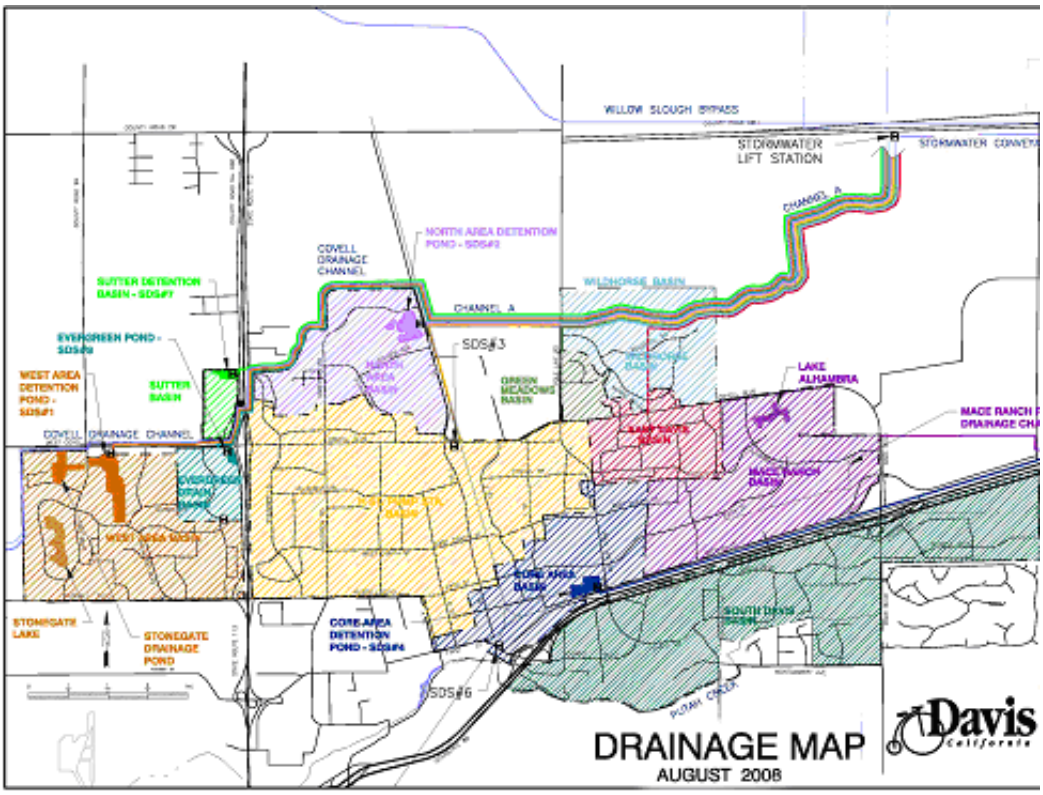


Figure 1-1 City of Davis Jurisdictional Boundary

1.2 ELEMENTS AND ORGANIZATION OF THE PROGRAM

The City's SWMP is a comprehensive environmental program that addresses a wide range of activities and builds upon existing programs and activities. Various City Departments cooperate in implementing different parts of the SWMP under their control. Each of the seven Program Elements contains various Control Measures. Each Control Measure consists of a series of Measureable Goals. Measurable Goals for modifying or developing new Best Management Practices (BMPs) are designed to address regulatory requirements or sources of pollutants that are not adequately addressed through existing activities. BMPs are the standard acceptable practices for controlling, preventing, reducing, or removing pollutants in stormwater. Assessment Tasks for each Control Measure are identified to document the progress of implementation and to measure the effectiveness of implemented BMPs. A table to track the progress of the SWMP has been included and a table of the CASQA assessment factors is included at the end of each Program Element.

Table 1-1 provides the Program Element and the associated Control measure as found in the City's 2010-11 Annual Report.

Table 1-1 The Seven Program Elements and Corresponding Control Measures

Program Element	Control Measure	Control Measure Title
Commercial and Industrial Program	CI1	Business Outreach and Recognition Program
Illicit Discharges Program	ID1	Detection, Elimination, and Training
Construction Activities Program	CA1	Land Development Plan Review Process
	CA2	Erosion and Sediment Control
	CA3	Construction Site Inspection Program
	CA4	Municipal Construction Projects – Contractor Requirements
New Development / Redevelopment Program	NDR1	Private land Development Plan Review Process
	NDR2	Permanent Stormwater BMPs for Municipal Construction Projects
Municipal Operations Program	MO1	Employee Education and Training Program
	MO2	Public Infrastructure Operation, Repair, and Maintenance
	MO3	Green Waste Management
	MO4	Corporation Yard and Fleet Maintenance
	MO5	Parks and Open Space Maintenance
Public Education, Outreach and Participation Program	PEOP1	Residential, Business, and Construction Education and Outreach
	PEOP2	Public Participation Program
Public Agency Legal Authority	PALA1	General Plan Action Items
	PALA2	Legal Authorities

The general purpose of each program element is as follows:

1. **Commercial and Industrial** – Inventories and identifies opportunities for outreach to reduce and control pollutants associated with business activities.
2. **Illicit Discharges** – Establishes a program to identify, reduce, and eliminate illicit discharge to the stormwater sewer system.
3. **Construction Activities** – Establishes controls to identify, reduce, and eliminate pollutants during construction activities.
4. **New Development and Redevelopment** – Identifies opportunities for the installation of permanent stormwater Best Management Practices (BMPs) in new development and redevelopment projects.
5. **Municipal Operations** – Improves and identifies in municipal operations at City facilities and in maintenance practices to reduce pollutant accumulation and discharge into the stormwater sewer system.

6. **Public Education, Outreach, and Participation** – Educates the general population and businesses about stormwater quality, recommend pollution prevention measures that can be implemented, and provides opportunities for public input in the development and implementation of the SWMP.
7. **Public Agency Legal Authority** – Describes the maintenance of adequate legal authority for enforcing requirements of the permit and the SWMP.

City departments are charged with the implementation of various tasks outlined in the SWMP. Many of these SWMP tasks are complimentary to ongoing City programs and efforts. The SWMP provides language that places administrative responsibility to implement the SWMP with the SWMP Administrator position. Formerly, the position of the Environmental Compliance Coordinator (ECC) held the responsibilities of the SWMP Administrator in addition to other broader responsibilities. The ECC position has been vacant since September 2008. The SWMP Coordinator's responsibilities are now the responsibility of the Wastewater Treatment Plant Superintendent. City staff continues to oversee the implementation of Control Measures and related activities, evaluate their effectiveness, and strive to improve the program.

1.3 ANNUAL REPORT FORMAT

This report includes the following information:

- Evaluation of the SWMP's overall effectiveness and assessment of appropriateness of BMPs identified.
- Status of compliance with permit conditions and progress towards achieving Measurable Goals.
- Update on the City's coordination and implementation of other watershed-based management actions (e.g. partnerships with other programs).
- Identify program modifications.

The Annual Report is organized into the following sections to address the major components of the SWMP:

Section 1: Provides background information on the City and the SWMP.

Section 2: Describes activities conducted under each of the seven Program Elements and corresponding Control Measures implemented during the 2011-12 report period. Each Program Element consists of the following:

- An overview of the existing BMPs and related activities
- Control Measures and corresponding Measurable Goals with the progress the City has made towards each of these goals
- Assessment tasks to be conducted to help assess the effectiveness of the Control Measure to reduce pollutants in urban runoff. Many Assessment Tasks require the collection of data and records that may not directly relate to pollutant reduction in urban runoff. These Assessment Tasks address a qualitative approach to demonstrating pollutant reduction by verifying the good faith effort of the City to reduce or eliminate sources of pollutants in runoff through program implementation.
- The City assessed program effectiveness by summarizing 2011-2012 accomplishments by the outcome level achieved. The City utilized a modified version of the Program Effectiveness Assessment (PEA) approach developed by the California Stormwater Quality Association (CASQA). Pursuant to the 2007 CASQA guidance, outcomes for stormwater programs have been categorized into six levels as shown in **Figure 1-2**. The City evaluated its measurable goals within the first four levels. The fifth and sixth levels (Improving Runoff Quality and Protecting Receiving Water Quality, respectively) were not evaluated since the City has not and is not required to collect water quality monitoring data since it was conducted between 1994 and 1998 to help establish the foundation for the SWMP.

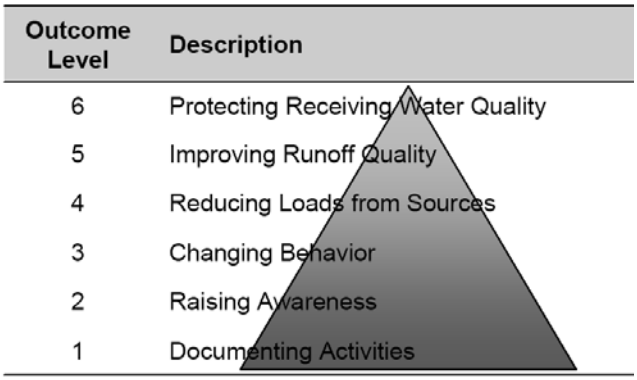


Figure 1-2 Effectiveness Assessment Outcome Levels

- Proposed modifications to the SWMP are identified to better tailor the plan to changes in the City and BMP technologies and methods for achieving the goals.
- A timeline and the Departments or positions responsible for implementing the Control Measure are identified.

The City utilizes the Program Element's assessments to develop program modifications. Implementation of these modifications will occur unless otherwise directed by the Regional Water Quality Control Board.

Section 3: Describes SWMP funding and responsibilities.

Section 4: Presents an overall SWMP assessment.

Section 2 – Program Elements

Section 2.1 - Commercial and Industrial Program

City of Davis

Partners for a Greener Davis Program

Certificate of Partnership

2009

Business Name

This business has voluntarily committed to making environmentally responsible choices and to operate their business in the most environmentally friendly way possible in order to reduce waste, save resources, prevent pollution and reduce greenhouse gas emissions.

PFGD Program Coordiantor, City of Davis

Date

Davis California

Printed on recycled content paper

"Partners for a Greener Davis" Program Certificate

2.1.1 OVERVIEW

Runoff from commercial and industrial areas of the City may contain silt, heavy metals, petroleum hydrocarbons, and pesticides associated with vehicular and business activities. Some of the commercial and industrial activities include material and waste handling, equipment and facility washing and maintenance, and spill response. The Control Measure and tasks in this section address controlling pollutants associated with these types of activities.

2.1.2 CONTROL MEASURES

The City has developed a Control Measure and several accompanying measureable goals to ensure that the Commercial and Industrial Program requirements are effectively developed and implemented. For each Control Measure there are accompanying measureable goals which, once accomplished, constitute compliance with the Permit requirements.

The Commercial and Industrial Program Control Measures consists of the following:

CI	Control Measure
CI1	Business Outreach and Recognition

The next section of the annual report provides information on the specific tasks that have been initiated and/or completed during the reporting period pursuant to the Commercial and Industrial Program measurable goals and implementation schedules.

2.1.3 C11 – BUSINESS OUTREACH AND RECOGNITION

This Control Measure specifies that the City will utilize the business license application process to identify new businesses that may be sources of stormwater pollutants. Implement the business outreach program.

The Business Outreach and Recognition program works to reduce the impacts of stormwater quality by encouraging businesses to implement source control BMPs. Existing BMPs and related activities to this Control Measure are the following:

- The Finance Department supplies new businesses with a Going into Business Agency Contact List that identifies the various agencies that may have regulatory or other legal controls over their business activity.
- The Finance Department distributes a list of the new business licenses issued during the previous month to all City departments while maintaining a database of all active business licenses.
- Partner's for a Cleaner Davis was initiated in 1997 and was reintroduced as Partners for Greener Davis in September 2009 to address multiple environmental facets for which the Public Works Department provides a service. The program was redesigned to increase the business community's awareness of not only pollution prevention, but also source control, recycling, and urban wildlife management. The program changes help to provide a measurement within each of the areas the City is work towards to promote sustainability within the community.
- The City participates in the annual regional "May is Bike Month" promotion events, including a hosting of a Bike-to Work Day (mid-May) with a free breakfast for bicycle commuters.

2.1.3.1 Measureable Goals

Measurable Goal 1: Include the Environmental Compliance staff on the distribution list identifying new business licensees.

During the Report Period, the Environmental Compliance staff continued to receive the monthly updates of new business licenses. The City issued 135 new business licenses during the 2011-12 report period.

Measurable Goal 2: Identify industries required to be covered by the State's General Permit for Industrial Activities and provide outreach to assist them in complying with State requirements.

During the 2011-12 reporting period, the City did not identify a new business that should be covered by the Industrial Activities General Permit. In previous reporting years Schilling Robotics and Davis Waste Removal became the only permitted businesses identified within the City. The City will continue to review the list of new and revised provided comments regarding permit compliance. The City provided Schilling with contact information for the RWQCB for assistance with the permitting process. The table below summarizes businesses licenses reviewed from June 2007 to July 2012. The City has identified one business currently which has recently completed construction but has yet to apply for a business license which may be covered by the Industrial General Permit. The City will contact the business and provide them with material when they apply for a business license with the City. In the 2010-11 reporting period, the City posted the web link for the new State Industrial General Permit during to help increase awareness of the permit. The link can be found in the "What's New?" section of the page.

http://archive.cityofdavis.org/pw/stormwater/

Description	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
# of new business licensees	108	150	155	124	142
# required to obtain coverage under the General Industrial Permit	1	1	0	0	0

Measurable Goal 3: Revise the *Going into Business Agency Contact List* to include the Environmental Compliance staff, and the City's administrator of the Partners for a Greener Davis Program.

In 2009, the City revised the *Going into Business Agency Contact List* to include the appropriate City staff for environmental compliance including stormwater within the Public Works Department. The contact information puts the caller in contact with our Public Works administrative help, who have been instructed where to route calls related to stormwater. Partners for a Greener Davis has become active (September 2009) and the program was also added to the list as well. The list is made available to each new business license applicant.

The list identifies the City's "Pretreatment and Stormwater Controls" programs and can be downloaded through the following weblink:

http://administrative-services.cityofdavis.org/fiscal-services/business-licenses/going-into-business-agency-contact-list

Measurable Goal 4: Continue to implement the Partners for a Greener Davis program.

During the report period, the City continued to implement the Partners for a Greener Davis program (Partners program).

Several various program lead staff (e.g. recycling, water conservation) have formed the Public Outreach Group (POG) within the Public Works Department. The POG meets on a regular basis to provide oversight of the Partners program. Among the accomplishments of the Partners program, is the development of a series of BMP checklists. These checklists indicate Partner requirements and assist businesses in determining actions necessary to achieve Partner status. Individual checklists were completed for different types of businesses such as retail/office, auto service, and food service establishments. The City intends to complete development of checklists for motels/hotels, medical/dental and light industrial uses over the next reporting period. The weblink for the Partners for a Greener Davis was developed and placed on the City's Public Works home page in September 2009.

Additionally, during the first year, the City awarded Partner status to two retail/office businesses and in last report period four more business locations signed up for the program. In this report period three more businesses signed up for the program. The City now has a total of nine certified members. In program checklist the potential for reduced stormwater pollution (primarily in outdoor hazardous material and solid waste storage practices) is high.

Description	2009-2010	2010-2011	2011-2012
# of new certified business	4	2	3

To date, the focus of Partner program has been creating a Medical/ Dental industry checklist. In this report period, funding for the program has been limited and no additional staff has been available to promote the program. No additional businesses were contacted during this report period.

The BMP checklists and information pamphlet can be downloaded from the Partners for a Greener Davis website: http://public-works.cityofdavis.org/stormsewer/greenpartners.

Measurable Goal 5: Continue to implement the Transportation System Management Program.

The City Manager's Office and the City Active Transportation Coordinator continues to promote bicycling, walking, and transit as sensible alternatives to driving single-occupancy vehicles. The City's Ride Walk Davis Program hosts events, distributes educational materials, and administers programs and projects that support the Transportation System Management Program. The City of Davis is in the process of updating the 2009 Bicycle Plan and is preparing a list of action items to enhance Davis' bikeability and livability through the development of new bicycle specific programs, policies, and infrastructure projects. The City of Davis has a goal of achieving a 25% bicycle mode share for all trips. In addition, the Finance Division of the City Manager's Office, in partnership with the Yolo Transportation Management Association and the Yolo-Solano Air Quality Management District, offers incentives for employees to purchase bicycles or establish carpools as alternative forms of commuting.

2.1.4 EFFECTIVENESS ASSESSMENT OF COMMERCIAL AND INDUSTRIAL PROGRAM

Effectiveness assessment is a fundamental component for developing and implementing successful stormwater programs. Outcome levels help to categorize and describe the desired results of the Program Elements and related Control Measures.

In order to determine the effectiveness of the Commercial and Industrial Program, an assessment of the program data is conducted as a part of the annual report. The results of this assessment are used to identify modifications that need to be made to the program. By conducting these assessments and modifying the program as needed, the City ensures that the iterative process is used as an effective management tool.

Effectiveness is determined through a series of Assessment Tasks as identified in the SWMP.

2.1.4.1 Assessment Tasks

Assessment Task CI1.1: Maintain the database of businesses participating in the Partners for a Greener Davis program. Document inspections or visits made to the businesses.

The City has had so few numbers sign up for the program that a database has been unnecessary. Despite the City's efforts to promote and advertise the program significant interest from the business community has been lacking. To date, only nine locations exist within the City. To date with so few numbers and not big numbers anticipated in future a simple spreadsheet program has sufficed to maintain record of the program participants. This data can then be used as part of regular inspection program along with the normal business inspection program anticipated with the new General Permit. As the program grows in the number of participants, inspections can be scheduled as a work order process for staff. Because the program is still relatively small and new with only nine participants, no scheduling of inspections has been performed. In the future reporting periods, the City will report on inspections or visits made to date.

Assessment Task C1.2: Solicit comments from businesses in Partners for a Greener Davis program and identify opportunities for improvement.

As noted above, the City contacted 244 businesses throughout the City in the previous report period. The Partners program business applications have provided feedback related to the program process rather

than content. Many potential applicants are challenged by the length of the application checklist. The City has adjusted to this feedback by offering more resources to help with the certification process.

2.1.4.2 Program Effectiveness Assessment Summary

The City accomplished all of the measurable goals identified for the reporting year, 2011-2012. **Table 2.1-1** summarizes the effectiveness assessment that was conducted for the Commercial and Industrial Program. The City will seek ways to measure additional levels of effectiveness for the future report periods.

Table 2.1-1 Effectiveness Assessment for the Commercial and Industrial Program

Measureable Goal	Level 1	Level 2	Level 3	Level 4
	Implement Program	Increase Awareness	Behavior Change	Load Reduction
CI1 – Business Outreach and Recognition				
1. Include the Environmental Compliance staff on the distribution list identifying new business licensees.	✓ City staff received monthly updates. 142 new business licenses were issued.	✓ With each of the business licenses, comes the Going into Business Contact list.	N/A	N/A
2. Identify industries required to be covered by the State's General Permit for Industrial Activities and provide outreach to assist them in complying with State requirements.	✓ No businesses within the City required coverage by the State's General Permit for Industrial Activities	✓ New Industrial General Permit link placed on City's SW Webpage.	N/A	N/A
3. Revise the *Going into Business Agency Contact List* to include the Environmental Compliance staff, and the City's administrator of the Partners for a Greener Davis Program.	✓ The City revised the Agency Contact List.	✓ The items were changed, placed on the City's Webpage, and provided for all new business licenses.	N/A	N/A
4. Continue to implement the Partners for a Greener Davis program.	✓ The City has continued to implement and further the development of the program.	✓ 244 businesses were contacted 2009-10.	✓ 9 businesses locations have become certified Partners.	N/A
5. Continue to implement the Transportation System Management Program.	✓ The City has continued to implement the program.	N/A	N/A	N/A

✓ – An effectiveness assessment was conducted during the reporting period 2010 – 2011
F – An effectiveness assessment may be conducted in future Annual Reports
N/A – This outcome level is not applicable

2.1.5 SWMP MODIFICATIONS

The City's SWMP received final approval from the Regional Water Quality Control Board (RWQCB) on February 18, 2007. Thus, the City's Permit coverage began on that date; however, the SWMP includes Implementation Schedules spanning the time period 2003 to 2008. As a result, the City updated and modified the Implementation Schedules for each Program Element beginning with the 2007-2008 reporting period (see **Table 2.1-2**). These changes were also noted in the 2008-2009 Annual Report. For this element there are no changes in responsibility or revisions to the Implementation Schedule since all measurable goals have been accomplished for this program. The City will continue to support continuing activities as identified in Table 2.1-2.

Table 2.1-2. Commercial and Industrial Program Implementation Schedule and Responsible Department/Position

Control Measures and Measurable Goals	Implementation Schedule					Responsible Department/Position					
	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	Environmental Compliance Staff	Public Works	Community Development	Parks	Finance	Other
CI1 Business Outreach and Recognition											
1. Include the Environmental Compliance staff on the distribution list identifying new business licensees.	■	▬	▬	▬	▬	◐				●	
2. Identify industries required to be covered by the State's General Permit for Industrial Activities and provide outreach.	▬	▬	▬	▬	▬	●				◐	
3. Revise the *Going into Business Agency Contact List* to include the Environmental Compliance staff, and the City's administrator of the Partners for a Cleaner Davis program.			■			◐	◐			●	
4. Continue to implement the Partners for a Greener Davis program.			■	▬	▬	◐	●				
5. Continue to implement the Transportation System Management Program.	▬	▬	▬	▬	▬	◐	●				

▬ Continuing activity, reviewed or revised as needed throughout implementation
■ One-time activity to develop or implement a measurable goal

● Individual or department to take lead in the development or implementation of an activity.

◐ Individual or department to provide strong support in the development or implementation of an activity.

◔ Individual or department to review and provide comments and guidance during the development or implementation of an activities.

Section 2.2 - Illicit Discharge Program

An Example of an Illicit Discharge in a Storm Drain that the City Cleared in Response to a Phone Call from a Concerned Citizen. Image shows City drain inlet # 19 on Eel Avenue.

Section 2.2 - Illicit Discharge Program

2.2.1 OVERVIEW

The City's stormwater sewer system can convey flows other than stormwater. These flows are commonly referred to as non-stormwater flows, and enter the stormwater sewer system from a variety of sources. Illicit discharges are another source of non-stormwater that enters the stormwater sewer system through illicit connections and illegal dumping. An illicit connection is a physical connection to a storm drain that has not been approved by the City and conveys a prohibited non-stormwater discharge. Illegal dumping is the intentional dumping of prohibited materials into the stormwater sewer system or on streets and other exposed surfaces that will be conveyed by the stormwater sewer system when it rains.

However, stormwater regulations list several non-stormwater flows that are not considered illicit discharges. These discharge flows are permissible provided they are not found to be sources of significant pollutants. The permissible flows listed are the following:

- water line flushing
- landscape irrigation
- diverted stream flows
- rising ground waters
- foundation drains
- springs
- discharges from potable water sources
- uncontaminated pumped ground waters
- air conditioning condensation
- dechlorinated swimming pool discharges
- individual residential car washing
- water from crawl spaces pumps
- footing drains
- irrigation water
- lawn watering
- flows from riparian habitats and wetlands
- uncontaminated ground water infiltration to separate storm sewers
- emergency fire fighting water

All other non-stormwater flows are considered illicit discharges and can be a source of pollutants that may adversely impact receiving waters. Due to this potential impact, the MS4 Permit requires municipal programs to "effectively prohibit" non-stormwater discharges to the stormwater sewer system. To determine if the City is effectively prohibiting non-stormwater discharges, the City is required to implement a program to detect and eliminate illicit discharges to its stormwater sewer system.

2.2.2 CONTROL MEASURES

The City has developed one Control Measure and several accompanying measureable goals to ensure that the Illicit Discharge Program requirements are effectively developed and implemented. For each Control Measure there are accompanying measureable goals which, once accomplished, constitute compliance with the Permit requirements.

The Illicit Discharge Program Control Measures consists of the following:

ID	Control Measure
ID1	Illicit Discharge Detection, Elimination, and Training

The next section of the annual report provides information on the specific tasks that have been initiated and/or completed during the reporting period pursuant to the Illicit Discharge Program measurable goals and implementation schedules.

2.2.3 ID1 – ILLICIT DISCHARGE DETECTION, ELIMINATION, AND TRAINING

This Control Measure specifies that the City will detect and eliminate illicit connections and illegal discharges to the stormwater sewer system.

Section 2.2 - Illicit Discharge Program

This Control Measure addresses different aspects of the illicit discharge program. The City reviews and revises, as needed, its maintenance and response activities for illicit discharges. Maintenance and emergency response personnel are trained to protect the stormwater sewer system during emergency response activities. In addition, improved record keeping and reporting practices will be developed and implemented.

Existing BMPs and related activities to this Control Measure are the following:

- An ordinance prohibiting illicit discharges to the stormwater sewer system is planned under Control Measure PALA2.
- Annually the City's Public Works Department inspects and cleans the City's stormwater sewer system infrastructure. Evidence of illicit connections or illegal discharges is investigated and corrected.
- Solid waste in City parks are contained in covered receptacles with no weep holes. Trash from each park is carried to regionally-located dumpsters for collection by regular services.
- On Friday and Saturday of each week throughout the year except for Holidays, Yolo County Landfill holds Household Hazardous Waste Drop-off Events to accept hazardous wastes, pesticides, and herbicides from households. Businesses that qualify for the Conditionally Exempt Small Quantity Generator Hazardous Waste Collection Program can make an appointment with the Landfill to arrange drop-offs. Davis Waste Removal, Yolo County Landfill and five automotive parts stores or service centers in Davis provide free used motor oil drop off.
- Businesses handling hazardous materials and wastes are required to develop an Emergency Response Plan that includes spill prevention, control, and counter-measures. The Fire Department maintains copies of all business emergency response plans.
- The Public Works Department responds to all complaints by staff, residents, and businesses reporting spills, leaks, and illegal dumping of non-hazardous materials or illicit connections to the stormwater sewer system. Clean-up activities include measures to prohibit or limit flows to the stormwater sewer system.
- The Fire Department responds to all spills and leaks of hazardous material. Clean-up activities include measures to prohibit flow to the stormwater sewer system.
- The Partners for Greener Davis green business program has checklists which contain information related to spill prevention and best management practices for dealing with hazardous materials.

2.2.3.1 Measureable Goals

Measurable Goal 1: Inspect the sanitary sewer system within the Core Area (downtown Davis) such that the entire system is inspected at least once during the permit term.

Public Works completed these inspections and repairs. Maintenance of the Core Area system occurs quarterly on an annual basis.

Measurable Goal 2: Continue to implement spill/leak investigation and clean-up response activities.

During the 2011-12 report period, Public Works responded to a total of 11 incidents of hazardous material spills. None of these incidents resulted in an illicit discharge due to BMPs implemented by City personnel. No Fire Department information is included in this Incident listing.

Description	2008-2009	2009-2010	2010-2011	2011-2012
# Incidents of hazardous material spills	21	91	51	11
# resulting in illicit discharge	0	0	0	0

Measurable Goal 3: Continue to use a standardized reporting procedure for spill/leak and clean-up response activities and develop the City's CMMS database system if feasible to facilitate electronic record keeping.

During the 2011-12 report period, the City continued to record hazardous material spills and leaks are via several methods. The primary method is an incident response record that is filled out by the Public Works' Hazardous Materials recovery crew. Information on location, material, volume, and clean-up response are recorded. These records are kept in hard copy form and filled for future data retrieval. Materials that enter the storm drain are referred to the Stormwater Collections crew for containment and clean up. The SW Collections crew documents the materials recovery effort via a CMMS database. In addition, the Fire Department reports hazardous spills and leaks within a national incident response database, but does not use the City's CMMS. The City is investigating how to utilize the CMMS for all spill and leak record keeping. In the 2011-12 report period, Public Works staff also recorded illicit discharges reported. This included investigating, reporting, creating awareness to dischargers via outreach methods, and halting discharges.

Measurable Goal 4: Maintain records of illicit discharges including:

- Dates of occurrence, response and resolution
- Location
- Estimated type and quantity of material discharged
- Description of response and enforcement actions

The City maintains records of illicit discharge responses via hard copy incident response records and in the future, these will be recorded in a database. The CMMS module for illicit discharges has been viewed for the past several years for development. With continued reductions in staffing levels and the importance of other efforts such as development of outreach methods for illicit discharge awareness and prevention, the task of developing the database has taken a lower priority. With two departments involved in Hazardous Material response, and multiple divisions involved in illicit discharge detection and elimination, the overall numbers are relatively small. They have easily been recorded by both paper and electronic methods such as spreadsheets. Incident response records have and continue to document the location, material, volume, and clean-up response. Additionally, the Fire Department reports hazardous material spills in a national database. Below is a table showing records of the City's response and actions taken for illicit discharges during the 2011-12 report period.

Public Works documented and responded to:

- 9 hazardous waste spills. None of these spills resulted in a discharge. These spills typically consisted of motor oil, transmission fluid, hydraulic oil, gasoline, diesel, and anti-freeze and none of these spills resulted in an illicit discharge.
- 18 potential illicit discharge incidents. These incidents involved draining of chlorinated pool water, dumping garbage into the storm drain, cement contractors washing concrete mix into the drain, or use of surfactant cleaning products to degrease parking areas. An unknown amount of materials were discharged. In all cases the City was responding to calls made from the public to the Public Works office or City staff identified spills. These activities are rarely caught in the act in the field. However, the pollutants discharged are of both insignificant quantity and low threat to environmental health. In all incidents, the City investigated the source of the spill and worked with the responsible parties to create awareness of damages that result from activities that result in pollutant discharges to the storm drain system. Since the City's stormwater ordinance was only adopted in June of 2012, we did not issue any NOVs. It is unlikely for any of the reported incidents that the City would resort to such a measure. The City will work with dischargers in a sequence of awareness, to greater enforcement measures dependent upon the response of the responsible party as staff attempts to modify the responsible party's behavioral.
- 7 incidents of sanitary sewer overflows. Of these incidents, five discharge incidents reached the storm drain system. However in no incidents were discharges reported to reach surface waters.

An estimated 1,508 gallons were reported as spilled and recovered. All incidents were reported through the State reporting system CIWQS.

The Fire Department did not provide information for the 11-12 reporting period.

	Description	2008-09 #	2009-10 #	2010-=11 #	2011-12
Summary	# of illicit discharges identified	1	5	67	18
	# illicit discharges investigated***	1	5	36 (PW), 40 (Fire)*	18
	# of Sanitary Sewer Overflows	N/A	10	11	7
	# of Hazardous spills reported non-discharge - PW	21	16	10	9
	# of Hazardous spills cleaned-up non-discharge - PW	21	16	10	9
	# of Hazardous spills cleaned-up w/discharge –PW	0	0	0	0
	Total # of Hazardous spills reported non-discharge – Fire Department	N/A	75	40	N/A
	# of Hazardous spills cleaned-up non-discharge – Fire Department	N/A	59	39**	N/A
	# of Hazardous spills cleaned-up w/discharge – Fire Department	N/A	4	0	N/A
	# of Hazardous spills that did not require clean up – non-discharge - Fire Department	N/A	12	1	N/A
	TOTAL NUMBER OF SPILLS	21	91	67	16
Type of Materials	Inorganic	0	32	2	0
	Paint	0	1	2	0
	Petroleum Products	0	30	37	9
	Sewage	0	5	11	7
	Misc (wheat flour, other)	1	7	9	0
	Unidentified	0	11	0	0
	Pool Water	N/A	5	3	0
Enforcement Action	Verbal or Written Warnings	1	6	7	0

* Reported as storm drain threatened, but engine company did not note discharge into storm drain.

** 1 report indicated no cleanup necessary, fluid had evaporated. 7 incidents involving spills were cleaned up by parties other than the fire department (ie. owner, EH&S, tow truck).

*** Note that the City in 2011-12 differentiated illicit discharges from SSOs and Hazardous Material spills. The number in past years did not necessarily reflect that distinction.

Measurable Goal 5: Compile training materials and train appropriate personnel for the adequate implementation of the illicit discharge program during the permit term.

New field employees are trained on the job regarding illicit discharge identification, response, reporting and enforcement though the City has not had any new employees for the past two years. All field

employees discuss illicit discharge identification at tailgate meetings prior to drainage inspection/maintenance activities. Reference material for managing illicit discharges is utilized for this purpose on an as needed basis and depending upon the investigation of an illicit discharge incident. The table below shows the number of training sessions during this and last report periods. This past report year, the Public Works Transportation crew was trained on general stormwater awareness issues in general, provided with a stormwater handouts (see Appendix B, pages 20-22 for a copies of the handouts) and an updated copy of the CASQA Municipal Operations BMP Manual.

In alternate years, a survey of the managers and crew members was conducted to test their knowledge of stormwater pollutants, pollution prevention and clean up procedures . See Appendix B, pages 2-5 for a copy of the survey.

	2008-09	2009-10	2010-11	2011-12
Total Number of Trainings Provided to PW Staff	2	3	3	1
Total Number of Attendees	13	8	8	7
Total Number of Trainings Provided to Fire Staff	N/A	3	16	N/A
Total Number of Fire Staff Attendees	N/A	46	98	N/A

2.2.4. EFFECTIVENESS ASSESSMENT OF ILLICIT DISCHARGE PROGRAM

Effectiveness assessment is a fundamental component for developing and implementing successful stormwater programs. Outcome levels help to categorize and describe the desired results of the Program Elements and related Control Measures.

In order to determine the effectiveness of the Illicit Discharge Program, an assessment of the program data is conducted as a part of the annual report. The results of this assessment are used to identify modifications that need to be made to the program. By conducting these assessments and modifying the program as needed, the City ensures that the iterative process is used as an effective management tool.

Effectiveness is determined through a series of Assessment Tasks as identified in the SWMP.

2.2.4.1 Assessment Tasks

Assessment Task ID1: Maintain a record of illicit discharges investigated. Include in the record a characterization of the type and estimated quantity of the flow eliminated, a brief description of the City's activities to response, and any enforcement actions taken.

The City maintains records of illicit discharges and hazardous material spill resulting in illicit discharges via hard copy incident response records and spreadsheets and to some degree the City's CMMS database. Additionally, the Fire Department reports hazardous material spills in a national database. Quantities of discharges, response and enforcement action taken are included in the record.

It is possible that over time, patterns or trends of illicit discharges may be determined as the record keeping of illicit discharges is improved, possibly with the addition of GIS. If so, then the City can direct their resources in those areas (e.g., public education efforts for apartment complexes). At this point, the assessments of the records do suggest trend of automobile work being done at residents and spills resulting from it. Future outreach efforts may focus more in the area.

2.2.4.2 Program Effectiveness Assessment Summary

The City accomplished all of the measurable goals identified for the report year, 2011-2012. **Table 2.2-1** summarizes the effectiveness assessment that was conducted for the Illicit Discharge Program.

Table 2.2-1 Effectiveness Assessment for the Illicit Discharge Program

Measureable Goal	Level 1	Level 2	Level 3	Level 4
	Implement Program	Increase Awareness	Behavior Change	Load Reduction
ID1 – Illicit Discharge Detection, Elimination, and Training				
1. Inspect the sanitary sewer system within the Core Area (downtown Davis) such that the entire system is inspected at least once during the permit term.	✓ In the 2007-8 reporting period, the City completed inspections of all and repaired 80% of the sanitary sewer system in the Core Area. ✓ The remaining 20% of the repairs are minimal and will be scheduled as CIP budget permits.	N/A	N/A	N/A
2. Continue to implement spill/leak investigation and clean-up response activities	✓ The City Public Works investigated, and mitigated as necessary 16 incidents of hazardous material spills. ✓ The City responded to 11 sanitary sewer overflows and mitigated all of the SSO. ✓ Fire Department investigated and mitigated 4 spills with some minor levels of discharge.	✓ The City issued 7 written or verbal warnings.	N/A	✓ Of the 66 total spill incidents reported and 11 SSOs responded to all but 5 resulted in illicit discharges. A total of 275 gallons of a possible 589 gallons of discharges were recovered. All other spills reported no discharges.
3. Continue to use a standardized reporting procedure for spill/leak and clean-up response activities and develop the City's GBA database system if feasible to facilitate electronic record keeping.	✓ The City has a standardized reporting procedure for discharges and clean-up.	N/A	N/A	N/A
4. Maintain records of illicit discharges.	✓ The City maintains records of illicit discharges responses.	✓ See # 2 above.	N/A	N/A
5. Compile training materials and train appropriate personnel for the adequate implementation of the illicit discharge program during the permit term	✓ The City trained appropriate personnel.	✓ 19 training sessions held with a total of 106 attendees over all the training sessions.	F	F

✓ – An effectiveness assessment was conducted during the reporting period 2010 – 2011
F – An effectiveness assessment may be conducted in future Annual Reports
N/A – This outcome level is not applicable

2.2.5 SWMP MODIFICATIONS

The City's SWMP received final approval from the Regional Water Quality Control Board (RWQCB) on February 18, 2007. Thus, the City's Permit coverage began on that date; however, the SWMP includes Implementation Schedules spanning the time period 2003 to 2008. As a result, the City updated and modified the Implementation Schedules for each Program Element beginning with the 2007-2008 reporting period (see **Table 2.2-2**). These changes were also noted in the 2008-2009 Annual Report. For this element there are no changes in responsibility or revisions to the Implementation Schedule.

Table 2.2-2 Illicit Discharges Program Implementation Schedule and Responsible Department/Position

Control Measures and Measurable Goals	Implementation Schedule					Responsible Department/Position					
	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	Environmental Compliance Staff	Public Works	Community Development	Fire	Finance	Other
ID1 Illicit Discharge Detection, Elimination and Training											
1. Inspect the sanitary sewer system within the core (downtown) area such that the entire system is inspected at least once during the permit term.	■					◐	●				
2. Continue to implement spill/leak investigation and clean-up response activities.	▩	▩	▩	▩	▩	◐	●	●	●		
3. Develop a standardized reporting procedure for spill/leak and clean-up response activities.	■					●	◐	◐	◐		
4. Maintain records of illicit discharges.	▩	▩	▩	▩	▩	◐	●	●	◔		
5. Train appropriate personnel for the adequate implementation of the illicit discharge program during the permit term.	▩	▩	▩	▩	▩	◐	●				

▩ Continuing activity, reviewed or revised as needed throughout implementation
■ One-time activity to develop or implement a measurable goal

● Individual or department to take lead in the development or implementation of an activity.

◐ Individual or department to provide strong support in the development or implementation of an activity.

◔ Individual or department to review and provide comments and guidance during the development or implementation of an activity.

Section 2.3 - Construction Activities Program

Sediment Control BMPs at Second Street near the Dave Pelz Bike Overcross of I80.

Section 2.3 – Construction Activities Program

2.3.1 OVERVIEW

Stormwater runoff from construction sites can be a significant source of pollutants to receiving waters during all phases of construction activities. Failure to implement adequate erosion and sediment Control Measures can result in higher contributions of sediment to these waters than what was contributed previously from undisturbed land.

The MS4 Permit requires municipal stormwater programs to implement a Construction Activities Program for construction sites that result in a land disturbance of one acre or more by:

- Implementing an ordinance or other regulatory mechanism to control erosion and sediment from construction sites.
- Establishing penalties or other mechanisms to enforce compliance.
- Addressing discarded building material, concrete washout, and sanitary wastes.
- Conducting pre-construction review of site management plans.
- Developing procedures for receipt and addressing of information submitted by the public.
- Conducting regular inspections during construction.

Construction sites less than an acre can pose a threat of producing an illicit discharge (see Section 2.2) and are subject to the Control Measures of the Construction Activities Program as necessary.

2.3.2 CONTROL MEASURES

The City has developed several Control Measures and accompanying measureable goals to ensure that the Construction Activities Program requirements are effectively developed and implemented. For each Control Measure there are accompanying measureable goals which, once accomplished, constitute compliance with the Permit requirements.

The Planning and Land Development Program Control Measures consists of the following:

CA	Control Measure
CA1	Land Development Plan Review Process
CA2	Erosion and Sediment Control Standards
CA3	Construction Site Inspection
CA4	Municipal Construction Projects – Contractor Requirements

The next section of the annual report provides information on the specific tasks that have been initiated and/or completed during the reporting period pursuant to the Construction Activities Program measurable goals and implementation schedules.

2.3.3 CA1 – LAND DEVELOPMENT PLAN REVIEW PROCESS

This control measure specifies that the City will establish standard conditions of approval and engineering design standards and specifications for construction activity stormwater quality measures to be used during the land development process.

Existing BMPs and related activities to this control measure include the following:

- The Public Works Department's Design Standard book summarizes the development application process related to design parameters within the scope of the Department's responsibilities, including document submittal requirements for Public Work's review, comment and/or approval. These design standards, include retention, and capacity for stormwater. The Design Standard book was revised in January 2012 including revisions that includes standards for stormwater concerns.

- The City developed the *Manual of Stormwater Quality Control Standards for New Development and Redevelopment* (New Development Manual) in 2008. The New Development Manual provides as appropriate, specific standards for development of new and redevelopment projects for retention and treatment control measures of stormwater on these projects.
- Specific conditions of approval for land use entitlements are determined for the required stormwater management activities during construction and post construction. In addition, standard conditions are applied for erosion and sediment control for construction activities.
- All discretionary land development applications and building permits are reviewed by the Community Development and Sustainability Department. As appropriate, plans are also circulated to the Public Works Department for Engineering Division review, including review of stormwater BMPs. Conditions of approval (for discretionary approvals) are established as necessary to ensure City standards and codes to protect the environment. For ministerial applications, plans are reviewed for compliance with design standards and proper engineering practices.
- To comply with CEQA requirements for all land development applications, the Community Development and Sustainability Department, in consultation with Public Works and other City Departments, establishes mitigation measures, as appropriate to ensure significant adverse environmental impacts including discharges of pollutants to the stormwater conveyance system will not occur as a result of construction activities.
- Subdivision maps, and improvement plans required for development of public infrastructure for subdivisions are submitted to and reviewed by Public Works in a process similar to development applications processed by the Community Development and Sustainability Department. Infrastructure improvements are outlined in Subdivision Agreements including stormwater retention, treatment and conveyance.

2.3.3.1 Measureable Goals

Measurable Goal 1: Establish standard conditions of approval for runoff for all phases of construction activities for construction sites that result in a land disturbance of one acre or more, or less if part of a common plan of development (i.e., individual lots of a subdivision) or is deemed appropriate by the City. Conditions include, but are not limited to, requiring proof of coverage (i.e., Notice of Intent) under the State's Construction Activities Storm Water General NPDES Permit (CGP), when appropriate.

The City developed standard conditions of approval that the Community Development and Sustainability Department has been using since approximately 2004. In the standard conditions are two conditions which cover grading and erosion and sediment control. They are the following:

GRADING PLAN REQUIRED. The applicant shall submit a final grading plan concurrent with the initial building plan check submittal to the Community Development Department. All accessibility features and bicycle access routes are to be clearly delineated on the site.

EROSION CONTROL PLAN REQUIRED. An Erosion Control plan shall be prepared by a registered Civil Engineer, for review and approval by the City Engineer prior to the issuance of permits. This plan shall incorporate the following requirements:

a) This plan will include erosion control measures to be applied during the months of October through April. These measures may include limitations on earth moving activities in sensitive areas during this time period.
b) The developer shall implement wind erosion and dust control measures to be applied on a year-round basis. This shall include an effective watering program to be implemented during earth moving activities.
c) The plan will include methods for re-vegetating denuded earth slopes. Re-vegetation will be accomplished by a method which reseeds and temporarily protects the ground so that 90% germination is achieved. Future building pads are not subject to this requirement, although measures will be required to contain sediments.

d) All sediments generated by construction activities shall be contained by the use of sediment traps, such as silt fences, settling basins, perimeter ditches, etc.
e) When building construction will be delayed beyond the next rainy season, the developer shall provide permanent erosion control measures on each individual lot.

In January of 2011, the City adopted the Cal Green Code. This code makes provides the City with the legal authority to require both residential and non-residential projects of less than an acre to provide erosion and sediment control plans in addition to a full complement of stormwater construction activity BMPs including good housekeeping measures for the site during construction. A new standard condition has therefore been applied for construction project to comply with the requirements of the City's green code ordinance.

In June of 2012, the City adopted a Stormwater Management and Discharge Control Ordinance (SWO). This section of code provides the City with the legal authority to require development projects greater than one acre in size to comply the requirements of the State of California's Construction General Permit. As qualifying projects are approved for development, a commensurate condition of approval is applied to comply with the requirements of the City's SWO.

The above conditions cover all applicable projects including those which are less than one acre where deemed applicable by City staff. The process of assigning conditions of approval involves the standard practice of reviewing all discretionary permit projects and developing or assigning the conditions as deemed appropriate by staff. During the report period, Public Works staff has continued with an established review procedure for all discretionary permit projects. This process has enabled comments to be provided on all discretionary permit projects and require conditions of approval specific to stormwater discharge for construction activities. The table below shows the number of projects that staff reviewed and provided comment on in the 2009 – 2012 report periods. For the current report period, Public Works reviewed a total of 23 projects for building permits, of which 11 rose to a level for plan check review from other divisions with Public Works. Of these 11 projects 2 projects were over 1 acre in size. All projects were in compliance with the City's standard condition for erosion and sediment control.

Of the 11 projects reviewed by all of Public Works, staff provided comment for 7 of those projects where deemed appropriate related to stormwater BMPs for construction activities. The other 4 projects were improvements to the property which involve no exterior disturbance of soil. For discretionary permit projects, Public Works reviewed 3 total projects, all of which required some level of comment. Those projects that required comments typically involved permanent treatment control measures as opposed to standard BMPs for construction activities.

Description	2009-10	2010-11	2011-12
# of Discretionary Projects Reviewed and Provided Comment	10	6	3
# of Ministerial Projects Reviewed and Provided Comment	12	11	7

Collectively, these conditions should address stormwater goals for construction projects. Other conditions are specific to a project site and its individual characteristics and therefore would not be considered standard. Compliance with the Stormwater Ordinance will address stormwater treatment control measures for both construction and post construction use of a property.

Measurable Goal 2: Modify record keeping to note plans that incorporate standard conditions or measures for stormwater BMPs for construction activity.

Under the City's current process, all construction projects which disturb soil are subject to implementing erosion and sediment control BMPs. The current number of projects coming through the City of Davis remains relatively small. During the 2011-2012 report period, there were 13 active construction sites in the City. Some of these projects were carried over from the previous report period. Of these active projects, 4 projects had grading plans and 6 projects had formal erosion and sediment control plans. There were 7 projects which did not have either a grading or an erosion and sediment control plan.

These were projects which involved no disturbance of soil. All projects that disturb soil had comments requiring construction activity stormwater BMPs.

The City's current process continues to work as follows:

- Developers submit and implement grading and erosion and sediment control plans with building permit applications and construction plans.
- Non-qualifying projects (those disturbing less than 1 acre) are encouraged or required through Cal Green Code, plan check comments or conditions of approval for discretionary projects to implement construction erosion and sediment control BMPs.
- Paper copies and electronic scans of these plans are stored in the City's network filing system by project for access by staff.
- Electronic copies of inspection reports are stored in our network file storage system, but not paper copies. A master spreadsheet is maintained to report out on the number of inspections per active construction site and summarize the main issues to surface out of each inspection.
- Any copies of SWPPPs for qualifying projects are kept for the duration of the project in Public Works files for staff access and reference during wet season inspections.

For the future, the City envisions implementing a database process to schedule, record and report out on construction inspections. In the past, the City had considered using our GBA database, through the modules for stormwater inspection and work order generation.

Much of the discussion for record keeping for stormwater in Public Works has centered around utilizing GBA which is a work order tracking system. Public Works shares GBA with other City Departments for their tracking needs. Based on the limitations of the GBA tracking system, Public Works has limited the amount of information to be entered into GBA from the inspection checklists. Public Works continues to coordinate with other City departments to maintain the flexibility of the system for all the users. The City will continue to use our electronic inspection form until such time as the form can be integrated into an appropriate database system.

With new management of the stormwater program, the possibility for purchasing a database system for this purpose now exists. However, with such small numbers it is easy to track the sites that require inspections and track and record those inspections. For the foreseeable future, the number of development projects within Davis is anticipated to be small rendering such an effort to purchase and develop such a database system as unnecessary.

Measurable Goal 3: Develop standards and specifications for construction activity stormwater quality Control Measures.

All projects that disturb soil must submit and implement a grading and erosion and sediment control plan. The City uses the CASQA "Construction" guidance documents as a reference:

http://www.cabmphandbooks.com/Construction.asp

This measurable goal has remained the same and fully implemented for projects which have received building permits and disturbed soil within the City during the 2011-2012 report period. In addition, for this report period, the Building Division of the Community Development and Sustainability Department has developed a four page erosion and sediment control handout which outlines common BMPs for construction activities. This handout is made available for all applicable projects for which Cal Green Code applies. This handout was developed with review and input of Public Works stormwater program staff.

Measurable Goal 4: Train Community Development and Engineering staff how to implement the MS4 Permit during the reviewing and approving processes for development and/or construction projects. Provide control measures training to staff responsible for verifying that construction activity controls are incorporated in the development plans and implemented at the site.

In past reporting years, the City had participated in and help coordinated Pre-Wet Season Workshop for City staff and developers, in addition to State sponsored workshops for the CGP as it was coming on line. Other members of the Engineering Division and Community Development and Sustainability Department staff had attended LID conferences and training sessions both here in the City and in outside locations. One Public Works inspector completed the CESSWI course for Erosion and Sediment and Stormwater Inspector in December 2010.

The long term plan is to have one other CESSWE certified inspector and then have both complete certification with the State for QSP. In addition, one other staff member has been identified for certification in the QSD program. Lastly, during this report period, 3 Public Works field inspectors and 5 Building Division field inspectors were all trained on common erosion and sediment control problems seen here in Davis and BMPs to remedy these problems. These training sessions lasted one hour in length, involved Powerpoint presentations with picture examples of problems and proper BMPs found in the field and references to CASQA Construction BMPs Handbook. This represents all of the City's construction inspection staff. Clarifications of staff responsibilities for inspections were made during these training presentations.

In addition, over the past several years engineering staff that has been involved in development review process has been trained on the use of the City's New Development Manual. This document implements the standards of Attachment 4 from the State's General Permit for small MS4s and includes site design control measures relevant to the construction stage including, conserving natural areas and protecting slopes and channels. The document can be found on line at the following link on the City's website.

http://archive.cityofdavis.org/pw/stormwater/pdfs/sw_NewDev.pdf

The City will continue to implement these measures of the program into the future.

Measurable Goal 5: Inform the private development and construction firms and contractors about the MS4 Permit Process and the available Control Measures.

a. Produce new informational materials or review and revise/amend the public information sheets available at Community Development to include requirements regarding erosion and sediment controls and stormwater pollution prevention including prohibition of non-stormwater discharges to the stormwater sewer system.

b. Continue to participate and/or sponsor a workshop prior to the commencement of the wet season, to educate available City staff, construction contractors, and developers regarding the City's stormwater quality policies for construction activities and new development.

During the 2011-12 report period, the City communicated with local developers and continues to do so with regard to MS4 Permit Process and the appropriate available control measures as it relates to the development process. Since the development of the New Development Manual, Public Works staff has provided copies of the Manual to the firms #1, 3, 5, and 7 listed in the table below. In addition, all of the firms below were informed about the State's new CGP and were invited to the regional pre-wet seminar in Woodland in the September 2010. A link to the State's new CGP has been placed on the City's website. See the following link:

http://archive.cityofdavis.org/pw/stormwater/

1. Cunningham Engineering	2. Sweetwater Homes
3. NK Engineering	4. Aubrey Moore and Associates
5. Morton and Pitalo	6. Maria Ogrydziak Architecture
7. Kimley-Horn	8. Hibser Yamauchi Architects Inc
9. Harrison Construction	10. Gryphon Architecture
11. Bedrock Construction	12. JMH Architects
13. Sherman Construction Co	14. Berteaux Richard Architect
15. Harbinson Construction Inc.	16. Indigo-Hammond & Playle Architects

17. Mak Design & Build Inc	18. Yhla Architects
19. Tandem Properties	20. Vogel Architecture
21. Casa Verde Design	22. Zanetto James Architect & Planner
23. Morse Remodeling Inc	24. Deering Design
25. Hudson Construction	26. Ecological Landscape Design
27. DS Powell Construction	28. Anderson Margot M Landscape Architect
29. Broward Builders Inc	30. Inside Out Landscapes
31. Corbett Michael Master Builder	32. Brass Shovel Landscape
33. Don Fouts Construction	34. Mig Inc-Davis
35. Sequoia Associates	36. Secret Garden Landscape Design
37. Teichert Construction	38. GP Landscape Inc.

Staff has revised the City website to include links to the latest construction activity and BMP requirements. In addition, staff developed a handout for the State's New CGP for distribution at the public counters in Community Development (See Appendix B, pages -12-19). Additionally, staff developed a construction activity and a post-construction handout worksheet during the current report period. The post-construction handout is available at:

http://archive.cityofdavis.org/pw/stormwater/ See the link titled "State CGP 2010 FAQ Handout"

The City has participated in pre-wet season workshops. During the 2010-11 reporting period, the City participated in the workshop orchestrated by the City of Woodland during September 2010. None were available in 2011-12 locally and the City did not attempt to organize one. In future years, the City will engage in collaborative efforts regionally to put on a regional pre-wet season workshop.

2.3.4 CA2 – EROSION AND SEDIMENT CONTROL STANDARDS

This control measure specifies that the City will implement and apply the City's design standards for erosion and sediment Control Measures.

Existing BMPs and related activities to this control measure are the following:

- The current New Development Manual specifies and outlines design guidelines for site design consistent with Attachment 4 of the Small MS4 General Permit.
- The City currently requires and reviews grading and erosion and sediment control plans submitted for sites that are engaging in any regarding of their site during the development process.
- The SWO (Chapter 30 of Municipal Code) requires construction sites to comply with the requirements of the State's Construction General Permit.
- Section 8.01.065 of Municipal Code requires all construction sites to comply with the erosion and sediment control requirements of Cal Green Code.

2.3.4.1 Measureable Goals

Measurable Goal 1: Revise the Public Works Design Standards to require construction plans requiring Public Works review and approval to include erosion control practices. The erosion control measures shall comply with the MS4 Permit's requirement, other requirements deemed appropriate by the City, and shall include the following:

a. Appropriate BMPs shall be installed to prevent off-site stormwater transport of silt or other deleterious substances during the wet season.

b. Inspection of all BMPs during rain, or at minimum within 24 hours before and after rain, to assure that erosion and sediment controls are properly maintained and functioning as designed. Exception to this requirement is the recognition that most minor storm events do not pose stormwater pollutant runoff potential to the City's storm sewer system. However, storm event

intensity is often difficult to predict, and therefore, remains the obligation of the contractor or developer to ensure that proper preventative and maintenance measures are in place at all times in order to stay in compliance City's MS4 Permit.

c. All sites covered by an NPDES Permit, or any site instructed by the City, shall have adequate erosion and sediment control materials on site, or readily available as agreed to by the City (e.g., at a central corporation yard near the construction site), to install in the event that significant rainfall is predicted.

The City commenced with revisions to its Public Works Design Standards in the fall of 2011. The Design Standards were reviewed and comments provided to incorporate the requirements of this Measurable Goal. The process was completed in January 2012. The City continues to require erosion and sediment control plans in construction review and utilizes the CASQA Construction Handbooks to provide guidance on erosion control practices whether or not the Design Standards had a requirement for it or not. Erosion and sediment control plans are a standard requirement for most construction projects including all those that disturb less than 1 acre. This is done in compliance with the requirements of the State's Construction General Permit and Cal Green Code. Both of which are adopted by reference into the City's Municipal Code as Chapters 30 and 8 respectively.

For all non-residential projects that disturb soil, staff reviews construction plans prior to the issuance of building permits for adequate erosion and sediment control plans including evidence of good housekeeping measures. If plans are in compliance with the CGP or Cal Green Code then PW staff will pass the plan check review with no comment in that area. If plans are deemed inadequate or missing proper erosion and sediment control and good housekeeping measures, then staff will provide comments to the developer to make changes to the plan as appropriate to comply with City Code.

For those projects that required erosion and sediment control details within the building permit plans, staff will inspect the construction site for implementation and maintenance of standard erosion and sediment control measures and good housekeeping measures in the field. Inspections are conducted to make sure that erosion and sediment controls and good housekeeping measures in accordance with plans are in place prior to commencement of soil disturbing activities.

Measurable Goal 2: Require that all Erosion and Sediment Control Plans and Grading Plans for sites disturbing greater than one acre be prepared and signed by a Professional Engineer in Civil Engineering registered in the State of California or other competent professional.

All six erosion and sediment control plans and grading plans submitted to the City were prepared and signed by a Professional Engineer or other competent professional.

Measurable Goal 3: Continue to review and comment on Grading Plans.

As a standard part of the development review process, the City reviews all Grading Plans and comments as necessary. The City reviewed and commented upon Grading Plans as follows in the past four years.

	2008-2009	2009-2010	2010-2011	2011-2012
Grading Plans	6	10	8	4

Measurable Goal 4: Continue to review and comment on Erosion and Sediment Control Plans.

As a standard part of the development review process, the City reviews all erosion and sediment control plans and comments as necessary. The City reviewed and commented upon Erosion and Sediment Control plans as follows for the past four years.

	2008-2009	2009-2010	2010-2011	2011-2012
Erosion and Sediment Control Plans	10	9	11	6

Measurable Goal 5: Train staff and/or provide refresher training, about the erosion and sediment control standards and specifications.

In past years, the City has participated in and coordinated a Pre-Wet Season Workshop for City staff and developers. Training sessions were planned and carried out for all appropriate City staff in the fall of

2009 (See Appendix B, pages 20 - 22) and a questionnaire/survey of that training was conducted in the fall of 2010 (See Appendix B, pages 2-5). City staff performed a pre-wet stormwater presentation in October 2009 for all Public Works and had one Engineering staff inspector attend a pre-wet stormwater seminar in October 2009 held in Vacaville. In addition, two other Engineering Inspectors attended the new CGP State sponsored one day seminar in Rancho Cordova in April 2010. Staff also attended a pre-wet conference in the City of Woodland in September of 2010. The focus of this conference was the New CGP. The City will continue to implement this program into the future. The City also had one Public Works inspector certified as a CESWWI erosion and sediment control inspector in December of 2010.

In this reporting period construction inspection staff in both Public Works (3 inspectors) and Community Development (5 inspectors) were trained specifically for CGP and Cal Green Code erosion and sediment control standards. The training involved an hour long presentation of pictures examples of common BMP implementation problems and solutions found here in Davis. All BMP standards presented are consistent with the CASQA BMP Handbook for Construction Activities. A background of the regulatory structure was presented along with an introduction to the City's Stormwater Management and Discharge Control Ordinance.

2.3.5 CA3 – CONSTRUCTION SITE INSPECTION

This control measure specifies that the City will implement a construction site inspection program for private land development.

Existing BMPs and related activities to this control measure are the following:

- The City holds pre-construction meetings typically attended by the City project engineer, City inspectors, developer, contractor, and other parties for significant or selective projects when the improvement plans are approved and construction is about to begin.
- The Public Works and Community Development Departments have established construction inspection programs. Typically, inspectors visit each construction site at least once a day during active construction of public improvements to record the activities conducted at the site and to make sure construction is proceeding according to contract documents and approved construction plans. Generally, problems observed at a site are resolved in the field and are noted on inspection forms, as necessary. If problems persist, enforcement action is taken, and may include, having the contractor cease construction until the problems are resolved to the satisfaction of the inspector and refusing occupancy clearance of the site until corrections are made.
- The Building Inspection Division and/or Public Works Department conduct inspections of construction sites during the on-site building construction phase for code compliance and compliance with contract documents.
- The Building Division may issue enforcement action notifying the builder of violations to City code as a result of in-field inspections.
- The Building Division is responsible for enforcement of construction projects subject to Cal Green Code. Projects less than 1 acre are subject to Cal Green Code for erosion and sediment control.
- Public Works is responsible for enforcement of construction projects subject to the CGP.
- For Capital Improvement projects and utility work within rights-of-way, the Public Works Department requires compliance with approved plans by requiring corrective actions as necessary.
- Contract documents such as Subdivision Agreements, Improvement Agreements, and Encroachment Permits are the enforcement mechanisms for requiring developers and contractors to utilize stormwater BMPs at construction sites. These documents will contain conditions or provisions related to stormwater and pollution prevention.
- With adoption of the City's Stormwater Ordinance in June 2012 and Cal Green Code in January 2012, the sections of code are additional enforcement mechanisms.
- Compliance with the submitted SWPPP is an additional enforcement mechanism.

- Public Works tracks its construction inspections via a spreadsheet.

2.3.5.1 Measureable Goals

Measurable Goal 1: Continue to hold pre-construction meetings for all projects greater than one acre, or other projects selected to by the City, to include:

- A review of erosion and sediment control plans, stormwater pollution prevention measures and all City requirements regarding stormwater quality management for the project.
- Coordination with the Building Division's field inspection staff and the Public Works to have representatives at the meeting, as required.
- An agenda item to address implementation and maintenance of erosion and sediment control measures and other stormwater pollution prevention control measures.

In 2011-12, staff attended two pre-construction meetings for private sites and seven CIPs to meet with project developers and contractors for all projects over one acre and other City selected project sites. None of the CIPs were greater than one acre in size. All projects had review of erosion and sediment control plans, stormwater pollution prevention measures, and all other City requirements regarding stormwater quality management.

Coordination between the City's Building, and Engineering Divisions occurred through full representation at pre-construction meetings. Stormwater requirements were always represented at the meetings. City staff also visited residential construction sites or tenant improvements sites to discuss stormwater controls.

In the 2009-10 reporting period, Public Works staff participated in pre-construction meetings at the following development sites:

- Hillel HouseNew HarmonyYolo County Federal Credit UnionMori SeikiThe following CIP's had pre-construction meetings for 2010-11.2010 Street Rehab (Prop 1B)
- 2010 Concrete Replacement
- 2010 Bike Path Maintenance
- 6th & G Sanitary Sewer Manhole Replacement
- 2010 Road Reconstruction
- 2010 Waterline Replacement
- Well 32 Manganese Treatment System

During the pre-construction meetings between construction and City staff, stormwater controls are always discussed. City staff has conducted an initial review of SWPPPs prior to the pre-construction meetings for applicable projects.

Measurable Goal 2: Continue to review and enhance the construction inspection program prior to the wet season to:

- Inspect construction sites that require erosion and sediment control plans to ensure the plan is implemented.
- Inspect construction sites that pose a significant threat of pollution prior to forecasted significant rain events and following such events during the wet season.
- Coordinate inspection activities with code inspectors and other City field inspection personnel to ensure stormwater program site inspections are conducted during all phases of construction, including but not limited to:

- Inspecting erosion and sediment Control Measures, waste management measures, proper storage, use and disposal of construction materials, and chemicals, and any other construction related BMPs.
- Identifying and prohibiting non-stormwater discharges that are not allowed into the stormwater sewer system, e.g., concrete wash waters, contractor equipment rinse waters, etc.

During the 2011-12 report period, inspectors from the City's Public Works Department conducted construction site inspections of all sites greater than one acre and other sites selected by the City.

There were 13 active private and 7 active CIP construction sites that disturbed soil in 2011-2012 and they were inspected specifically for stormwater 168 times and many other "drive-by" inspections to keep vigilant for potential problems as they might occur.

Measurable Goal 3: Continue to use the standard inspection form or checklist to be used in the field to ensure consistent field review of construction site BMPs.

During the 2011-12 report period, a standard inspection form developed in 2006 was referenced. The form permits the use of digital images, charts, graphs as needed. Inspections forms are now typically being stored electronically rather than on paper hand-written forms. However, staff uses more commonly pictures of the sites to provide a visual evidence record of site inspections and a spreadsheet with a list of 20 common site conditions observed. The spreadsheets allows for each site, the date, the weather conditions, when 50% chance rain events are next forecasted, how the site supervisor was contacted about any issues, follow up inspections, pictures on file, response to direction for corrections, and other corrective actions taken as necessary. This spreadsheet enables staff to track all relevant information regarding construction site inspections quickly and efficiently.

Because of the measures above, staff no longer uses a paper standard inspection form. Staff believes is has met the intent of the measurable goal and always has the more time consuming inspection form to use if necessary. Staff has found this to be unnecessary thus far and believes this measurable goal is complete. A copy of the current form may be viewed in Figure 2.3-1. A screen shot of the spreadsheet is provided in Figure 2.3-2.

All inspections reported above were performed by Public Works Stormwater Program staff. Other, Public Works staff assisted with inspections by informing Stormwater Program staff if a site appeared to have compliance issues with the CGP. For sites less than 1 acre, the Building Division inspectors are scheduled to take ownership of construction site inspection for erosion and sediment control measures as part of compliance and implementation of Cal Green Code. Building inspection staff has their own system for tracking inspections and recording code enforcement actions through their own database system known as AS400.

The City will continue to:

- Records of inspections are being filed and stored in a similar manner as in the past (see a sample inspection form in Figures 2.3-1 and 2.3-2). Stormwater inspections are being entered into a spreadsheet for record keeping and tracking purposes. The City has completed 168 storm water inspections on construction sites in 2011-2012 report period.

Measurable Goal 4: Continue to train staff responsible for conducting pre-construction meetings prior to the wet season about the City's stormwater quality issues and policies.

Several City staff members responsible for conducting pre-construction meetings were trained on stormwater quality issues and policies during the 2008-9 and 2009-10 report periods. A pre-wet season training regional session was held at the City of Woodland. In addition, trained staff members were present at all City conducted and held pre-construction meetings. Stormwater training was initially accomplished in 2006 and retraining occurs annually with pre-wet season training in typically in October. Appropriate City staff will attend the regional meetings as they are available in the future.

In the 2011-12 report period as noted previously, three Public Works inspectors where given an hour long training in CGP requirements including a power point presentation with common problems and solutions presented for erosion and sediment control and good housekeeping measures. In addition five, Building

Inspectors were provided an hour long training session on the requirements for Cal Green Code as it relates to erosions and sediment control and good housekeeping measures. This presentation also included pictures of common problems and solution found here in Davis.

Measurable Goal 5: Initially train and subsequently retrain/update construction field inspection staff in stormwater pollution prevention requirements for construction activities.

See response to Measureable Goal 4 above. In addition, the City intends to complete training for two of Public Works staff to complete State certification of the QSP program during the 2012-13 report period.

Measurable Goal 6: Continue to receive and respond to information submitted by the public regarding stormwater impacts due to construction projects. Maintain a record (including date, complaint, and action taken) of publicly submitted information regarding impacts of stormwater runoff from construction sites.

In 2009-10, the City received one complaint which it responded to with corrective action for the Willowbank 10 subdivision. In 2010-11 and 2011-12, no complaints were received from the public. In the past, the City has logged information submitted by the public to maintain and track such issues. The City's currently has no database with which to record these complaints. Given their historically low number, the City will not invest in a database to record these complaints. The City is able track these complaints via a spreadsheet. Typically, the information submitted in the past has been about paint or cement washout activities on construction sites. Contact information for public complaints is provided on the City's webpage. See the following link. http://community-development.cityofdavis.org/code-compliance

Figure 2.3-1 Inspection Checklist Form

Active Construction Site Inspection

Department of Public Works
1717 Fifth St Davis, CA 95616
Phone: (530) 757-5686, Fax: (530) 758-4738

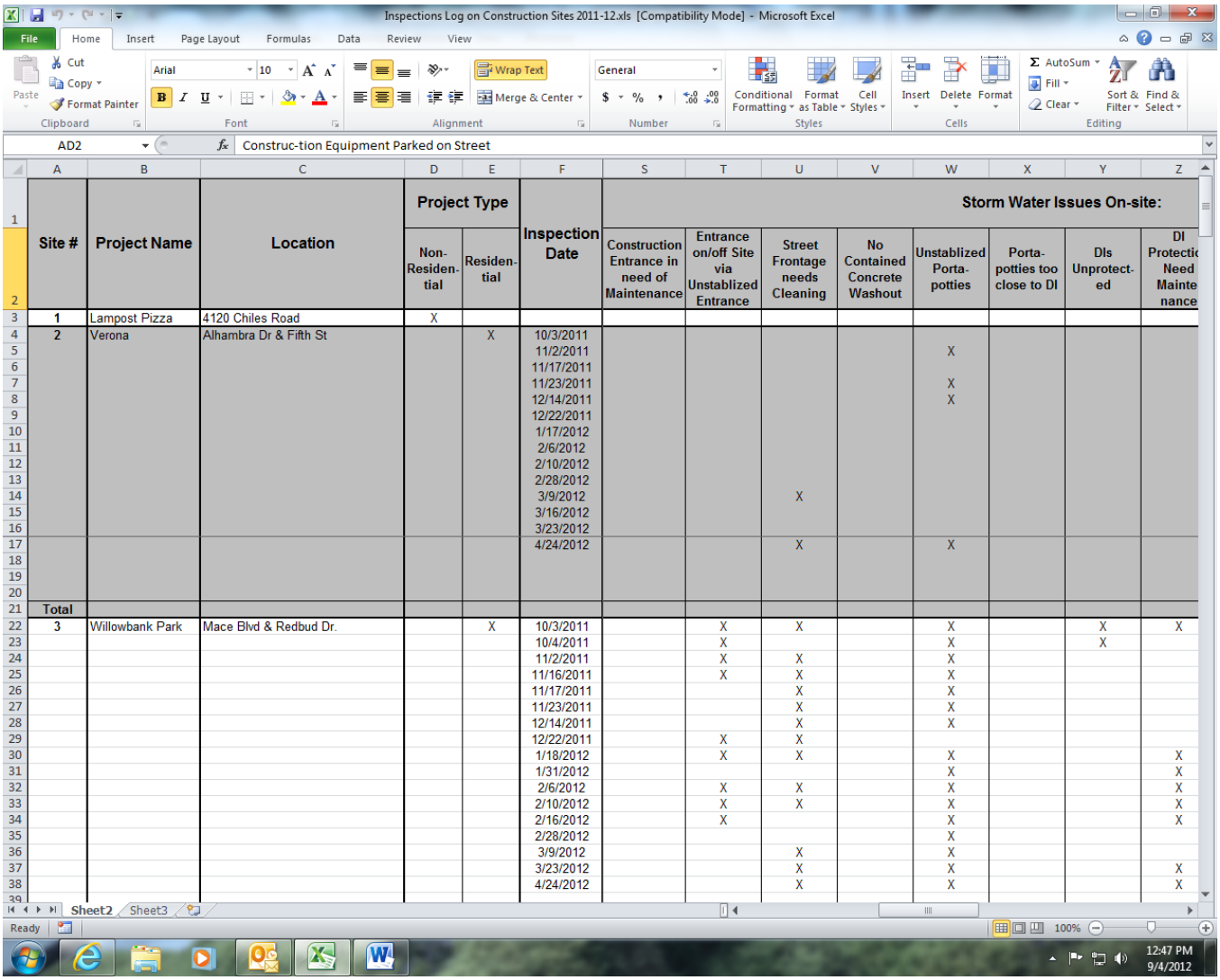
Structure type: *commercial building*
Site name: *Trader Joes*
Date inspected: *08-18-10*
Site Superintendent present *no*
Inspected by: *Kirk Freeman*
SWPPP reviewed: *SWPPP not reviewed*
Site Address: *Russell and Sycamore*
Corrective action: *corrective action needed*
Weather conditions: *clear/warm*
Inspection type *found in field*
DI # : --

Inspection findings: Site is in same general condition as last review. Site needs improvement on general house keeping. Contractors are starting to paint and I did not locate a wash out for paint, but there are spots that appear to have paint/stucco/cement wash-out dumped on the ground. Did not see any covers for garbage containers. Gutter on Sycamore does not have wattles inplace and dirt from construction is in gutter. Does not appear that the contactor(s) are cleaning up at the end of the day.

Pollution Control Evalustion	Yes	No	N/A		Yes	No	N/A
1. Are storm drain inlets properly protected?	☒	☒	☐	9. Are seeded or landscaped areas adequately managed to provide designed pollution prevention?	☐	☐	☒
2. Are sediment control measures (traps, filters, etc) properly installed and maintained?	☐	☒	☐	10. Does the site have a properly maintained concrete washout pit? N/A if it doesn't need one	☐	☒	☐
3. Are soil or other granular materials stockpiles covered, contained, or bermed?	☐	☒	☐	11. Are paints, fuels, concrete mix, fertilizer, etc. being stored properly and kept dry?	☐	☐	☒
4. Are water flows leaving the site reasonably free of sediment?	☐	☐	☒	12. Are trash and wastes properly managed, e.g. stored in covered containers? Is drain plug installed?	☐	☒	☐
5. Are cut or fill slopes, drain outlets or swales showing signs of erosion (rills, gullies, etc.)?	☐	☐	☒	13. Are slurries, wash waters, vehicle fluids, etc. discharges properly controlled and prevented from leaving the site?	☐	☐	☒
6. Are public roads near the site free of sediment, debris, or mud deposits?	☐	☒	☐	14. Does the site have a properly maintained vehicle entrance? N/A if it doesn't need one.	☐	☒	☐
7. Is any bare, unprotected soil or materials causing, or posing a threat of, active pollution?	☐	☒	☐	15. Any follow up needed?	☒	☐	☐
8. Is portable toilet in a secure place and/or does it need a pan underneath it?	☒	☐	☐	16. Was ERP action started in response to this inspection?	☐	☒	☐

	no covers for trash containers located
	stucco waste, empty? paint buckets, bags etc on bare ground
	stucco/cement waste dumped on ground

Figure 2.3-2 Inspection Checklist Spreadsheet



Inspections Log on Construction Sites 2011-12.xls [Compatibility Mode] - Microsoft Excel

Site #	Project Name	Location	Project Type: Non-Residential	Project Type: Residential	Inspection Date	Storm Water Issues On-site: Construction Entrance in need of Maintenance	Entrance on/off Site via Unstablized Entrance	Street Frontage needs Cleaning	No Contained Concrete Washout	Unstablized Porta-potties	Porta-potties too close to DI	DIs Unprotected	DI Protection Need Maintenance
1	Lampost Pizza	4120 Chiles Road	X										
2	Verona	Alhambra Dr & Fifth St		X	10/3/2011								
					11/2/2011					X			
					11/17/2011								
					11/23/2011					X			
					12/14/2011					X			
					12/22/2011								
					1/17/2012								
					2/6/2012								
					2/10/2012								
					2/28/2012								
					3/9/2012			X					
					3/16/2012								
					3/23/2012								
					4/24/2012			X		X			
Total													
3	Willowbank Park	Mace Blvd & Redbud Dr.		X	10/3/2011		X	X		X		X	X
					10/4/2011		X			X		X	
					11/2/2011		X	X		X			
					11/16/2011		X	X		X			
					11/17/2011			X		X			
					11/23/2011			X		X			
					12/14/2011			X		X			
					12/22/2011		X	X					
					1/18/2012		X	X		X			X
					1/31/2012					X			X
					2/6/2012		X	X		X			X
					2/10/2012		X	X		X			X
					2/16/2012		X			X			X
					2/28/2012					X			
					3/9/2012			X		X			
					3/23/2012			X		X			X
					4/24/2012			X		X			X

2.3.6 CA4 – MUNICPAL CONSTRUCTION PROJECTS – CONTRACTOR REQUIREMENTS

This Control Measure specifies that the City will ensure that significant municipal construction projects comply with the City's MS4 Permit existing BMPs and related activities.

Existing BMPs and related activities to this control measure are the following:

- For all municipal construction projects, Public Works establishes requirements that contractors must comply with during construction.
- The City adopted the new Cal Green Code standards in January 2011, which requires non-residential projects smaller than one acre to submit a SWPPP.
- Municipal projects are covered under the State's CGP, when required.
- The City adopted the SWO in June 2012.

2.3.6.1 Measureable Goals

Measurable Goal 1: Develop and/or improve standard contract language addressing stormwater quality control requirements for municipal construction projects.

In 2010-11, the City reviewed its contract language to address stormwater quality control requirements and suggested a standard set of language to address stormwater for all CIP contracts. All new CIP contracts used language to address stormwater quality requirements. In the past, quality control contract language was included in some municipal projects as deemed necessary (e.g., some municipal projects such as interior remodeling may not warrant the inclusion of standard language). Staff will continue to work with CIP staff to incorporate standard contract language to address stormwater quality control requirements. No changes were made to this contract language for 2011-12.

Measurable Goal 2: Continue to inspect municipal construction sites to verify that proper erosion and sediment BMPs and other stormwater BMPs are being implemented and maintained.

Proper implementation at various sites has been verified by staff, in the past and during the 2011-12 report period. This year, there were no qualifying CIP projects subject to CGP requirements. However, staff continued to require standard erosion and sediment control measures to protect the storm drain system at all seven active sites.

Measurable Goal 3: Train City Capital Improvement inspection staff to ensure the implementation and maintenance of stormwater BMPs at municipal construction sites.

Training occurred in groups during workshops or individually, or both. Retraining is to be held on a biennial basis in the future unless significant changes in regulations occur.

Description	2008-2009	2009-2010	2010-2011	2011-2012
# of CIP Inspection staff trained on implementation and maintenance of BMPs	4	3	2	3

2.3.7 EFFECTIVENESS ASSESSMENT OF NEW DEVELOPMENT/ REDEVELOPMENT PROGRAM

Effectiveness assessment is a fundamental component for developing and implementing successful stormwater programs. Outcome levels help to categorize and describe the desired results of the Program Elements and related Control Measures.

In order to determine the effectiveness of the Construction Activities Program, an assessment of the program data is conducted as a part of the annual report. The results of this assessment are used to identify modifications that need to be made to the program. By conducting these assessments and modifying the program as needed, the City ensures that the iterative process is used as an effective management tool.

Effectiveness is determined through a series of Assessment Tasks as identified in the SWMP.

2.3.7.1 Assessment Tasks

Assessment Task CA1: Review implementation of construction Control Measures to determine if modifications of the City's approval process or ordinance are necessary.

The City adopted the Stormwater Ordinance in June 2012 and Cal Green Code in January of 2012. In addition, clarification of staff roles is another issue that staff is working with Engineering and Building Inspection staff to address development and plan checks review, and construction inspections. While Public Works Stormwater Program staff uses a spreadsheet and pictures to record inspections, Building Inspection staff uses an existing database to track and schedule inspections. Qualitative information is not possible to record in this database and retrieve.

The respective ordinances have not been in place long enough for the City to yet asses what changes may necessary for improved efficiency and effectiveness. The City will continue to assess this effectiveness of its approval process for discretionary and ministerial projects, outreach material for contractors to raise awareness of erosion and sediment control and good housekeeping measures, inspections to make sure these measures are in place and being maintained and any code enforcement to determine if any changes to the approval process and corresponding ordinances are necessary.

Assessment Task CA2: Review the progress of Measurable Goals and report on overall effectiveness.

The City intends to continue to review all measurable goals and report on overall effectiveness. Table 2.3-1 summarizes the progress and effectiveness of this element's measurable goals.

Assessment Task CA3: Summarize inspection records and the enforcement or other type of follow-up activities required to bring the facility into compliance with approved plans.

During the report period, the City's Public Works Inspection staff conducted periodic inspections. Multiple verbal requests for corrections or adjustment to BMPs occurred, however three sites had sufficient deficiencies and were issued written notice of corrections needed. The table below summarizes the results of the City's efforts.

	Description	2008-2009	2009-2010	2010-2011	2011-2012
Inspections	# of publically submitted complaints regarding construction	0	1	0	0
	# Inspections Conducted	121	100+*	109+	168
	# Follow Up Inspections Conducted	4	19	25	81
Enforcement	Verbal or Written Warnings	--	3	10	12
	Notice of Violation	2	0	0	0

* Estimated by PW Inspection staff.

Assessment Task CA4: Review construction site inspections records or otherwise evaluate if stormwater quality issues are being adequately addressed.

87 inspections were conducted between all 13 active private and 7 active CIP construction sites. Typically all appropriate BMPs were being utilized or if out of proper usage were soon after inspection they were corrected. The City has found the methods of outreach and working with its construction contractors to be effective in getting "buy-in" from the construction community and continued cooperation if measures are found to either lacking or not being maintained properly. In general, the program is believed to be effective in improving water quality being released from construction sites within the City.

2.3.7.2 Program Effectiveness Assessment Summary

The City accomplished most of the measurable goals and tasks identified for the 2010-2011 report period. As the SWMP implementation continues and the experience and knowledge of City staff increases,

problems at construction sites are reducing. **Table 2.3-1** below summarizes the effectiveness assessment that was conducted for the Construction Activities Program.

Table 2.3-1 Effectiveness Assessment for the Construction Activities

Measureable Goal	Level 1	Level 2	Level 3	Level 4
	Implement Program	Increase Awareness	Behavior Change	Load Reduction
CA1 – Land Development Plan Review Process				
1. Establish standard conditions of approval for runoff from all phases of construction activities for construction sites that result in a land disturbance of one acre or more, or less if part of a common plan of development (i.e., individual lots of a subdivision) or is deemed appropriate by the City. Including, but not limited to, requiring proof of coverage (i.e., Notice of Intent) under the State's Construction Activities Stormwater General NPDES Permit, when appropriate.	✓ The City completed this process by adding conditions regarding erosion and sediment control and grading in 2004. The City will add another condition for compliance with the Stormwater Ordinance once it is adopted.	✓ The City created a Stormwater Webpage in 2010-11. ✓ The webpage received 1,327 hits in 2010-11 alone. In 2011-12 there were 2,839 total page views.	F	N/A
2. Modify record keeping to note plans that incorporate standard conditions or measures for stormwater BMPs for construction activity.	✓ The City tracks projects with standard conditions for construction activity.	F	N/A	N/A
3. Develop standards and specifications for construction activity stormwater quality Control Measures.	✓ The City refers to the CASQA Construction BMP Handbook.	✓ Links to the CASQA Construction BMP Handbook and other Construction resources are available on the City's Stormwater webpage since 2010.	F	N/A
4. Train Community Development and Engineering staff how to implement the MS4 Permit during the reviewing and approving processes for development and/or construction projects. Provide control measures training to staff responsible for verifying that construction activity controls are incorporated in the development plans and implemented at the site.	✓ Wet season training provided in the past. ✓ Retraining of staff scheduled for fall of 2013. ✓ CGP & Cal Green Code requirements included.	✓ 8 staff members trained from both groups during this report period.	F	N/A

Measureable Goal	Level 1 Implement Program	Level 2 Increase Awareness	Level 3 Behavior Change	Level 4 Load Reduction
5. Inform the private development and construction firms and contractors about the MS4 Permit Process and the available Control Measures.	✓ Initial outreach completed. ✓ New outreach accomplished annually prior to the Wet Season. ✓ Private firms invited to October 2009 and 2010 trainings. ✓ New Public erosion and sediment control handout completed and being distributed by CDD.	✓ Handout for BMPs placed in CDD for the public and put on PW webpage.	✓ All 20 active Construction projects utilized construction BMPs on site t in report period.	N/A
CA2 – Erosion and Sediment Control Standards				
1. Revise the Public Works Design Standards to require construction plans requiring Public Works review and approval to include erosion control practices. The erosion Control Measures shall comply with the MS4 Permit's requirement, other requirements deemed appropriate by the City.	✓ The Public Works Design Standards reviewed and revised in Fall of 2011 and completed in January 2012.	N/A	N/A	N/A
2. Require that all Erosion and Sediment Control Plans and Grading Plans for sites disturbing greater than one acre be prepared and signed by a Professional Engineer in Civil Engineering registered in the State of California or other competent professional.	✓ All Grading Plans and Erosion and Sediment Control plans be prepared and signed by a registered Civil Engineer or competent professional.	✓ This requirement is made known to applicable projects in the development review process..	✓ All projects meeting this criterion and both had grading and erosion and sediment control plans prepared by competent professionals	N/A
3. Continue to review and comment on Grading Plans	✓ All Grading Plans are reviewed.	✓ This requirement is made known to applicable projects in the development review process.	✓ All Grading Plans submitted this year were reviewed and commented upon.	N/A
4. Continue to review and comment on Erosion and Sediment Control Plans.	✓ All Erosion and Sediment Control Plans are reviewed	✓ This requirement is made known to applicable projects in the development review process.	✓ All Erosion and Sediment Control Plans reviewed and commented upon.	N/A

Measureable Goal	Level 1 Implement Program	Level 2 Increase Awareness	Level 3 Behavior Change	Level 4 Load Reduction
5. Train staff and/or provide refresher training, about the erosion and sediment control standards and specifications.	✓ Training or surveys provided on annual basis. ✓ Staff attended pre wet season training in October 2009.and 2010.	✓ BMP Manuals provided for erosion & sediment control & good housekeeping measures.	✓ 8 staff members trained during the last report period. ✓ 1 staff member certified as a Erosion and Sediment Control Inspector.	N/A
CA3 – Construction and Site Inspection				
1. Continue to hold pre-construction meetings for all projects greater than one acre, or other projects selected to by the City.	✓ A stormwater checklist has been developed. ✓ Preconstruction meetings are held.	✓ Stormwater Program staff has worked with both CIP and Engineering staff to be included in meeting invites.	✓ 2 pre-construction meetings were held with Public Works staff. ✓ 2 pre-construction meetings held on CIPs.	N/A
2. Continue to review and enhance the construction inspection program prior to the wet season.	✓ Construction inspection program reviewed in 2006, 2009-10 and 2011-12..	✓ Revisions to inspection process were part of training to City inspection staff in both CD&SD and PW.	✓ 168 construction inspections performed in 2011-12.	N/A
3. Continue to use a standard inspection form or checklist to be used in the field to ensure consistent field review of construction site BMPs.	✓ City has reference to it but formed a spreadsheet used with pictures and stored electronically which facilitates efficiency and ease in accessing records and doubles as an standard inspection form.	✓ All Engineering staff and Inspection staff have been made aware of the inspection spreadsheet.	✓ Pictures and records of inspections were made for active construction sites 168 times.	N/A

Measureable Goal	Level 1 Implement Program	Level 2 Increase Awareness	Level 3 Behavior Change	Level 4 Load Reduction
4. Continue to train staff responsible for conducting pre-construction meetings prior to the wet season about the City's stormwater quality issues and policies.	✓ Re-trainings occur every other year with surveys / questionnaires of staff in odd years..	✓ One Engineering staff member trained to be made aware of the need for appropriate Public Works staff attendance for Preconstruction meetings.	✓ 9 total construction meetings attended by appropriate Public Works staff.	N/A
5. Initially train and subsequently retrain/update construction field inspection staff in stormwater pollution prevention requirements for construction activities.	✓ Re-trainings occur every other year with surveys / questionnaires of staff in odd years.	✓ PW and CD&SD inspection staff made aware of training schedule and SW construction BMPs during training this report period.	✓ 3 Public Works field inspectors trained this report period ✓ 1 PW inspector trained as a CESSWI erosion and sediment control in 2010-11. ✓ 5 CD&SD field inspectors trained this report period in SW Construction BMPs.	N/A
6. Continue to receive and respond to information submitted by the public regarding stormwater impacts due to construction projects. Maintain a record (including date, complaint, and action taken) of publicly submitted information regarding impacts of stormwater runoff from construction sites	✓ The City has received, logged and responded to information submitted by the public.	✓ A complaint form and contact information placed on the City's website in 2010-11.	✓ 0 complaints received this report period.	N/A
CA4 – Municipal Construction Projects				
1. Develop and/or improve standard contract language addressing stormwater quality control requirements for municipal construction projects.	✓ The City reviewed and developed contract language to address stormwater quality control requirements.	N/A	✓ All CIP contracts now contain this revised language.	N/A

Measureable Goal	Level 1	Level 2	Level 3	Level 4
	Implement Program	Increase Awareness	Behavior Change	Load Reduction
2. Continue to inspect municipal construction sites to verify that proper erosion and sediment BMPs and other stormwater BMPs are being implemented and maintained.	✓ The City continued to inspect CIP sites for ESC and stormwater BMPs.	✓ All CIP inspectors were made aware of inspection requirement for applicable projects to perform construction SW BMP inspections.	✓ During the 2011-12 report period, all CIP sites were inspected for ESC and stormwater BMPs.	N/A
3. Train City Capital Improvement inspection staff to ensure the implementation and maintenance of stormwater BMPs at municipal construction sites.	✓ CIP inspection staff were trained and subsequently trained other CIP staff.	✓ All CIP inspectors were made aware of inspection requirement for applicable projects to perform construction SW BMP inspections	✓ During the 2011-12 report period, 3 CIP inspection staff were trained.	N/A

✓ – An effectiveness assessment was conducted during the reporting period 2010 – 2011
F – An effectiveness assessment may be conducted in future Annual Reports
N/A – This outcome level is not applicable

2.3.8 SWMP MODIFICATIONS

The City's SWMP received final approval from the Regional Water Quality Control Board (RWQCB) on February 18, 2007. Thus, the City's Permit coverage began on that date; however, the SWMP includes Implementation Schedules spanning the time period 2003 to 2008. As a result, the City updated and modified the Implementation Schedules for each Program Element beginning with the 2007-2008 reporting period (see **Table 2.3-2**). These changes were also noted in the 2008-2009 Annual Report. For this element there are no changes in responsibility or revisions to the Implementation Schedule.

Table 2.3-2. Construction Activities Program Implementation Schedule and Responsible Department/Position

Control Measures and Measurable Goals	Implementation Schedule					Responsible Department/Position					
	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	Environmental Compliance staff	Public Works	Community Development	Parks	Finance	Other
CA1 Land Development Plan Review Process											
1. Establish standard conditions of approval for runoff from construction sites for all phases of construction.			■	■		◐	●	●			
2. Modify record keeping to note plans that incorporate standard conditions or measures for stormwater BMPs for construction activity.			■	■	■	◐	●	●			
3. Develop standards and specifications for construction activity stormwater quality control measures.		■				◐	●	◐	◔		
4. Train Community Development and Engineering staff responsible for development application review and inspection of construction activity controls.	■	■	■	■	■	◐	●	●			
5. Inform the private development and construction firms and contractors about the MS4 Permit Process and available Control Measures.			■	■	■	◐	●	●			
a. Produce new informational materials or review and revise/amend the public information sheets available at the Community Development.			■			●	◐	◐			
b. Continue to participate and/or sponsor a workshop prior to the commencement of the wet season.	■	■	■	■	■	●	◐	◐			
CA2 Erosion and Sediment Control Standards											
1. Revise the Public Works Design Standards to require construction plans requiring Public Works review and approval to include erosion and sediment control practices.			■	■		◐	●				
2. Require that all Grading Plans and Erosion and Sediment Control Plans for sites disturbing greater than one acre be prepared and signed by a P.E. in Civil Engineering registered in the State of California or other competent professional.	■	■	■	■	■	◐	●	◐			
3. Continue to review and comment on all Grading Plans.	■	■	■	■	■	◐	●	◐			
4. Continue to review and comment on Erosion and Sediment Control Plans.	■	■	■	■	■	◐	●	◐			
5. Train and/or update staff about erosion and sediment control standards and specifications.	■	■	■	■	■	◐	●	◐			

Table 2.3-2. Construction Activities Program Implementation Schedule and Responsible Department/Position (cont)

Control Measures and Measurable Goals	Implementation Schedule					Responsible Department/Position					
	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	Environmental Compliance staff	Public Works	Community Development	Parks	Finance	Other
CA3 Construction Site Inspection											
1. Continue to hold pre-construction meetings for all projects greater than one acre, or other projects selected by the City.						◐	●	●			
2. Continue to review and enhance the construction inspection program prior to the wet season.						◐	●	●			
3. Continue to use a standard inspection form or checklist to be used in the field to ensure consistent field review of construction site BMPs.						◐	●	●			
4. Continue to train staff responsible for conducting pre-construction meetings prior to the wet season.						◐	●	●			
5. Initially train and subsequently retrain/update all construction field inspection staff.						◐	●	●			
6. Continue to respond to public information on stormwater impacts from construction sites.						◐	●	●			
CA4 Municipal Construction Projects – Contractor Requirements											
1. Develop and/or improve on standard contract language for municipal construction projects.						◐	●	◐	◔		
2. Continue to inspect municipal construction sites to verify that stormwater BMPs are being implemented.							●	●			
3. Train City Capital Improvement inspection staff to ensure that stormwater BMPs are being implemented at municipal construction projects.						◐	●	●			

Continuing activity, reviewed or revised as needed throughout implementation
One-time activity to develop or implement a measurable goal

● Individual or department to take lead in the development or implementation of an activity.

◐ Individual or department to provide strong support in the development or implementation of an activity.

◔ Individual or department to review and provide comments and guidance during the development or implementation of an activity

Section 2.4 - New Development / Redevelopment Program

Swale Located on Site at Second Street

2.4 - New Development / Redevelopment Program

2.4.1 OVERVIEW

The Small MS4 General Permit requires municipalities to develop, implement, and enforce a program for stormwater runoff to prevent and minimize water quality impacts from new development and redevelopment projects that fall into certain project categories. The program must include a plan to implement site-appropriate and cost-effective treatment and source BMPs and ensure long-term operation and maintenance of such BMPs. The City is also required to adopt a set of design standards as set forth in Attachment 4 of the Small MS4 General Permit.

The New Development/Redevelopment Program ensures that the impacts on stormwater quality from new development and redevelopment are limited through the implementation of design standards and treatment and source control BMPs.

2.4.2 CONTROL MEASURES

The City developed several Control Measures and accompanying measureable goals to ensure that the New Development/Redevelopment Program requirements are effectively developed and implemented. For each Control Measure there are accompanying measureable goals which, once accomplished, constitute compliance with the Permit requirements.

The Planning and Land Development Program Control Measures consists of the following:

NDR	Control Measure
NDR1	Private Land Development Plan Review Process
NDR2	Permanent Stormwater BMPs for Municipal Construction Projects

The next section of the annual report provides information on the specific tasks that have been initiated and/or completed during the reporting period pursuant to the New Development/Redevelopment Program measurable goals and implementation schedules.

2.4.3 NDR1 – PRIVATE LAND DEVELOPMENT PLAN REVIEW PROCESS

This Control Measure specifies that the City will:

1) Develop standard conditions of approval for private land development projects.
2) Develop a plan check process that enables staff to ensure post-construction measures are included in the design prior to plan approval.
3) Develop an inspection program to ensure post-construction measures are implemented and maintained.

Existing BMPs and related activities to this Control Measure are the following:

- The Public Works and Community Development and Sustainability Departments review all land development applications and establish or recommend conditions of approval to meet City standards. The review also establishes or recommends mitigation measures to comply with CEQA requirements.
- The Community Development and Sustainability Department develops and implements conditions of approval for new development in accordance with the applicable City Plans and Codes. The General Plan, applicable Specific Plans, the Municipal Code (Zoning, Subdivision, Chapters, etc.), and other legal documents are in place to ensure orderly land development while providing for the protection of the environment and natural resources.
- The City may conduct pre-development meetings that include various City departments to develop requirements and provisions for approval of the land development project. The City departments that participate in pre-development meetings include: Community Development and Sustainability, Public Works, Parks and General Services, and Fire.

2.4 - New Development / Redevelopment Program

- The New Development Manual sets design standards for permanent stormwater treatment controls for new and redevelopment projects.
- The City's SWO formally adopted in June 2012, requires that all applicable new and redevelopment projects meet the requirements of the Small MS4 General Permit.

2.4.3.1 Measureable Goals

Measureable Goal 1: Establish standard conditions of approval for permanent stormwater BMPs based on the type of land development project, in order to:

- Preserve areas or features that provide important water quality protection
- Maximize pervious areas to promote and enhance percolation
- Limit disturbance of natural drainage features and vegetation

Currently, the City's standard conditions of approval require conditions on all applicable discretionary projects for grading and erosion and sediment control plans and for applicable projects to comply with the requirement of the City's SWO.

The City completed the development of the *Manual of Stormwater Quality Control Standards for New Development and Redevelopment* (New Development Manual) in 2008 which provides the standard conditions for all projects approved in the City with respect to stormwater Control Measures.

A summary of the New Development Manual requirements is provided in **Table 2.4-1**. The New Development Manual can be found on the City's stormwater website at:

http://archive.cityofdavis.org/pw/stormwater/pdfs/sw_NewDev.pdf

In the past, the City was able to require these standards is by making it a condition of approval for the discretionary projects to comply with the standards of the New Development Manual which brings projects into compliance with Attachment 4 of the Small MS4 General Permit. With the adoption of the SWO, it is now a standard condition of approval for all discretionary projects to comply with the requirements of the SWO. The SWO has a provision that requires all new and redevelopment projects to comply with the requirements of the Small MS4 General Permit.

The table below provides a listing of projects that were completed since 2008 through 2012 that have complied with the standards contained in the New Development Manual and the Small MS4 General Permit Attachment 4.

Year	**2008-09**	**2009-10**	**2010-11**	**2011-12**
# of projects Completed in compliance with Attachment 4	3	10	2	6

The list below provides a breakdown of projects that were subject to implementing the standards of the New Development Manual. Each of these projects provided at least one or more treatment control measures on site though they were not necessarily defined as categorical projects as defined by the New Development Manual. Of the projects listed below, those required by Attachment 4 are noted in parenthesis as categorical projects.

Approved development projects in 2009-10 but not yet in construction:

1. Carlton Retirement Center – 2726 Fifth Street
2. Chiles Ranch – 2411 E. Eighth Street

Approved development projects for 2010-11, but not yet in construction:

1. Hanlee's VW Remodel – 5000 Chiles Road

Approved development projects for 2011-12, but not yet in construction:

1. Hanlee's Toyota – 4202 Chiles Road (Categorical Project)
2. 336 C Street

3. 337 D Street

Under Construction for 2011-2012:

1. Willowbank Park – Mace Boulevard (Categorical Project)
2. Verona Subdivision – Fifth Street and Alhambra Drive (Categorical Project)
3. New Harmony– Cowell Boulevard and Drummond Avenue (Categorical Project)
4. Chase Bank - 4510 Second Street (Categorical Project)
5. Expression Systems – 603 Cantrill Avenue (Categorical Project)
6. All Things Right and Relevant - 2801 Spafford Street (Categorical Project)

Construction completed in 2011-12:

1. Yolo Federal Credit Union – 501 and 511 G Street
2. Hillel House – 328 A Street
3. 233 - 239 J Street
4. Central Park West - 311 and 315 B Street
5. Mori Seiki – 3703 Faraday Avenue (Categorical Project)

Measureable Goal 2: Require long-term maintenance and operation of permanent stormwater BMPs. Establish a process to track that permanent stormwater BMPs construction, operation and maintenance.

In the past two years a total of six projects voluntarily submitted maintenance agreements.	**2009-10**	**2010-11**	**2011-12**
Maintenance Agreements Submitted	4	2	0

With the adoption of the SWO in June 2012, moving forward, the City will require maintenance agreements on all categorical projects. In the past, it has been inconsistent on whether or not the City could require and obtain one for each of the discretionary projects approved over the past 3 years. In training sessions in the future with staff who implement development review, it will be clarified that maintenance agreements are a requirement of the SWO.

The City's New Development Manual outlines the guidelines for maintenance plans and agreements and also provides sample agreements as an appendix. The City currently utilizes this as the base agreement form and will continue to do so.

The presence of executed maintenance agreements is not the only proven method to enforce the maintenance of stormwater treatment controls. Stormwater treatment control measures are included in development plans in grading and drainage, landscaping and site plans. All plans submitted as part of both discretionary review and building permits run with the permit. The property owner is legally bound by these plans and statements of language on landscaping plans to maintain into perpetuity.

These measures have been practiced for decades in the Planning profession with some margin of efficacy. Maintenance agreements are no more enforceable and often a burden for all parties involved to document and execute. The City always requires grading and drainage, landscape, and site plan sheets for each discretionary project that rises to a categorical project. In addition, language requiring maintenance of site improvements and landscaping into perpetuity are also always required and verified during plan check review. These existing mechanisms are sufficient to enforce maintenance of stormwater treatment control measures.

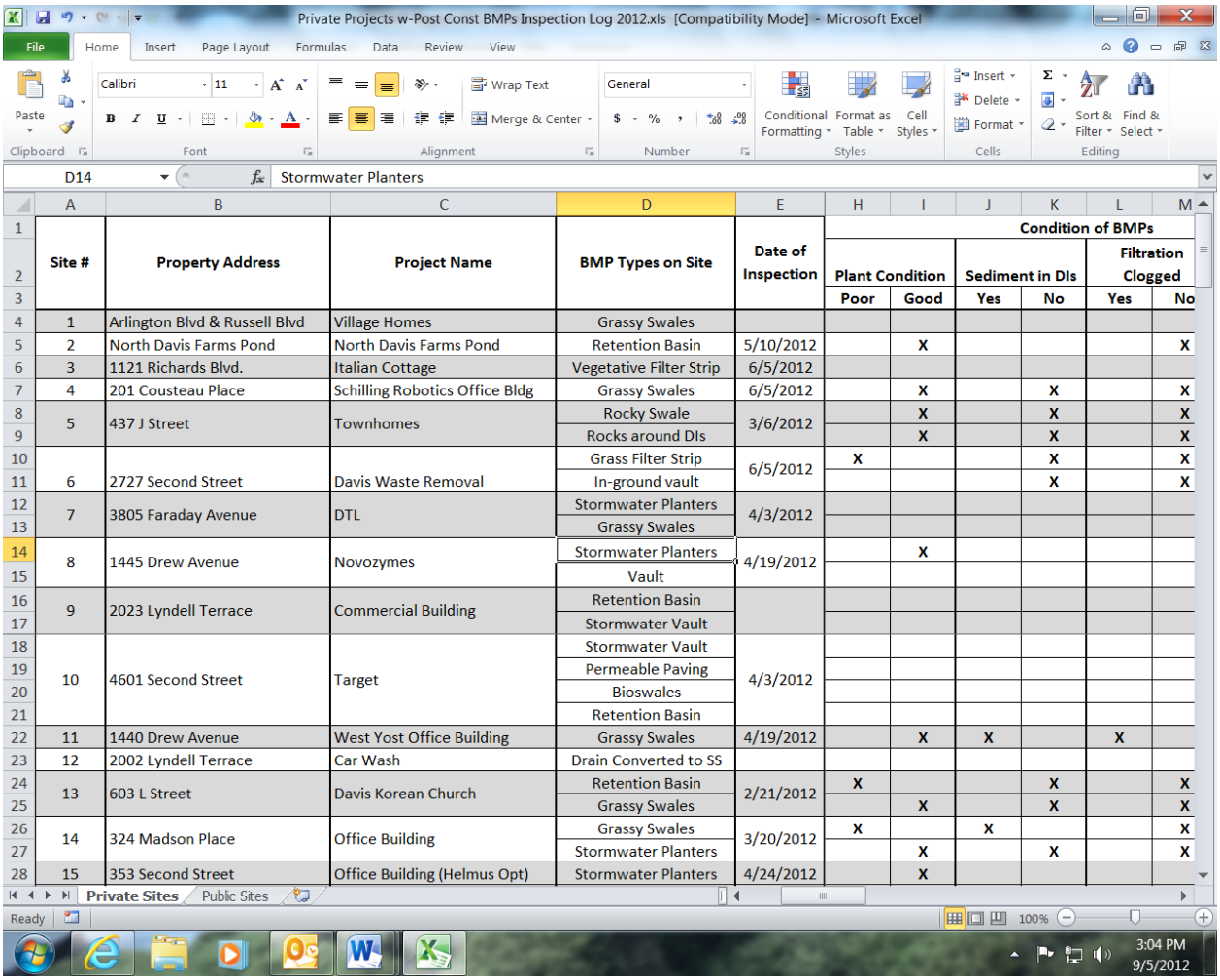
In previous annual reports, staff anticipated that the City's GBA database would provide tracking to the degree as noted below and that this task would be accomplished by June 30, 2010. The problems with bringing the GBA on-line have been documented in Section 2.3.3.1, Measureable Goal 2. The following is the outline of the previously anticipated process.

- The GBA will be modified to track specific types of stormwater controls implemented at a construction project site, data on the construction of these controls and the post-construction maintenance of the controls.

- In addition, the GBA will track the construction site inspections and post-construction inspections on both construction and permanent stormwater Control Measures.
- Public Works shares GBA with other City Departments for their tracking needs. This sharing limits some of the capabilities of the system and the ability to modify it to accommodate the need for tracking. Accounting for these limits, Public Works is editing the number of fields that will be used.

In the 2010-11 report, the City assessed the GBA as a BMP tracking mechanism and no longer anticipates using the GBA. The GBA database is exclusively a work order generating tool for staff. Where the GBA may be useful in the future, is to trigger the need inspections of sites. However, the number of sites remains small. In addition, development is restricted within the City due to low growth policies in effect within the City. Because of these two factors, we do not anticipate the number of sites with permanent stormwater treatment control measures to grow quickly, so that tracking of inspections is not a large task presently to perform annual inspections. The City did develop a spreadsheet in this report year which tracks inspections of permanent sites. See Figure 2.4.3.1 below, which is a screen shot of how the spreadsheet appears. Date of inspection, problems found and communication with property owner to deal with problems are recorded for each site.

Figure 2.4.3.1



Site #	Property Address	Project Name	BMP Types on Site	Date of Inspection	Condition of BMPs: Plant Condition Poor	Plant Condition Good	Sediment in DIs Yes	Sediment in DIs No	Filtration Clogged Yes	Filtration Clogged No
1	Arlington Blvd & Russell Blvd	Village Homes	Grassy Swales							
2	North Davis Farms Pond	North Davis Farms Pond	Retention Basin	5/10/2012		X				X
3	1121 Richards Blvd.	Italian Cottage	Vegetative Filter Strip	6/5/2012						
4	201 Cousteau Place	Schilling Robotics Office Bldg	Grassy Swales	6/5/2012		X		X		X
5	437 J Street	Townhomes	Rocky Swale	3/6/2012		X		X		X
			Rocks around DIs			X		X		X
6	2727 Second Street	Davis Waste Removal	Grass Filter Strip	6/5/2012	X			X		X
			In-ground vault					X		X
7	3805 Faraday Avenue	DTL	Stormwater Planters	4/3/2012						
			Grassy Swales							
8	1445 Drew Avenue	Novozymes	Stormwater Planters	4/19/2012		X				
			Vault							
9	2023 Lyndell Terrace	Commercial Building	Retention Basin							
			Stormwater Vault							
10	4601 Second Street	Target	Stormwater Vault	4/3/2012						
			Permeable Paving							
			Bioswales							
			Retention Basin							
11	1440 Drew Avenue	West Yost Office Building	Grassy Swales	4/19/2012		X	X		X	
12	2002 Lyndell Terrace	Car Wash	Drain Converted to SS							
13	603 L Street	Davis Korean Church	Retention Basin	2/21/2012	X			X		X
			Grassy Swales			X		X		X
14	324 Madson Place	Office Building	Grassy Swales	3/20/2012	X		X			X
			Stormwater Planters			X		X		X
15	353 Second Street	Office Building (Helmus Opt)	Stormwater Planters	4/24/2012		X				

The City's number of sites with permanent stormwater treatment controls has grown from fourteen in 2009-10 to in twenty nine in 2011-12. It is estimated that this number will grow in the next year to approximately thirty five sites. In future years, this number will continue to grow. This factor necessitates the need to develop a database and the GBA work order system in place to stimulate the inspection process for these sites and the potential need for additional staff resources to manage the inspections.

Staff will continue to work upon these issues into the future. In addition, with the current number of sites, the City catalogs inspections in a spreadsheet. The spreadsheet will form the basis for a future database. As noted in Chapter 2.3.3.1, Measureable Goal 2, the opportunity to purchase software for the program now exists.

Measureable Goal 3: Develop and/or revise checklists or similar tools used by City staff to review land development applications and plans for compliance with Receiving Water Limitations and Design Standards of the Small MS4 General Permit – Attachment 4.

A "Stormwater Control Measure" checklist (Checklist) was developed. The City commenced using the form in the fall of 2009. The Checklist is used at the conceptual design phase so that site design can accommodate Control Measure BMPs upfront rather than after the site design is completed. By implementing use of the Checklist, the process of having stormwater BMPs integrated into the site design is assured to take place. The Checklist is kept at the CD &SD public counter and was on the City's website to be distributed to potential site developers, architects, site designers, and other interested members of the public. In the City's recent change of its entire website, the form was lost from its previous location. The form will be posted again in the near term. A copy of the form can be viewed in Appendix B, pages 85-96.

Measurable Goal 4: Develop and implement a coordinated plan review, inspection activities, and reporting methods for permanent stormwater BMPs to be used by various City staff.

In 2009-10, the City revamped the previously established process so that the Public Works Department now reviews projects for compliance with the New Development Manual and inspects permanent stormwater BMPs under construction and permanent site BMPs. It was previously reported that Community Development was reviewing projects for compliance with the New Development Manual. The revised review process seems to working well as reported in the Measurable Goals above in this section of the report. An inspection spreadsheet is being used as a form is now being utilized to record the result of these inspections. The Checklist has been provided for developers to utilize on their proposed projects and file a maintenance agreement with Public Works for their controls. An outline of the current process is provided below.

1) The Checklist has been provided to the Community Development and Sustainability Department to handout to prospective developers.
2) Concept design meetings are sometimes held to discuss relevant issues for site development. Stormwater materials including the Checklist and/or the New Development Manual are provided here or prior to the drafting of construction or conceptual plans. All of the engineering firms working within the City were provided with a copy of the New Development Manual. The City requires the Developer/contractor to provide stormwater control measures in construction plans/documents.
3) The Checklist is filled out and provided upon submission for entitlement permits.
4) Community Development circulates plans to relevant various City Departments, Divisions, and outside agencies via a Request for Comments form in the case of discretionary permits.
5) When Public Works receives proposed plans the plans are reviewed for many aspects including the permanent stormwater controls. For entitlement permits (pre-construction phase), the Engineering Division coordinates comments from various staff members within Public Works including comments from the Stormwater Program. The New Development Manual is utilized as the reference document for specific stormwater controls.
6) If consistency with the New Development Manual is found, then the plans may receive little or no comments for stormwater from Public Works staff. If the plans are not consistent, then comments are provided to the applicant to modify the plans or supply new plans for consistency with specifically identified areas within the New Development Manual. The cycle repeats itself until consistency is achieved by the applicant.
7) The project can then enter the pre-construction phase. In this phase, Community Development again receives construction plans which are circulated to various departments within the City for review and comment on the construction plans.

2.4 - New Development / Redevelopment Program

Table 2.4-1. Control Measure Selection Matrix for New Development and Redevelopment Project Categories

New Development and Redevelopment Project Category	General Site Design Control Measures				Site-Specific Source Control Measures						Treatment Control Measures[a]	Other
	Conserve Natural Areas (D-1)	Protect Slopes and Channels (D-2)	Minimize Impervious Area (D-3) D-3.1: Minimize Sidewalk and Street Widths D-3.2: Minimize Impervious Footprint D-3.3: Cluster Development D-3.4: Use Porous Paving Materials	Minimize Effective Imperviousness (D-4) D-4.1: LID Grass Channel/Swale D-4.2: LID Grass Filter Strip D-4.3: LID Stormwater Planter D-4.4: LID Porous Pavement Filter D-4.5: LID Vegetated Swale D-4.6: LID Trench/Vault	Storm Drain Message and Signage (S-1)	Outdoor Storage Area Design (S-2)	Trash Storage Area Design (S-3)	Loading/Unloading Dock Area Design (S-4)	Vehicle/Equipment/Accessory Wash Area Design (S-5)	Fueling Area Design (S-6)	· Grass Swale (T-1) · Grass Filter Strip (T-2) · Wet Pond (T-3) · Constructed Wetland Basin (T-4) · Extended Detention Basin (T-5) · Infiltration Trench/Vault (T-6) · Infiltration Basin (T-7) · Vegetated Swale (T-8) · Stormwater Planter (T-9) · Media Filter (T-10) · Porous Pavement Filter (T-11) · Alternative/Proprietary Treatment Control Measures[b]	Proof of Control Measure Maintenance
Single-Family Hillside Residences	R	R	R	R[f]	R	R[g]	–	–	–	–	S	R
Commercial Developments	R	R	R	R[f]	R	R[g]	R[g]	R[g]	R[g]	R[g]	S	R
Automotive Repair Shops	R	R	R	R[f]	R	R[g]	R[g]	–	R[g]	R[g]	S	R
Retail Gasoline Outlets	R	R	R	R[f]	R	R[g]	R[g]	–	R[g]	R	S	R
Restaurants	R	R	R	R[f]	R	R[g]	R[g]	R[g]	R[g]	–	S[h]	R
Home Subdivisions (≥ 10 units)	R	R	R	R[f]	R	R[g]	–	–	–	–	S	R
Parking Lots (≥ 5,000 SF or ≥ 25 spaces)	R	R	R	R[f]	R	R[g]	R[g]	–	–	–	S	R

Notes:

(a) Must be designed for the Stormwater Quality Design Flow (SQDF – equal to the maximum flow rate of runoff produced by the 85th percentile hourly rainfall intensity, multiplied by a factor of two) or Stormwater Quality Design Volume (SQDV - the volume necessary to capture and treat 80% or more of the avg. annual runoff volume)

(b) Used only on a case-by-case basis with City stormwater staff approval or in combination with other applicable treatment Control Measures

R Required if applicable to project

R[f] Required unless shown to be infeasible based on site conditions. Select one or more applicable Control Measures

R[g] Required if outdoor activity area is included in the project

S Select one or more applicable treatment Control Measures from list above unless project drains to a regional basin

S[h] Restaurants with less than 5,000 SF impervious area are not required to provide treatment Control Measures

8) If consistency with conditions of approval for discretionary entitlement permits and the New Development Manual are found, then no or few comments are provided for the developer. If inconsistencies are found with either conditions of approval or the New Development Manual, then comments are provided to ask for changes in the plans in order to create consistency. New plans are submitted and reviewed again for consistency. This cycle repeats itself until consistency is achieved.

9) Building permits can then be issued and pre construction inspections performed by Engineering Division staff occur on the site to confirm stormwater Control Measures are consistent with those approved with the construction documents.

10) Periodic (sometimes daily) inspections occur at active construction sites to make sure construction stormwater control measures and other City requirements remain in place and are functioning as intended.

11) If problems are found they are noted on inspection forms and corrective actions take place.

12) Final inspections occur post-construction and prior to issuance of "occupancy". If all items are determined to be consistent with those approved, then the certificate of occupancy is provided or "final" clearance on the building permit is provided by each City department. If inconsistencies remain, occupancy or "final" is not issued on the outstanding permit. Instructions are provided to the developer or contractor on what needs to be provided or performed to gain occupancy.

13) Follow up inspections occur at 90 days for full acceptance of stormwater Control Measures for public infrastructure developed by the developer and once annually for permanent stormwater control measures by Public Works Stormwater Program staff.

14) Maintenance agreements are recorded prior to occupancy. On-site annual inspections will verify compliance with the agreement. With the adoption of the SWO the City now has the legal authority to require maintenance agreements for all categorical projects.

15) The City's GBA may be able to perform as to perform and track inspections of permanent BMPs at sites. Currently results of inspections are tracked via spreadsheet.

A summary of the categorical projects that were reviewed is provided in the table on the next page.

Categorical Development Projects[1]	Categorical Private Projects Reviewed 2008- 2009	Categorical Private Projects Reviewed 2009-2010	Categorical Private Projects Reviewed 2010-2011	Categorical Private Projects Reviewed 2011-2012
Significant Redevelopment	5	0	0	2
Single-family hillside residences (slope ≥ 25%)	0	0	0	0
Commercial Developments (≥5,000 SF)	2	1	2	1
Automotive Repair Shops	0	0	0	
Retail Gasoline Outlets	0	0	0	
Restaurants	2	0	0	
Home Subdivisions (≥ 10 units)	0	2	0	
Parking Lots (≥ 5,000 SF or 25 spaces)	0	1	0	
Total	**9**	**4**	**2**	**3**

1. The Development Standards apply to all categorical projects or phases of categorical projects at the date of adoption unless the projects already had approval by the City or County Engineer, a permit for development or construction or an approved tentative map prior to the Development Standards date of adoption.

The total number of categorical development private projects approved is 3. This number is in flux and may end up being less because two of the projects have not yet provided confirmation if they propose

5,000 square feet or more of new impervious surfacing. These projects may yet end up as not being categorical. Despite this, the City continues to request that all development projects whether categorical or not to provide LID on site, consistent with the Manual.

A summary of the type and number of post-construction BMPs that were implemented as a part of the categorical private development projects that were approved is provided in the table below. Definitions and guidance for each of the controls can be found in the City's New Development Manual. Please note that the City did get more treatment control measures than what was achieved in the categorical projects. This table only tells a portion of the complete story. Please note that some sites have more than one type of treatment control.

Control Measure Type	Total Number Approved for Private Projects 2008-2009	Total Number Approved for Private Projects 2009-2010	Total Number Approved for Private Projects 2010-2011	Total Number Approved for Private Projects 2011-2012
General Site Design Control Measures (D-1 through D-4)				
D-1 Conserve Natural Areas	1	0	0	1
D-2 Protect Slopes and Channels	1	1	0	
D-3.1: Minimize Sidewalk and Street Widths	0	4	2	1
D-3.2: Minimize Impervious Footprint	1	4	2	1
D-3.3: Cluster Development	1	0	2	1
D-3.4: Use Porous Paving Materials	1	0	2	2
D-4.1: LID Grass Channel/Swale	1	0	2	2
D-4.2: LID Grass Filter Strip	0	0	0	
D-4.3: LID Stormwater Planter	0	0	2	
D-4.4: LID Porous Pavement Filter	0	0	0	1
D-4.5: LID Vegetated Swale	0	0	0	
D-4.6: LID Trench/ Vault	0	0	0	
Total Site Design Control Measures	**6**	**9**	**12**	**9**
Site-Specific Source Control Measures (S-1 through S-6)				
S-1 Storm Drain Message and Signage	1	4	2	1
S-2 Outdoor Storage Area Design	1	3	2	
S-3 Trash Storage Area Design	4	4	2	3
S-4 Loading/Unloading Dock Area Design	2	1	1	
S-5 Vehicle/Equipment/Accessory Wash Area Design	0	0	0	
S-6 Fueling Area Design	0	0	0	
Total Site-Specific Source Control Measures	**8**	**12**	**7**	**4**

2.4 - New Development / Redevelopment Program

Control Measure Type	Total Number Approved for Private Projects 2008-2009	Total Number Approved for Private Projects 2009-2010	Total Number Approved for Private Projects 2010-2011	Total Number Approved for Private Projects 2011-2012
Treatment Control Measures (T-1 through T-10)				
T-1 Grass Swale	1	2	2	1
T-2 Grass Filter Strip	1	0	0	
T-3 Wet Pond	0	0	0	1
T-4 Constructed Wetland Basin	0	0	0	
T-5 Extended Detention Basin	0	1	0	
T-6 Infiltration Trench/ Vault	1	0	0	
T-7 Infiltration Basin	1	1	0	
T-8 Vegetated Swale	2	0	0	
T-9 Stormwater Planter	1	1	1	
T-10 Media Filter	0	0	0	
T-11 Porous Pavement Filter	1	2	2	
Alternative/ Proprietary Treatment Control Measures	4	0	0	
Total Treatment Control Measures	**12**	**7**	**5**	**2**
Total Control Measures	**26**	**28**	**24**	**15**

Measurable Goal 5: Train planning and engineering staff that are responsible for reviewing plans for inclusion of permanent stormwater BMPs. Educate appropriate staff in the use of established standard conditions, mitigation measures, City requirements, and engineering standards for stormwater quality protection.

The following trainings occurred during the 2009-11 report periods:

- A pre-wet season presentation/training session on stormwater for the entire Public Works staff was held in October 2009 with 69 staff members present including 8 Engineering staff. The presentation was a 29 slide Powerpoint presentation that divulged the purpose of the SWMP and to become better aware of why stormwater practices are necessary. A copy of the presentation can be made available upon request.
- Pre-Wet season training session in Vacaville October of 2009; 6 City employees attended including 2 Engineering Staff.
- 1 Public Works staff member trained at the CGP conference in Woodland on October 6, 2010 (See Appendix B, page 10 for a copy of the agenda).
- 1 Public Works staff and 2 Community Development staff members trained at LID conference in Loomis on October, 15, 2010 See Appendix B, page 11 for a copy of the agenda)..
- In 2009-10, 5 staff members from Community Development and Sustainability Department (Planning) participated in review of permanent stormwater BMPs as required in the New Development Manual and the draft Stormwater Ordinance. These meetings served as staff training sessions.
- The CWEA Annual Conference in Sacramento which 5 key Public Works staff members attended in on April 21 to 23 of 2010. Over three days, there were 7 separate stormwater technical sessions provided. One staff member attended all 7. 3 other staff members attended 3 total stormwater technical sessions.

- 4 Public Works staff members attended the CWEA Annual conference in Santa Clara on February 28 to March 2, 2011. Over the three days, 6.2 contact hours and 0.27 continuing education credits were earned on stormwater related sessions (See Appendix B, page 23 for a copy of the certification).
- In May, 2012, 3 Public Works and 5 Building inspectors trained on construction inspections and plan check review issues.

With some Engineering staff trained as late as April 2010 and numerous other informal discussions with City staff during 2011-12, training has continued on a regular basis mostly on a one-on-one, project-by-project basis. Formal training for this report period was deemed unnecessary because of the lack of new relevant information, the timing of the new Phase II General Permit and no adoption as of yet for the Stormwater Ordinance. With the proposed revisions to the Small MS4 General Permit, revisions to the City's SWO will be necessary. Once this process is completed, additional training will occur.

2.4.4 NDR2 – PERMANENT STORMWATER BMPS FOR MUNICIPAL CONSTRUCTION PROJECTS

This Control Measure requires municipal projects to incorporate permanent stormwater BMPs into municipal projects.

Existing BMPs and related activities to this Control Measure are the following:

- The Public Works staff responsible for capital improvement projects are also responsible for the development of contract documents (plans, specification and special provisions) associated with development and redevelopment of municipal property.
- Capital Improvement projects are reviewed by trained Public Works staff for SWPPP and permanent stormwater Control Measures.
- BMPs for Control Measures follow the guidance provided by the City's New Development Manual.
- Public Works staff utilizes an inspection form to check on implementation of City standards including during construction and post-construction stormwater BMPs. If issues arise during inspections, they are noted and corrected by staff.

2.4.4.1 Measurable Goals

Measurable Goal 1: Utilize permanent stormwater BMPs for municipal projects.

The City included permanent stormwater BMPs into municipal projects, when appropriate. A summary of the municipal projects that were reviewed is provided below:

Report Period	Total Number of Municipal Project Plans Reviewed
2007-2008	12
2008-2009	11
2009-2010	6
2010-2011	7
2011-2012	1

Total number of categorical municipal development projects approved in 2011-12 was 1. The lone municipal project reviewed in 2011-2012 was not a categorical development project therefore not subject to the New Development Standards. The municipal project reviewed was a repaving project in the downtown area involving the use of pervious paving.

Measureable Goal 2: Train capital improvement design staff in City stormwater management requirements.

Three inspectors who are involved with CIP inspections attended stormwater pre-wet season conference in Vacaville and the State's seminar on the new CGP in April, 2010. These inspectors shared information from the training with their working group. In addition, all CIP inspectors were trained in May 2012 with regards to construction management BMPs and made aware of the requirements of the Small MS4 General Permit during their training session. With the adoption of the SWO in June 2012 and pending adoption of the revisions to the Small MS4 General Permit, Stormwater Program staff will commence with a training process on permanent BMPs requirements once the revisions are completed with all development review staff including Planners, Engineering and Inspection staff from both the Public Works and Community Development and Sustainability Departments.

2.4.5 EFFECTIVENESS ASSESSMENT OF NEW DEVELOPMENT/ REDEVELOPMENT PROGRAM

Effectiveness assessment is a fundamental component for developing and implementing successful stormwater programs. Outcome levels help to categorize and describe the desired results of the Program Elements and related Control Measures.

In order to determine the effectiveness of the New Development/Redevelopment Program, an assessment of the program data is conducted as a part of the annual report. The results of this assessment are used to identify modifications that need to be made to the program. By conducting these assessments and modifying the program as needed, the City ensures that the iterative process is used as an effective management tool.

Effectiveness is determined through a series of Assessment Tasks as identified in the SWMP.

2.4.5.1 Assessment Tasks

Assessment Task NDR1: Conduct inspections and maintain records of inspections of permanent stormwater BMPs to evaluate performance, operation, and maintenance of these improvements.

See the discussion in Measurable Goal 2 in Section 2.4.3.1 for a more detailed explanation of how Public Works has worked to conduct inspections and maintain records. The City is maintaining electronic files of their inspections completed. During the 2011-12 report period, the City has conducted post construction inspections and categorized 65 separate permanent stormwater treatment control measures within the City's service area. Several of the 29 total private development sites with these stormwater BMPs have multiple types of BMPs. Staff also conducted 12 inspections on public development sites with 13 separate permanent stormwater treatment controls.

Starting in the 2nd quarter 2008, the City conducted a series of inspections to determine the quantity and type of stormwater controls existing in our service area. The inspection series included Industrial, Commercial and Residential locations. This effort was completed again this past report year for both private and public development sites. The location, type and function of these stormwater controls were compared against the City's New Development Manual. Since the full development of the New Development Manual, both private and public sites that qualified as categorical development were required to comply with the requirements of the New Development Manual.

Several building plans that were submitted were returned with request for permanent stormwater controls to be modified or implemented in accordance with the New Development Manual. The result is better permanent BMPs in the field. With an increasing number of new projects coming being completed or coming into the development process, a significant number of sites with increasingly better permanent treatment controls are developing within the City.

While nothing conclusive has been arrived at, we are accumulating enough projects so that conclusive determinations about what types of permanent BMPs are most successful in treating stormwater. Thus far, we are seeing that grassy swales, impervious paving, and stormwater planters are the leading choices with developers in the Davis area. We have found that it is particularly key to provide energy dissipation devices at roof leaders in stormwater planters and limiting the use of bark or mulch from areas

where water is intended to go and the proper choice of vegetation in treatment controls. Maintenance, so far has been less the issue as more is getting vegetation established to limit initial erosion from new treatment controls in first flush events. It has also been observed that in some of the earliest developments, swales were built with side slope that are too steep, or had insufficient vegetation, or had mulch or bark mixing into the channel, and also had drains that where built at grade in the bottom of the swale, reducing the efficacy of the treatment control. Further assessment of efficacy of installed treatment controls will be conducted in coming years as more recorded inspections permit evaluations over a series of years.

The number of categorical projects approved, reviewed and being built has been decreasing in the past three years, consistent with the current economic downturn. Please be aware that the opportunities for greenfield development decreases every year in Davis, due to the lack of expansion of the City's boundaries. This downward trend in new development should therefore be expected.

Assessment Task NDR2: Conduct inspections and maintain records of inspections of permanent stormwater BMPs to evaluate performance, operation, and maintenance.

See detailed description for Assessment Task NDR2 above. These two tasks address the same subject.

2.4.5.2 Program Effectiveness Assessment Summary

The City accomplished most of the measurable goals and tasks identified for the report year, 2010-2011. **Table 2.4-2** below summarizes the effectiveness assessment that was conducted for the New Development/Redevelopment Program.

Table 2.4-2 Effectiveness Assessment for the New Development/Redevelopment Program

Measureable Goal	Level 1	Level 2	Level 3	Level 4
	Implement Program	Increase Awareness	Behavior Change	Load Reduction
ND1 – Private Land Development Plan Review Process				
1. Establish standard conditions of approval for permanent stormwater BMPs based on the type of land development project.	✓ Standard conditions of approval completed with the New Development Manual. ✓ The SWO adopted in June 2012. A standard condition of approval is used for compliance with the SWO for all categorical projects.	✓ The New Development Manual available on the web.	✓ 3 discretionary projects approved w SW standard conditions.	N/A
2. Require long-term maintenance and operation of permanent stormwater BMP. Establish a process to track permanent stormwater BMP construction, operation, and maintenance.	✓ Completion of the new Development Manual has model Maintenance Agreement. ✓ The adopted of the SWO provides legal authority to require Maintenance Agreements.	✓ The Manual has been posted on the City's website since 2009. ✓ In 2011-12, there were 39 direct views of the Manual.	✓ The City has collected 6 Maintenance Agreements in the past three years.	N/A

2.4 - New Development / Redevelopment Program

Measureable Goal	Level 1	Level 2	Level 3	Level 4
	Implement Program	Increase Awareness	Behavior Change	Load Reduction
3. Develop and/or revise checklists or similar tools used by City staff to review land development applications and plans for compliance with Receiving Water Limitations and Design Standards of the Small MS4 General Permit – Attachment 4.	✓ Stormwater Control Measure Checklist Developed.	✓ The Checklist has been part of the Manual and posted on the City's SW webpage since 2009. ✓ In 2010-11, there were 21 direct views of the Manual.	✓ The City has reviewed 6 projects in the past two years with checklists submitted.	N/A
4. Develop and implement a coordinated plan review, inspection activities, and reporting methods for permanent stormwater BMPs to be used by various City staff.	✓ Projects being reviewed with SW Control Measures Developed in the past 3 years. ✓ Basis of coordinated plan review completed.	✓ All development review staff has agreed to coordinated plan review process for stormwater. ✓ Developers made aware of process by Community Development at Planning counter and by PW Engineering staff at Administration Building counter.	✓ 1 categorical project reviewed and commented upon this year to provide permanent BMPs. ✓ 2 non categorical projects reviewed and commented upon this year to provide permanent BMPs. ✓ All permanent sites have been inspected this year.	N/A
5. Train planning and engineering staff that are responsible for reviewing plans for inclusion of permanent stormwater BMPs. Educate appropriate staff in the use of established standard conditions, mitigation measures, City requirements, and engineering standards for stormwater quality protection.	✓ 3 Meetings/ Training Sessions held.	✓ 8 total staff were training last year including 3 key Engineering & 5 Planning staff. ✓ On-going training occurred on a one on one basis with key staff, during project review on the pending new rules and review of the current standards.	N/A	N/A
NDR2 – Permanent Stormwater BMPs for Municipal Construction Projects				

2.4 - New Development / Redevelopment Program

Measureable Goal	Level 1	Level 2	Level 3	Level 4
	Implement Program	Increase Awareness	Behavior Change	Load Reduction
1. Utilize permanent stormwater BMPs for municipal projects.	✓ Municipal categorical development project required to utilize permanent stormwater BMPs.	✓ CIP Engineering staff made aware of BMP requirements for categorical CIPs.	N/A	N/A
2. Train capital improvement staff in stormwater management requirements.	✓ 2 formal /training sessions held in 2009-10. ✓ 1 formal training session held in 2011-12.	✓ 3 staff inspectors trained on Stormwater BMPs.	N/A	N/A

✓ – An effectiveness assessment was conducted during the reporting period 2010 – 2011
F – An effectiveness assessment may be conducted in future Annual Reports
N/A – This outcome level is not applicable

2.4.6 SWMP MODIFICATIONS

The City's SWMP received final approval from the Regional Water Quality Control Board (RWQCB) on February 18, 2007. Thus, the City's Permit coverage began on that date; however, the SWMP includes Implementation Schedules spanning the time period 2003 to 2008. As a result, the City has updated and modified the Implementation Schedules for each Program Element beginning with the 2007-2008 reporting period (see **Table 2.4-3**). Recent changes in responsibility are also included.

2.4 - New Development / Redevelopment Program

Table 2.4-3. New Development and Redevelopment Program Implementation Schedule and Responsible Department/Position

Control Measures and Measurable Goals	Implementation Schedule					Responsible Department/Position					
	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	Environmental Compliance Staff	Public Works	Community Development	Parks	Finance	Other
NDR1 Private Land Development Plan Review Process											
1. Establish standard conditions of approval for permanent stormwater BMPs based on the type of land development project in order to: preserve areas or features that provide important water quality protection; maximize pervious areas to promote and enhance percolation; and limit disturbance of natural drainage features and vegetation.						◐	●	●	◐		
2. Require long-term maintenance and operation of permanent stormwater BMPs, when necessary. Establish a process to track that permanent stormwater BMPs are constructed, operated, and maintained.						◐	●	●	◔		
3. Develop or revise, as necessary, checklists or similar methods used by City staff to review land development applications and plans for compliance with Receiving Water Limitations and Design Standards of the Small MS4 General Permit – Attachment 4.						◐	●	●			
4. Develop and implement a coordinated plan review, inspection activities, and reporting methods for permanent stormwater BMPs to be used by various City staff.						●	◐	◐	◐		
5. Train planning and engineering staff that are responsible for reviewing plans for inclusion of permanent stormwater BMPs. Educate appropriate staff in the use of established standard conditions, mitigation measures, City requirements and engineering standards for stormwater quality protection.						◐	●	●			
NDR2 Permanent Stormwater BMPs for Municipal Construction Projects											
1. Utilize permanent stormwater BMPs for municipal projects.						◐	●	◐			
2. Train capital improvement staff in City stormwater management requirements.						◐	●	●			

Continuing activity, reviewed or revised as needed throughout implementation

One-time activity to develop or implement a measurable goal

● Individual or department to take lead in the development or implementation of an activity.

◐ Individual or department to provide strong support in the development or implementation of an activity.

◔ Individual or department to review and provide comments and guidance during the development or implementation of an activity.

Section 2.5 - Municipal Operations Program

City Crews Vacuuming out a City Storm Drain Inlet

2.5 - Municipal Operations Program

2.5.1 OVERVIEW

The Municipal Operations Program requires the City to "examine its own activities and develop a program to prevent the discharge of pollutants from these activities. At a minimum, the program must educate staff on pollution prevention, and minimize pollutant sources." Among the municipal facilities and activities that could be sources of pollutants in stormwater runoff are:

- maintenance and repair of vehicles, equipment, and facilities
- facility, equipment, and landscaping maintenance and repair practices
- chemical and material use, application and storage practices
- waste management practices

Pollutants most commonly associated with these facilities and activities include petroleum hydrocarbons, pesticides, fertilizers, toxic chemicals, trash and debris, sediment and oxygen-demanding substances. The program must include a plan to implement site-appropriate and cost-effective treatment and source BMPs and ensure long-term operation and maintenance of such BMPs.

2.5.2 CONTROL MEASURES

The City has developed several Control Measures and accompanying measureable goals to ensure that the Municipal Operations Program requirements are effectively developed and implemented. For each Control Measure there are accompanying measureable goals which, once accomplished, constitute compliance with the Permit requirements.

The Municipal Operations Program Control Measures consists of the following:

MO	Control Measure
MO1	Employee Education and Training
MO2	Public Infrastructure Operation, Repair and Maintenance
MO3	Green Waste Management
MO4	Corporation Yard and Fleet Management
MO5	Parks and Open Space Maintenance

The next section of the annual report provides information on the specific tasks that have been initiated and/or completed during the reporting period pursuant to the New Development/Redevelopment Program measurable goals and implementation schedules.

2.5.3 MO1 – EMPLOYEE EDUCATION AND TRAINING

This control measure specifies that the City will increase employee awareness of the SWMP and to ensure employees responsible for implementing any part of the SWMP are adequately trained.

Existing BMPs and related activities to this Control Measure are the following:

- The Public Works Department conducts department-wide monthly safety meetings. The meeting is related to safety and to other training and information sharing such as stormwater.
- The Public Works Department distributes Employee Handbooks that contains all the policies and procedures that employees need while performing their job duties.
- Many of the staff within the Public Works Department train employees through weekly divisional tailgate meetings and on-the-job training.
- The City performs Stormwater training for all maintenance and operations crews biennially and surveys these same crews in odd years to determine what they know and how they have modified their actions.

- The City's SWMP and CASQA's Stormwater Pollution Prevention for Municipal Operations are both available for all employees for reference either on the City's webpage or at the following weblinks:
  - http://archive.cityofdavis.org/pw/stormwater/pdfs/2006-SWMP.pdf
  - http://www.cabmphandbooks.com/Municipal.asp

2.5.3.1 Measurable Goals

Measurable Goal 1: Review the Public Works Employee Handbook and identify where it may be revised to include reference to the City's responsibility to implement the SWMP and describe the City departments and/or employee positions responsible for implementing the SWMP.

After a review of the Public Works Employee Handbook in 2007, staff concluded that revision of the Handbook was unnecessary. City staff responsible for implementing the SWMP have been made aware of the SWMP and their responsibilities for implementation through a variety of City department meetings in prior years since the adoption of the 2006 SWMP and in individual municipal operations crews trainings over the 2008-10 report periods, in surveys of staff that tested their stormwater knowledge in 2010-11, and in trainings in 2011-12.

Measurable Goal 2: Develop and implement an environmental training program that includes stormwater issues for City personnel that conduct activities directly or indirectly related to the SWMP. The various departments and divisions to be trained include:

- Public Works Department:
  - Administrative Division
  - Transportation Division
  - Water Division
  - Wastewater Division
  - Solid Waste Division
  - Support Services Division
- Parks and Community Services Department
- Community Development Department

In 2008, the City completed the New Development Manual and presented it to City staff in the Departments listed above. For the 2008-2009 report period little to no training occurred. In 2009-2010 extensive training of City staff occurred. A system was implemented that would track and keep records of training for the purposes of reporting back to the State by June 30, 2010. The training session records include:

- what training has occurred,
- what dates training occurred on,
- how many individuals involved, and
- what subject matter covered by the training session.
- provide surveys for staff to see what they learned to measure awareness.

The table below provides the results of implementing the system outlined above. No surveys were developed to capture change in behavior. Staff will prepare behavior modification surveys for training this coming report period.

2.5 - Municipal Operations Program

Department/Division	Date	# of Staff	Subject Matter	Handout Materials?	Survey to Increase Awareness?
Public Works General	October 7, 2009	72	Pre-wet season presentation*	No	No
Parks and Community Services Maintenance Staff	October 15, 2009	28	Pre-wet season presentation*	No	No
Transportation	December 14, 2009 March 22, 2012	8 9	Storm water for O & M	Yes**	No
Water	December 15, 2009 October 4, 2012	13 10	Storm water for O & M	Yes**	No
Wastewater and Stormwater Collections	October 6, 2009 March 22, 2012 April 4, 2012	6 3 5	Storm water regulations for wastewater	Yes***	No
Wells	January 5, 2010 April 4, 2012	4 3	Storm water for O & M	Yes**	No
Parks and Community Services Maintenance Staff	December 3, 2009 April 5, 2012	30 30	Storm water for O & M	Yes**	No
Facilities – Building and Pool Maintenance	December 09, 2009 April 6, 2012	6 8	Storm water for O & M	Yes**	No
Custodial Services	January 8, 2010 April 24, 2012	6 6	Storm water for O & M	Yes**	No
Fleet Services	November 24, 2009 March 27, 2012	3 5	Storm water for O & M	Yes**	No
Greenbelt and Maintenance contract-employees	December 11, 2009 March 21, 2012******	24 21	Storm water presentation	Yes**	No
Community Development and Sustainability****	January 6, 2010, March 15, 2010, June 9, 2010 October 6, 2010 May 7, 2012*****	5 5 5 5 5	Storm water for New and Redevelopment	No	No
Public Works Field Inspectors	May 30, 2012******	3	CGP Construction Requirements	No	No
Building Field Inspectors	May 30, 2012******	5	Cal Green Code Construction Requirements	No	No

Notes:
*The 29 slide pre-wet season presentation is available upon request.
**Provided Power Point presentation with background on regulatory structure and requirements, and an updated copy of the Stormwater Pollution Prevention for Municipal Operations BMP Handbook created by CASQA, January 2003. A quick reference sheet on Basic Stormwater Best Management Practices basic principles. A quick reference sheet on pollutants of concerns and basic procedures to perform at sites (Appendix B, pages 12-14).
*** Held by GCVCSC and CWEA in Modesto by Blair Bradley from the City of Modesto. Staff received certificates for attending. The content was a 47 slide presentation. A copy can be made available by request.

**** Individual sessions with CDD management staff explaining the regulations of the General Permit our compliance in the proposed Stormwater Ordinance with the regulations as it applies to new and redevelopment. Also an LID Conference with 2 members of CD&DS (Appendix B page 11 for Agenda)
***** Training on Small MS4 General Permit requirements, LID, and regulatory structure.
****** Training included a Powerpoint slide presentation.

In 2010-2011, it was determined that it was too soon to retrain City staff on similar material, particularly coupled with no new staff being hired and that the subject matter has not changed substantially within the past eight years. Staff instead developed a survey to test all those trained in the table above with general stormwater questions and a survey of how their behavior may have changed since the training occurred a year prior. The survey/questionnaires were circulated to City staff in the Fall/Winter of 2010-2011. The results of these surveys are quantified in the table below. See Appendix B, pages 2-5 for a copy of a completed survey form. Overall knowledge of stormwater principles appears good. While examples of behavioral changes were somewhat limited, there were some small examples of behavioral changes that did result from the training sessions in 2009-10. Staff used these surveys to focus training for the trainings performed in the 2011-12 report period.

Department/Division	# of Surveys Completed
Parks and Community Services Maintenance Staff	11
Administration	0
Transportation	2
Water	13
Wastewater	0
Solid Waste	0
Wells	3
Facilities – Building and Pool Maintenance	8
Custodial Services	0
Fleet Services	4
Greenbelt and Maintenance contract-employees	0
Community Development	0
Storm Water Collection and Maintenance	4
Total Surveys Collected	**45**

In addition, direct trainings involved the following for the 2010-11 report period:

- On September 21, 2010, 1 member of Public Works staff attended a conference on the Construction General Permit in Woodland CA. See Appendix B, page 10 for a copy of the Agenda.
- On October 6, 2010, 1 Public Works staff member and 2 Community Development and Sustainability Department staff members attended an LID conference in Loomis, CA. This event was sponsored by the CVRWQCB and hosted by the American Basin Council of Watersheds. See Appendix B, page 11 for a copy of the agenda.
- In December 2010, 1 Public Works staff member successfully completed training and certification in the CESSWI program for Erosion and Sediment Control inspector.
- On February 28, through March 2, 2011, four members of Public Works staff attended the annual CWEA P3S conference held in Santa Clara, CA. Multiple sessions on stormwater were provided.

One member of Public Works staff focused on stormwater and received credit for 6.2 hours of contact time and 0.26 continuing education credits on stormwater related sessions. See Appendix B, page 23 for a copy of the Certificate of Completion.

- On March 17, 2011, the IPM manager and one member of Public Works staff provided a combined Stormwater and IPM presentation to staff members from both Parks and Community Services and Public Works staff. There were approximately 10 members of Parks and Greenbelt Maintenance staff and 20 members of Public Works Sewer Collections, Water Production, Storm Sewer Maintenance and Wastewater Treatment Plant staff. In addition to supervisors for the City's contract parks and greenbelt maintenance staff. The agenda involved primarily IPM related topics; however the combined IPM/stormwater presentation provided the nexus between stormwater and IPM for our municipal operations crews.
- On April 15, 2011, IPM and stormwater presentation was given to contract parks and greenbelt maintenance staff. In attendance were 13 staff from contract staff and 5 members of City Parks Maintenance staff. The presentation was the same as that provided in 2010.
- On April 18-20 four members of Public Works attended the 2012 CWEA Annual Conference in Sacramento. Multiple sessions on stormwater and pollution prevention were provided.

2.5.4 MO2 – PUBLIC INFRASTRUCTURE OPERATION, REPAIR AND MAINTENANCE

This control measure specifies that the City will implement procedures, practices, and schedules to ensure municipal operation activities minimize stormwater pollutants.

Existing BMPs and related activities to this Control Measure are summarized as the following:

Street Sweeping

- All residential streets are swept once per week
- Core Area (downtown Davis) streets are swept twice per week.

Graffiti Removal

- Remove graffiti using the less-toxic products. Implement dry cleanup methods for removing residual materials when reasonably possible.
- Filter or direct to landscape all wash water that does not contain cleaning compounds.
- Vacuum/pump wash water containing cleaning compounds to the sanitary sewer.
- Protect storm drain inlets during graffiti cleanup activities.

Signs, Striping, and Painting Activities

- The Transportation Division uses water-based, fast drying paint products that do not contain heavy metals. The paint is applied in a manner to minimize over spray and spillage.

Road, Street, Curb, Gutter, and Sidewalk Repair and Maintenance

- The Transportation Division typically schedules maintenance and repair work during the dry season except during emergency situations.
- Household garbage and recyclable materials are collected separately but concurrently. Green waste is picked up loose from the street using specially designed equipment. A street sweeper follows this vehicle to remove remnant material from the collection activities.

Stormwater Sewer System Maintenance

- The City annually inspects, and cleans if needed, all 2,975 of its stormwater catch basins.
- Siphon-type drains in the downtown area are flushed and vacuumed quarterly. Collected water is discharged into the sanitary sewer system.

- Public Works inspects and maintains each of its five stormwater retention ponds annually prior to the wet season.
- From November through April, Public Works inspects the ponds at a minimum of two times per week.
- During the dry season months, May through October, the ponds are inspected at least once per week.
- The City has installed two trash racks at the outlet of West Pond, the largest of the five ponds.
- During August and September of each year, the City cleans and inspects every stormwater pump station in the City to remove silt and trash.
- Preventative maintenance of pump stations occurs quarterly and is in addition to the annual inspections.

Storm Channels and Ditches

Each year from May to November the City inspects, repairs, and maintains the channels and ditches it operates that traverse the City.

Channels and ditches are inspected and maintained during and immediately following each storm event during normal working hours.

BMP Activity Sheets

Field crews use the following Activity Sheets:

- Storm drain inlet and other concrete installation, repair, and replacement projects only when determined to be needed
- Public infrastructure maintenance and repair schedule and contractor BMPs
- Road and street repair and maintenance BMPs
- Routine catch basin/inlet inspection and cleaning BMPs once annually.
- Routine storm drainage pond inspection, maintenance, and cleaning BMPs once annually.
- Storm drain pump station inspection and maintenance BMPs weekly, quarterly and annually.
- Storm channel and ditch maintenance BMPs once annually.
- Storm drain stenciling program and other public outreach BMPs

2.5.4.1 Measurable Goals

Measurable Goal 1: Develop standard practices (with BMP Activity Sheets, if necessary) for additional activities that emphasize:

Graffiti removal activities:

- Remove graffiti using the less-toxic products. Implement dry cleanup methods for removing residual materials when reasonably possible.
- Protect storm drain inlets during graffiti cleanup activities.

Signs, striping and painting activities:

- Use dry-method techniques to clean and remove paint, paint chips, and other waste material. Dispose of waste material appropriately. Avoid washing or rinsing waste material down the storm drain.
- Protect storm drain inlets when work is being conducted at or near an inlet.
- Handle and load paint products or other materials away from storm drain inlets.

- Develop/edit and implement spill control and clean-up procedures to prevent spilled paint or other chemicals from reaching the stormwater sewer system.

Water line maintenance activities:

- Implement measures to reduce the quantity of domestic water to the stormwater sewer system.
- Ensure all discharges comply with all applicable laws, regulations and permits.

In 2007-08 it was reported that the above measurable goal's BMPs had been incorporated into the normal work practices of City staff via internal department/division training and policy setting. Measurable Goal 1's activities have been completed. The existing BMPs described above are indication that these activities being incorporated into normal BMP activity. In 2009-10, the City modified the standard operating procedures (SOP) of 27 different maintenance activities for the Water and Transportation Divisions of Public Works and 16 additional SOPs in 2011-12 for the Wastewater and Stormwater Collections crews.

Measurable Goal 2: Evaluate inlet inspection and maintenance records. Develop a list of catch basins that have been cleaned, by quadrants of the City. Determine if certain quadrants of the City require more frequent cleaning. Use this data to help prioritize routine maintenance and to focus the public education and outreach program.

The City began inlet inspection and maintenance records in 2003. Staff has reviewed records from 2005 through 2010-11. Catch basins and drainage inlets (DIs) are inspected routinely City-wide. Public Works field crews kept records on the total amounts of solid wastes and recyclables where removed from the DIs. The records from 2005 -2012 displayed in the table below, showed a steady amount of material being removed since the implementation of the use of recycling containers and the street sweeping programs. Collections crews report anecdotally that there is far less material in DIs since the implementation of the program. The City initially installed storm water markers on all existing DIs as part of this program. New development is required to install markers for any new storm water DIs. As noted in the table below, the number of storm water markers and the amount of garbage removed has generally decreased. They are replaced as they age over a period of about 5 years. Staff has not analyzed the collection as of yet to pin point outreach activities for specific areas. That is a process the City may engage in the future. The annual inspection involves all storm drains, so no DI goes un-maintained for long periods. Staff concluded that because of these results that this task has been completed and no further action is necessary. However, the City will continue to inspect all City drainage inlets (DIs) and perform maintenance as is necessary.

Year	2005-06	2006-07	2007-08	2008-09 (Est.)	2009-10	2010-11	2011-12
Total DIs Checked	2,586	2,612	2,442	2,585	2,628	2,975	2,975
Total DIs Cleaned	437	335	26	81	112	677	259
Aluminum Cans Removed (lbs)	1 - 30 gallon bag	23.6	26	N/A	22.3	16	5
Plastic Bottles Removed (lbs)	2 – 30 gallon bags	50.8	48	N/A	30.2	30	10
Hard Plastic Removed (lbs)	0	0.4	0	N/A	0.5	N/A	N/A
Glass Bottles (lbs)	½ - 30 gallon bag	0.19	0	N/A	21.9	28	3
Total Weight Removed (lbs)	?	75	74	70	75	74	18
Miscellaneous Material	2 - yards of solids	5 – scooters	None reported	N/A	5 - yards of solids	140 lbs of garbage	30 lbs of garbage

Year	2005-06	2006-07	2007-08	2008-09 (Est.)	2009-10	2010-11	2011-12
	vacuumed	1 – skate-board 1 - 30 gal bag of balls			removed	removed	
Installed Stormwater Markers	240	6	0	N/A	81	0, though 153 are scheduled for replacement	189

2.5.5 MO3 - GREEN WASTE MANAGEMENT

This control measure specifies that the City will develop and implement procedures, practices, and schedules for the evaluation and management of green waste management to ensure minimal release to the receiving waters.

Existing BMPs and related activities to this Control Measure are the following:

- Currently, green waste generated from yard and landscape maintenance activities is staged in the City streets then removed mechanically by a private contractor and normally followed by street sweeping the following day. The debris typically is set away from the gutter to allow curbside flows to bypass the debris during rain events or over-watering.
- Additional practices to prevent that green waste from discharging into the receiving waters include street sweeping and corresponding parking enforcement to keep streets clear for sweeping, storm drain inspection and cleaning, stormwater detention basins and channel operations, stormwater pump station cleaning, local waterways and detention basin clean-up events, vegetated channels, storm drain inlet markers, green waste composting, and public education. Focused public education programs regarding landscape management including integrated pest management (IPM), composting and water conservation, are described in other portions of this SWMP.

2.5.5.1 Measurable Goals

Measurable Goal 1: Complete the City's evaluation of alternatives of green waste collection and removal. Pending City Council direction, begin to implement recommended alternative by spring of 2007.

In 2007, the evaluation of the alternatives resulted in the City Council deciding to continue collecting green waste from piles in the streets. The City did consider conducting a pilot study to use green waste containerization on major bike route corridors in order to improve bike safety, but decided to abandon that activity primarily because residents were against using the container program and costs to the City for collection would be increased over the existing means of collection.

In 2005, the City contracted with Godbe Research to conduct a citizen phone survey. The results of the survey indicated that 95% of the respondents were satisfied with the current service and 63% reported they are opposed to the containerization of green waste.

The City is currently working on a Solid Waste Strategic Plan that should be completed early 2013. One of the key elements of the plan features yard material collection strategies and containerization. The City is looking into containerization as a way to reduce collection costs and include the municipal collection of food scraps for composting with yard materials. Once the plan is complete, City Council will need to make a decision on the best yard material collection system.

Additionally, according to the City's DI inspection reports from 2003 to 2007, the amount of solid waste removed from DIs has decreased including green waste primarily due to the City's recycling containers and street sweeping program.

The City has also examined water quality with respect to potential pollutants associated with green waste. Upon examination of the City's monitoring results, organics and BOD were not identified as constituents of concern. There is no indication that current practices of waste containerizing and removal cause or contribute to any water quality impairment. Davis runoff appears to be comparable if not slightly cleaner than other California cities. Although this City does not have a containerized green waste program, the City does employ many other BMPs that may help to mitigate potential impacts of green waste including but not limited to the following

- once a week street sweeping (a sweeper follows the front end loader that picks up the green waste to sweep up remnants),
- downstream BMPs (approximately 2/3 of Davis drains to retention ponds),
- the downstream conveyance channels of Channel A, Mace Ranch, Putah Creek are substantially vegetated, with design that mimics the physical characteristics of a vegetated swale,
- annual storm drain cleaning, and
- a green waste composting education program conducted annually.

The above factors have led the City Council to decide to continue collecting green waste piles from the street.

Measurable Goal 2: Review and, if necessary, modify the City's Management of Garbage, Other Wastes, Recyclables, and Fees Ordinance to support implementation of the recommended green waste removal alternative by July 2007.

Based on the information provided in Measurable Goal 1 above, the City has decided to continue collecting green waste from the streets. The City is of the opinion, additional modifications to the City's Management of Garbage, Other Wastes, Recyclables, and Fees Ordinance remains unwarranted. However, the City is currently studying the feasibility of options with a green waste container program. Public Works staff anticipates the item going to City Council in February 2013.

Measurable Goal 3: Continue to manage and grow an outreach program focusing on how proper handling of green waste can promote water quality.

The City continues to develop and distribute outreach material about proper green waste management. See **Appendix B** page 6 - 9, 27 – 30, and 53 - 60 for a partial list of existing BMP's and related activities related to the Control Measure for an outline of outreach classes, and educational materials for activities related to this Measurable Goal. The City has also developed and continues to update the following webpages to help promote use of backyard, food scrap and worm composting:

http://archive.cityofdavis.org/pw/recycle/backyardcompost.cfm

Measurable Goal 4: Continue to promote backyard composting program through workshops, educational articles, or advertisements.

The evaluation of the backyard composting program resulted in adding additional workshops to increase awareness and participation. See Assessment Task MO3.7 for the numbers of workshops and participation increases from 2007-8 to 2011-12. See Appendix B pages, 26-30 for a copy of the fliers, agenda and handout material for composting classes.

2.5.6 MO4 - CORPORATION YARD AND FLEET MANAGEMENT

This Control Measure specifies that the City will manage the City's corporation yards to minimize pollutant discharges to the stormwater sewer system.

Existing BMPs and related activities are the following:

- The City owns and operates two corporation yards, one at 1717 5th Street and the other at 1818 5th Street. The City Fuel Facility located at 1717 5th Street corporation yard is completely covered and includes leak prevention and detection equipment. This facility meets all current regulations covering operations of underground storage tanks. The island is graded to prevent stormwater

from draining onto or through the fueling island area. Fuel spill reporting/cleanup procedures are posted and absorbents are stored nearby.

- Painting at 1717 5th Street is done only during the dry season. Water-tight paint containers are stored on pallets.
- All loose construction materials (e.g., asphalt, sand) are stored in storage bins. Any runoff from these bins is diverted to a central collection pit. This pit is pumped out by Public Works, which transport the wastewater for discharge to the sanitary sewer. This process is performed once per quarter or more frequently as needed.
- Yard maintenance crews use yard vacuums, leaf blowers and brooms to remove excess dirt and debris. If wash down is necessary, clean water and drain filters are used.
- Recyclable scrap metal is stored on-site in a large dumpster. A recycling contractor empties the container approximately twice per month.
- Several of the City Transportation staff are certified in hazardous waste spill response.
- There are filter fabric used to protect five total of the main valley drainage inlets in the both the City corporation yards located at 1717 and 1818 Fifth Street. These DIs are inspected prior to 50% chance or more rain events and inspected for maintenance once per quarter.
- The Parks and Community Services Department operates the General Services Division and the Parks and Open Space Division from 1818 5th Street. These divisions provide maintenance for City facilities, and parks and open space
- The City's vehicles and equipment are maintained by the Fleet Division of Public Works at 1818 Fifth Street. Fleet maintenance activities, such as oil changes and repairs, are conducted indoors. The vehicle wash pad is sloped to drain into an oil/water separator, which discharges into the sanitary sewer system. The remainder of the yard drains into the stormwater sewer system. Waste oil and waste coolant are stored in double-wall containers. The waste oil tank is located outside the maintenance building in an uncovered area against the south shop wall and is protected by bollards. The waste coolant tank is located inside the Fleet Services shop and is contained by a concrete berm. Waste oil is collected from vehicles in a drain cart and the drain carts contents are pumped into the waste oil tank through a sealed system of suction hose, pump, and transfer piping directly to the waste oil tank. Waste coolant is collected in a drain container and the contents manually emptied directly into the waste coolant tank.
- Used batteries are stored on a special plastic spill containment pallet, indoors. They are hauled away by a commercial battery recycler.
- Bulk oil and coolant are stored inside the Fleet Services shop building and are contained by a lined, concrete berm. Product is delivered into the tanks by commercial vendors by means of a delivery hose. Products are removed from the tanks and distributed to work stations throughout the shop through a system of overhead pumps and piping system.
- Drip pans are placed under vehicles that are leaking in the parking area. If excessive, such vehicles are moved indoors and serviced.
- Fire Department vehicles are washed cosmetically at the Fire Station, but washing of the undercarriage is done at the corporation yard wash rack located at 1818 Fifth Street.
- In recent years, City staff has reduced the use of gas by driving alternatively fueled cars including the following modifications to the City's fleet of vehicles.
  - In 2008-09, 16 electric GEM carts, 1 electric gator, 2 electric Miles pick-ups, and 8 hybrid vehicles were added to the City fleet replacing older traditionally fueled vehicles.
  - In 2009-10 the City eliminated 4 gas vehicles and added to more 2 hybrids to the City fleet. Spills and leaks inside and outside the shop are cleaned using dry methods.

- In 2010-11, the City did not eliminate any gas vehicles and did not add any hybrids or other alternatively fueled vehicle to the City fleet. The City did eliminate three gross polluting diesel lawn mowers and replaced with new Tier 4I diesel engines. The City also replaced three Harley Davidson Police motorcycles that averaged 18 MPG with new Honda motorcycles the average 40 MPG.
- In 2011-2012 the City Replaced (1) one 20 year old gross polluting Type I Beck Fire Truck with a new low emission Type I Spartan/Hi-Tech fire truck, (6) six old PD patrol cars changing the emissions rating from Bin 5 to ULEV II, (1) one old John Deere gross polluting Tier II lawn mower with a new low emission Tier 4I John Deere mower, (2) old P/U trucks changing the emissions rating from NLEV to ULEV II, (2) old pool cars changing the emissions rating from NLEV to new Ford Escape Hybrids with an emissions rating of PZEV and removed (8) eight vehicles from service due to low utilization.

- Absorbent material used to clean the spill or leak is swept up and disposed or recycled appropriately.

2.5.6.1 Measurable Goals

Measurable Goal 1: Continue to maintain appropriate BMPs at the City's Corporation Yards.

The City has and continues to utilize BMPs at both corporation yards since 2003. BMPs maintained at the City's Corporation Yards are specified in the above description of Existing BMPs.

Measurable Goal 2: Inspect 1717 and 1818 5th Street annually for opportunities to reduce pollutant discharges into the stormwater sewer system and dispose of all waste material.

During the 2011-12 report period, both corporation yards were inspected as noted below. Any identified opportunities to reduce pollutants were incorporated into standard practices. Some opportunities to operate the yards in a cleaner manner have been identified. These have to do with equipment storage under solid cover, more routine cleaning of the yards around the sediment piles, collecting greenwaste in a different manner, using more covered garbage contains and more. Staff is working with appropriate City staff to implement these minor changes.

Description	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
# of inspections	2	1	1	2	4
# of facilities in general compliance	1	2	2	2	2
# of facilities requiring follow-up inspections	1	0	0	0	0

2.5.7 MO5 - PARKS AND OPEN SPACE MAINTENANCE

This control measure specifies that the City will implement procedures, practices and schedules to ensure activities related to the operation, maintenance, and repair of public parks and open space minimize stormwater pollutants.

Existing BMPs and related activities to this Control Measure include the following:

- Both the Parks and Community Services and the Public Works Departments (all divisions in the Public Works Department) utilize Integrated Pest Management (IPM) practices to reduce the use of pesticides. IPM includes employee training on pesticide application and alternatives to pesticide use. This training is provided annually (periodically) by the IPM Coordinator who also assists with pesticide reduction outreach. Most of the employees tasked with pesticide application in the Parks Division are certified pesticide applicators (CPA). Those who are not are under the direct supervision of a CPA. Feedback from field staff (monthly pesticide use reports) assist in tracking pesticide use and use reduction efforts. The City has not used any Category 1 herbicides (such as Vaporooter), within the City limits, and has significantly reduced the use of

Category II herbicides (such as Scythe). In addition, no insecticides have been used. Herbicides are applied to targeted areas only when needed.

- Crews use rakes, brooms, and leaf blowers to clean up twigs, sawdust, and wood chips left after vegetation trimming and maintenance in public parks and open spaces.
- The City altered its pruning operations to reduce the amount of green waste. Vegetation is allowed to grow more naturally thus reducing the amount of pruning conducted and the chance for vegetative waste to enter the storm water sewer system.
- The City's open space vegetation management activities include restoring and re-vegetating areas, planting native grasses, and removing noxious plants and weeds. Much of the open space owned and maintained by the City is along Putah Creek or the City's ponds agricultural buffers such as Wildhorse and El Macero. Well established and maintained native vegetation in areas adjacent to and around water bodies provides a filter that stormwater will flow through prior to its discharge to the receiving waters.
- The City owns and operates four public swimming pool complexes: Civic Center, Manor, Arroyo, and Community. Filters are backwashed approximately weekly or monthly; pools are drained (emptied) annually. Filter backwash at Manor, Arroyo, and Community drain into the sanitary sewer system. Civic Center's filter backwash currently drains into the storm water sewer system because of the plumbing for the facility was not plumbed to the sanitary sewer. Debris from the back flush are captured with a filter bag prior to release into the storm drain. There are no current viable options the City can afford to re-plumb this facility. The long term plan involves about a 3 to 5 year window before this facility can be closed with a shift in its current users towards a new facility. Manor's pool water is drained into the sanitary sewer system after chlorine levels are below 1 mg/L. Civic Center, Arroyo, and Community pool waters are chemically treated to oxidize any residual chlorine to below 0.1 mg/L before discharging to the storm water sewer system. Decks at all four complexes are hosed down with clean water. Wash water runoff from this activity is diverted to landscaping as much as practical. An additional BMP that will be tested is the application of filter fabric to the small storm water drain inlets to capture trace amounts of sediment.

2.5.7.1 Measurable Goals

Measurable Goal 1: Continue to implement the IPM program and policy. Investigate opportunities to expand the program and further reduce pesticide and herbicide use. Review and revise the program as necessary to keep the practices up-to-date and incorporate emerging technology for IPM practices.

In 2008 the City's IPM Specialist revised the Citywide IPM policy with the incorporation of the Pesticide Hazard and Exposure Reduction (PHAER) zones program. This strategy gives structure to the implementation process of the IPM policy in parks and greenbelts by allowing supervisors the needed flexibility in their management options and informing the citizens about the general level of pesticide hazard present on a site-by-site basis. Contracted landscape maintenance and pest control companies have been presented with this program and are expected to abide by it. For more information see:

http://archive.cityofdavis.org/pw/ipm/ipm-policy.cfm .

In 2013, the pesticide use policy and the IPM policy will be fused into one document updating current practices by staff and contractors.

In 2008, the City was a recipient of the IPM Innovator Award from the California Department of Pesticide Regulation (DPR). The award was given in recognition of the City's efforts to reduce chemical pesticides via cultural, biological and mechanical control methods.

City staff continued to work with alternative pest control methods including:

- "Green pesticides": products derived from soap, acetic acid, herbal oils or microorganisms.
- Biological control: use of predatory organisms such as nematodes for grub controls on ball field turf, and promoting birds-of-prey to eat pest rodents.

- Mechanical control: removal of weeds by “weed whackers”, tractor implements or hoes.
- Grazing: use of goats and sheep at Mace Ranch wildlife habitat.
- Mulching: use of wood chips to cover open ground, smothering weeds.
- Sheet Mulching: mulching but with cardboard or weed cloth barriers.
- Flaming: use of propane flamers to burn down broadleaf weeds.
- Solarization: use of clear plastic during the summer to pasteurize the soil, kill or debilitate most weed seeds.
- Flooding: use of flooding in the wetlands to deprive weeds of air.
- Revegetation using native and drought tolerant plants as ground cover to displace weeds and reduce herbicide use in City parks.

The following staff training events where held in 2011-12:

- Continuing education credits on March17, 2011, where about 50 people attended. At the time of the writing of this report, a copy of the agenda and sign in sheet were unable to be located.
- Four people from Public Works have renewed their Qualified Applicator Certificates.
- Parks has 14 staff with Qualified Applicator Certificates which they renew every two years.
- The City’s IPM Coordinator conducted two hour IPM training in Spanish for GP and Coast landscaping contractors employees which had 18 attendees.
- Additional outreach activities are listed in Appendix B, pages B-6 to 9

Measurable Goal 2: Coordinate with the Public Education, Outreach, and Participation Program to continue implementing the Residential Pesticide Outreach Program.

The City continued to provide public outreach and education on pesticides using several forms of communication. City staff was also educated on weed and pest control techniques and current trends in IPM. Outreach and education efforts included (refer to PEOP1 for program specific information):

- The City of Davis’ IPM website. http://archive.cityofdavis.org/pw/ipm/
- The City IPM program will be bringing up a Facebook page linked to the City’s Facebook page starting on September 17, 2012.
- The IPM comic “The Exterminator”. http://archive.cityofdavis.org/pw/ipm/exterminator.cfm
- Notification of City herbicide application activities in parks and greenbelts via the Pesticide Hotline and development of the City website for citizens to view where applications are taking place or pesticides are not being used. The website is at the following link:

  http://archive.cityofdavis.org/pw/ipm/phaer.cfm

- Making the City’s PHAER zones map available on line:

  http://archive.cityofdavis.org/pw/ipm/phaer.cfm

- Tips and alternatives to pesticide use provided in the annual Public Works sponsored “Utility Connections” newsletter to all City utility customers (over 33,000). The following website provide access to the “Utility Connections” newsletter:

  http://public-works.cityofdavis.org/water/utilities/utility-connection

- Distribution of IPM educational literature at community events. The City continues to partner with the Master Gardener Program to provide free advice at the Celebrate Davis event, UCD Arboretum Plant Sales, and Central Park Open House. These provide opportunities to display the City’s effort at least toxic pest control. Tables featured the OWOW program, bat and owl boxes as well as pamphlets and handouts on our pest control programs among other things. See

Control Measure PEOP1 and Measurable Goals 5 and 6 for additional details on these events. See Appendix B pages B-24 – 26, and 31 - 60 for examples of informational handouts.

- Presentations on least toxic pest control at the Davis Community Gardens on 5th Street and Central Park Garden.
    - A presentation was made at the Davis Community Gardens on 5th Street on August 23, 2011 and March 21, 2012 with approximately 15 people in attendance.
    - A presentation was made at Central Park Garden on October 29, 2011, with over 1,000 attendees.
- Pesticide safety training for City field staff. IPM coordinator attended five IPM conferences during 2011-12 to build networks for IPM professionals to share information and resources, and provide information to City IPM staff.
- Attendance at IPM conferences by departmental staff involved with IPM coordination. 10 Public Works and 15 Parks staff were required to attend during the 2011-12 report period continuing education to maintain pesticide applicators certificate. Staff did not all hold just one training session to train all individuals, but rather held multiple training sessions at various times during the 2011-12 time period.
- Attendance of continuing education for IPM in 2011-12. 20 Public Works and 10 Parks staff attending the IPM/SW continuing education on March 17, 2011.
- One annual presentation on the Annual IPM Report each the City Council and to citizen advisory commissions. The Annual Report can be viewed on the City's website by using the following link:

  http://archive.cityofdavis.org/pw/ipm/annual_report.cfm
- Encouraging local pesticide venders to participate in the OWOW program by placing OWOW handouts and labels for products in local hardware stores. Pesticide free products are stocked with the OWOW label on the stores' shelves to encourage their purchase. Pesticide retailers are contacted by the City OWOW consultant. She meets with the owner/ manager and offers the materials and store staff training. Once a store is participating, the consultant visits the store regularly to ensure appropriate stocking of materials and to provide additional training as needed. Comments received by staff from vendors show that vendors were able to sell the pesticide free products better by use of OWOW information and labels.
- Attended UCD Arboretum Plan Sale events on held on September 24, 2011, October 9, 2011, March 10, 2012, April 13, 2012, and May 18, 2012, where the City IPM Coordinator occupied an information table and answered questions about the City's IPM program as well as other pollution prevention programs. See Appendix B, page 97 for a copy of the spring sales flier. The information table also contained displays for the City's Bat Box program and hand out materials for all pollution prevention programs as well as OWOW program brochures.
- A video on IPM and outreach activities was created and posted in the 2009-10 report year on the City's IPM webpage. See the following link

  http://archive.cityofdavis.org/pw/ipm/what_is_ipm.cfm
- Use of positive posting at location where alternatives to chemical pest control were in use. Signage which state that no pesticides are being used at these locations. These signs are being used at City Hall, all City playgrounds, and various parks, greenbelts, nature preserves, and gardens. "Phaer" Zones" website up on the City's webpages to show where pesticides are being used and not used on City property. To view the City's pesticide usage maps, consult the following weblink:

  http://archive.cityofdavis.org/pw/ipm/phaer.cfm
- **Our Water Our World (OWOW) Program**: The OWOW program continued to be implemented at three pesticide retail stores in Davis (Davis Ace, Redwood Barn and Nursery, and CVS

Pharmacy) in 2011-12. This program provides "Less Toxic" fact sheets and shelf tags set adjacent to pesticides. In addition to the written materials, store employees are given training regarding what products are environmentally conscience alternatives for pest control. A view of the labels and brochure in stores may be viewed at the following website:

http://www.ourwaterourworld.org/QuickLinks/PromotionalMaterials/tabid/67/Default.aspx

The program works as follows: OWOW consultant sets up training dates with store staff. She discusses the proper installation of the rack and shelf talkers, teaches staff to addresses common questions regarding common pests and identifies appropriate less toxic alternatives. She also stays in communication with store managers to keep current on pest problems and what are the effective less toxic and nontoxic controls.

During the 2011-12 report period, the following OWOW program events occurred:

- **Davis Ace Hardware training October 20, 2011. 13 attendees**. Excellent response to training with City staff joining in with water pollution prevention message. Employees had many questions for him and are extremely supportive of the OWOW program in this store. The focus was on the pesticides of concern for water pollution and discussed IPM methods to avoid using pesticides. Also discussed were the coming pest issues the spotted winged drosophila and the increase in citrus pests and diseases. The store manager is very supportive and invites me to do display work on a dedicated endcap as long as it is changed on a frequent basis.
- **Customer Appreciation Night Davis Ace 11/09/12 Over 55 customer contacts**
- This was hosted by Davis Ace Hardware 6-9pm. A table was set up across from the pesticide section and showcased photos of beneficial insects, examples of less toxic products and with samples Sluggo to hand out. The City's IPM Manager joined up for the evening and helped answer pest problems for the local customers. Photos were taken of the event.
- **Duck Days February 25, 2012** 8-4pm Set up table with OWOW materials and displayed large chart on beneficial insects in addition to photos of beneficial insects. Discussed concerns with pesticides in the waterways and guiding the public to the partner stores in Davis who have the less toxic products. Handed out coupons from each partner store that gave discounts on less toxic products to event attendees. Copies of the coupons were provided to the City. The attendance was greater than last year. Samples of Sluggo, 10 Most Wanted Bug Brochures, recycling guides, and information on disposal of HHW were handed out at the event. Photos were taken of the event. **250 - 300 plus attendees were contacted.**
- **Davis Ace Hardware Tabling Event - April 15, 2012**
  - A table was set up across from the pesticide section and worked with customers helping them with aphid, weed, and cockroach problems. The OWOW representative also helped customers find insectary plants in the nursery so they could attract beneficial insects. Photos were taken of the event. **65 customers were contacted.**
- **Stores Visits:**
  - The stores were contacted on a frequent basis for needs for fact sheets and shelf talker updating. The stores also were asked to participate in a special coupon for the public events where they gave a discount for a less toxic product.
  - All three stores now have participated by making up coupons that they can give out when events are held to promote OWOW. This was done for Duck Days.
  - The stores really appreciate being promoted in the community as a resource for the products and for the fact sheets.
  - Store visits: 8/8, 9/21,11/9,12/11, 1/23, 2/27,4/15,5/3,6/19

- **Endcap shelf space at Ace** This year Ace dedicated space for the less toxic products on the key endcap on the pesticide aisle. This has remained up for 10 months and also has an OWOW poster and the OWOW fact sheet rack all in one place. The OWOW representative has dedicated additional time to redoing their pesticide section when a pesticide manufacturer came and took apart the less toxic section. Their less toxic endcap is reorganized every few months.
- CVS manager is very supportive of OWOW. Their store makes coupons available for OWOW community events. The OWOW representative retags the store on an annual basis when the shelves are reset for the season. The literature rack remains in a prominent area in the main pesticide aisle.
- Redwood Barn Nursery is also a good partner store. The fact sheets do not move as rapidly as the other stores as they get less and less foot traffic. They are frequently moving their shelf talkers around so they are maintained on a quarterly or as needed basis.

- **Other IPM Related Events:**
  - **Central Park Gardens Open House 10/29/11** Contacted over 100 attendees at the event where 1,000 residents attended. Worked by Martin Guerena (City IPM Administrator) and answered questions about less toxic ways to manage pests. Handed out OWOW fact sheets, fly swatters, Sluggo samples.
  - Friends of the West Pond June 2, 2011. IPM coordinator meets with members to discuss weed control strategies and less toxic approaches for controlling weeds in the area.
  - Community Gardens Aug. 23, 2011. Mar. 28, 2012 Pest control talk with community garden members on less toxic pest control for weeds, insects, diseases, vertebrate pests, mollusks and nematodes.
  - Local Radio Interview on KDVS Local Dirt program on the city of Davis IPM program and effort to reduce hazardous pesticides in Parks, Greenbelts, Open Spaces and other city properties., ,
  - Contractor IPM and pesticide training in Spanish March 28, 2012.
  - Da Vichi High School environmental Sciences presentation to 60 students on IPM, soil health and less toxic approaches to pest control
  - Plant Sale at 3 Palms Nursery manned table with outreach materials to patrons during plant sale. About 50 attendees.
  - Celebrate Davis May 17, 2012. Hundreds of citizens going through information table with outreach material on many environmental programs the city has to offer.
  - University of California Weed day presentation on July 17, 2012 on the City of Davis' IPM program and efforts to reduce hazardous pesticides. About 100 attendees.

Measurable Goal 3: Maximize removal of vegetative waste from pruning activities and protect storm drain inlets when practical. Mulch lawn clippings in public spaces.

Staff and landscape maintenance contractors use drop cloths to contain and eventually transport landscape clippings. Excess waste material is swept up or blown into the landscaped areas. Tree trimmings are chipped and applied within the landscaping or hauled off for landscape application at a different facility. Mulch mowers are used to maintain turf at all City facilities. Public Works and Parks Maintenance staff made aware of green waste pollutant threat potential in both the past two report periods.

Measurable Goal 4: When possible, use non-fossil fuel burning equipment to conduct vegetation maintenance activities and collection of vegetation waste (e.g., rakes, brooms, battery powered leaf blowers).

Parks and Community Services staff utilized several of the City's electric vehicles (GEM, Miles, Gator) for park maintenance activities. Several of these vehicles are equipped with a flat bed for hauling equipment and materials around the parks and open spaces. The use of heavy vehicular equipment in and around park and open space facilities is therefore minimized. Rakes and brooms are heavily used in the collection of excess green waste. The feasibility of using electric blowers has not yet been evaluated. This is largely attributed to the extended service life of the existing fleet of gas operated blowers.

Measurable Goal 5: During open space maintenance and planting activities, use plants and planting arrangements that maximize water quality benefits from the vegetation, when possible.

The City continues to use native trees and /or near native, shrubs, and grasses in all open space restoration projects. The use of native or near native vegetation reduces the need for irrigation (thus potential runoff) and fertilizers. Once these plants are established, little to no herbicides are needed to maintain the area. Additionally, during the past two report periods, the City engaged in the following replanting projects using native and/ or near native plants.

- Citywide supplemental planting in City Open Space areas,
- Supplemental planting at the Davis Wetlands, and
- The on-going maintenance and expansion of the Bird and Insect Garden, a zero pesticide demonstration garden in the West Area Pond Greenbelt.
- Installation of native and near native landscaping associated with the south Davis Bike Tunnel/ Greenbelt capital improvement projects.

Measurable Goal 6: Investigate plumbing facilities and activities at municipal swimming pools. Determine appropriate BMPs to be utilized.

The community pool maintenance staff diverts pool deck wash water into the landscaping as much as possible. All pool water when discharged is brought to near 0 levels of chlorine. Back flushing at three of the four facilities is discharge to the sanitary sewer. While plans to reconfigure the Civic Center pool's plumbing to backwash into the sanitary system have proved to be infeasible due to cost. Sanitary sewer connections would have to connect to the sewer lines on Russell Boulevard which would require tunneling under City Hall. The alternative project involves accumulating finances over a 4 to 6 year period to redevelop the Community Park pool located about 1 mile north of the Civic Center pool. Once completed, this project could serve the Civic Center pool patrons. Closing the Civic Center pool without a viable current alternative has been extremely unpopular with citizens due to this facility's heavy use. In the interim, the City filters the back flush water from the Civic Center pool complex to capture solids from the filter system from entering the storm drain. Unfortunately, the City cannot de-chlorinate the water prior to release as the frequency of performing this operation would render the use of the pool as infeasible.

2.5.8 EFFECTIVENESS ASSESSMENT OF MUNICIPAL OPERATIONS PROGRAM

Effectiveness assessment is a fundamental component for developing and implementing successful stormwater programs. Outcome levels help to categorize and describe the desired results of the Program Elements and related Control Measures.

In order to determine the effectiveness of the Municipal Operations Program, an assessment of the program data is conducted as a part of the annual report. The results of this assessment are used to identify modifications that need to be made to the program. By conducting these assessments and modifying the program as needed, the City ensures that the iterative process is used as an effective management tool.

Effectiveness is determined through a series of Assessment Tasks as identified in the SWMP.

2.5.8.1 Assessment Tasks

Assessment Task MO1: Evaluate the effectiveness of this Control Measure through an evaluation of the information gathered in Annual Reports.

It is evident that the City has some processes in place to educate and train employees on both formal and informal basis. Record keeping has been informal or by word of mouth on training efforts.

What appear to be lacking is a more formalized tracking processes and assessment tools to determine efficacy of the training methods. With a planned effort to formally train City staff on stormwater issues for municipal operations the past two report periods, with the surveys conducted this past fall, the general knowledge of stormwater principles appears to be good. The City will continue to assess where training is required by training and questioning staff.

Assessment Task MO2: Implement a supervisory oversight program, which documents that employees are implementing BMPs. Maintain a record of follow-up activities conducted.

The City's GBA work order system would be a tool in the future to document employee's activities that would require the use of stormwater BMPs. However, not all City departments implement the use of the GBA. So there is not one tool to track this assessment task and it requires management buy off of modifying the GBA to track stormwater issues within each module utilized by each work crew or group in each division and department. This has been extremely problematic. Moneys are not available to purchase database software. We have modified standard operating procedures (SOPs) in the past two years for most all of the City's operations and maintenance work crews. We have discussed those changes within the SOPs we each of the affected work groups. Part of our training has included going over the CASQA Stormwater Pollution Prevention for Municipal Operations Manual and making sure each work crew had access to one. Surveys issued this past fall queried the work crews on changed behaviors since the training and introduction of the revised SOPs and the CASQA SWPP Manual for Muni Ops. In this regard, the City is making a good faith effort to track and implement stormwater BMPs for municipal operations.

Supervisory oversight along with employees understanding of how to implement stormwater BMPs appear to be functioning. This is affirmed by the fact that there have not been requests to alter the BMPs due to low amounts of material collected from catch basins, drainage inlets and other areas of sediment accumulation.

Assessment Task MO3.1: Conduct a green waste management survey and report on subsequent implementation actions.

The City conducted a greenwaste management survey in the spring of 2007 and drew the following conclusions about how to manage greenwaste in the City:

The City contracted with Godbe Research to conduct a citizen phone survey. The results of the survey indicated that 95% of the respondents were satisfied with the current service and 63% reported they are opposed to the containerization of green waste. Resistance to containerization has to do with the following:

- a perception of increased cost to the Citizens
- a reduction in the ability to deal with large clippings from mature landscaping

The City's primary concerns about containerization of greenwaste have to do with cost and contamination of greenwaste into regular garbage containers, thus increasing the City's solid waste component.

The City has not implemented a container program and continues to collect greenwaste from the public street. Public streets are swept following greenwaste collection once per week. Greenwaste accumulation in drainage inlets has not been observed by maintenance crews to be a significant problem.

The City plans to do another survey in the fall of 2012.

Assessment Task MO3.2: Develop possible revisions to City ordinance.

The City is working on an Integrated Waste Management Strategic Plan which will address green waste collection options (containerization, etc.). The City anticipates presenting it to the City Council in January-February 2013.

Assessment Task MO3.3: Summarize annual outreach and public education efforts.

See Assessment Task MO3.7 below for a summary of annual public education and outreach efforts.

The City will continue to provide these outreach efforts. Staff believes they reach an audience otherwise not tapped. The program has been determined to help reduce solid waste loads to the landfill.

Assessment Task MO3.4: Document the number of citizen complaints regarding green waste management practices.

During FY 2011-2012 the City received eleven complaints regarding yard material piles. These complaints ranged from issues with yard material piles blocking bike lanes, cars parking on top of bike lanes and yard material piles that were illegally placed. The City concludes that the program is well received by the residents of the City.

Assessment Task MO3.5: Tabulate total number of storm drain inlets inspected and cleaned annually. Document the volume of material removed from various stormwater facilities.

The City implemented as part of the 2003 SWMP, a drainage inlet cleaning program inspection form. The City kept records from 2003 to present on inspection of all of the City's drainage inlets. The forms tracked mainly recyclable materials such as plastic bottles, aluminum cans, and glass, but the crews also removed other solids such as paper, green waste, and other discharges. The drainage inlets had solids removed by hand and by vacuum for small particulate matter. The table below provides evidence to support this observation.

	2005-6	2006-7	2007-8	2008-9*	2009-10	2010-11	2011-12
# of DIs Inspected	2,586	2,612	2,442	2,585	2,628	2,975	2,975
# of DIs Cleaned	437	335	26	81	112	677	259

* Estimated

City staff notes anecdotally, that this downward trend in required cleanings of drain inlets remains into 2009-10. However, you will note the number rose in 2010-11, but fell in 2011-12. The City continues to inspect storm drains inlets and clean as necessary. .

The City has concluded that the volume of material removed from drainage inlets reaffirms that the City is implementing an effective set of BMPs for green waste management due to the downward trend in the necessity to clean drainage inlets despite the much higher number in DIs cleaned in 2010-11. The amount of wastes were also down for 2011-12 which continues to reaffirm that the City's street sweeping program is having some measurable success at keeping wastes from entering DIs.

Assessment Task MO3.6: Document the volume of material removed from various stormwater facilities.

City staff documented records of DI inspections and cleaning from 2003 to 2012. The amount of material removed remained about the same during this period until this year when less material was removed. The overall trend shows waste removal from DIs has been steadily reduced, but was substantially reduced after the implementation of the City's curbside container program in 2005 and the regular schedule of street sweeping.

The City believes the current practices to be generally successful. The City is seeing an increasing volume of greenwaste being picked up, while the amount of greenwaste being found in the DIs remains generally insignificant according to Stormwater Maintenance staff. This was the first year maintenance staff weighed and recorded removing miscellaneous material from DIs, which could include green waste. As noted an 48 lbs of total materials were removed from the DIs. We will continue to record this information into the future to establish trends in the data.

Assessment Task MO3.7: Record the number of composting classes and participants.

The table below provides information on the number of classes and participants the City is conducting from fiscal year 2007-8 to 2010-11.

Description	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
# of materials developed	5	9	1*	0	0
# of materials distributed (est.)	9	11	104**	250	250
# of compost classes given	5	8	9***	6	6
# of compost class attendees	80	139	236***	89	59

* One new item for 2009-10, but the other items from previous years where handed out as well. The new items were food waste composting.
** This figure is the total number of compost packets handed out which includes the Worm brochure, compost brochure, grasscycling….etc.
*** These figures include the compost classes plus compost correspondence course

Although it seems that the concept of backyard composting is not very popular, the number of attendees to the classes reflects that to date nearly 4% of all City residents have taken the class. City taught classes are advertised via website, press releases to the Davis Enterprise and fliers posted at the community garden.

All brochures given out as part of the compost correspondence course and at the composting classes as well as composting videos are available on our website:

- http://archive.cityofdavis.org/pw/recycle/pdfs/backyard_composting.pdf
- http://archive.cityofdavis.org/pw/compost/
- http://archive.cityofdavis.org/pw/recycle/pdfs/Worm_Composting_flier_for_web.pdf
- http://archive.cityofdavis.org/pw/recycle/pdfs/grasscycling.pdf
- http://archive.cityofdavis.org/pw/recycle/pdfs/Food_Scrap_Composting.pdf
- Days of Our Piles: Composting 101 (15 minutes)
- As the Worm Turns: Vermicomposting Basics (12 minutes)

City taught classes are advertised via website, press releases to the Davis Enterprise and fliers posted at the community garden. Appendix B, pages 27 - 30 includes a flier posted for classes held in spring 2011 and the handouts given to the classes.

In specific handouts for solid waste reduction in 2011-12 included:

- 48+ composting packets (including a compost booklet, compost flier, worm composting flier and grasscycling flier) were mailed out
- 22+ compost bins were given to residents as part of the composting correspondence course and backyard composting/worm composting classes.
- 3 residents that attended the backyard composting/worm composting classes were given a starter set of composting worms.
- A large number of compost booklets, compost fliers, worm composting fliers, grasscycling fliers were given out at various outreach events such as Celebrate Davis, Coastal Clean-up, Chamber Day on the Quad, and the Davis Farmers Market.

Assessment Task MO4.1: Conduct annual inspections of corporation yards to determine compliance with established BMPs and identify areas/BMPs that can be improved.

During the 2011-12 report period, both yards were inspected. 1717 Fifth Street was inspected three times and 1818 Fifth Street was inspected five times. The City typically inspects the BMP facilities in both yards on a quarterly basis as part of its routine maintenance. The inspections found that the yards were generally in compliance and performed routine maintenance. The City keeps and maintains records of these maintenance and inspections primarily through pictures but also has used an inspection form. Established BMPs are maintained. Areas where BMPs can be improved have been identified as noted in Section 2.5.6.1, but as BMP technologies are improved and therefore adopted into the City's standard practices, these new BMPs would be required to be integrated. Currently, funding for implementation of new technologies is limited and may put implementation outside of staff control.

Assessment Task MO4.2: Implement a supervisory oversight program to verify and document that the BMPs for the corporation yard are being implemented. Document all follow-up actions required.

Work sites are regularly visited by supervisors. BMPs are typically in use. On occasion adjustments to BMPs or requests for additional BMPs are made by inspecting supervisors. Inspections are the mechanism by which BMP's are implemented at the corporation yards. The inspections found no areas of non-compliance.

Assessment Task MO5.1: Maintain records of the amount, date, and location of herbicides, insecticides and pesticides applied by City staff and contractors.

The City continues to maintain records of pesticide usage. The table below provides amount of pesticides used in the City for the past five calendar years.

Open Space Maintenance Documentation	Description	2007-08	2008-09	2009-10	2010-11	2011-12
Herbicides	Treated Area	N/A	N/A	N/A	N/A	N/A
	Total Amount Active Ingredient Applied	416 gal liquid 3,325 lbs granular	187 gal liquid 6,400 lbs granular	136 gal liquid 0 lbs granular	178 gal 337 lbs granular	265 gal 1,170 lbs for granular
Insecticides	Treated Area	N/A	N/A	N/A	N/A	N/A
	Total Amount Active Ingredient Applied	6.4 gal	51 oz	0	0	0
IPM	Total acreage applied	1,736	1,736	1,736	1,736	1,616
Water Quality benefiting plantings	# of projects using native plants implemented?	2	3	3	3	3

By continuing to record pesticide use data, the IPM Coordinator is able to identify high use areas, evaluate the pest problem and test alternative control methods. Such a strategy has helped the City continue an overall reduction in chemical pesticide use. The increase in the use of the granular pre-emergent herbicide in 2011-12 was due to problematic areas where weeds had gone to seed. The pre-emergent herbicide was used to reduce the use of post emergent herbicide. The overall increase of herbicide application was due to a higher than normal precipitation and the increased use of the soap based herbicide Scythe which is used to replace glyphosate based herbicides or used in conjunction to reduce the glyphosate rate. The City is committed to reducing overall use of pesticides and anticipates the trend to continue downward into the future.

Assessment Task MO5.2: Assess measures to reduce pesticide use.

During the report period, the City's IPM Coordinator reviewed herbicides uses and assisted field staff with implementing alternative pest management techniques.

The IPM Coordinator helps staff implement alternative pest control measure as appropriate. Alternative methods used include mechanical (disking, mowing), physical (mulching, solarization, flaming), cultural

(irrigation and tolerance) and diluting some typical pesticides with green organic pesticide applications. Post treatment monitoring helps the IPM coordinator understand the effectiveness of an alternative method as it relates to the particular pest problem at a given location. In many areas, the alternative control methods met the management need just as well, if not better, than the use of chemical control methods.

Assessment Task MO5.3: Record efforts made to determine the types of plants and planting arrangements in open spaces that maximize water quality benefits.

General and specific measures continue within the City to reduce the use of pesticides and reduce the consumption of water. The City has made significant efforts to reduce herbicide use and incorporate native plant species into park and open space landscaping through its IPM program.

The City also adopted in 2012 a Water Conservation Ordinance which requires reductions in overspray, turf areas, and the use of native or drought tolerant species. Plant selection and planting arrangements were review on three projects this year specifically with these elements in mind on landscape plans.

These efforts further the City's goal to reduce pollution in stormwater runoff.

2.5.8.2 Program Effectiveness Assessment Summary

The City accomplished all of the measurable goals and tasks identified for the report year, 2010-2011. **Table 2.5-1** below summarizes the effectiveness assessment that was conducted for the Municipal Operations Program.

2.5 - Municipal Operations Program

Table 2.5-1 Effectiveness Assessment for the Municipal Operations Program

Measureable Goal	Level 1	Level 2	Level 3	Level 4
	Implement Program	**Increase Awareness**	**Behavior Change**	**Load Reduction**
MO1 – Employee Education and Training				
1. Review the Public Works Employee Handbook and identify where it may be revised to include reference to the City's responsibility to implement the SWMP and describe the City departments and/or employee positions responsible for implementing the SWMP.	✓ The City reviewed the Public Works Employee Handbook.	✓ 128 employees attended stormwater training presentations.	F	N/A
2. Develop and implement an environmental training program that includes stormwater issues for City personnel that conduct activities directly or indirectly related to the SWMP.	✓ The City provided training to City personnel.	✓ 13 storm water training presentations made. ✓ 128 employees attended general storm water training presentations.	✓ In 2010-11, 8 incidents where City staff indicated they had changed behavior and implemented SW BMPs in work as a result of training from 2009-10.	N/A
MO2 - Public Infrastructure Operation, Repair and Maintenance				
3. Develop standard practices (with BMP Activity Sheets, if necessary) for additional activities that emphasize: • Graffiti removal activities • Signs, striping and painting activities • Water line maintenance activities.	✓ The City has continued to utilize BMP Activity Sheets	✓ The City modified the standard operating procedures (SOP) of 27 different maintenance activities for the Water and Transportation Divisions of Public Works. ✓ The City created 16 new SOPs for Wastewater and Stormwater Collection Crews. ✓ The City will continue to investigate modifying additional SOPs for additional maintenance Divisions.	F	N/A

Measureable Goal	Level 1 Implement Program	Level 2 Increase Awareness	Level 3 Behavior Change	Level 4 Load Reduction
4. Evaluate inlet inspection and maintenance records. Develop a list of catch basins that have been cleaned, by quadrants of the City. Determine if certain quadrants of the City require more frequent cleaning. Use this data to help prioritize routine maintenance and to focus the public education and outreach program.	✓ The City has evaluated inspection and maintenance records. ✓ The City will continue to implement the program.	✓ Inspected 2,539 DIs ✓ Cleaned 259 DIs	N/A	✓ Removed 18. lbs of recyclable glass, plastic and glass from DIs. ✓ Removed an additional 30 lbs of miscellaneous garbage from DIs.
MO3 - Green Waste Management				
1. Complete the City's evaluation of alternatives of green waste collection and removal. Pending City Council direction, begin to implement recommended alternative by spring of 2007	✓ The City completed the alternatives evaluation of greenwaste collection and removal. The City is currently working on a Solid Waste Strategic Plan that should be completed early 2013.	N/A	N/A	N/A
2. Review and, if necessary, modify the City's Management of Garbage, Other Wastes, Recyclables, and Fees Ordinance to support implementation of the recommended green waste removal alternative by July 2007.	✓ The City reviewed the Ordinance, but did not modify it.	N/A	N/A	N/A

2.5 - Municipal Operations Program

Measureable Goal	Level 1	Level 2	Level 3	Level 4
	Implement Program	Increase Awareness	Behavior Change	Load Reduction
3. Continue to manage and grow an outreach program focusing on how proper handling of green waste can promote water quality	✓ The City developed and distributed outreach material.	✓ The City has developed 16 green waste outreach materials in the past 5 years. These materials where handed out at over 10 separate events resulting in hundreds of people exposed to increase awareness of the green waste and stormwater nexus. ✓ The City provided 6 compost classes with 59 attendees in 2011-12. ✓ The City provided 250 pieces of outreach materials at these classes in 2011-12.	F	N/A

Measureable Goal	Level 1 Implement Program	Level 2 Increase Awareness	Level 3 Behavior Change	Level 4 Load Reduction
4. Continue to promote backyard composting program through workshops, educational articles, or advertisements.	✓ The City continued to promote backyard composting.	✓ The City conducted 6 compost workshops. ✓ 59 people attended these workshops. ✓ 10 separate outreach materials handed out at these workshops. ✓ 250 total handouts at these workshops ✓ 48+ composting packets (including a compost booklet, compost flier, worm composting flier and grasscycling flier) were mailed out ✓ 22+ compost bins were given to residents as part of the composting correspondence course and backyard composting/worm composting classes. ✓ 3 residents that attended the backyard composting/worm composting classes were given a starter set of composting worms.	F	N/A
MO4 – Corporation Yard and Fleet Management				
1. Continue to maintain appropriate BMPs at the City's Corporation Yards	✓ The City continued to utilize BMPs at both corporation yards.	N/A	N/A	N/A
2. Inspect 1717 and 1818 5th Street annually for opportunities to reduce pollutant discharges into the stormwater sewer system and dispose of all waste material	✓ During the Report Period, both corporation yards were inspected a total of 8 times. ✓ Opportunities to reduce pollutants were incorporated into standard practices.	✓ Replaced 6 old higher polluting vehicles with new low pollutant vehicles.	N/A	N/A

Measureable Goal	Level 1 Implement Program	Level 2 Increase Awareness	Level 3 Behavior Change	Level 4 Load Reduction
MO5 - PARKS AND OPEN SPACE MAINTENANCE				
1. Continue to implement the IPM program and policy. Investigate opportunities to expand the program and further reduce pesticide and herbicide use. Review and revise the program as necessary to keep the practices up-to-date and incorporate emerging technology for IPM practices	✓ City staff continued to work with alternative pest control methods including: • green pesticides products • biological controls • mechanical controls • grazing • mulching • sheet mulching • flaming • solarization • flooding	✓ Continuing education credits on March 17, 2012, where about 50 people attended. At the time of the writing of this report, a copy of the agenda and sign in sheet were unable to be located. ✓ Four people from Public Works have renewed their Qualified Applicator Certificates. ✓ Parks has 14 staff with Qualified Applicator Certificates which they renew every two years. ✓ The City's IPM Coordinator conducted two hour IPM training in Spanish for GP and Coast landscaping contractors employees which had 18 attendees.	✓ City staff has steadily reduced in its municipal operations the use of liquid pesticides and dry pesticides from past 5 years.	F

Measureable Goal	Level 1 Implement Program	Level 2 Increase Awareness	Level 3 Behavior Change	Level 4 Load Reduction
2. Coordinate with the Public Education, Outreach, and Participation Program to continue implementing the Residential Pesticide Outreach Program	✓ The City provided public outreach and education on pesticides using several forms of communication. ✓ City staff were educated on weed and pest control techniques and current trends in IPM.	✓ Outreach and education efforts included the following: • City IPM website. • The IPM comic "The Exterminator" • Notification of City herbicide application activities in parks and greenbelts. • Tips & alternatives to pesticide use in the "Focus" newsletters. • Distribution of IPM educational literature at community events. • Presentations on least toxic pest control methods at City gardens. • Pesticide safety training for City field staff. • Attendance at IPM conferences by City staff. • Presentations to Council & commissions. • Encourage local pesticide venders to participate in OWOW program. • Post at locations where alternatives to chemical pest control were in use. • 5 Arboretum Plant Sales attended with outreach information presented on IPM, OWOW and other pollution prevention handouts present.	F	N/A

Measureable Goal	Level 1 Implement Program	Level 2 Increase Awareness	Level 3 Behavior Change	Level 4 Load Reduction
3. Maximize removal of vegetative waste from pruning activities and protect storm drain inlets when practical. Mulch lawn clippings in public spaces.	✓ The City maximized removal of vegetative wastes from pruning.	✓ Trained 30 Parks landscape maintenance staff in storm water BMPs in 2011-12. ✓ Trained 21 landscape maintenance contract staff on storm water BMPs.	✓ Staff & landscape maintenance contractors use drop cloths to contain & remove clippings. ✓ Waste material is swept up or blown into the landscaping. ✓ Tree trimmings chipped & applied to landscaping. ✓ Mulch mowers used to maintain turf at all City facilities.	N/A
4. When possible, use non-fossil fuel burning equipment to conduct vegetation maintenance activities and collection of vegetation waste (e.g., rakes, brooms, battery powered leaf blowers).	✓ The City used non-vehicular equipment to conduct vegetation maintenance on City properties. Rakes and brooms are utilized whenever possible.	✓ City staff trained to use this equipment and be aware of relation to stormwater.	✓ PGS staff increased the use of electric vehicles for park maintenance activities. ✓ Staff used rakes & brooms in the collection of excess green waste.	N/A
5. During open space maintenance and planting activities, use plants and planting arrangements that maximize water quality benefits from the vegetation, when possible	✓ The City continues to use native trees, shrubs, and grasses in all open space restoration projects.	✓ City staff trained and educated in the use of native plants and benefits to stormwater control.	✓ Native plants planted in three City projects, city wide open space, Davis wetlands, and the Bird and Insect Garden in the West Area Pond Greenbelt	F

Measureable Goal	Level 1 Implement Program	Level 2 Increase Awareness	Level 3 Behavior Change	Level 4 Load Reduction
6. Investigate plumbing facilities and activities at municipal swimming pools. Determine appropriate BMPs to be utilized	✓ The City has determined appropriate BMPs to be used at municipal swimming pools.	✓ 3 pool maintenance staff trained in storm water BMPs for operations in 2011-12.	✓ Community pool maintenance staff are directed to divert pool deck wash water into the landscaping when feasible. ✓ All pools discharge water only after de-chlorinating water to less than 0.1mg/L ✓ Staff testing filter devices at the deck drain inlets. Plan to close the Civic Center Pool in 3 to 5 years to eliminate back flush discharge.	F

✓ – An effectiveness assessment was conducted during the reporting period 2010 – 2011
F – An effectiveness assessment may be conducted in future Annual Reports
N/A – This outcome level is not applicable

2.5.9 SWMP MODIFICATIONS

The City's SWMP received final approval from the Regional Water Quality Control Board (RWQCB) on February 18, 2007. Thus, the City's Permit coverage began on that date; however, the SWMP includes Implementation Schedules spanning the time period 2003 to 2008. As a result, the City has updated and modified the Implementation Schedules for each Program Element beginning with the 2007-2008 reporting period (see **Table 2.5-2**). Recent changes in responsibility are also included.

The existing Control Measures in this program element remain unchanged at this time.

Table 2.5-2. Municipal Operation Program Implementation Schedule and Responsible Department/Position

Control Measures and Measurable Goals	Implementation Schedule					Responsible Department/Position					
	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	Environmental Compliance Staff	Public Works	Community Development	Parks	Finance	Other
MO1 Employee Education and Training											
1. Review the Public Works employee handbook and identify where it may be revised to include reference to the City's responsibility to implement the SWMP, and describe the City departments and/or employee positions responsible for implementing the SWMP.						●	●				
2. Develop and implement a Citywide environmental training program that includes stormwater quality issues.						●	◐	◐	◐	◐	
MO2 Public Infrastructure Operation, Repair and Maintenance											
1. Develop standard practices (with BMP Activity Sheets, if necessary) for additional activities. Include subtasks a-c.						◐	●				
2. Evaluate inlet inspection and maintenance records.						◐	●				
MO3– Green Waste Management											
1. Conduct an evaluation of alternative green waste collection and removal alternatives						◐	●				
2. Review and determine if the Management of Garbage, Other Wastes, Recyclables, and Fees Ordinance needs changing.						◐	●				
3. Continue to manage and grow an outreach program focusing on how proper handling of green waste can promote water quality.						◐	●				
4. Continue to promote backyard composting and evaluate the need for changes to the program.						◐	●				

Continuing activity, reviewed or revised as needed throughout implementation

One-time activity to develop or implement a measurable goal

● Individual or department to take lead in the development or implementation of an activity.

◐ Individual or department to provide strong support in the development or implementation of an activity.

◔ Individual or department to review and provide comments and guidance during the development or implementation of an activity.

Table 2.5-2. Municipal Operation Program Implementation Schedule and Responsible Department/Position (cont)

Control Measures and Measurable Goals	Implementation Schedule					Responsible Department/Position					
	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	Environmental Compliance Staff	Public Works	Community Development	Parks	Finance	Other
MO4 Corporation Yard and Fleet Maintenance											
1. Continue to implement site BMPs for employees that operate, maintain and use the City's Corporation Yards at 1717 and 1818 5th Street.	■	■	■	■	■	●	◐		◐		
2. Inspect 1717 and 1818 5th Street annually for opportunities to reduce pollutant discharges into the stormwater sewer system and dispose of all waste material.	■	■	■	■	■	◐			●		
MO5 Parks and Open Space Maintenance											
1. Continue to implement the IPM program and policy.	■	■	■	■	■	◐	●		●		
2. Coordinate with the Public Education, Outreach and Participation Program to continue implementing the Residential Pesticide Outreach Program.	■	■	■	■	■	◐			●		
3. Maximize removal of vegetative waste from pruning and mowing activities and protect storm drain inlets when practical. Collect and dispose/compost lawn clippings from public spaces.	■	■	■	■	■	◐			●		
4. When possible, use non-fossil fuel burning equipment to conduct vegetation maintenance activities and collection of vegetation waste (e.g., rakes, brooms, battery powered leaf blowers).	■	■	■	■	■	◐			●		
5. During open space maintenance and planting activities, use plants and planting arrangements that maximize water quality benefits from the vegetation, when possible.	■	■	■	■	■	◐			●		
6. Investigate plumbing facilities and activities at municipal swimming pool and identify appropriate BMPs		■				◐	●		●		

■ Continuing activity, reviewed or revised as needed throughout implementation
■ One-time activity to develop or implement a measurable goal

● Individual or department to take lead in the development or implementation of an activity.

◐ Individual or department to provide strong support in the development or implementation of an activity.

◔ Individual or department to review and provide comments and guidance during the development or implementation of an activity.

Section 2.6 - Public Education, Outreach and Participation Program

Volunteers at a Davis Stormwater Pond Clean-up Event

Section 2.6 - Public Education, Outreach and Participation Program

2.6.1 OVERVIEW

The Public Education, Outreach, and Participation Program is an essential element of the SWMP. This program element focuses on educating the public and businesses about the impact of stormwater discharges on a water body and what can be done to reduce stormwater pollutants. Through participation, the public can provide valuable input and assistance in program development and implementation. Increased public knowledge and participation result in increased public acceptance and support of the program, and help ensure a successful and effective program to reduce stormwater pollutants.

Elements of the Public Education, Outreach, and Participation Program include:

The distribution of educational material to inform business owners and citizens on ways to minimize stormwater pollution

- Staff participation and availability at public events
- School programs
- Workshops and other educational programs for the business community

Educational material helps citizens to understand their influence and reduce their impact on stormwater quality and encourages them to participate in various municipal programs such as inlet marking and retention pond clean up. In addition to general public education, educational materials for business activities are developed to specifically address business practices that cause stormwater pollution. Such material describes pollution prevention measures that businesses can implement to prevent stormwater pollution.

2.6.2 CONTROL MEASURES

The City has developed several Control Measures and accompanying measureable goals to ensure that the Public Education, Outreach and Participation Program requirements are effectively developed and implemented. For each Control Measure there are accompanying measureable goals which, once accomplished, constitute compliance with the Permit requirements.

The Public Education, Outreach and Participation Program Control Measures consist of the following:

MO	Control Measure
PEOP1	Residential Education and Outreach
PEOP2	Public Participation

The next section of the annual report provides information on the specific tasks that have been initiated and/or completed during the reporting period pursuant to the Public Education, Outreach and Participation Program measurable goals and implementation schedules.

2.6.3 PEOP1 – RESIDENTIAL EDUCATION AND OUTREACH

The purpose of this control measure is to educate residents regarding steps and measures that can be implemented to prevent stormwater pollution.

Existing BMPs and related activities to this control measure are the following:

The City has an extensive education and outreach program. Information regarding stormwater pollution prevention is distributed via the mail, in-store displays, handout materials at public events, and interpretive tours of facilities. The main areas of outreach activities can be categorized into the following categories:

- General City
- Integrated Pest Management

- Solid Waste Reduction/Recycling
- Wildlife Resources
- Stormwater Pollution Prevention

These BMPs and activities are provided in detail in Appendix A-1. Examples for some of these activity documents may be viewed by using the web links where provided):

2.6.3.1 Measurable Goals

Measurable Goal 1: Continue to make presentations on the Davis Wetlands to local school groups. Provide a fact sheet on City activities that address stormwater runoff.

During the 2011-12 report period, Wetlands presentations were given to one elementary school class (25 students), a UC Davis environmental engineering class (80 students), a UC Davis Wildlife Conservation student group (20 students), and a foreign exchange class from Japan (20 students). Presentations are currently available as requested and advertised by announcement at other community outreach events. Methods to advertise such presentations to more schools will continue to be investigated.

Several brochures on residential runoff have been updated and continued to be distributed at wetlands presentations. These brochures specifically address charity carwashes, pool and fountain cleaning, and least toxic pesticide use. See Figure 2.6-1 and Appendix B pages 19-28 for representative samples of these brochures.

Measurable Goal 2: Maintain and update the wetlands website with current stormwater pollution prevention information.

The City developed a website in 2000 when the wetlands area was opened. The website was updated in 2005 and again in 2009 to include the stormwater issues. The City continues to provide a wetlands website that addresses stormwater issues. The website for the wetlands is listed below.

http://public-works.cityofdavis.org/wastewater/the-davis-wetlands

Measurable Goal 3: Investigate using the City's cable television channel to promote the SWMP through a public service announcement about stormwater issues and water quality to be aired prior to the wet season.

The City's cable television channel is available for broadcasting water quality messages. During the 2011-12 report period, the station ran one video documentary related to stormwater pollution prevention. The video, "Salt of the Earth", was aired twice during October 2011 and 4 times in March 2012. This video covers the growing salinity issue in the Central Valley's waters. The City estimates that 1/3 of Davis households (8,500 residences) regularly view the government channel.

In addition, a slide of the OWOW program is run daily year round on the channel.

Measurable Goal 4: Evaluate issuing an annual Utility Report to the public in combination with the City's Focus newsletter. If determined feasible, issue Utility Report annually.

Program staff believes that the existing Utility Connection mailer, in addition to the other outreach periodicals currently employed, are well suited to carry water quality outreach messages to the City's population. This newsletter used to be distributed annually to the over 33,000 postal addresses and boxes in Davis. The last newsletter that was distributed was in the summer of 2009. It is unknown when the newsletter will be revised and mailed. The newsletter can be viewed by using the link provided below.

http://public-works.cityofdavis.org/Media/PublicWorks/Documents/PDF/PW/Water/Utilities/utilityconnection-summer-2009.pdf

Measurable Goal 5: Continue to implement the Residential Pesticide Outreach Program.

City outreach efforts involve the following:

1. The City continues to distribute information on alternative pest control methods at public events and via periodical newsletters that go out to utilities customers.
2. The City IPM Coordinator has established community volunteer events and pesticide free park and greenbelt demonstration areas to show the public how to reduce reliance on chemical pesticides and fertilizers (see "existing BMPs and Related Activities" above).
3. The Solid Waste program provides Backyard Composting classes to residents.
4. The Barn Owl Nest Box program continues to be a great success in engaging the community regarding alternative pesticide control methods. See Trifold, Appendix B, page 27.
5. The Our Water Our World (OWOW) program has been implemented at the 3 main pesticide retailers (see "existing BMPs and Related Activities" above).
6. The City has implemented the Partners for a Greener Davis green business program that also provides outreach on alternative pest control methods.
7. The City's existing Healthy Garden Program is outdated and was replaced in September 2009 by the OWOW and Partners for a Greener Davis programs. (see CI1).

Measurable Goal 6: Continue to participate in public events held in the City to promote the SWMP.

The City participated in the following public events with the approximate number of participants listed for events during the 2011-12 report period:

- The City's OWOW consultant and Wildlife Resource Specialist staffed a booth at California Duck Days festival (360 participants). IPM, Wetlands, hazardous material disposal, and composting outreach materials were distributed.
- Solid Waste program employees led six Backyard Composting Classes (89 participants).
- The City's Wildlife, IPM and Solid Waste program employees staffed a booth at Celebrate Davis (2,000+ participants). IPM, Wetlands, and composting and Partners for a Greener Davis outreach materials were distributed.
- Stormwater, Solid Waste, and Bicycle/ Pedestrian program employees staffed a booth at the Chamber on the Quad event (1,000+ students). IPM, Wetlands, composting, and alternative transportation and Partners for a Greener Davis outreach materials were distributed.
- The Bicycle/ Pedestrian program staffed a booth at the Tour of California stage start in down town Davis (1,000+ participants). Information on alternative transportation was distributed.
- The Wildlife and Solid Waste program staffed a table at a Farmer's Market (100 participants). IPM, Wetlands, composting and Partners for a Greener Davis outreach materials were distributed.
- Stormwater and Solid Waste programs led site activities. Coastal Cleanup Day stormwater pond cleanup (140 participants). Staff handed out written materials and gave verbal presentations on stormwater pollution prevention, IPM, waste reduction, and proper hazardous material disposal.
- Stormwater, IPM, Wildlife Resources, and Solid Waste programs had representation at three UCD Arboretum Plant Sales where staff handed out written materials and provided verbal responses to these programs. Several hundred people attended this event.

Measurable Goal 7: Develop a stormwater quality display that includes brochures, pamphlets, and other outreach material regarding the SWMP. The display could include diagrams, pictures, computer program or model that illustrates the concerns and potential environmental impacts that could be caused by urban runoff.

The City uses a variety of pollution prevention education and outreach materials, including brochures, pamphlets, fact sheets, sample products, entomological and ornithological study specimens, video, maps, and posters. Figure 2.6.1 is one such example. Such material is displayed in racks and on tables as

Figure 2.6-1 - Storm Drain Brochure

Home and Garden Activities¶

- Consider using less toxic chemical and methods for plant care and insect control. For guidance go to this link http://www.ourwaterourworld.org/factsheets.cfm. If you must use pesticides or fertilizers, do so carefully and sparingly. Follow label instructions. Do not apply if rain is expected since stormwater will carry these substances into the watershed. Dispose of unused products at Household Hazardous Waste Turn-in Events. ¶
- Compost yards clippings or place them in a pile on the street no sooner than the day before pick up day. Use a broom to clean off sidewalks and driveways. Be sure the pile is a foot or more away from the gutter to allow for water passage.¶
- Pick up and dispose of animal wastes in garbage containers. If you take your pet to a park, bring a bag and be prepared to clean up after them.¶
- Consider washing pets in the bathtub rather than outside. If you must wash your pet outside, use non-toxic cleaners and dump wastewater into sink, or grass so that residues can be filtered out.¶
- Properly store all toxic products including cleaners, solvents, and paint. Use kitty litter or other absorbent material to clean spills. Always clean painting tools in the sink. Take unused materials to a Household Hazardous Waste Turn-in Event.¶

For more information on recycling, composting, or hazardous waste disposal contact:¶

Richard Tsai, ----------
Recycling Coordinator (Ext. 7559)¶

For more pollution prevention solutions, like to participate in California Coastal Cleanup Day, and less toxic practices please call:¶

Jack Betourne¶
Environmental Compliance Coordinator¶
at 757-5638, or visit our web site at http://www.city.davis.ca.us/pw/ppp/intro.cfm¶
¶

¶

Remember, it is against the law to dump toxic substances into the storm drain system. If you see anyone dumping questionable materials, please call 911. ¶

Stormwater pollution is extremely harmful to the health of an abundance of plants and animals with who we share this planet. **Help us to protect your water resources for current and future generations.¶**

PLEASE KEEP OUR WATERSHED CLEAN!!¶

Printed on 100% Recycled, 100% Post Consumer, Unbleached Paper¶

¶

CITY OF DAVIS¶

STORM DRAIN MARKING PROGRAM¶

RAINWATER ONLY DRAINS TO WETLANDS

¶

Davis California ¶

¶

Pollution Prevention ¶
Starts at Home

Figure 2.6-1 - Storm Drain Brochure (cont.)

A WORD ABOUT WATER

What happens to water from rains, lawn watering, or car washing? These waters, referred to as stormwater or urban runoff, flow into the city's storm drain system through over 2500 curbside catch basins – small openings that you find along street gutters. These waters move through the system to our rivers, creeks, wetlands, sloughs, the delta and bay, on the way to the ocean.

Upon entering the catch basins, the runoff is transported via an intricate system of storm drain piping below our streets. Initially, these waters fill the stormwater detention/wildlife ponds. The North Area, West Area, and Core Area ponds are a few that you may have visited. These ponds are landscaped to support an array of wildlife species. From the ponds, water flows through conveyance channels towards the northern and eastern edges of the city.

A large portion of the stormwater that is collected in the city is conveyed to the Davis Wetlands where it's used to support the wetlands system and all its wild inhabitants.

PROTECT OUR WETLANDS

It's important to ensure that the water entering our ponds and wetlands is safe for wildlife. This is why toxic materials may not legally be dumped into curbside catch basins. Water quality is compromised when people dump used motor oil, antifreeze, paint products, pesticides, pet wastes, or other pollutants into catch basins. This, in turn, threatens the health of wildlife that is dependent on the ponds and wetlands habitat.

Tours of the Davis Wetlands are offered the first Saturday of the month. Call the Yolo Basin Foundation for more information: 757-4828.

The City is, therefore, working to remind everyone about the importance of preventing pollution of our stormwater by installing drain inlet markers with these words:

STORMWATER ONLY

DRAINS TO WETLANDS

These markers are easy to install. So if you, your group, or organization would like to participate in this pollution awareness program, please contact City of Davis Public Works at 757-5686.

HELPING FROM HOME

Automotive Care:

- Home auto mechanics – when you change your oil or antifreeze, collect used fluids and take to either Davis Waste Removal, 756-4646, or to a Household Hazardous Waste Turn-in Event at the Yolo County Landfill, 666-8729.
- Maintain your vehicle to avoid leaks of oil, antifreeze, or other liquids. Use a drip pan where appropriate.
- Take your car to a car wash or wash it on your lawn. Use a shut off nozzle to save water and be sure to pour your soapy water down the sink.

DID YOU KNOW!?

Dumping one quart of motor oil down a storm drain contaminates 250,000 gallons of water!!

appropriate to the outreach venue and audience. Displaying outreach materials in this fashion allows for audience specific tailoring. Staff finds that this display tailoring, in addition to personal interface/ demonstration, creates a much more powerful interpretive environment versus a static display.

In November 2010, Public Works launched an official webpage for Stormwater. The page has a large variety of information related to pending legislation, regulations, informational resources, FAQ sheets and other general stormwater related information, including cross links to the other City pollution prevention programs. The webpage received a total of 1,327 hits by viewers during the 2010-11 report period and 2,839 views in 2011-12. See the web link below to view the City's Stormwater page. The page was restructured in the spring of 2012 and the City launched a new webpage in the summer of 2012.

http://public-works.cityofdavis.org/stormwater

Measurable Goal 8: Continue to maintain the graffiti hotline and Citizen Response Manager to facilitate public reporting of stormwater pollution hazards.

The hotline remained operational during the 2011-12 report period. Due to restructuring of some departments in the City, the number calls were for this report period are unknown, but remain being reported to the hotline during the report period. All calls were responded to by staff. All graffiti incidents were cleaned either by staff and mostly neighborhood volunteers if public property or in the case of private property the property owners were notified to clean the graffiti. In the next report period the Police Department will be tracking these calls and will record the number of incidents received.

Program staff evaluated the possibility of expanding the use of the hotline for public reporting of illegal dumping and illicit discharging. It was determined that the City's Citizen Response Manager was more efficient and effective at encouraging reporting of such events, via online reporting. The system forwards the incident to the appropriate staff from the City Manager's Office, and provides positive follow up with the citizen. The web link for the Citizen Response Manager is the following:

http://cityofdavis.org/citizen-request-form

2.6.4 PEOP2 – Public Participation

The purpose of this control measure is to promote public participation in the development, implementation, and review of the SWMP.

Existing BMPs and related activities to this control measure are the following:

- The City complies with all state and local public notice requirements for the adoption of public plans or policies to be implemented by the City.
- The Natural Resources Commission (NRC) holds public meetings to review, comment on, and make recommendations to the City Council regarding various projects that require environmental review.
- The City conducts public workshops on composting and vermiculture (see PEOP1).
- The Partners for a Greener Davis program (see CI1) was developed with input from the Davis Chamber of Commerce and Davis Downtown Business Association.
- The City recruits and utilizes community volunteers to participate stormwater detention pond clean up event (see PEOP1). Both projects have a direct link to stormwater quality in both purpose and physical setting. These projects are a great venue to provide the community and businesses with pollution prevention information.
- Several volunteer organizations are active in the Davis community and engaged in water quality projects:
    - Friends of the West Area Pond – A neighborhood volunteer group comprised of over 150 community members who contribute a significant amount of time to the maintenance and improvement of the West Area Pond stormwater detention basin.
    - Sierra Club, Yoloano Group – organizes field trips and environmental events

- Explorit Science Center – develops hands-on science programs and exhibits for children, including water quality focused exhibits.
- Yolo Basin Foundation – focuses on wetlands and wildlife, publishes newsletter, sponsors environmental field trips at the Davis Wetlands and local Yolo Wildlife Area, and produces the California Duck Days event. This group also facilitates the Davis Wetlands Docent program. Support funding was provided to this organization by the City's Stormwater Program.
- TREE Davis – supports an urban reforestation and tree planting program. TREE Davis volunteers plant trees and conducts outreach to educate the public that trees, among other things, mitigate stormwater runoff. The City Arborist is a Board member.
- Putah Creek Council – publishes newsletter and conducts monthly talks and events related to Putah Creek. The City's Wildlife Resource Specialist is a Board member.
- Norwood 4H Club – participates in various community volunteer activities.
- Girl and Boy Scouts of American – Local troops participate in annual basin clean up events, build barn owl nest boxes for the City's Barn Owl Nest Box program (see PEOP1), build bat boxes, and are very active in the Herb Garden Demonstration project.
- Riparian Improvement Organization – conducts habitat restoration and stream monitoring projects, storm drain marking, and supports annual litter cleanups at various storm drainage ponds.
- UC Davis Wild Campus – supports the creation of urban wildlife habitat on campus and the surrounding community. Offers community education and outreach geared toward building barn owl and bat boxes.

For additional outreach activities the City is involved in see Appendix B pages B-6 - 9.

Measurable Goal 1: Present a summary of the program assessment and proposed program changes to the NRC annually.

During the SWO adoption the process the NRC received an informal briefing on the Stormwater Program. A formal summary of the program has not yet been presented to the NRC. Staff has planned to provide a summary of the program with review of Stormwater Ordinance. It is anticipated this will occur in the 2012-13 report period as the NRC has asked for a staff report on the effects of revisions to the Small MS4 General Permit upon the City's discharge.

Measurable Goal 2: Continue interactive relationships with several volunteer organizations active in the City.

The City interacts will multiple local volunteer organizations on projects and activities that promote the implementation of the SWMP. During the 2011-12 report period, the City collaborated with multiple local volunteer organizations on the following projects:

- Putah Creek clean up,
- wetland tours,
- barn owl nest box and bat box construction and installation, and
- Stormwater detention pond/ channel cleanup

These local volunteer organizations included:

- The Putah Creek Council
- Yolo Basin Foundation
- Boy and Girl Scouts
- Riparian Improvement Organization and Tree Davis
- Friends of the West Area Pond

- several local church groups
- UC Davis Wild Campus and other student volunteer groups

2.6.5 EFFECTIVENESS ASSESSMENT OF PUBLIC EDUCATION, OUTREACH AND PARTICPATION PROGRAM

Effectiveness assessment is a fundamental component for developing and implementing successful stormwater programs. Outcome levels help to categorize and describe the desired results of the Program Elements and related Control Measures.

In order to determine the effectiveness of the Public Education and Outreach Program, an assessment of the program data is conducted as a part of the annual report. The results of this assessment are used to identify modifications that need to be made to the program. By conducting these assessments and modifying the program as needed, the City ensures that the iterative process is used as an effective management tool.

Effectiveness is determined through a series of Assessment Tasks as identified in the SWMP.

2.6.5.1 Assessment Tasks

Assessment Tasks - Control Measure PEOP1: Residential Education and Outreach

Assessment Task PEOP1.1 - Continue using assessment tools developed for the OWOW, Wetlands and Partners for a Greener Davis outreach programs

The Healthy Garden Program is outdated and has been replaced with the OWOW and Partners for a Greener Davis programs. The number of participants in the Wetlands outreach program was recorded as noted in PEOP1, Measurable Goal 1.

During the report period, 1,673 people participated in the wetlands outreach program. Of those people only 125 (local school students) can be confirmed as Davis residents. It is assumed that a majority of the 1,673 participants in the Wetlands Docent Tour program were also Davis residents, but the exact number is unknown. The City will continue to evaluate the possibility of capturing more accurate resident participation data.

The Partners for a Greener Davis Program was implemented during the 2009-10 report period. Since its release, a total of nine businesses have become certified members of the program. Four of these are office/ retail businesses, one food market, the cemetery and three are restaurants. The program includes a full array of stormwater pollution prevention practices. The City anticipates pushing to expand the program in the next report period, and continue to recruit participating businesses.

Assessment Task PEOP1.2 - Record the number of calls and reports received through the graffiti hotline, Citizen Response Manager and direct reporting.

The graffiti hotline and Citizen Response Manager continue to provide public reports of graffiti incidents. Despite this, the number of graffiti incidents has remained consistent over the last several years. The City continues to provide a valuable educational and outreach program. It is difficult to assess overall effectiveness as quantifiable. However, the educational presentations and materials are well received by target groups.

Assessment Task PEOP2.1 - Maintain a record of the number of public workshops, committees, or other public forums held to address SWMP-related issues. Include pertinent information, e.g. date held, number in attendance, special interest groups attending, etc.

For the 2009-10 and 2010-11 report periods public workshops held where the following:

- Integrated pest management – see Section 2.5.7 Measurable Goal 2 for a summary outline of the workshops and presentations held.
- Our Water Our World – see Section 2.5.7 Measurable Goal 2 for a summary outline of the workshops and presentations held.

- Composting classes – see Section 2.5.5 Measurable Goal 3 and 4 for the details of the classes.
- Wildlife Resources – see Section 2.6.3, Measurable Goal 1 for details of events and presentations attended by the City's program staff.
- The City co-sponsored a pre-wet season stormwater workshop in Vacaville in October 2009.
- Other events: See Section 2.6.3 – Measurable Goal 6 for an outline of events.
- Committees: the Stormwater Coordination Committee which is a committee formed and attended by the communities of Yolo and Solano Counties. The list of committee members includes the Cities of Vacaville, Woodland, Davis, West Sacramento, Dixon, Winters, UC Davis, and the Counties of Yolo and Solano. The committee meets once per quarter and has met six times in the past two years. See Appendix B, pages 43-45 for copies of the agendas.

2.6.5.2 Program Effectiveness Assessment Summary

The City accomplished most of the measurable goals but none of the tasks identified for the 2008-9 reporting period, primarily attributed to the lack of a Stormwater Coordinator on staff. Staff has provided other accomplishment related to the Public Education and Outreach Program in **Table 2.6-1**.

Table 2.6-1 Effectiveness Assessment for the Public Education, Outreach & Participation Program

Measureable Goal	Level 1	Level 2	Level 3	Level 4
	Implement Program	Increase Awareness	Behavior Change	Load Reduction
PEOP1 – Residential Education and Outreach				
1. Continue to make presentations on the wetlands to local school groups. Provide a fact sheet on City activities that address stormwater runoff.	✓ The City made presentations to local school groups with fact sheets on stormwater runoff and wetlands.	✓ Via water conservation & pollution prevention outreach to school age children, staff assumes 80 – 90% of K-12 students understand the concept that pollution impacts water quality.	N/A	N/A
2. Maintain and update the wetlands website with current stormwater pollution prevention information.	✓ The City developed a website for wetlands with stormwater issues with links to the SWMP in 2005.	✓ Verbal polling of wetlands outreach participants shows that 50% of participants are aware that the sanitary & stormwater systems are treated independently.	F	N/A

Measureable Goal	Level 1	Level 2	Level 3	Level 4
	Implement Program	Increase Awareness	Behavior Change	Load Reduction
3. Investigate using the City's cable television channel to promote the SWMP through a public service announcement about stormwater issues and water quality to be aired prior to the wet season.	✓ During the 2011-12 report period, the station ran one video documentary related to stormwater pollution prevention twice. ✓ Continual running of the OWOW program slide.	✓ Estimated 8,500 residences exposed to documentary. ✓ Same number estimated to be exposed to the OWOW program slide.	N/A	N/A
4. Evaluate issuing an annual Utility Report to the public in combination with the City's Focus newsletter. If determined feasible, issue Utility Report annually.	✓ Program staff believes that the existing Utility Connection mailer, with the other outreach current periodicals employed, is adequate to carry water quality outreach messages to the City's population.	✓ 50,000 City wide utility & program newsletters distributed. ✓ The annual newsletter distributed to 33,000 postal addresses and boxes in Davis, annually	N/A	N/A

Measureable Goal	Level 1 Implement Program	Level 2 Increase Awareness	Level 3 Behavior Change	Level 4 Load Reduction
5. Continue to implement the Residential Pesticide Outreach Program.	✓ The City continued to distribute information on alternative pest control methods at public events & via periodical newsletters to utilities customers. ✓ The City IPM Coordinator has established community volunteer events & pesticide free park & greenbelt demonstration areas to show the public how to reduce reliance on chemical pesticides & fertilizers. ✓ The Barn owl Nest Box program has been a great success in engaging the community alternative pesticide control methods. ✓ The Our Water Our World (OWOW) program implemented at 3 pesticide retailers. ✓ The City is in the process of implementing the Partners for a Greener Davis program that also provides outreach on alternative pest control methods. ✓ The existing Healthy Garden Program was replaced in September 2009 by the OWOW & Partners for a Greener Davis programs. ✓ Outreach strategy developed.	✓ An estimated 2,000 pollution prevention related brochures distributed annually. ✓ An estimated 1,500 OWOW fact sheets distributed. ✓ 7 community events attended by program staff outreaching to 4,700+ participants.	✓ Feed back from local pesticide retailers participating in the OWOW program suggests a 10% increase in the purchase of less toxic pesticides. ✓ 9 businesses have been certified as Partners for a Greener Davis	✓ Outreach efforts to businesses & residents, results, lead staff to estimate that: • 415 lbs of gross pollutants were removed from the stormwater detention basins, • An estimated 10 gallons of pesticides were kept from running off into the storm drains.
6. Continue to participate in public events held in the City to promote the SWMP.	✓ The City participated in the 14 public events with approximately 5,000 participants attending all events during the 2010-11 reporting period.	✓ Approximately 5,000 participants exposed to stormwater materials at promotional events.	N/A	N/A

Measureable Goal	Level 1	Level 2	Level 3	Level 4
	Implement Program	Increase Awareness	Behavior Change	Load Reduction
7. Develop a stormwater quality display that includes brochures, pamphlets, and other outreach material regarding the SWMP. The display could include diagrams, pictures, computer program or model that illustrates the concerns and potential environmental impacts that could be caused by urban runoff.	✓ The City displays a variety of pollution prevention education and outreach materials, including brochures, pamphlets, fact sheets, sample products, entomological and ornithological study specimens, video, maps, and posters in racks and on tables as appropriate to the outreach venue and audience. ✓ The City introduced its first separate stormwater webpage.	✓ 2,839 hits by viewers of the stormwater webpages during the 2011-12 report period	F	N/A
8. Continue to maintain the graffiti hotline and Citizen Response Manager to facilitate public reporting of stormwater pollution hazards.	✓ The graffiti hotline was maintained and the evaluation for expansion was performed. The determination was made that the current process was sufficient.	✓ Graffiti hotline is posted on City's webpage.	✓ Calls continued to be received in 2011-12. ✓ An unknown number of calls were received in 2011-12. These will be tracked again in for 2012-13	N/A
PEOP2 – Public Participation				
1. Present a summary of the program assessment and proposed program changes to the NRC annually.	Summary of program assessment not completed. Assessment will be completed in 2013.	N/A	N/A	N/A
2. Continue interactive relationships with several volunteer organizations active in the City.	✓ The City maintained interactive relationships with local volunteer organizations,	✓ 10 community volunteer groups partnered with.	F	N/A

✓ – An effectiveness assessment was conducted during the reporting period 2010 – 2011
F – An effectiveness assessment may be conducted in future Annual Reports
N/A – This outcome level is not applicable

2.6.6 SWMP MODIFICATIONS

The City's SWMP received final approval from the Regional Water Quality Control Board (RWQCB) on February 18, 2007. Thus, the City's Permit coverage began on that date; however, the SWMP includes Implementation Schedules spanning the time period 2003 to 2008. As a result, the City has updated and modified the Implementation Schedules for each Program Element beginning with the 2007-2008 reporting period (see **Table 2.6-2**). Recent changes in responsibility are also included.

Section 2.6 - Public Education, Outreach and Participation Program

The revised Implementation Schedules serve as the annual work plan for the upcoming reporting period. Proposed program modifications were made to the Public Education and Outreach Program during the 2008-2009 report period and were also noted in the 2008-2009 Annual Report. For this element there are no changes in responsibility or revisions to the Implementation Schedule.

Section 2.6 - Public Education, Outreach and Participation Program

Table 2.6-2 Public Education, Outreach and Participation Program Implementation Schedule and Responsible Department/Position

Control Measures and Measurable Goals	Implementation Schedule					Responsible Department/Position					
	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	Environmental Compliance Staff	Public Works	Community Development	Parks	Finance	Other
PEOP1 Public Education and Outreach											
1. Continue to make presentations on the wetlands to local school groups.	▒	▒	▒	▒	▒	◐	●				
2. Develop a web site for the wetlands with stormwater issues. Add a link to download SWMP documents.	■					◐	●				●
3. Investigate using the City's cable television channel to promote the SWMP	■					●	◐				
4. Evaluate issuing an annual Utility Report to the public in combination with the City Focus newsletter. If determined feasible, issue Utility Report annually.	■	▒	▒	▒	▒	●	◔	◔	◔		
5. Continue to implement the Residential Pesticide Outreach Program.	▒	▒	▒	▒	▒	◐	●		◐		
6. Continue to participate in public events in the City to promote the SWMP.	▒	▒	▒	▒	▒	●	●		◔		
7. Develop a stormwater display for use at public events.		■				●	●		◔		
8. Maintain the graffiti hotline. Consider expanding the use of the hotline to allow residents and businesses to report illegal dumping, illicit connections, or other activities that they believe may have adverse impact on the environment..		■	▒	▒	▒	◐	●				
PEOP2 Public Participation											
1. Present a summary of the program assessment and proposed program changes to the NRC annually.			▒	▒	▒	●	◐	◐	◐		◐
2. Continue interactive relationships with several of the volunteer organizations active in the City	▒	▒	▒	▒	▒	●	◐	◐	◐		◐

▒ Continuing activity, reviewed or revised as needed throughout implementation

■ One-time activity to develop or implement a measurable goal

● Individual or department to take lead in the development or implementation of an activity.

◐ Individual or department to provide strong support in the development or implementation of an activity.

◔ Individual or department to review and provide comments and guidance during the development or implementation of an activity.

Section 2.7 - Public Agency Legal Authority Program

Joint City Council and Planning Commission Meeting

2.7 - Public Agency Legal Authority Program

2.7.1 OVERVIEW

Adequate legal authority through ordinances and other mechanisms are essential to the success and implementation of the SWMP and to meet the intent of the Small MS4 General Permit.

2.7.2 CONTROL MEASURES

The City has developed several Control Measures and accompanying measureable goals to ensure that the Public Agency Legal Authority Program requirements are effectively developed and implemented. For each Control Measure there are accompanying measureable goals which, once accomplished, constitute compliance with the Permit requirements.

The Public Agency Legal Authority Program Control Measures consists of the following:

MO	Control Measure
PALA1	General Plan Action Items
PALA2	Legal Authority Review

The next section of the annual report provides information on the specific tasks that have been initiated and/or completed during the reporting period pursuant to the Public Agency Legal Authority Program measurable goals and implementation schedules.

2.7.3 PALA1 – General Plan Action Items

This Control Measure specifies that the City review the May 2001 City of Davis General Plan for action items that relate to stormwater quality issues and developing a plan to implement the items.

Existing BMPs and related activities to this Control Measure are the following:

- The City's General Plan has policy statements and action items related to stormwater quality. City staff is required to implement the Plan's action items. An implementation schedule was not developed for these action items. The current General Plan expires was extended to June 30, 2013. The City has until then to implement these action items or extend the plan.

2.7.3.1 Measurable Goals

Measurable Goal 1: Review and provide an assessment of the City's General Plan action items related to the SWMP and draft an implementation plan for reporting period 2010-11.

Staff reviewed the action items contained in the General Plan during the 2009-10 report period. Where applicable, staff has identified those items which are applicable to the SWMP. Staff prepared a table which shows the status and implementation plan for action items which are SWMP-related items that have not yet been accomplished. This table has been updated where applicable for 2011-12. See Appendix B pages 65 - 84 for the table. Of the 97 action items having some association with storm water quality, the City has completed or on-going implementation of 79 action items. The remaining 22 are in process or will be completed by 2013 unless otherwise specified. For 2011-12, the City completed 10 more of these action items.

2.7.4 PALA2 – Legal Authority Review

This Control Measure specifies that the City assess existing legal authorities as needed during SWMP implementation to ensure continued adequate authority to enforce the SWMP and develop new or revise authorities as necessary.

This Control Measure includes the development and adoption of a Stormwater Management and Discharge Control Ordinance, which would include provisions specifically related to the implementation and enforcement of the SWMP.

2.7 - Public Agency Legal Authority Program

Existing BMPs and related activities to this Control Measure are the following:

- The City currently utilizes the following City regulations to help ensure that requirements in the SWMP are met. Code enforcement actions are possible through application of any of the Municipal Code Chapters below:
  - Municipal Code Chapter 8 – Buildings including Grading, Drainage, and Flood Control
  - Municipal Code Chapter 23 – Nuisance Abatement
  - Municipal Code Chapter 25 – Streets and Sidewalks
  - Municipal Code Chapter 27 – Parks and Open Spaces
  - Municipal Code Chapter 30 – Stormwater Management and Discharge Control
  - Municipal Code Chapter 33 – Sewers and Sewage Disposal
  - Municipal Code Chapter 37 - Subdivisions
  - Municipal Code Chapter 39 - Water
  - Municipal Code Chapter 40 - Zoning Ordinance
  - Municipal Code Article 40.42 - Water Efficient Landscaping
- The City also uses the following State and Federal regulations to ensure the requirements of the SWMP are met.
  - Cal Green Code
  - CEQA process and development of Conditions of Approval and CEQA Mitigation Measures
  - Clean Water Act (in specific CFR 403)
  - Development Agreements
  - Engineering Standards Specifications and Design Standards
  - Improvement Agreements
  - Uniform Building Code
- Yolo County District Attorney's Office, Environmental Prosecutions Unit, prosecutes environmental crimes and brings environmental civil suits to enforce environmental laws and regulations. Officers investigate reports from the public or public agencies (Department of Fish and Game, Yolo County Health Department) that environmental regulations are being broken.
- Construction projects disturbing greater than one acre of land (or part of a larger development plan that will disturb greater than one acre) are required to obtain coverage under a statewide General Permit for Discharges of Storm Waters Associated with Construction Activities.

2.7.4.1 Measurable Goals

Measurable Goal 1: Evaluate the need for a Stormwater Sewer Ordinance that will incorporate issues addressing stormwater quality as well as other drainage issues in the City. If needed, develop and adopt a Stormwater Sewer Ordinance.

In 2007, the City concluded that a new ordinance is needed in order to more clearly communicate the City's authority to implement and enforce the statewide MS4 permit and the approved SWMP. The City adopted the SWO on June 13, 2012. The City anticipates revising its SWO following completion of the revisions to the Small MS4 General Permit.

Measurable Goal 2: Revise existing City Code and other legal authorities as needed to ensure continued implementation and enforcement of the SWMP according to requirements in the MS4 Permit for illicit discharges, illegal dumping, land development review, construction and post-construction

stormwater BMPs. Include requirements for long-term maintenance and operation of permanent stormwater BMPs.

After a review of existing City Code as listed in Measurable Goal 1 above, City staff found that current Code adequately addresses all stormwater program requirements. The City will revise the current SWO to reflect the revisions to the Small MS4 General Permit once adopted by the State.

Measurable Goal 3: Review and revise, as necessary, implementing code compliance enforcement techniques, such as issuance of citations or notices of noncompliance, for inspectors to implement. Include enforcement authority for violations of long-term maintenance agreements.

The City has a code enforcement system in place with the SWO. The SWO provides the City with the necessary police power to implement code compliance enforcement. Currently, the City works with any dischargers that if finds in violation of the requirements of the State's Phase II General Permit. The City has issued 5 code enforcement letters in the past two report periods, but had no incidents during the 2011-12 report period which required a letter to follow up on illicit discharges of any type. Thus far, no problems have gone un-rectified. These letters would be similar to a Notice of Violation, but intended to create awareness about discharging pollutants into the City's stormwater collection system. In the event that a discharger was non-responsive and did not cease activities, then the City would escalate code enforcement, such as a letter, issuing an NOV, and assessment of fines or more. Using this method consistently, the City has found most property owners to be agreeable.

Measurable Goal 4: Train staff in new ordinances or other legal authorities when needed.

Appropriate City staff have been trained in the requirements of the SWO during 2011-12. Development review staff has been aware of the requirements of the SWO for the past three years since the SWO only enforces the requirements contained within the Phase II General Permit. Additionally, O and M staff have been trained this year on the requirements of the SWO during training in April and May. When the revisions to the Small MS4 General Permit are completed, City staff will be trained within six months of adoption.

2.7.5 EFFECTIVENESS ASSESSMENT OF PUBLIC AGENCY LEGAL AUTHORITY PROGRAM

Effectiveness assessment is a fundamental component for developing and implementing successful stormwater programs. Outcome levels help to categorize and describe the desired results of the Program Elements and related Control Measures.

In order to determine the effectiveness of the Public Agency Legal Authority Program, an assessment of the program data is conducted as a part of the annual report. The results of this assessment are used to identify modifications that need to be made to the program. By conducting these assessments and modifying the program as needed, the City ensures that the iterative process is used as an effective management tool. Effectiveness is determined through a series of Assessment Tasks as identified in the SWMP.

2.7.5.1 Assessment Tasks

Assessment Task PALA1: Maintain a record of the action items being addressed, when and how the action was taken.

The City will maintain a record of the action items being addressed once Measureable Goal 1 has been completed. The City anticipates that this tracking will begin developed and initial measurements made the six month period following staff training.

Assessment Task PALA2: Evaluate the effectiveness of this Control Measure by assessing the status of the completion of the Measurable Goals.

The statuses of the Measureable Goals are summarized in the following section.

2.7.5.2 Program Effectiveness Assessment Summary

The Stormwater Management and Discharge Control Ordinance is the most pivotal component of this Control Measure. **Table 2.7-1** below summarizes the effectiveness assessment that was conducted for the Public Agency Legal Authority Program.

Table 2.7-1 Effectiveness Assessment for the Public Agency Legal Authority Program

Measureable Goal	Level 1	Level 2	Level 3	Level 4
	Implement Program	Increase Awareness	Behavior Change	Load Reduction
PALA1 – General Plan Action Items				
1. Review and provide assessment of City's General Plan action items related to stormwater and compliance and draft implementation plan for reporting period 2009-10.	✓ Completed review of the GP and established an implementation plan.	N/A	N/A	N/A
PALA2 – Legal Authority Review				
1. Evaluate the need for a Stormwater Sewer Ordinance that will incorporate issues addressing stormwater quality as well as other drainage issues in the City. If needed, develop and adopt a Stormwater Sewer Ordinance.	✓ Evaluation completed	N/A	N/A	N/A
2. Revise existing City Code and other legal authorities as needed to ensure continued implementation and enforcement of the SWMP according to requirements in the MS4 Permit for illicit discharges, illegal dumping, land development review, construction and post-construction stormwater BMPs.	✓ Revisions completed.	✓ Staff trained.	N/A	N/A
3. Review and revise, as necessary, implementing code compliance enforcement techniques, such as issuance of citations or notices of noncompliance, for inspectors to implement.	✓ Revisions completed.	✓ Inspection staff has been trained.	F	N/A
4. Train staff in new ordinances or other legal authorities when needed.	✓ Training completed.	✓ Staff has been trained.	F	N/A

2.7.5.2 Program Effectiveness Assessment Summary

During this reporting period, the City produced a final draft Stormwater Management and Discharge Control Ordinance which is currently undergoing final review by staff and legal counsel. Staff has outlined an aggressive plan for accomplishing the remaining measureable goals in 2010-11.

2.7.6 SWMP MODIFICATIONS

The City's SWMP received final approval from the Regional Water Quality Control Board (RWQCB) on February 18, 2007. Thus, the City's Permit coverage began on that date; however, the SWMP includes Implementation Schedules spanning the time period 2003 to 2008. As a result, the City has updated and

modified the Implementation Schedules for each Program Element beginning with the 2007-2008 reporting period (see **Table 2.7-1**). These changes were also noted in the 2008-2009 Annual Report. For this element there are no changes in responsibility or revisions to the Implementation Schedule.

Table 2.7-1. Public Agency Legal Authorities Program Implementation Schedule and Responsible Department/Position

	Implementation Schedule					Responsible Department/Position					
Control Measures and Measurable Goals	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	Environmental Compliance Staff	Public Works	Community Development	Parks	Finance	Other
PALA1 General Plan Action Items											
1. Provide assessment of City's General Plan action items related to stormwater and compliance and draft implementation plan for reporting period 2009-10.			■	■	■	●	◐	◐	◐	◐	◐
PALA2 Legal Authority Review											
1. Evaluate need for Stormwater Sewer Ordinance.	■					◐	●	◐			
2. Revise existing city Code and other legal authorities as needed.			■			◐	◐	◐	◐	◐	●
4. Review and revise, as necessary, implementing code compliance enforcement techniques.			■			◐	●	●			
5. Train staff in new ordinances or other legal authorities when needed.			■	■	■	●	◐	◐	◐		◐

■ Continuing activity, reviewed or revised as needed throughout implementation
■ One-time activity to develop or implement a measurable goal

● Individual or department to take lead in the development or implementation of an activity.

◐ Individual or department to provide strong support in the development or implementation of an activity.

◔ Individual or department to review and provide comments and guidance during the development or implementation of an activity.

Section 3 – Program Administration

3.1 - PROGRAM MANAGEMENT AND ROLES AND RESPONSIBILITIES

Management and oversight of the Stormwater Management Plan (SWMP) development and implementation is essential to the success of the program and to meet the intent of the Municipal Separate Storm Sewer System (MS4) Permit. The development and implementation of the SWMP requires the participation and coordination of many of the departments, divisions, and employees in the City. Careful oversight and management of the SWMP will ensure:

- The roles and responsibilities for the development and implementation of the SWMP are assigned to the appropriate City departments, divisions, or employees.
- Proper coordination and cooperation between departments, divisions, or employees responsible for program development and implementation.
- The SWMP is developed and implemented in accordance with the SWMP's schedule.
- The SWMP is monitored and the effectiveness of the SWMP is assessed and reported.
- Compliance with the MS4 Permit.
- Staff accountability to the City Council and the community.

Since the September 2006 submittal of the SWMP some roles and responsibilities have changed. The current responsibilities are outlined in the following sections.

3.2 - STORMWATER MANAGEMENT PROGRAM ADMINISTRATION

The Wastewater Treatment Plant Superintendent has overall responsibility for the program. A team of three Public Works staff currently maintain the SWMP and conduct various requirements of the SWMP as detailed in the previous section of the report.

3.3 - PUBLIC WORKS DEPARTMENT

There are multiple divisions in the Public Works Department that carry out engineering and field operation functions. Each has responsibility for developing and implementing various elements of the Control Measures.

The Engineering Division is responsible for Control Measures related to:

- Land development application review and establishing conditions of approval.
- Coordinating with the Community Development Department's inspection services section.
- Enforcing established conditions of approvals, City code, and engineering design standards.
- Reviewing and developing appropriate legal authorities associated with site development.
- The Wastewater Division now oversees the Stormwater and Wildlife Resources programs with the charge of coordinating facilitation and implementation of related BMPs.

Field operations involve all activities related to the operation, maintenance, and upkeep of public facilities and infrastructures. Many of these activities involve the use of water, chemicals, materials, and waste products that could end up in the stormwater sewer system or in stormwater runoff if not properly managed through developing and implementing the Measurable Goals related to:

- Street, road, curb, gutter, and sidewalk maintenance and repair
- Stormwater sewer system operation, maintenance, and repair
- Domestic water supply system operation, maintenance, and repair
- Sanitary sewer operation, maintenance, and repair
- Facility and public parking area operation, maintenance, and repair
- Public outreach to the business community

- Illicit connection and illegal discharge identification and elimination
- Spill response and clean-up activities
- Corporation yards operation and maintenance
- Vehicle operation and maintenance

3.4 - COMMUNITY DEVELOPMENT DEPARTMENT

The Department is involved in the land development, planning, and building code inspection activities. The Planning Division's review of current development applications and development of long range land use plans play a key role in the City's policy for future land development and use of permanent stormwater BMPs. The Community Development Department is and will continue to be involved in the development and implementation of Measurable Goals relating to:

- Land development application review and approval, establishing conditions of approval, and CEQA mitigation measures.
- Developing, implementing, enforcing, and revising the General Plan, City codes, ordinances, and other authorities.
- Design phase influence of site design to implement stormwater BMPs for Construction and Post-Construction.
- Transportation and sustainability programs and stormwater BMPs related to these programs.

3.5 - PARKS AND GENERAL SERVICES DEPARTMENT, CITY MANAGERS OFFICE AND COMMUNITY SERVICES DEPARTMENT

These programs provide a number of services in the City. Each of these programs has developed a public education program that focus on public outreach and promotion of City programs as noted in Section 2.6 of the report. A number of brochures, newsletters and other outreach materials have been developed and with minor changes that also address stormwater quality. The City's cable TV station is also operated and funded by these programs. The City is already using this medium for business & public education measures but will consider additional use of this medium to promote stormwater outreach.

The Facility Maintenance Division is responsible for the maintenance and upkeep for public facilities, parks, and open spaces. They also perform routine maintenance and minor repair of City equipment and vehicles. In addition, the Parks and General Services Department is involved in the development and implementation of Measurable Goals relating to:

- Operation and maintenance of public parks and open spaces
- Public buildings and pools operation and maintenance
- Vegetation management
- Operation and management of the City's cable TV station
- Implementing, maintaining, and developing public education and outreach programs

3.6 – FINANCE DEPARTMENT

The Finance Department is responsible for issuing City business licenses and utility billings. These services have and continue to provide outreach opportunities for goals of the SWMP. Coordination between the Finance Department, Public Works staff, and other City Departments is important for program development and implementation.

3.7 - FIRE DEPARTMENT

The Fire Department responds to spills and releases of hazardous materials, reviews emergency response plans for businesses, and inspects facilities. The City will continue to explore the opportunity of incorporating SWMP compliance inspections into the Fire Department inspection process. Inspection reports, business

plans, or other documents maintained by the Fire Department may provide useful information for the Commercial/Industrial and Public Education program elements.

The Fire Department also conducts fire-training activities and other non-emergency activities that result in non-stormwater discharges. The Department is responsible for managing these flows to minimize the discharge to the stormwater sewer system during non-emergency activities.

3.8 - PROGRAM STAFFING AND RESOURCES

Existing work activities and resources incorporate SWMP Control Measures as much as reasonably possible. The degree to which the SWMP may impact resources varies depending on the Control Measure and current activities of each department. Implementation of some Control Measures may require nothing more than a change in how a form is completed or how a site is inspected. Other Control Measures may require additional time for an employee to review plans or conduct site inspections.

Implementation of Control Measures and their associated Measurable Goals, with increasingly limited existing resources including funding may limit what the City can pursue for implementation or what can be accomplished within the program. In the current economic climate, the City must pursue the most cost effective approaches. The implementation process will continue to be evaluated to determine if additional resources are necessary to adequately implement the SWMP.

3.9 - FUNDING

The general fund, stormwater sewer impact fees, related capital improvement permit fees, and funds associated with a special assessment district and utility, permit, and assessment district fees support the current activities related to stormwater management.

3.10 - COLLABORATION WITH OTHER LOCAL AGENCIES

The City interacts and overlaps with several other local agencies in activities related to stormwater management. The following agencies and primary roles are listed below:

- Yolo County Agricultural Commissioner - Enforces pesticide regulations, inspects permit holder facilities, conduct workshops, and mails informational letters to permit holders.
- University of California Cooperative Extension Farm Advisor - Researches alternatives to pesticides and IPM techniques, provides information learned through newsletters and workshops
- Farm advisor and master gardeners
- Yolo County Department of Public Health - Enforces county regulations in areas of food regulation, small drinking water systems, septic systems, and solid and toxic waste. Provides bacteria and pest control advice, environmental documents (NEPA, CEQA) review.
- Yolo County District Attorney's Office – Prosecutes environmental crimes
- Yolo County Landfill – Promotes and manages recycling programs, curbside collection of yard wastes, and toxic waste collection days
- Yolo County Communications Emergency Service Agency - Maintains hazardous materials inventory and provides informational packets
- Yolo-Solano Air Quality Management District - Determines emission limits and regulatory requirements for criteria air pollutants

In addition to the City's individual activities, staff participates in a countywide stormwater manager's group to discuss collaborative opportunities such as coordinating regional erosion control training for construction sites. The group also shares information on common issues such as funding sources, implementation tools, program approval and implementation status, and standards.

Section 4 – Assessment

4.1 - OVERALL PROGRAM ASSESSMENT

The effectiveness of the SWMP is determined by evaluating:

- Compliance with the SWMP schedule.
- Appropriateness of the Control Measures in the SWMP to reduce the discharge of pollutants to the MEP.
- Program costs compared to budgeted costs.
- Progress towards meeting its Measurable Goals.

At this stage of the SWMP, the City is mostly on target with the many of its tasks within their compliance schedules, but had to adjust responsibilities within existing staff to compensate for the lack of an Environmental Compliance Coordinator and shifting management of the program. Other factors now include dwindling staff and capital resources which may further hamper the ability to achieve objectives and goals.

The Control Measures that the City has outlined in the SWMP are anticipated to be effective at further reducing the discharge of pollutants into the stormwater stream to the MEP.

The City has already invested greatly into the reduction of stormwater pollutants over the last 15 years. The cost of initiating the SWMP has been offset by the City's earlier efforts. Budgeted costs for the continued progress of the SWMP are less than in years past, but staff believes that necessary funding can be found to adequately address the proposed work program for the 2012-13 report period.

Most of the previously implemented Measurable Goals continue to be practiced with only a few exceptions as noted within the report. The major accomplishment this year was the approval of the Stormwater Ordinance, which will serve as the backbone from which the remainder of the SWMP is supported.

APPENDIX A
ACRONYMS AND GLOSSARY

ACRONYMS:

BMP – Best Management Practice

CASQA – California Stormwater Quality Association

CEQA – California Environmental Quality Act

DI – Drainage Inlet

MEP – Maximum Extent Practicable

MS4 – Municipal Separate Storm Sewer System

NEPA – National Environmental Policy Act

NPDES – National Pollutant Discharge Elimination System

PEA – Program Effectiveness Assessment

POG – Public Outreach Group

RWQCB – Regional Water Quality Control Board

SWMP – Stormwater Management Plan

SWPPP – Stormwater Pollution Prevention Plan

USEPA – United States Environmental Protection Agency

GLOSSARY:

Best Management Practices (BMPs) – BMPs are maintenance procedures, prohibitions of practices, and other management practices to prevent or reduce the pollution of 'Waters of the United States." BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Design Standards – Design Standards are post-construction requirements to incorporate specific structural BMPs into construction projects. Examples of design standards include specifying an amount of runoff that must be retained on a site, and prohibiting the direct connection of truck wells in loading docks to the storm drain system.

Maximum Extent Practicable (MEP) – MEP is the technology-based standard established in the Clean Water Act that dischargers of stormwater must meet. Technology-based standards establish the level of pollutant reductions that dischargers must achieve. MEP is generally a result of emphasizing pollution prevention and source control BMPs primarily but possibly in combination with other treatment methods. The MEP approach is an ever evolving, flexible and advancing concept, which considers technical and economic feasibility. As knowledge about controlling pollutants in stormwater continues to evolve so does that which constitutes MEP. The way in which MEP is met varies between communities. The individual and collective activities elucidated in this SWMP become the proposal for reducing or eliminating pollutants in stormwater to the MEP.

Measurable Goal – definable tasks or accomplishments that are associated with implementing BMPs.

Minimum Control Measure – A stormwater program area that must be addressed (BMPs implemented to accomplish the program goal) by all regulated Small MS4s. The six minimum Control Measures required to be addressed by regulated Small MS4s are defined in section 2.

Notice of Intent – Notification statement that the City will comply with an NPDES permit to follow certain discharge conditions

Outfall – a point source at the point where a municipal separate stormwater drainage discharges to Waters of the United States and does not include open conveyances connecting two municipal separate stormwater drainages, or pipes, tunnels or other conveyances which connect segments of the same stream or other Waters of the United States and are used to convey Waters of the United States.

Point Source – any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leach ate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater.

Performance Standards – Performance Standards are the level of implementation necessary to demonstrate the control of pollutants in stormwater to MEP.

Small Municipal Separate Storm Sewer System (Small MS4) – Means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that are:

- Owned or operated by the United States, a State, County, town, boroughs, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or designated and approved management agency under section 208 of the CWA that discharges to Waters of the United States.
- Not defined as “large” or “medium” municipal separate storm sewer systems.
- This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

Stormwater Pollution Prevention Plan (SWPPP) – a documented step-by-step process for ensuring that pollutants from a site and its activities are not making their way into the stormwater discharges from the site. Specifically, the pollution prevention plan requires that you select and implement BMPs, including schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce pollutants in stormwater from the site.

Waters of the United States – any surface water or groundwater, including saline waters, within the boundaries of the United States.

APPENDIX B
ATTACHMENTS

Department /Division CSD
Work Group Name Facilities

Stormwater Questionnaire Survey 2011

Intent of this survey and questionnaire is to help the City gauge where our strengths in knowledge and operations lie and to help us address areas where we may have weaknesses. This exercise will provide information which we can compile to determine if our program is making any progress and be able to demonstrate that to the State in our annual reporting process. For those who had training in 2010, we hope that it may have helped modify a few of your day to day activities. This exercise will help guide the need for any future training sessions. Please keep in mind, this is nothing that is being graded in terms of performance review, but rather as an informational tool to help us improve our Stormwater program. Please take a few moments and answer the questions to the best of your ability.

Below are some of general questions about stormwater. Please circle the best applicable answer(s).

1. Which of the following are considered stormwater pollutants:
   a. Dirt, sand, gravel
   b. Concrete, ashphalt
   c. Motor oil, fuels, antifreeze
   d. Solvents
   e. Soap or detergents
   f. Chlorinated water
   g. Pesticides
   h. Fertilizers
   i. Saw cutting slurry
   j. Grass clippings, leaves, branches, weeds, mulch, sawdust etc.
   k. Oils, fuels, detergents, solvents, adhesives, etc.
   l. Pesticides, fertilizers
   m. Trash, plastic, bottles, cans, etc.
   n. All the above
   o. None of the above

2. Which of the following are not appropriate tasks to perform prior to commencing with work related activities at a Site:
   a. Assess your work site for the job you are about to perform. Look for items that have the potential to be washed into a storm drain.

b. Take time to remove items that could be washed into the storm drain including debris that could be washed into the nearest storm drain.

c. Install diversion, retention or filtering devices to protect the storm drain inlets.

d. Place materials away from storm drains, contain and cover them. Keep them out of the rain.

e. If possible, avoid scheduling work during rain events.

f. None of the above.

g. All the above.

3. Which of the following tasks are appropriate to perform while conducting work at a job site:

a. Divert or block stormwater runoff from possible contamination sources.

b. Clean-up spills and drips immediately using absorbent materials -- dispose of absorbent materials properly.

c. Report dumping or discharges to any storm drain, areas that would lead to a storm drain, or into conveyance channels.

d. None of the above.

e. All the above.

4. Which are the following tasks are not appropriate to perform when work is completed at a job site:

a. Keep things clean using dry clean-up methods whenever possible (e.g., sweep instead of hosing things down) both prior to commencing with work activities when using water and after work activities cease.

b. Clean dirt and vegetation off of equipment at 1818 Fifth Street wash rack prior to storing outside.

c. Prevent pollutant discharges to drainage inlets - if a surface must be hosed down, block inlets, collect water and dispose of properly.

d. All the above.

e. None of the above.

5. Which of the following are basic storm water principles:

a. Keep work materials under cover and out of the rain whenever possible.

b. Divert stormwater runoff from possible contamination sources.

c. Keep things clean using dry clean-up methods whenever possible (e.g., sweep instead of hosing things down) both prior to commencing with work activities when using water and after work activities cease.

2

(d) Clean dirt and vegetation off of equipment at appropriate controlled run off wash facilities (like 1818 Fifth Street) prior to storing outside.

(e) Prevent pollutant discharges to drainage inlets - if a surface must be hosed down, block inlets, collect water and dispose of properly.

(f) Prevent materials from entering drainage inlets – do not stock materials near drainage inlets.

(g) Clean-up spills and drips immediately using absorbent materials – dispose of absorbent materials properly.

(h) Report dumping or discharges to any storm drain, areas that would lead to a storm drain, or into conveyance channels.

Below are some questions related to your daily activities.

1. As a result of the stormwater training from 2010, did you personally change any of your work procedures in 2010? If yes, how? MORE BLOWING OFF DEBRIS LESS HOSE OFFS

2. As a result of changing the SOP's in 2010, did you follow the new procedures in performing your work in 2010? If not, why? YES

3. If the answer in no. 2 above was 'no', was the information presented in the SCP's clear, and how could it be improved to make it easier to follow? N/A

4. Prior to commencing with a job, did you ever consult the SOP's to refresh your memory? If so, why and what specific areas did you review? NO

5. Please list any specific incidents where measures you took kept potential pollutants from entering into a storm drain. CLEAN UP DEBRIS FIRST BEFORE HOSING TO A DRAIN

3

6. If the answer to no. 5 above is yes, please list what pollutants they were. _____
LEAVES STICK DIRT ETC

7. Did you ever consult the Municipal Operations Stormwater Pollution Prevention Manual prior to commencing with a job? If yes, why? _____
NO

8. If the answer to no. 8 was yes, did you find the manual helpful? Why or why not? __
N/A

4

General Outreach Activities

- The Finance Department distributes utility billings to property owners every other month. The billing statements include a "City message area that is used for various City messages.
- The Parks and General Services Department, provides publishes a wide variety of educational materials on improving the environment available to every resident in Davis including the following publications:
    - "Focus" is a semi-annual newsletter for residents that discuss important issues within Davis.
    - Special topic brochures are produced for the public, which include information on topics such as the Transportation Management Ordinance, the City's IPM Program, and air pollution prevention.
- Public Information Sheets are available at the Community Development Department counter and online for citizens who want to build or install permanent structures in the City. These sheets summarize many City Code requirements.
- The City produces an annual newsletter called "Utility Connection", which is mailed to residents. This newsletter informs residents about various issues and activities, such as, proper green waste management and other pollution prevention activities and regulations. See the Summer 2009 newsletter using the following web link:

    http://public-works.cityofdavis.org/water/utilities/utility-connection
- The Public Works Department participates in or produces the following various environmental educational programs and produces associated informational materials:
    - The Consumer Guide to Cleaner Rides in Davis. The booklet provides suggestions to reduce car use, make conventional cars drive cleaner, and save money and gas.
    - The City bicycle program works with the UC Davis bicycle program putting on several education/advocacy events throughout the year.
    - The Solid Waste Program distributes information via flyers and website about recycling, composting, bulky and construction waste handling, and household hazardous waste collection events. http://archive.cityofdavis.org/pw/recycle/
    - Sponsors slides at local theaters and government television channel promoting the Our Water Our World program. OWOW slides ran in local theaters during the report period.
    - Developed the following webpage to provide information regarding the City's wetlands.

        http://public-works.cityofdavis.org/wastewater/the-davis-wetlands
    - A monthly newspaper column that covers multiple environmental topics is prepared by City staff and published in the local newspaper, the Davis Enterprise. In addition, a monthly newsletter is circulated.
    - Created a "Visitors Environmental Guide to Davis" which helps showcase environmentally responsible projects around Davis, including but not limited to, Stormwater BMPs.

        http://archive.cityofdavis.org/pw/recycle/Enviro_Guide/
    - Produce and distribute a children's coloring book "The Water We Share".

        http://archive.cityofdavis.org/pw/stormwater/pdfs/Pollution%20Prevention%20Coloring%20Book.pdf

Additional City of Davis Outreach Activities

- Public Works and Parks and General Services employees participate in special public events to promote environmental programs. At the events, they distribute various environmental public educational brochures, flyers, and other materials. Events attended by the Departments include:
  - California Duck Days Festival – Coordinated by the Yolo Basin Foundation, the City annually contributes funds to the event and staffs an informational booth that promotes water quality BMPs. Duck Days attracts over 1,000 area residents to participate in field trips and workshops, many of which include the importance of protecting water quality. Information regarding this program may be obtained by using the following weblink:

    http://www.yolobasin.org/duckdays2009.cfm
  - The City contributed $6,000 to fund Yolo Basin Foundation docent training to provide tours of the Davis Wetlands. Information regarding this program may be obtained using the following weblink: http://www.yolobasin.org/volunteers.cfm
  - Celebrate Davis – The Chamber of Commerce event to promote City businesses and services. Thousands of Davis residents attend the event. City staff distributes informational handouts for Our Water Our World, IMP, wildlife, solid waste reduction, recycling, composting, and stormwater, Staff was on hand to answer questions about these programs. The City booth also promoted recycling and water conservation. A weblink regarding this event is provided: http://daviswiki.org/Celebrate_Davis
  - Chamber on the Quad – Held on UC Davis campus, this event is to acquaint UC Davis students with the services and businesses in the City. City staff this event to distribute information about City programs, e.g., water quality protection.
  - Coastal Clean-up Day – an event to encourage volunteers to collect trash and debris within regional waterways. Information regarding this program is provided by using the following weblink: http://www.coastal.ca.gov/publiced/ccd/ccd.html
- In addition to written outreach material, the city distributes useable materials such as: flyswatters that promote IPM; plate grease scrappers and drain hair snares to minimize grease and hair accumulation in sanitary sewer drain pipes, thus minimizing the clogging and subsequent sanitary sewer overflow to the stormwater collection system; composting bins; and vehicle drip mats.
- The City currently employs a Wildlife Resource Specialist who makes public presentations regarding the City's wetlands and stormwater retention ponds. In addition to the wetland brochure, a slide show was developed to describe the wetlands function, habitat value, and future efforts. Handouts are given to the public on measures that they can take to prevent stormwater pollution.
- City employees can obtain free bike locks if using their own bike to commute to work. Showers are available many city offices. The City also has a bike fleet available for work-time use.

Integrated Pest Management Outreach (IPM)

- Due to public desire to know where and what pesticides are being applied in City parks and other landscaped areas, the City has established a "hotline" to provide this information (530-757-5621).
- The Public Works Department's IPM Program educates the public about environmental concerns regarding pesticide use, and alternative non-chemical pest control techniques. See the City's IPM webpage at the following link: http://archive.cityofdavis.org/pw/ipm/
- The UC Davis Cooperative Extension has a Backyard Master Gardener Program that uses volunteers to answer gardening questions over the telephone. The hotline (530-666-8737) also gives information on alternative pest control techniques to replace pesticide usage. Information for this program can be found using the website provided below:

http://camastergardeners.ucdavis.edu/

- Implemented a Barn Owl Nest Box program to promote natural predation as a solution to a growing black rat problem. The program targets youth groups, but includes the general public, by engaging volunteers to construct barn owl nest boxes. The boxes are installed at various locations around the city in an attempt to increase the local barn owl population to consume rats, thus reducing the citywide use of toxic baits. More information about the program can be obtained by using the following weblink: http://www.kiwi-tree.net/docs/Heart-faced.htm
- Developed a city IPM information webpage.
- Developed comic book that presents pesticide use reduction in a humors but yet serious manner. http://cityofdavis.org/pgs/ipm/exterminator.cfm
- The Parks and Open Space Division have placed signs at the four retention ponds in Davis stating "We are all connected to our waterways."
- Continued implementation of the Our Water Our World IPM outreach program
  - Includes over 20 fact sheets (some translated in Spanish) that offer less-toxic pest management strategies for specific pests.
  - Fact sheets and shelf tags are placed at local pesticide retail outlets to inform consumers about less toxic alternative pesticide products.
  - Store clerks are provided with training to assist with outreach customers.
  - In addition to store outlets, OWOW material is distributed at local events and City facilities.
  - More information can be obtained using the following website: http://www.ourwaterourworld.org/
- The City sponsored the first Yolo County Ag Futures Alliance event in May of 2008. Yolo County is known for both its successful farms and for its progressive, City-centered development pattern. Both may be in jeopardy as development pressures, government fiscal concerns, and a variety of mitigation programs threaten to take ag land out of production.

  The Yolo County Ag Futures Alliance has identified ag land mitigation as a significant opportunity to affect public policy and improve the results for agriculture and the environment. The group has developed a set of mitigation principles to guide policy and has made detailed recommendations to the County on its 2006 Ag Conservation Easement Ordinance (YAFA Ag Ord Recommendation.pdf).

Additional Outreach Activities

- The City maintains a Citizen Request database that allows residents to report, among other issues, stormwater pollution concerns. Concerns are routed to appropriate staff for follow up. Additional information on this program can be found by using the following weblink:

  http://cityofdavis.org/crm/
- The City sponsors an Environmental Recognition Award, started in 1994, for individuals, businesses and non-profit organizations. Additional information on this program can be found by using the following weblink: http://cityofdavis.org/story/pdfs/NRC_ERA_flier.pdf
- The City has a graffiti control hotline (530-757-5600) and a volunteer program to include the public in its anti-graffiti efforts.
- The City installed a van wrap on its sewer collections van displaying a pollution prevention message and contact information.
- Continued work on adding Stormwater information to the City's web page, including the Stormwater Management Plan, program informational handouts on pollution prevention for pool

maintenance, car washing, green waste, paint clean up, road work and maintenance, and Reports.

City of Woodland

Pre-Wet Season Workshop

September 21, 2010
9:00-12:00 a.m.
City of Woodland
Community Senior Center
2001 East Street, Woodland CA

Agenda

8:30 Meet & Greet

9:00 Annalisa Kihara - RWQCB - General overview of the Construction Permit

9:30 Russ Foster – Pulte Group – Reporting

10:00 Break

10:15 Scott Thorne – Project Close Out

10:45 Tamera Burnham – COW - How to Put Together a SWPPP Compliance Program & Good/Bad/Ugly BMP's

11:15 Questions

12:00 Adjourn

Low Impact Development (LID): Current Trends and Case Studies

A community workshop for local government, development community and environmental organizations
hosted by the American Basin Council of Watersheds
October 6, 2010 – Blue Goose Fruit Shed, 3550 Taylor Road, Loomis, CA

AGENDA

REGISTRATION & NETWORKING	***Refreshments sponsored by:*** *United Natural Foods, Inc.*	7:30
Welcome and Workshop Overview	Walt Scherer, Councilmember, Town of Loomis Gregg Bates, American Basin Council of Watersheds Carmel Brown (facilitator)	8:30
Keynote Speakers: Darla Inglis, UC Davis Center for Land Use and Water - *LID Introduction and Context* Mike McKeever, SACOG - *Regional Initiatives to Mitigate Impacts of Urbanization* Judy Corbett, Local Government Commission - *The Ahwahnee Water Principles: Making the Connection Between Water, Land Use and Climate Change*		8:45
BREAK *(time approximate)*		**9:45**
Integrating LID and Urban Runoff Management: Drainage Master Planning, Flood Control, Hydromodification and Groundwater Recharge *(Panel Discussion)*	Chris Bowles, cbec Tom Plummer, Civil Solutions Panel: Eric Berntsen, State Water Board Darla Inglis, UCD Jennifer Walker, Watearth	10:00
LID Implementation Challenges: Getting the Design in the Ground *(Panel Discussion)*	Tom Dalziel, Contra Costa County Dan Cloak, Cloak Environmental Christian Carleton, CSUS Water Programs	11:00
LUNCH		**12:00 – 1:00**
LID and Green Infrastructure *(Panel Discussion)*	Darla Inglis Steve White, Sacramento County Ed Armstrong, Foothill Associates Katie Yancey, City of West Sacramento	1:00
LID Performance: Monitoring and Measuring Results *(Panel Discussion)*	Michael Hogan, Integrated Environmental Restoration Services, Inc. Loren Oki, UC Davis Christian Carleton, CSUS Office of Water Programs	2:00
Lessons from Today and Look to the Future *Video "Slow the Flow" + Door/Table Prizes*	Carmel Brown, CKB Environmental Consulting	3:00
ADJOURN		**3:30**

Thank you to our sponsors! *City of Roseville, Town of Loomis, Dry Creek Conservancy, Hewlett-Packard Company, Cosumnes American Bear Yuba (CABY) Integrated Regional Water Management, cbec, inc. ecoengineering, Terracare Associates, United Natural Foods, Inc., RBF Consulting, Lu Restoration Nursery, Sacramento County, City of Rocklin*
With special thanks to the Virgil Harrigan Family Trust.

Frequently Asked Questions for State's New Construction General Permit (CGP) effective July 1, 2010 as They Apply to Traditional Construction Sites

The following FAQ was developed by the State Water Resources Control Board with some changes made by City staff to make the information more relevant to construction projects within the City of Davis. The FAQ's are grouped into categories to help you find information relevant to: the applicability of the permit, the application process, permit duration and transferability, reporting and monitoring, qualifications and training required to develop SWPPPs and inspect projects under the SWPPP.

Applicability of the Permit

1. **How do I know if I need this permit?**
   Construction activity resulting in a land disturbance of one acre or more, or less than one acre but part of a larger common plan of development or sale must obtain the Construction Activities Storm Water General Permit (2009-0009-DWQ Permit). Construction activity includes clearing, grading, excavation, stockpiling, and reconstruction of existing facilities involving removal and replacement. Construction activity does not include routine maintenance such as, maintenance of original line and grade, hydraulic capacity, or original purpose of the facility.

Application Process

2. **Are there other requirements I should be aware of when applying for this permit?**
   There may be other permits or requirements in addition to the 2009-0009-DWQ Permit. For example, you may also need a streambed alteration agreement from the Department of Fish and Game, a Water Quality Certification (Clean Water Act Section 401) as administered by the State and Regional Water Quality Control Boards, and/or Clean Water Act Section 404 permit administered by the U. S. Army Corp. of Engineers. Contact the Central Valley Regional Water Quality Control Board to determine if other permits are required for your construction activity at (916) 464-3291.

3. **Who should apply, and who is the proper signatory?**
   The 2009-0009-DWQ Permit states the Legally Responsible Person (LRP) or a person legally authorized to sign and certify on behalf of the LRP is responsible for obtaining permit coverage.

4. **What are the fees associated with the Permit?**
   The annual fees are based on total disturbed area of the construction project in acres. See the following web link for a list of fees by acres.

   http://www.swrcb.ca.gov/water_issues/programs/stormwater/docs/sw_feeschedules2008.pdf

   You will continue to receive an annual invoice until your project is complete and a Notice of Termination (NOT) is electronically submitted and approved by the Central Valley Regional Water Quality Control Board. Projects continuing from the 99-08-DWQ Permit into the 2009-0009-DWQ Permit will pay the annual fees based on their current billing cycle.

5. **Who do I contact for questions regarding an invoice?**
   If you have questions regarding outstanding invoices or payments please contact the State Water Resources Control Board Fee Unit at (916) 341-5247.

6. **How do I apply for coverage?**
   For new projects commencing on or after July 1, 2010, an LRP must electronically submit Permit Registration Documents (PRDs) prior to commencement of construction activities in the Storm water Multi- Application Report Tracking System (SMARTS). PRDs consist of the Notice of Intent (NOI), Risk Assessment, Post-Construction Calculations, a Site Map, the Storm Water Pollution Prevention Plan (SWPPP), a signed certification statement by the LRP, and the first annual fee.

7. **How long will it take for me to get my WDID number after I submit my PRDs to SMARTS? Is there a staff or public review process before the WDID is issued?**
   PRDs consist of the Notice of Intent, Risk Assessment, Post-Construction Calculations, a

   Site Map, the SWPPP, a signed certification statement by the LRP, and the first annual fee. Once these components have been submitted and are deemed complete by the SMARTS system, a WDID number will automatically be emailed to the LRP.

8. **How long are PRDs available online after the WDID number is terminated?**
   PRDs and other reports will be available to the public to view for 5 years after the NOT approval date.

9. **How can I find out the status of my permit?**
   LRPs can log into the SMARTS system to obtain the status, or can download or search the construction storm water database at the following web link:

   http://www.swrcb.ca.gov/water_issues/programs/stormwater/databases.shtml

Reporting Process (SMARTS)

10. **Will SMARTS track enforcement data as well?**
    Yes. The Central Valley Regional Water Quality Control Board will enter their inspection and enforcement data into SMARTS.

11. **When will the SMARTS system be available?**
    The SMARTS system will be available by July 1, 2010 for electronic filing of PRDs. It is anticipated that the system may be available prior to July 1st to allow for early submission of PRDs.

Permit Duration / Transferability

12. **How long is my permit in effect?**
    Your coverage under the 2009-0009-DWQ Permit remains in effect until a NOT is submitted in SMARTS and approved by each Regional Water Board that your project resides in. If the Regional Water Board denies the NOT, you are responsible for any missed or outstanding invoices. For outstanding invoices, a complete NOT must be received by the Regional Water Board 90 days from the original invoice date in order to cancel the invoice. If a complete NOT is received after 90 days, the invoice is deemed valid and payable.

13. **Can I terminate or sell a portion of my project?**
    Yes, the 2009-0009-DWQ Permit allows a discharger to terminate portions of a construction project if those portions have been sold to another owner. The permit is not transferable, so the responsibility to obtain permit coverage, update the SWPPP, and comply with permit requirements becomes that of the new owner. The seller must notify the new owner about his/her responsibilities concerning the permit, and must notify the State Water Board by submitting the new owner's name, address, and phone number on the Change of Information (COI) form for the termination to be processed. The seller must also disclose the state of

construction, primarily if construction activity is ongoing, or if the post-construction requirements are completed.

14. **What if I sell the property prior to completing the construction?**
    The new owner must submit new PRDs within 30 days of the date of change of ownership. For ongoing construction activity involving a change of ownership, the new owner must review the existing SWPPP, determine if it is appropriate for the construction activity being undertaken. If it is not in compliance, then the SWPPP must be amended, or a new SWPPP developed.

15. **When do I have to implement post-construction requirements?**
    The post-construction requirements become mandatory on September 2, 2012. On a case by case basis, dischargers may request an extension from the Executive Officer of the Central Valley Regional Water Quality Control Board.

16. **If my site is still active after September 2012 but I file a COI to reduce my acreage, do the post-construction requirements apply to the completed portion?**
    No. If you file a COI to reduce your acreage prior to September 2012, then only the remaining disturbed acreage would need to comply with the post construction requirements.

17. **After a project is grandfathered into coverage under the new CGP at risk level 1 (type 1), can the State Water Board or Regional Water Board change that project's risk level?**
    Yes, the Central Valley Regional Water Quality Control Board has the authority to require a risk determination be performed on grandfathered projects that have a history of non-compliance with the 99-08-DWQ, 99-06-DWQ, and 2003-0007-DWQ Permits, or where the project poses a significant threat to water quality without the implementation of the additional Risk Level 2 or 3 requirements.

18. **Will grandfathered construction projects need to have their SWPPPs developed by a Qualified SWPPP Developer (QSD)?**
    Yes, after July 1, 2010 all SWPPPs and SWPPP updates entered into the SMARTS system must be certified by an individual holding one of the certifications/registrations listed in Section VII of the 2009-0009-DWQ Permit. Effective two years after the permit adoption (September 2, 2011), the QSD must have also attended the State Water Board sponsored or approved QSD Training Course.

19. **For grandfathered projects, can existing SWPPPs be submitted during the PRD process, or does the SWPPP need to be amended/adjusted to reflect the new CGP?**
    The SWPPPs must be amended to meet the minimum criteria listed in Section XIV, SWPPP Requirements, and Attachment C, Risk Level 1 Requirements, of the CGP.

Training and Qualifications to Prepare SWPPPs and Inspect Projects

20. **Does the Qualified SWPPP Practitioner (QSP) need to have the pre-qualifications listed in Section VII of the 2009-0009-DWQ Permit by July 1, 2010?**
    No. Effective September 2, 2011, the QSP shall have one of the pre-qualifications listed in Section VII of the 2009-0009-DWQ Permit and shall have attended the State Water Board sponsored or approved QSP Training Course. Between July 1, 2010 and September 2, 2011 anyone can be a QSP.

21. **What kind of training is required for our company's site superintendents? Can we hire one QSP to train all of them?**
    Yes, one QSP can train all company superintendents. However, the Regional Water Board inspectors may ask to meet and/or conduct an inspection with the QSP responsible for a particular project/site, and that individual should be accessible. The QSP is responsible for the implementation of BMPs on each construction project, not the trained superintendents.

22. **Can a QSD or QSP be an independent contractor?**

Yes.

23. **Is the QSD and/or QSP responsible for project compliance, or the project owner?**
    The LRP is always ultimately responsible for project compliance. This individual must certify the PRDs and will be the recipient of any Notices of Violations or Administrative Civil Liabilities (fines) for the project.

24. **How can I become a QSD/ QSP?**
    Section VII of the 2009-0009-DWQ Permit lists pre-qualifications for the QSD and QSP. In addition to meeting one of the listed pre-qualifications, an individual must have attended a State Water Board sponsored or approved QSD/QSP training course. See the following web link to obtain information on this training course: http://www.casqa.org/

25. **How much will it cost to take the State Sponsored QSD/QSP Training course?**
    Costs will vary. Since private training vendors who have been selected/approved to work as "trainers of record" and "specialized trainer" (through a structured Request for Qualifications process) will offer their own training courses. Each course will be required to be a certain length (i.e., minimum training hours for each required module; likely 2-3 days per designation) and follow prescribed standards, but training courses will vary in specific content/approach and are expected to vary in cost.

26. **Where can I get information on QSD/QSP pre-requisite programs to see if I am eligible?**

Pre-Requisite QSD Certifications/Registrations	Website
California Registered Professional Civil Engineer	www.pels.ca.gov
California Registered Professional Geologist or Engineering Geologist	www.geology.ca.gov
California Registered Landscape Architect	www.latc.ca.gov
Professional Hydrologist registered through the American Institute of Hydrology	www.aihydrology.org
Certified Professional in Erosion and Sediment Control (CPESC) registered through Enviro Cert International Inc.	www.envirocertintl.org
Certified Professional in Storm Water Quality (CPSWQ) registered through Enviro Cert International Inc.	www.envirocertintl.org
Professional in Erosion and Sediment Control registered through the National Institute for Certification in Engineering Technologies (NICET)	www.nicet.org
Certified erosion, sediment and storm water inspector through Enviro Cert International Inc.	www.envirocertintl.org
Certified Inspector of Sediment and Erosion Control registered through Certified Inspector of Sediment and Erosion Control Inc. (CISEC)	www.cisecinc.org

27. **What is the role of the local municipality in reviewing/enforcing the SWPPP?**
    The local municipal storm water programs and the CGP requirements intentionally have some overlap/redundancy. However, the local municipality has no authority to enforce the State's CGP requirements; this is done by the Regional Water Board inspectors. Typically, the local agency is responsible for ensuring compliance with local storm water ordinance which prohibits

sediment and other pollutants from entering the municipal separate storm sewer system, and with a local grading ordinance which typically requires an erosion and sediment control plan (typically a sheet in the construction plan set) for projects with a grading permit. In some cases, the local municipality may have a condition in their MS4 storm water permit requiring the agency to check that certain items are included in the SWPPP. This does not constitute approval of the SWPPP and the review is typically conducted prior to issuing a grading permit.

Reporting and Monitoring Requirements

28. **Who is responsible for preparing and implementing the Rain Event Action Plan (REAP)? Do you have to be a QSP?**
    The project QSP must develop and be in responsible charge of implementing the REAP. A QSD may also implement the REAP if they are also in responsible charge for implementing the SWPPP onsite. The REAP is a living document specific to a project site. A new REAP must be prepared/revised specific to each forecasted qualifying rain event (any likely precipitation event forecast of 50% or greater probability). However, some of the REAPs for an individual project might look similar for each construction phase.

29. **When do I need to develop a REAP?**
    A REAP must be developed 48 hours prior to any likely precipitation event. (National Oceanic Atmospheric Administration (NOAA) – 50 percent or greater probability of producing precipitation) This is determined by:

    1. Visit the NOAA Website at: http://www.srh.noaa.gov/
    2. Enter your zip code or city & state in the search box and click “go”
    3. Scroll down to the bottom right hand of the page under “Additional Forecasts & Information”
    4. Click on “Forecast Weather Table Interface” at the bottom of the section

30. **Where can I get copies of inspection forms?**
    The 2009-0009-DWQ Permit lists minimum criteria required for an inspection checklist. Dischargers may develop their own inspection forms, or may contact their local Regional Water Board for an inspection form if one is available.

31. **What is a Sediment Sensitive Watershed?**
    A sediment sensitive watershed drains into a receiving water body (1) listed on Environmental Protection Agency’s (EPA) approved Clean Water Act (CWA) 303 (d) list for sedimentation/siltation, turbidity with an approved Total Maximum Daily Load (TMDL): or (2) designated with beneficial uses of SPAWN, MIGRATORY and COLD.

32. **Once a phase of my construction project has commenced, can I re-calculate my risk level based on existing site conditions. If found to be different from the initial risk, can I resubmit the new risk level with a COI?**
    No. The only scenario where risk can be recalculated based on existing site conditions would be if there is a change in ownership or if a portion of the project is sold. For all other projects, the initial risk calculated during PRD submittal applies until an NOT is filed.

33. **How does the 500 NTU turbidity NEL relate to the Basin Plan turbidity standards for receiving waters? How will the local Regional Water Board inspectors enforce this?**
    The 500 NTU turbidity NEL is a technology based effluent limitation that applies to storm water discharges leaving the project boundaries. The Basin Plan turbidity standards are water quality based effluent limitations that apply to receiving waters. The Regional Water Boards will continue to enforce their Basin Plan standards where projects are found to discharge directly into a receiving water body.

34. **Where can I obtain guidance for pH and turbidity sampling?**
The Surface Water Ambient Monitoring Program (SWAMP) has a Guidance Compendium for Watershed Monitoring and Assessment. Sections 3.1.4 and 3.1.5 of this Compendium contain guidance for pH and turbidity sampling. See the following web link for this Guidance document:

http://www.waterboards.ca.gov/water_issues/programs/swamp/cwt_guidance.shtml

A SWAMP Field Methods Course training CD is also available for the public. Please contact stormwater@waterboards.ca.gov to request a copy.

35. **Where can I obtain guidance for Bioassessment Monitoring?**
SWAMP 2007 Bioassessment Standard Operating Procedures (SOP) includes standard operating procedures for bioassessment. See the following web link for these procedures:

http://swamp.mpsl.mlml.calstate.edu/resources-and-downloads/standard-operating-procedures

36. **Please clarify the meaning and use of the term "direct discharge"**
The CGP glossary (Appendix 5) defines direct discharge as "a discharge that is routed directly to waters of the US by means of a pipe, channel, or ditch (including a municipal storm sewer system), or through surface runoff. Discharges from a construction site to a MS4 where commingling with upstream and/or downstream discharges can occur are not considered 'direct discharges'." See the following web link for Appendix 5:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/wqo_2009_0009_app_5.pdf

37. **Will local municipalities be revising their storm water quality development standards to be consistent with the post-construction requirements in the CGP?**
Projects located within an area subject to post-construction standards of an active Phase I or II MS4 permit that has an approved Storm Water Management Plan are exempt from the post-construction requirements in the CGP.

38. **What are the training requirements to operate and maintain an Active Treatment System (ATS)?**
Order No. 2009-009-DWQ requires that all ATS operators have training specific to using ATS's liquid coagulants. By July 1, 2010, projects requiring the usage of an ATS are to be operated and maintained by Certified ATS operators.

    - Training shall be in a form of a formal class with a certificate and requirements for testing and certificate renewal.
    - Training shall include a minimum of eight hours classroom and 32 hours field training.

39. **What is the difference between the LRP, Approved Signatory, and Data Submitter?**

    - The **LRP** is the person who possesses the title of the land or the leasehold interest of a mineral estate upon which the construction activities will occur for the regulated site. For linear underground/overhead projects, it is the person in charge of the utility company, municipality, or other public or private company or agency that owns or operates the linear underground/overhead project.
    - The **Approved Signatory** is a person who has legal authority to sign, certify, and electronically submit PRDs and NOTs on behalf of the LRP.
    - The **Data Submitter** is any individual authorized by the LRP or an Approved Signatory to enter data on behalf of the LRP or Approved Signatory. A data submitter may be other employees, contractors, labs, etc.

40. **What documents must be submitted to the State Water Board and Regional Water**

Appendix B – Attachments

Boards?

TRADITIONAL CONSTRUCTIONAL PROJECTS		
Document	**Developer/Certifier**	**Timeline**
Annual Report	Discharger	September 1st
Document	**Developer/Certifier**	**Timeline**
– Employee Training Documentation	Discharger	In Annual Report
ATS Operation & Maintenance (O&M) Plan	Discharger	Develop prior to implementation of an ATS system
ATS Plan	Discharger	Submitted 14 days prior to implementation of an ATS system
ATS QA/QC Plan	Discharger	Develop prior to implementation of an ATS system
Construction Site Monitoring Program (CSMP)	Discharger	In SWPPP as an appendix or chapter
NAL Exceedance Report	Discharger	Submitted upon request by the Regional Board
NEL Violation Report	Discharger	Submitted within 24 hours after NEL exceedance has been identified
NOT	LRP	Upon completion of construction or change in ownership
PRDs	LRP	Submitted for permit coverage
– NOI	LRP	In PRD package
– Risk Assessment	LRP	In PRD package
– Site Map	LRP	In PRD package
– SWPPP	QSD	In PRD package
– Certification Statement	LRP	In PRD package
– Post-Construction Calculations	LRP	In PRD package (if applicable)
– ATS System Design	LRP	In PRD package (if applicable)
– Soil Particle Size Analysis	LRP	In PRD package (if applicable)

Appendix B – Attachments

– Annual Fee	Discharger	In PRD package
Rainfall Erosivity Waiver Certification	LRP	In PRD package (if applicable)

41. **Do all projects need to submit an Annual Report?**
    Annual Reports must be submitted by projects that are enrolled under 2009-0009-DWQ for more than one continuous three month period. The Annual Reports will be submitted electronically in SMARTS. See the following web link for the SMARTS system:

    http://smarts.waterboards.ca.gov/

42. **Where can I get guidance for on-site rain gauge installation and reading?**
    The SWAMP has a Guidance Compendium for Watershed Monitoring and Assessment. Section 5.1.1 of this Compendium contains guidance for Rainfall Monitoring.

43. **I would like to design a sediment basin for my project. The 2009-0009-DWQ permit requires sediment basins to be designed according to the method provided in CASQA's Construction BMP Guidance Handbook. Do I need to purchase the handbook in order to design a sediment basin for my project?**
    No. It is not necessary to purchase California Storm Water Quality Association's Construction BMP Guidance Handbook in order to design a sediment basin for a project. See the following web link to obtain a free copy of the Sediment Basin Fact Sheet (SE – 2):

    https://www.casqa.org/store/products/tabid/154/p-171-fact-sheet-se-2.aspx

44. **At what point will the Attachment F, ATS requirements apply on my site?**
    The requirements in Attachment F only apply when an Active Treatment System (ATS) is implemented on a project site. ATS is defined in the 2009-0009-DWQ permit as "A treatment system that employs chemical coagulation, chemical flocculation, or electrocoagulation to aid in the reduction of turbidity caused by fine suspended sediment." The application of chemicals on disturbed soil areas is not considered ATS. This BMP is used for the purpose of erosion control. See the following web link for Attachment F:

    http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/wqo_2009_0009_att_f.pdf

45. **Will a risk re-calculation be required if my project extends past the original construction end date specified?**
    Yes, all projects that extend past their original construction end date will be required to electronically re-calculate their risk level in SMARTS.

Questions or comments about the 2009-0009 DWQ Permit?

1. Please email stormwater@waterboards.ca.gov or phone (866) 563-3107; or
2. Contact the City of Davis Public Works Department @ PWWeb@cityofdavis.org or phone 757-5686.

Stormwater Training Presentation Format / Agenda

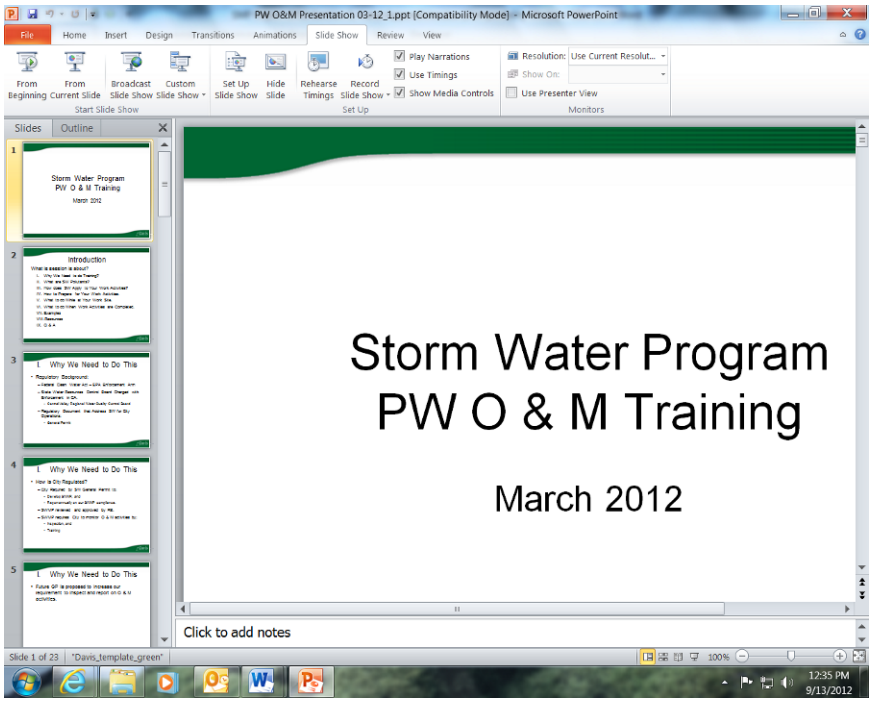
I. Introduction

- What is session is about?
- Why we need to do this?
- Sign in sheet.
- How do they think stormwater BMPs apply to their day-to-day operations?
- What are the types of precautions they currently take in their day-to-day operations?

II. Review of Stormwater Reference Materials

- Handout of basic stormwater BMP principals.
    - Discussion of how does it applies to the work crew?
- Review of the Stormwater Pollution Prevention for Municipal Operations manual.
    - Do they have one and do they use it?
    - What it is and what it provides?
- Handout specific to the work crew (Revised SOP's where applicable).

III. Questions and Answers



Basic Stormwater Best Management Practices – March 2012

What are storm water pollutants?

- Dirt, sand, gravel, asphalt, concrete, etc.
- Saw cutting slurry
- Green wastes: grass clippings, leaves, branches, weeds, mulch, sawdust etc.
- Oils, fuels, detergents, solvents, adhesives, etc.
- Pesticides, fertilizers
- Trash, plastic, bottles, cans, etc.

Tasks to Perform Prior to Commencing with Work Related Activities at a Site:

1. Consult CASQA Municipal SW BMP Manual prior to starting your work to make sure you are utilizing proper stormwater BMPs.
2. Assess your work site for the job you are about to perform. Look for items that have the potential to be washed into a storm drain.
3. Take time to remove items that could be washed into the storm drain. If cleaning up debris prior to commencing with activity, use dry clean-up methods only (e.g., sweep instead of hosing things down).
4. Install diversion, retention or filtering devices to protect the storm drain inlets.
5. Place materials away from storm drains, contain and cover them. Keep them out of the rain.
6. If possible, avoid scheduling work during rain or wind events.

Tasks to Perform While Performing Work at a Site:

1. Divert stormwater runoff or water from possible contamination sources.
2. Clean-up spills and drips immediately using absorbent materials – dispose of absorbent materials properly.
3. Report dumping or discharges to any storm drain, areas that would lead to a storm drain, or into conveyance channels.

Tasks to Perform when Work is Completed:

1. Clean up the work area. Use dry clean-up methods whenever possible after work activities cease.
2. Clean dirt and vegetation off of equipment at 1818 wash rack prior to storing outside.
3. Prevent pollutant discharges to drainage inlets - if a surface must be hosed down, block inlets to divert water, collect water and dispose of properly.

Basic Stormwater Best Management Practices – March 2012

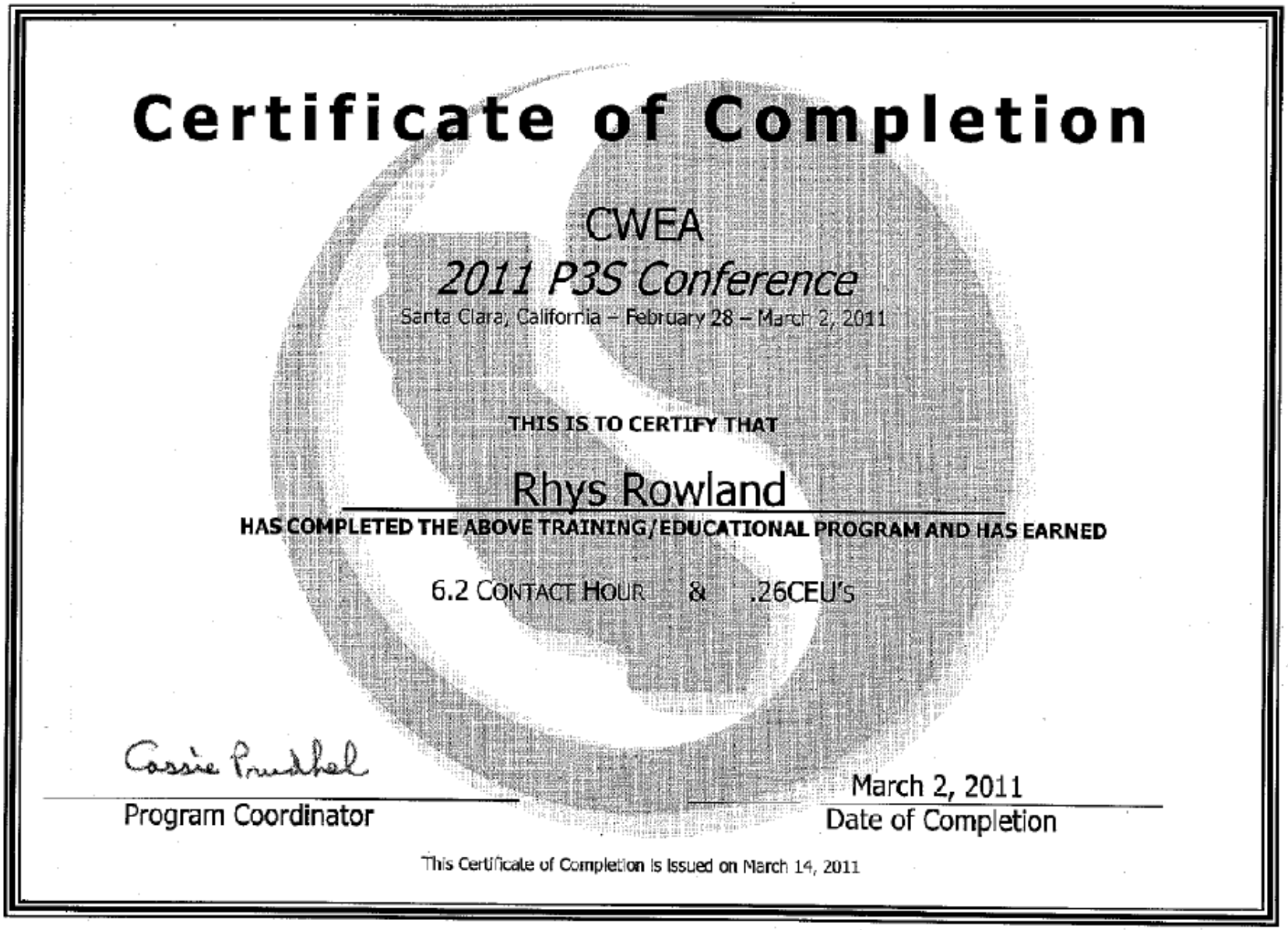
Basic Pollutants:

What are stormwater pollutants? Whatever you would not dump in a fish tank.

- Dirt, sand, gravel, asphalt, concrete, etc.
- Saw cutting slurry
- Green wastes: grass clippings, leaves, branches, weeds, mulch, sawdust etc.
- Oils, fuels, detergents, solvents, adhesives, etc.
- Pesticides, fertilizers
- Trash, plastic, bottles, cans, etc.

Basic Principles:

1. Keep materials under cover and out of the rain.
2. Divert stormwater or water runoff from possible contamination sources.
3. Keep things clean using dry clean-up methods whenever possible (e.g., sweep instead of hosing things down) both prior to commencing with work activities and after work activities cease.
4. Clean dirt and vegetation off of equipment at appropriate controlled run-off wash facilities (like 1818 5th Street) prior to storing outside.
5. Prevent pollutant discharges from reaching drainage inlets. If a surface must be hosed down, block inlets, collect water and dispose of properly.
6. Prevent materials from entering drainage inlets – do not stock materials near drainage inlets.
7. Clean-up spills and drips immediately using absorbent materials – dispose of absorbent materials properly.
8. Report dumping or discharges to any storm drain, areas that would lead to a storm drain, or into conveyance channels.
    - For identifiable materials (e.g., oil based products or paint) in quantities of 5 gallons or less and sanitary sewer overflows contact PW Administration for clean-up.
    - For un-identifiable spills or in quantities greater than 5 gallons, contact the Fire Department.



Certificate of Completion

CWEA

2011 P3S Conference

Santa Clara, California – February 28 – March 2, 2011

THIS IS TO CERTIFY THAT

Rhys Rowland

HAS COMPLETED THE ABOVE TRAINING/EDUCATIONAL PROGRAM AND HAS EARNED

6.2 CONTACT HOUR & .26CEU'S

Cassie Prudhel

Program Coordinator

March 2, 2011

Date of Completion

This Certificate of Completion is issued on March 14, 2011

Redwood Barn Nursery, Inc.
1607 Fifth Street
Davis, CA 95616

www.redwoodbarn.com

Monday through Saturday 9 – 5:30
Sunday 12 – 5

15% off
any "Less Toxic" product

Any one-time purchase. Not combined with other offers. Limited to stock on hand.
Coupon good through March 30, 2011

Davis ACE

Davis Ace Hardware
3rd & G Streets
Downtown, Davis
530-758-8000
www.davisace.com

15% off any plant purchase of $20 or more

Davis ACE The helpful place.

helpful earthchoices.

Expires 11-20-10

cashiers: CTRL+D to issue discount, ring sku OW1

Not valid with other offers or currently advertised items. Not valid on gift cards, labor, custom orders, special orders, merchandise replacement agreements, or as payment on a DLH account. Valid only towards stock on hand. Employees of Davis Ace Hardware are not eligible for a discount. In the event of a return, savings may be deducted from your refund. Other restrictions may apply. See store for specific details.

15% off any single less-toxic gardening product

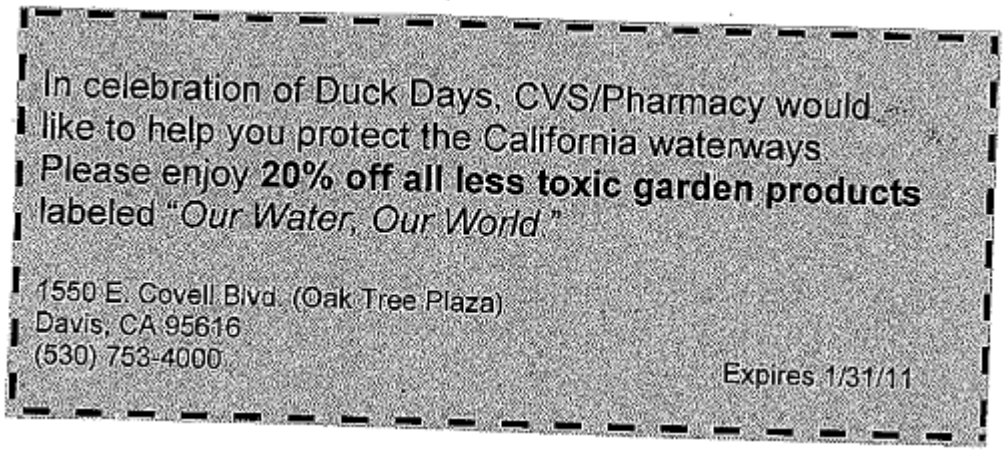
Davis ACE The helpful place.

helpful earthchoices.

Expires 11-20-10

cashiers: CTRL+D to issue discount, ring sku OW1

Not valid with other offers or currently advertised items. Not valid on gift cards, labor, custom orders, special orders, merchandise replacement agreements, or as payment on a DLH account. Valid only towards stock on hand. Employees of Davis Ace Hardware are not eligible for a discount. In the event of a return, savings may be deducted from your refund. Other restrictions may apply. See store for specific details.


In celebration of Duck Days, CVS/Pharmacy would like to help you protect the California waterways. Please enjoy **20% off all less toxic garden products** labeled "*Our Water, Our World*"

1550 E. Covell Blvd. (Oak Tree Plaza)
Davis, CA 95616
(530) 753-4000

Expires 1/31/11

FREE COMPOST CLASSES

The City of Davis Recycling Program is offering free composting classes at the following locations and dates:

- Saturday, February 27 at 10:00 am - Senior Center Activity Room, 646 A St.
- Fri., March 5 at 3:00 - Public Works Corp. Yard Training Room, 1717 5th St.
- Friday, March 12 at 3:00 - Public Works Corp. Yard Training Room, 1717 5th St.
- Friday, March 19 at 3:00 - Public Works Corp. Yard Training Room, 1717 5th St.

Classes will run about one hour. In addition to backyard composting, these classes will place a particular emphasis on simple, pest-free methods of composting food scraps via worm composting, in-ground composting and homemade food digester. After attending a class, Davis residents can receive a starter set of composting worms and residents in single-family homes can receive a free backyard compost bin.

To register, call the City of Davis Public Works Department at 757-5686 or email pwweb@cityofdavis.org. For more information on composting, see www.davisrecycling.org.

A copy of the flyer used for composting classes in 2009-10.

Free Composting Classes

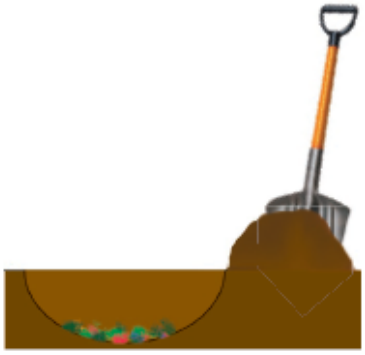
The City of Davis Recycling Program is offering free composting classes at the following locations and dates:

- Saturday, February 27 at 10:00 am - Senior Center Activity Room, 646 A Street
- Friday, March 5 at 3:00pm - Public Works Corporation Yard Training Room, 1717 5th Street
- Friday, March 12 at 3:00pm - Public Works Corporation Yard Training Room, 1717 5th Street
- Friday, March 19 at 3:00pm - Public Works Corporation Yard Training Room, 1717 5th Street

Classes will run about one hour. In addition to backyard composting, these classes will place a particular emphasis on simple, pest-free methods of composting food scraps via worm composting, in-ground composting and homemade food digester. After attending a class, Davis residents can receive a starter set of composting worms and residents in single-family homes can receive a free backyard compost bin.

To register for a class, call the Public Works Department at 757-5686 or email pwweb@cityofdavis.org.

For more information about composting, see: www.davisrecycling.org.



Davis City of Davis Public Works Department 757-5686 www.davisrecycling.org

A copy of the sign posted at the Davis Communit Gardens and at the Public Works Corporation Yard for composting classes in 2009-10.

Composting Class

★ Backyard Composting

- Materials
  - carbon—brown stuff—dry leaves, sticks, bread, coffee filters
  - nitrogen—green stuff—grass clippings, green leaves, fruit and vegetables, coffee grounds, weeds
  - Fruits and vegetables—always bury deep in the pile (6-12") to discourage rodents. Add a week's worth at a time, and always chop it up so it breaks down faster. The presence rodents or insects mean too much is being added. Stop adding veggies, and add some green matter to increase the heat in the pile.
  - Do NOT use—meat, bones, grease, fat, oil, pet feces, invasive weeds, diseased plants, large pieces of wood
- Moisture—40% material should clump in your hand when you squeeze it with a drop or two on your fingers
- Temperature—140° to 150° for several days to kill weeds, or maintain the pile at 120° for a longer time.
  - increase temperature by adding water, making the pile larger, turning the pile, adding greens or insulating the pile (cold weather)
  - piles must be 3x3x3
- Air—turning your pile—decomposer organisms need oxygen to survive. Turn every one to two weeks for maximum aeration
- Surface area—organisms feed on the surface area—more surface area means they can decompose things quicker.
  - chop the material up for faster decomposition
- Hot Pile Technique—FAST—compost in 3 months
  - 3 parts carbon, 1 part nitrogen
  - easiest in the fall—lots of brown material
  - lack of brown stuff in the spring? Let stuff dry out first and turn brown
- Hot pile technique—SLOW—compost in 3 to 6 months
  - 50/50 carbon to nitrogen
- Harvesting—spread out compost in the sun to cure it, dry it out a little, make it easier to spread, let the sow bugs etc crawl out
- Troubleshooting—go over the bullets on the sign
- More information
  - Regional Recycling Backyard Composting Guide
  - Backyard Composting by Harmonious technologies—at County Library

★ How to build your own compost bin

- see examples
- buy your bin
- other ideas to build a bin—3 bin system, 2 bin system, concrete block bin

★ Basic worm composting

- Ideal for apartments, places with little space, composting lots of fruits and veggies quickly
- Worms
  - red wriggler, not earthworms
  - about 1 lb of worms to start
  - UCD Project Compost 754-8227 or projectcompost@yahoo.com
  - The Worm Farm in Durham 894-1276--worms for about $30 for 1 Lb
- The bin
  - holes for aeration, drainage
  - shallow—they like to feed near the surface where there is a lot of oxygen.
  - tight fitting lid—keep them in, but most importantly—keep others out
    - birds, moles, ants, fruit flies
  - 1’ deep x 2-3’ square surface is best.
- Environment
  - careful not to freeze or overheat the worms
  - they can tolerate 50°-84°, prefer 55°-77°
- Bedding
  - shredded paper, shredded cardboard, peat moss, leaves, manure
  - 8-10” of moist bedding
- Worm food
  - fruit and vegetable peelings, coffee grounds, bread, tea bags, crushed egg shells, rice
  - no non-biodegradable stuff—plastic, rubber bands, bones, meat, cat litter
- Composting
  - keep the bedding moist
  - bury food scraps in the bedding
  - they like to feed on the top, but don’t like the sun
  - In a few months, ready to harvest
- Harvest
  - start feeding on only one side
  - place piles out in the sun—worms move towards the bottom
  - pull worms out by hand
- Troubleshooting
  - Bin smells bad
    - too much food—feed less
    - too wet—check drainage holes/ add dry bedding
  - Fruit flies
    - food isn’t buried—bury it/ cover surface of the bedding with carpet or a sheet of newspaper
  - worms aren’t eating
    - too much food—feed less
    - too acidic—stop feeding citrus peelings or sprinkle with crushed oyster shells
- More information—Mary Appelhof’s book “Worms Eat My Garbage” at Yolo County Public Library
- worm composting classes given by UCD Project Compost

Where does the water go?

A portion of the stormwater that is collected in the City is conveyed to the Davis Wetlands where it is used to support this constructed wetlands system and all its wild inhabitants.

What happens to water from storms, landscape irrigation, or car washing? This water, called stormwater or urban runoff, flows into the City's storm drainage system through over 2500 curbside catch basins - the openings located along street gutters. The water moves through the storm drain piping below our streets to our creeks, sloughs, wetlands, rivers, delta, bay and eventually the Pacific Ocean.

Initially, much of this water fills the City's detention and wildlife ponds which support an array of wildlife species. Other water flows through drainage ditches towards the northern and eastern edges of the City.

To remind everyone about the importance of preventing pollution of our stormwater, be it from other sources, the City has installed storm drain inlet markers near each drain:

Storm Drain Markers:
Installing these markers in an easy hands-on project for you, your group, or organization to participate in that will help spread the pollution prevention message. If you'd like to join in this awareness effort, please contact City of Davis Public Works at (530) 757-5686

Stormwater pollution can be extremely harmful to the health of the plants and animals with which we share this planet. Help us to protect your water resources for current and future generations.

If you see anyone dumping questionable materials, please call City of Davis Public Works at (530) 757-5686.

If it is an emergency, call 911.

PLEASE KEEP OUR WATERSHED CLEAN!!

Mulching

PROVIDE A BETTER GROWTH ENVIRONMENT FOR YOUR PLANTS AND TREES

Provided by:
The City of Davis

What is Mulching?

Mulching is one of the simplest and most benefitial practices you can use in the garden. Mulch is defined as a protective layer of material that is spread on the top of soil.

Mulch comes in two different types: organic and inorganic. Examples of organic mulch are: grass clippings, straw, bark chips and similar material. Mulches that are inorganic include: stones, bark chips, and plastic. Both of these types of mulch are very beneficial to your soil in their own ways.

Mulch that is both organic and inorganic provides these benefits:
- It protects the soil from erosion
- It reduces compaction from the impact of heavy rains
- Conserves moisture which reduces the need for frequent watering
- Maintains a more even soil temperature
- Prevents weed growth
- Keeps fruit and vegetables clean
- Keeps your feet clean, allowing easy access to your garden even when it is damp
- Provides a "finished" look to the garden.

Organic mulch also improves the condition of the soil. As the mulch slowly decomposes, it provides organic matter which helps keep the soil loose. Loose soil improves root growth, increases the infiltration of water and also improves water-holding capacity of the soil. Organic matter is a source of plant nutrients and it also provides an ideal environment for earthworms and other beneficial soil organisms.

Inorganic mulches have their place in certain landscapes but they do lack the soil improving properties of the organic mulch. Due to the persistence of inorganic mulch, it may be difficult to remove if you decide to change your garden at a later date.

Did you know...

Excessive application of mulch can result in a situation where roots grow into the mulch instead of the soil.

Selecting the right mulch for your needs

All mulches have different characteristics, some of them may have advantages in some situations and disadvantages in others. Before you choose a mulch, consider how you will use it.

Summer mulches: Summer mulches are placed during the growing season and are used primarily for flowers and vegetables. Their role is to retain moisture, reduce weed growth, and moderate soil temperatures. Summer mulches are often left in place through the winter to reduce the effects of erosion. Perennial plants can also be substituted by winter mulches.

Winter Mulches: Winter mulches are used to mainly protect shrubs and flowers from severe winter temperatures and frost heaving. Frost heaving happens when the soil expands and contracts due to freezing and thawing. Moist, fine-grained soil at certain temperatures is most susceptible to frost heaving. Winter mulches are laid down in the late fall and serve as insulation during the winter.

Permanent mulches: Permanent mulches are used where mulch is most desired year around and does not need to be disturbed. These places are, for example, in paths and around trees and shrubs. If a permanent mulch is organic, it will need to be replenished annually.

Sheet Mulching: Sheet mulching is a fast and labor saving technique for building beds and surpressing weeds. The quick way to do this type of mulching is by putting down some compost. Then cover the area with cardboard or layers of newspaper. Make sure that you to do not use shiny and/or colored paper. Soak each layer and finish with 6" of straw or sawdust. You will want to make sure not to bury the sawdust of the wood chips. Make soil pockets for immediate planting of just let it sit for a few months.

How to mulch

Summer mulch for annual flowers and vegetable gardens is normally applied in midspring, once the soil has warmed enough for active root growth. The best way to prevent weeds from growing is to apply mulch in the early spring. Remove any existing weeds before applying the mulch.

For winter protection, apply the mulch in early winter or once the soil has cooled but before it has frozen. For your trees and shrubs, spread mulch evenly and only 2 to 3 inches deep. For trees and shrubs in beds, mulch the entire bed. For trees in the lawn, mulch a wide range of about 3 to 6 feet from the trunk. *Never pile mulch against tree trunks*. Pull the mulch back away from the trunk about an inch or so. As the organic mulch decomposes, it may need to be replenished a little every year; but do not let the mulch get too deep (4 inches max.).

For flower beds, mulch can be applied up to 3 inches deep (after settling), but should be kept pulled back slightly from the plant stems. Mulches should throughly cover an area to a uniform depth to be the most effective. Low or bare spots will be prone to weed problems.

Mulching is a wonderful alternative for fertilizers. The best part is that you do not hasve to keep applying it. It is good year around. Fertilizers are harmful to the environment. When irrigation is used, it will take any remaining fertilizer with it. This runoff then goes into the storm drain and into our waterways. The aquatic life is then exposed to these chemicals and can kill them. Help keep our waterways clean by using mulch instead of pesticides.

Free Compost Bins Available!

The City of Davis offers a year-round compost correspondence course to Davis residents in single-family homes. To enroll, call the Public works Department (757-5686) to request a compost packet mailed to your home. Once you receive the packet, read the materials inside, fill out the enclosed quiz and return the quiz to the Public Works Department. A city staff-person will contact you to let you know that your quiz was received and that your free compost bin is available for pick-up.

Best Gardening Practices

Integrated Pest Management (IPM) - A decision-making process to determine pest levels and tolerance thresholds and combines biological, cultural, physical, and chemical tools to maximize health, e nvironmental, and financial risks. The method uses extensive knowledge about pests, such as infestation thresholds, life histories, environmental requirements, and natural enemies to compliment and facilitate biological and other natural control of pests.

Weed control measures at this garden consists of sheet mulching where cardboard or layers of newspaper are placed on the ground which is then covered by wood chip mulch. other weed control practices consist of solarization, where the suns energy is used to pasteurize the soil killing most pest and michanical controls such as hand weeding or weed whacking. These techniques are demonstrated here so that the community can observe and apply these techniques at home.

Donations

Momorial benches may be donated to the garden.

Donations to the herb garden are accepted. If you would like to make a donation, please make a check payable to the City of Davis. Send the donation to the address provided below and send to: Attn Bob Stephenson

For more information or to get involved, please contact:

Bob Stephenson
City of Davis
23 Russell Blvd
Davis, CA 95616
rstephenson@cityofdavis.org
(530) 757-5656 x 7329

City of Davis

Herb Wildlife Garden

Dedicated to garden beautification, education, wildlife protection, and water quality.

A Joint Project of the
Parks & General Services
&
Public Works Departments

Davis California

To remind everyone about the importance of preventing pollution of our stormwater, be it from other sources, the City has installed storm drain inlet markers near each drain:

Storm Drain Markers:
These markers are easy to install. So if you, your group, or organization would like to participate in this pollution awareness program, please contact City of Davis Public Works at: (530) 757-5686

Stormwater pollution can be extremely harmful to the health of the plants and animals with which we share this planet. Help us to protect your water resources for current and future generations.

If you see anyone dumping questionable materials, please call City of Davis Public Works at (530) 757-5686.

If it is an emergency, call 911.

PLEASE KEEP OUR WATERSHED CLEAN!!

Where does the water go?

A portion of the stormwater that is collected in the City is conveyed to the Davis Wetlands where it is used to support this constructed wetlands system and all its wild inhabitants.

What happens to water from storms, landscape irrigation, or car washing? This water, called stormwater or urban runoff, flows into the City's storm drainage system through over 2500 curbside catch basins - the openings located along street gutters. The water moves through the storm drain piping below our streets to our creeks, sloughs, wetlands, rivers, delta, bay and eventually the Pacific Ocean.

Initially, much of this water fills the City's detention and wildlife ponds which support an array of wildlife species. Other water flows through drainage ditches towards the northern and eastern edges of the City.

Volunteer at the Garden

There are many volunteer opportunities at the Garden during the week or on weekends.

Adopt-A-Park

Sections of the garden may be adopted by groups or individuals.

To remind everyone about the importance of preventing the pollution of our stormwater, the City has installed storm drain inlet markers near each drain:

These markers are easy to install. If you, your group, or organization would like to participate in this pollution awareness program, please contact City of Davis Public Works at: (530) 757-5686

Stormwater pollution can be extremely harmful to the health of the plants and animals with which we share this planet. Help us to protect your water resources for current and future generations.

If you see anyone dumping questionable materials, please call City of Davis Public Works at (530) 757-5686.

If it is an emergency, call 911.

PLEASE KEEP OUR WATERSHED CLEAN!!

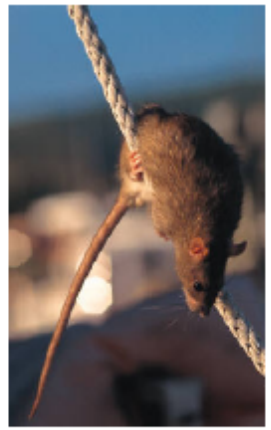
Where does the water go?

A portion of the stormwater that is collected in the City is conveyed to the Davis Wetlands where it is used to support this system and all its wild inhabitants.

What happens to water from storms, landscape irrigation, or car washing? This water, called stormwater or urban runoff, flows into the City's storm drainage system through over 2500 curb side catch basins - the openings located along street gutters. The water moves through the storm drain piping below our streets to our creeks, sloughs, wetlands, rivers, delta, bay and eventually the Pacific Ocean.

Initially, much of this water fills the City's detention and wildlife ponds which support an array of wildlife species. Other water flows through drainage ditches towards the northern and eastern edges of the City.

Rat Control



Your informational guide to understanding rats & how to identify and prevent infestations

Promoting alternatives to pesticides

Davis
California

The Norway Rat

The Norway rat. This rat is also known as the brown rat and the sewer rat. This distinctive pest is gound in urban and suburban neighborhoods. These rodents eat and contaminate food, damage buildings and other property by gnawing and burrowing, and may spread diseases that affect people and pets. These rats are husky, and brownish. They weigh about 11 ounces and are 18 inches long including the 6 to 8 1/2 inch tail. Their fur is course and mostly brown with scattered black on the upper surfaces; the underside is typically greay to yellowish white. They will eat any type of food, although they prefer high-quality foods

The down low on roof rats

Roof rats. To some, they may look cute and innocent, but these rats are the ones responsible for having spread the plague in Europe during the middle ages. Here in Davis it poses both a health and safety hazard. Besides plague, roof rats may spread other diseases to humans like murine typhus, leptosporosis, salmonellosis, trichinosis and rat bite fever. They can also spread diseases to domestic animals and are suspected of carrying ectoparasites from one place to another. Besides consuming and contaminating stored food and feed, they will gnaw on wiring which can pose a serious fire hazard. they also will gnaw on wood and tear up the insulation in your home for nesting material. Rats will feed on fruits and vegetables in many gardens as well as damaging young trees by feeding on their bark. Unprotected compost piles as well as pet food as common food sources for them in our neighborhoods. Roof rats are nocturnal and have an arial nature so this is what distingiushes them and has implications for their comtrol. Roof rats prefer to forage above ground. They are agile climbers and travel through trees, vines, rafters wires and rooftops. They use trees and utility lines to reach food and enter buildings. They can also be found foraging in dense ground cover. Secluded areas above ground are ideal for nesting such as attics, overhead garage storage, in the vine cover of fences or buildings and in wood piles. They prefer non- diciduous trees or trees with hollow cavities and crowns of palm trees, especially when old fronds are not removed.

Did you know?

Roof rats have high reproductive potential with 3 to 5 litter a year with 5 to 8 pups per litter!

WHAT TO DO FOR A BAT IN NEED?

If you or someone you know finds **a sick or injured bat**, do not attempt to handle the animal. While bats are normally gentle creatures, if they are injured or feel threatened, they may be dangerous. **Please call Corky Quirk at NorCal Bats Rescue and Education at (530) 902-1918.**

THE BIGGER PICTURE

Whenever you fertilize your garden or use insecticides both outside and inside your home, remember where these compounds can travel. If rinsed down your kitchen sink or off of your property and into your gutter, the contaminated water will flow into the City's wastewater or storm drainage system. This water moves through the drain piping below our streets to our rivers, creeks, wetlands, sloughs, the delta and the bay.

Stormwater fills the Davis storm water detention and wildlife ponds which are landscaped to support an array of wildlife species. Stormwater is also conveyed to the Davis Wetlands where it is used to support the wetlands system and all its wild inhabitants. Storm water pollution can be extremely harmful to the health of the plants and animals in our community.

Organic pest control and other efforts to reduce chemical pesticide and fertilizer use are important in protecting the wildlife and aquatic resources in our local community.

Help us to protect your water resources for current and future generations.

For more information about how you can prevent water pollution please call Jack Betourne, Environmental Compliance Coordinator, or for more detailed information about bats and instructions for building your own bat box, call John McNerney, Wildlife Resource Specialist. Both can be reached by calling: (530) 757-5686.

For other helpful hints including proper composting techniques and proper disposal of household chemicals, visit the City of Davis website at: **cityofdavis.org**

Cover photo courtesy of David Rosen of Wildlife Photography and Public Relations

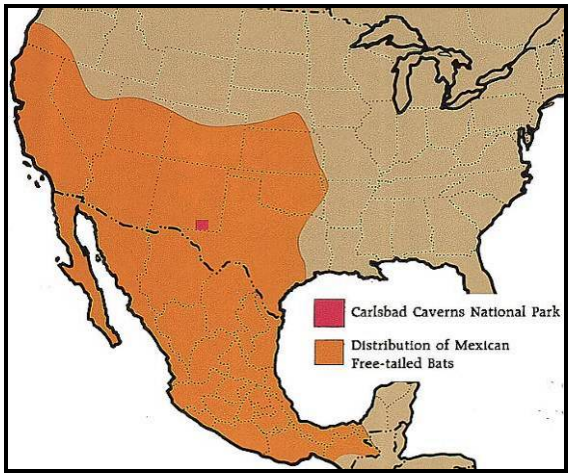
BENEFICIAL BATS

Mexican free-tailed bat
(*Tadarida brasiliensis*)

Promoting alternatives to pesticides…

THE BENEFITS OF BATS

Yolo County is one of many regions in the Central Valley that is a haven for native bat species. Areas in and around the City of Davis offer excellent habitat for bats, in particular, the Mexican free-tailed bat.



*orange region denotes Mexican free-tailed range

Mexican free-tailed bats are among the smaller bat species, weighing less than one tenth of a pound and having a wingspan of only twelve inches. These furry creatures range from brown to black in color, and are rarely seen except in the evenings when they emerge to hunt insects.

Did you know . . . ?

Mexican free-tailed bats eat insects ranging from moths and mosquitoes to beetles and ants, and they are one of the most important controllers of agricultural insect pests. **In one night alone, a colony of Mexican free-tailed bats can consume as much as 250 tons of insects!!!**

What is a Bat Box?

Bat boxes are rectangular wooden shelters in which local bats will roost. Inside of each box, they will snuggle among the constructed wooden crevices, hanging upside down by their feet. During the day, the bats will remain in the box, likely sleeping. They will emerge from their box roughly 15 minutes after sundown, and fly into the night to hunt for insect meals. Mexican free-tailed bats are not easily disturbed by children or pets so long as their box is out of reach. They are neither messy nor noisy.

Guano

One of the many benefits of having neighborhood bats is a local source of natural fertilizer. Bat excrement, or guano, is organic and tremendously rich in nutrients and minerals. Mixed in low concentrations with soil or irrigation water, it can be used to enhance the growth of lawns, vegetables, landscape shrubs and flowers. Care must be taken not to over fertilize as, like all fertilizers, it may damage plants and/or pollute local waterways.

Can't find a guano source? You can purchase guano from local nurseries and garden supply stores. By using guano carefully in your yard, you can avoid the use of more toxic, manufactured fertilizers. Such fertilizers are often applied to the surface of the soil and are thus more dangerous to children and pets. These products are also at a higher risk of moving from your yard into the stormwater system.

Did you know . . . ?

Bats are fast flying creatures. At times, they can reach flight speeds of **40 to 60 miles per hour**, traveling nearly as quickly as cars driving at freeway speed!!!

What's the big deal with inorganic insecticides?

Each year, consumers from private homeowners to city businesses purchase insecticides to combat pest on their properties. These pesticides, ranging from sprays to pellets, are not only limited in their effectiveness, but also potentially toxic, particularly to children and pets. Additionally, household insecticide use may cause adverse health effects. Neighborhood bats can decrease the need for these toxic chemicals by providing a natural and safe control for insect pests.

Not only will you, your family and your pets benefit from the presence of local bats, but harmless insect species will too. Beneficial creatures that would otherwise be vulnerable to the use of industrial and household insecticides will thrive. Furthermore, nearby storm water will be safe from the runoff of pesticides that could result from industrial and household use.

WHAT TO DO FOR AN OWL IN NEED?

If you or someone you know finds **a sick or injured owl,** do not attempt to handle the animal. While owls are normally gentle birds, if they are injured or feel threatened, they may be dangerous. To report an ill or injured barn owl, **please call the California Raptor Center at UC Davis at (530)752-6091.**

THE BIGGER PICTURE

Whenever you use rodent bait or poison either outside or inside your home, remember where the bait can travel. If rinsed off of your property and into your gutter, the bait-contaminated water will flow into the city storm drainage system. This water moves through the storm drain piping below our streets to our rivers, creeks, wetlands, sloughs, the delta and the bay.

Stormwater fills the Davis storm water detention and wildlife ponds which are landscaped to support an array of wildlife species. Stormwater is also conveyed to the Davis Wetlands where it is used to support the wetlands system and all its wild inhabitants. Stormwater pollution can be extremely harmful to the health of the plants and animals in our community.

The City of Davis Owl Box Program and your efforts to reduce chemical rodent bait use are important in protecting the wildlife and aquatic resources in our local community.

Help us to protect your wildlife and water resources for current and future generations.

For more information about how you can prevent water pollution please call the Environmental Compliance Coordinator, or for more detailed information about the City's Barn Owl Box Program or plans to build your own owl box, the Wildlife Resource Specialist. Both can be reached by calling (530)757-5686.

For other helpful hints including proper composting techniques and proper disposal of household chemicals, visit the City of Davis website at: **cityofdavis.org**

Davis
California

BARN OWL BOX PROGRAM

Promoting alternatives to pesticides…

THE BENEFITS OF OWLS

Yolo County is one of many regions in the State of California that provide habitat for native raptor species. In particular, areas in and around the City of Davis are well-established habitats for owls including the Barn Owl.

*purple region denotes Barn Owl range

Barn Owls are among the larger owl species with wingspans of roughly 3.5 feet on average. They can be easily recognized by their characteristic light-colored breast plumage and heart-shaped faces. Despite their abilities as successful hunters, Barn Owls typically live for only a short time, surviving for an average of 18 months to 2 years.

Did you know . . . ?

One nest of six young Barn Owls and two adults may consume as many as 1,000 small mammals in a single nesting season.

Resident pest control specialists!

Barn Owl boxes are rectangular wooden shelters in which the owls will nest and roost. The owls will snuggle together on the box's floor, and will remain there during most of the day. When night falls, Barn Owls will leave their box in pursuit of primarily rodent prey. Remarkably, Barn Owls are able to hunt in complete darkness, and will use their acute sense of hearing and excellent vision to locate unsuspecting creatures.

Barn Owls will spot and swoop down upon their prey, which include rodents, insects and small birds. Once captured, prey is eaten or brought to the box of hungry offspring. It is possible that after Barn Owls have moved into a local owl box, you may see owl pellets inside or around the box. These small wads of hair, feathers and bones resemble scat but are regurgitated by the owls following digestion of prey. These odorless pellets are interesting to dissect, as the entire skeleton of the prey item can be found. When handling a pellet, be sure to wear rubber gloves and/or thoroughly wash your hands afterward.

Did you know . . . ?

One Barn Owl male can have multiple mates in a given breeding season, and sires between three and six chicks per mate.

Why not use rodent baits?

Each year, consumers from private homeowners to city businesses purchase rodent baits to keep their properties free of mice, rats and gophers. These pesticides, ranging from powders to pellets, are not only limited in their effectiveness, but also toxic, particularly to children and pets. Household rodent bait use may cause adverse health effects. Neighborhood owls can decrease the need for these toxic remedies by providing a natural and safe control for rodent pests.

Not only will you, your family and your pets benefit from the presence of local owls, stormwater runoff will too. By relying more on natural pest control methods, more toxic pesticides are kept out of your yard, storm drains and waterways.

Where does the water go?

What happens to water from storms, lawn watering, or car washing? This water, called stormwater or urban runoff, flows into the City's storm drainage system through over 2500 curbside catch basins - the openings located along street gutters. The water moves through the storm drain piping below our streets to our rivers, creeks, wetlands, sloughs, delta, bay, and eventually the Pacific Ocean.

Initially, much of this water fills the City's detention and wildlife ponds which support an array of wildlife species. Other water flows through drainage ditches towards the northern and eastern edges of the City.

A portion of the stormwater that is collected in the City is conveyed to the Davis Wetlands where it is used to support this constructed wetlands system and all its wild inhabitants.

To remind everyone about the importance of preventing pollution of our stormwater, be it from other sources, the City has installed storm drain inlet markers near each drain.

Storm Drain Marker

These markers are easy to install. So if you, your group, or organization would like to participate in this pollution awareness program, please contact City of Davis Public Works at (530) 757-5686

PLEASE KEEP OUR WATERSHED CLEAN!!

Stormwater pollution can be extremely harmful to the health of the plants and animals with which we share this planet.

Help us to protect your water resources for current and future generations.

If you see anyone dumping questionable materials, please call City of Davis Public Works at (530) 757-5686.

If it is an emergency, call 911.

Stormwater

Best Management Practices (BMPs)

Home and Charity Car Washing: Is it possible to keep both our cars and watershed clean?

City of Davis
Department of Public Works

PROTECT OUR WETLANDS

Our local watershed is comprised of a delicately balanced ecosystem. Creeks, ponds and wetlands are home to numerous species of plants and animals. These species rely on the abundance of smaller organisms that support the food web. These organisms can be harmed by discharges of material and wastes from an array of urban activities.

Car Washing

Contrary to what some believe, water that runs off from our homes, parking lots and streets does not recieve treatment. Unlike the water coming from toilets and bathtubs, urban run off flows straight into local wetlands and ponds. Home and charity car washers often don't realize they are actually harming the environment. Automotive frames, paint, brakes and exhaust contain heavy metals such as lead, zinc, iron oxide and asbestos. Soap contains phosphates, chlorine and other non-biodegradable ingredients that are toxic to fish and other aquatic life.

Did you know...

Detergent as low as:
- 2 parts per million can cause fish to absorb twice the amount of chemicals as normal?
- 5 parts per million will kill fish eggs?
- 15 parts per million cause death in most fish species?

The Solution to Car Washing Pollution

Best Management Practices such as washing your car at a licensed car wash facility or redirecting wash water away from the storm drain can prevent pollutants from entering our wetlands, ponds and oceans.

What you can do:

- Wash your car at a licensed car wash facility. These facilities collect wash water and send it to the sanitary sewer system for treatment. Some facilities even recycle the water through on-site filtration for use as a pre-wash rinse!
- Charity car wash organizers should try and partner with licensed car wash facilities. Charities benefit from increased traffic and fund raising. The car wash owner benefits from increased business and good public relations. Everyone benefits from healthy local wetlands ecosystems!
- If car washing must occur outside of a licensed car wash facility, wash vehicles over turf grass or other vegitated soil. Another method would be to use a containment sump to capture wash water. This water may then be pumped into a sanitary sewer drain.

Save Water for More Important Uses

Professional car wash facilities are a water responsible alternative to washing your vehicle at home or in a parking lot. Most car wash facilities save water by using high pressure nozzles and pumps.This car wash equipment is designed to throughly clean a vehicle using minimal water. As a result, a fraction of the water is used compared to a garden hose typically used at home or charity car washes.

Think About It!

Would you intentionaly throw buckets of dirty, soapy water in a river, pond or stream? That's what is happening when 100 to 200 cars are washed at home or charity car wash events.

WHERE DOES THE WATER GO?

What happens to water from rain, lawn watering, or car washing? This water, called stormwater or urban runoff, flows into the City's storm drainage system through over 2500 curbside catch basins – the openings located along street gutters. The water moves through the storm drain piping below our streets to our rivers, creeks, wetlands, sloughs, the delta, the bay, and eventually the Pacific Ocean.

Initially, much of this water fills the City's detention and wildlife ponds which support an array of wildlife species. Other water flows through drainage ditches towards the northern and eastern edges of the City.

A portion of the stormwater that is collected in the City is conveyed to the Davis Wetlands where it is used to support this constructed wetlands system and all its wild inhabitants. Tours of the Davis Wetlands are offered the first Saturday of the month. for more information contact the Yolo Basin Foundation: (530) 757-4828.

To remind everyone about the importance of preventing pollution of our stormwater, be it from concrete and mortar activities, or other sources, the City of Davis has installed these storm drain inlet markers near each drain:

These markers are easy to install. So if you, your group, or organization would like to participate in this pollution awareness program, please contact City of Davis Public Works at (530) 757-5686

Stormwater pollution can be extremely harmful to the health of the plants and animals with which we share this planet.

Help us to protect your water resources for current and future generations.

If you see anyone dumping questionable materials, please call City of Davis Public Works at (530) 757-5686.

If it is an emergency, call 911.

PLEASE KEEP OUR WATERSHED CLEAN!!

CITY OF DAVIS Concrete & Mortar Program

Best Management Practices (BMPs) and Procedures for:

Masons and Bricklayers
Sidewalk Construction Crews
Patio Construction Workers
Construction Inspectors
Home Builders & Developers
Do-It-Yourselfers

Pollution Prevention Starts with your Help

PROTECT OUR WETLANDS

The Putah Creek bioregion and Yolo Bypass Wetlands near Davis comprise a delicately balanced ecosystem, home to numerous species of aquatic plants and animals crucial to the food web. These organisms can be harmed by discharges of material and wastes from concrete and mortar activities.

Concrete & Mortar Problems

Activities using fresh concrete and mortar can easily contribute to urban runoff pollution. Materials and wastes blown or washed into a street, gutter, or storm drain represent a sediment load which can have a direct impact on our wetlands and creeks.

Sediment is the most common pollutant from worksites. Sediment can clog the gills of fish, block light transmission and increase river and slough water temperature, all of which can harm aquatic life and disrupt the food chain upon which both wildlife and people depend.

Sediment also may carry with it other worksite pollutants such as paints, pesticides, cleaning solvents, motor oil, grease, and fuel.

SOLUTIONS

Best Management Practices such as handling, storing, and disposing of materials properly can prevent pollutants from entering our rivers and oceans.

General Business Practices

- Train employees and contractors in proper pollution prevention practices.
- Keep materials out of the rain. Store both dry and wet materials under cover, protected from rainfall, runoff, and wind.
- Do not store bags or other materials directly on the ground, instead place them in containers or up on pallets.

During Construction

- Practice Source Reduction—minimize waste when ordering materials. Order and mix only the amounts needed to complete the job.
- Use recycled and recyclable materials whenever possible.
- Place erosion controls (e.g. berms) down-slope to capture runoff carrying mortar, cement or other waste before it reaches the storm drain.
- Set up and operate small mixers on tarps.

Cleaning Up

- Prevent wash water and other waste from entering driveways, streets, gutters, storm drains or drainage ditches.
- Wash out concrete mixers and equipment only in designated wash-out areas. Use a wet/dry vacuum to pick up water from concrete cutting operations.
- Recycle cement wash water by pumping it back into cement mixers for reuse.
- When breaking up paving (cement or asphalt), be sure to pick up all the pieces. Recycle them at a crushing company, along with any excess porcelain from the site.
- Recycle broken wood and cleared vegetation. Unrecyclable materials must be taken to the appropriate landfill or disposed of as hazardous waste.
- Dispose of small amounts of excess dry concrete, grout and mortar in a covered container.
- Never bury waste material.

Concrete recyclers:

Yolo County Central Landfill
44090 County Road 28H
Woodland, CA 95776 - (530) 666-8856

Golden State Crushing
5980 Outfall Circle
Sacramento, CA 95828 - 916-381-4100

WHERE DOES THE WATER GO?

What happens to water from rain, lawn watering, or car washing? This water, called stormwater or urban runoff, flows into the City's storm drainage system through over 2500 curbside catch basins – the openings located along street gutters. The water moves through the storm drain piping below our streets to our rivers, creeks, wetlands, sloughs, the delta and the bay. This water eventually enters the Pacific Ocean.

Initially, much of this water fills the City's storm water detention and wildlife ponds which are landscaped to support an array of wildlife species. Other water flows through drainage ditches towards the northern and eastern edges of the City.

A portion of the stormwater that is collected in the city is conveyed to the Davis Wetlands where it is used to support the wetlands system and all its wild inhabitants. Tours of the Davis Wetlands are offered the first Saturday of the month. For more information contact the Yolo Basin Foundation: (530) 757-4828.

PROTECT OUR WETLANDS

The Putah Creek bioregion and Yolo Bypass Wetlands near Davis comprise a delicately balanced ecosystem, home to numerous species of aquatic plants and animals crucial to the food web. These organisms can be harmed by discharges of wastes and pollutants from paint products.

To remind everyone about the importance of preventing pollution of our stormwater, be it from food service activities, or other sources, the City of Davis has installed these storm drain inlet markers near each drain:

These markers are easy to install. So if you, your group, or organization would like to participate in this pollution awareness program, please contact City of Davis Public Works at (530) 757-5686

Help us to protect your water resources for current and future generations.

If you see anyone dumping questionable materials, please call City of Davis Public Works at (530) 757-5686.

If it is an emergency, call 911.

PLEASE KEEP OUR WATERSHED CLEAN!!

CITY OF DAVIS PAINT DISPOSAL AND CLEAN-UP

Best Management Practices (BMPs) and Procedures for:

Painting Contractors

&

Do-It-Yourselfers

Pollution Prevention Starts with your Help

Davis California

Painting Problems

Painting can generate wastes that are extremely hazardous to your health and to the environment. These wastes include excess paint, used paint thinner, cleanup water, and wastes from prep work including paint chips and scrapings. If improperly disposed of, such wastes can contaminate water running off your property.

To avoid harm to the land, plant, and animal life, use the following simple guidelines.

Solutions

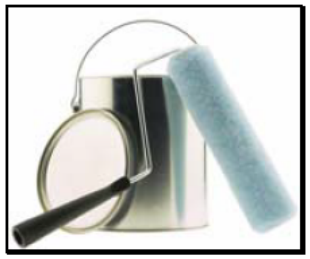
Best Management Practices such as handling, storing, and disposing of materials properly can prevent pollutants from entering our rivers and oceans.

Consider Prior to Painting…..

- ✓ From the very start of your project, take care to minimize painting waste by buying only as much paint and as many materials as needed. Not only will this generate less waste, but it will decrease the amount of leftover materials that will require proper disposal.
- ✓ If possible, purchase only disposable brushes, rollers and trays to avoid the use of solvents at the conclusion of the job.
- ✓ Don't use paints over 15 years old. They may contain toxic levels of lead.

Paint Removal

- ✓ Avoid using chemical paint strippers. Their residue is a hazardous waste. For disposal information, contact Yolo County Landfill. Call 666-8729 or visit www.davisrecycling.org
- ✓ Avoid generating large amounts of waste water by wet scraping rather than pressure washing.
- ✓ If you must, pressure wash homes and buildings only if they were built after 1978. (Link to BASMAA for BMPs)



- ✓ Chips and dust from marine paints or paints containing lead or tributyl tin are hazardous wastes. Dry clean-up only.
- ✓ Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up and disposed of as trash.
- ✓ When stripping or cleaning building exteriors with high-pressure water, block storm drains. Wash water onto a dirt area.

While Painting

- ✓ Keep your work site clean. Best management practices for handling, storing, and disposing of materials properly can prevent pollutants from entering the storm drains.
- ✓ Keep all liquid paint products and wastes away from the street, gutter, and storm drains. Liquid residues from paints, thinners, solvents, glues and cleaning fluids are hazardous wastes.
- ✓ Brush as much paint as possible from brushes before rinsing them.
- ✓ Avoid using oil-based paints. If possible, use latex products.
- ✓ Never wash brushes and equipment in the gutter. Instead, dispose of latex paint wastewater by pouring it into the **sanitary sewer.**

Cleaning Up

- ✓ Drain and recycle excess paint from spray equipment prior to washing equipment with water.
- ✓ Dispose of thoroughly dry, latex paint cans, rags, drop cloths, and disposable brushes may be disposed of in the trash. Scoop excess dried latex paint out of can and the can be recycled. Avoid throwing away any items that still have wet paint on them.
- ✓ Recycle empty spray cans using your local curbside recycling program.
- ✓ Excess latex-based and oil based paints can be recycled. If you intend to dispose, then the paint is disposed of as hazardous waste. Household Hazardous Waste may be dropped off for no charge at the Yolo County Landfill. Call 666-8729 or visit www.davisrecycling.org
- ✓ If possible, reuse paint thinner. Let any particles left in the thinner settle out. Then pour off the clear thinner for re-use. Dispose of contaminated thinner as you would other household hazardous wastes.
- ✓ Reuse leftover paint for touch-ups.

WHERE DOES THE WATER GO?

What happens to water from rain, lawn watering, or car washing? This water, called stormwater or urban runoff, flows into the City's storm drainage system through over 2500 curbside catch basins – the openings located along street gutters. The water moves through the storm drain piping below our streets to our rivers, creeks, wetlands, sloughs, the delta and the bay. This water eventually enters the Pacific Ocean.

Initially, much of this water fills the Davis storm water detention and wildlife ponds which are landscaped to support an array of wildlife species. Other water flows through drainage ditches towards the northern and eastern edges of the city.

A portion of the stormwater that is collected in the city is conveyed to the Davis Wetlands where it is used to support the wetlands system and all its wild inhabitants.

To remind everyone about the importance of preventing pollution of our stormwater, be it from concrete and mortar activities or other sources, the City of Davis has installed these storm drain inlet markers near each drain:

These markers are easy to install. So if you, your group, or organization would like to participate in this pollution awareness program, please contact City of Davis Public Works at (530) 757-5686

Storm water pollution can be extremely harmful to the health of the plants and animals with which we share this planet.

Help us to protect your water resources for current and future generations.

If you see anyone dumping questionable materials, please call City of Davis Public Works at (530) 757-5686.

If it is an emergency, call 911.

PLEASE KEEP OUR WATERSHED CLEAN!!

Stormwater

Best Management Practices (BMPs)

Roadwork & Paving

Safe Environment Practices and Procedures for:

Driveway, Sidewalk, Parking Lot, Road Construction Crews

Seal Coat Contractors
Construction Inspectors

General Contractors

Grading Equipment, Paving Machine, Dump Truck, Cement Mixer Operators

Roadwork & Paving Problems

Road paving, surfacing and pavement removal activities contribute to urban runoff pollution. This is because they take place right in the street, where urban runoff contamination can result from asphalt, saw-cut slurry or excavated material being washed into storm drains.

Rain or runoff then carries these toxic substances to the ocean through the storm drain system, posing a hazard to human and aquatic life.

Extra planning is required to store and dispose of materials properly and guard against stormwater and ocean pollution. This brochure will tell you how.

Solutions

Best Management Practices such as handling, storing and disposing of materials properly can prevent pollutants from entering the storm drains.

General Business Practices

- ☑ Keep materials out of rain, runoff and wind. Store them under cover of temporary roofs or plastic sheets.
- ☑ Schedule excavation and grading work for dry weather
- ☑ Develop and implement erosion and sediment control plans for embankments
- ☑ Recycle all used oil, concrete, broken asphalt etc.

Equipment Maintenance

- Keep all vehicles and equipment in good working order and inspect frequently for leaks.
- Conduct all vehicle/equipment maintenance and refueling at one location away from storm drains.
- Do not use diesel oil to lubricate equipment or parts.

Asphalt & Concrete Removal

- After breaking up paving, be sure to remove all chunks and pieces. Recycle them at a crushing company.
- Dispose of small amounts of dry concrete in the trash.
- Make sure broken pavement does not come in contact with rainfall or runoff.
- Shovel or vacuum saw-cut slurry and remove from the site. For disposal information contact the City of Davis Public Works Department at (530) 757-5686.
- Cover or barricade storm drain openings during saw-cutting.

Asphalt & Concrete Disposal

Use a crushing company like those listed below(?) to recycle cement, asphalt and porcelain rather than taking them to a landfill.

During Construction

- Cover catch basins and maintenance holes when applying seal coat, slurry seal, or fog seal
- Use check dams, ditches or berms to divert runoff around excavations.
- Never wash materials from exposed aggregate concrete, asphalt, or similar treatments into a street, gutter or storm drain.
- Collect and recycle excess abrasive gravel or sand. Call the City of Davis at (530) 757-5686 for a recycling guide

Spills

- Never hose down dirty pavement or surfaces. Clean up all spills and leaks using dry methods, or dig up and remove contaminated soil. For disposal information call the City of Davis at (530) 757-5686
- Catch drips from paver with drip pans or absorbent material placed under the machine when not in use.

The City has installed storm drain inlet markers near each catch basin to remind everyone about the importance of preventing pollution of our stormwater.

Stormwater pollution can be extremely harmful to the health of the plants and animals with which we share this planet. Help us protect our water resources for current and future generations.

If you are witnessing someone dumping questionable materials down a catch basin, please call 911 or contact the City of Davis Public Works Department.

Would you, your group, or organization like to participate in this pollution awareness program? If so, please contact City of Davis Public Works at (530) 757-5686.

PLEASE KEEP OUR WATERSHED CLEAN!!

Where does the water go?

A portion of the stormwater that is collected in the City is conveyed to the Davis Wetlands where it is used to support this system and all its wild inhabitants.

What happens to water from storms, landscape irrigation, or car washing? This water, called stormwater or urban runoff, flows into the City's storm drainage system through over 2500 curb side catch basins - the openings located along street gutters. The water moves through the storm drain piping below our streets to our creeks, sloughs, wetlands, rivers, delta, bay and eventually the Pacific Ocean.

Initially, much of this water fills the City's detention and wildlife ponds which support an array of wildlife species. Other water flows through drainage ditches towards the northern and eastern edges of the City.

Soil Solarization

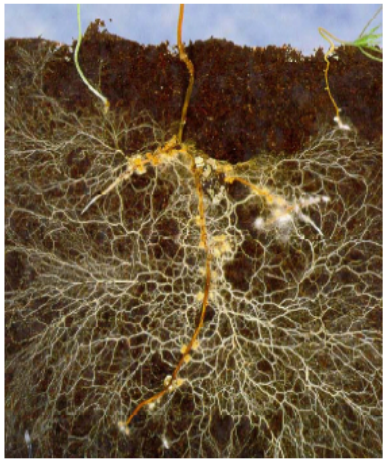
An easy, organic way to get rid of weeds with solar energy!

Promoting Alternatives to Pesticides

Davis
California

Integrated Pest Management

Integrated Pest Management (IPM) - A decision-making process to determine pest levels and tolerance thresholds and combines biological, cultural, physical, and chemical tools to maximize health, environmental, and financial risks. The method uses extensive knowledge about pests, such as infestation thresholds, life histories, environmental requirements, and natural enemies to compliment and facilitate biological and other natural control of pests.



Healthy soils feed and nurture healthy plants that are more resistant to pests. Organic matter fuels these healthy soils through the use of compost and organic fertilizers.

What is Soil Solarization?

Soil solarization is a nonpesticidal method of controlling soilborne pests by placing UV resistant plastic sheets on moist soil during the months of high temperature. The plastic sheets allow the suns heat to be trapped in the soil, heating the upper levels. This will increase the soils temperature to levels that kill most weed seeds and seedlings. This process also improves the soil structure and increases the amount of Nitrogen and other essential plant nutrients. Large increases in plant growth often occur in solarized soil. In order to solarize your garden, you must cover the soil for 4 to 6 weeks during the hot period of the year when the soil will receive the maximum amount of direct sunlight. The best time to do this is in June and July. If this is done properly, the soil can reach a temperature of up to 160 degrees on the surface and up to 100 degrees 3 inches deep. Solarization is by far, the most effective way home gardeners have to reduce or eliminate soilborne garden pests. The benefits are healthier and more productive flower and vegetable gardens. This process is better for your plants and the environment since there are no pesticides used.

How to Solarize Your Soil

Till the area to be treated. The soil needs to be broken up in order to enhance the heat conduction through the soil. Rake the surface to allow the UV resistant plastic covering to be placed in close contact with the soil. Then wet your soil, wet soil conducts heat better then dry soil does. Moisten the soil deeply. In moist soils, pest organisms are more active and are also more susceptible to the lethal effects of heat. Next, lay down the large sheets of UV resistant plastic. These can be purchased at hardware and home supply stores. Do not use colored plastic, it does not conduct as much heat as the clear one does. The plastic should be anchored down to prevent heat from escaping. This is done by digging a trench where the sides of the plastic can be pulled tight and covered with the soil in the trench. Leave the covering on for at least 4 to 6 weeks. When solarizing is complete, plant your bed with seed or healthy, uncontaminated plants.

Example of solarization near bike path along Mace channel in East Davis.

PROTECT OUR WETLANDS

The Putah Creek bio-region and Yolo Bypass Wetlands near Davis comprise a delicately balanced ecosystem. These waterway are home to numerous species of aquatic plants and animals crucial to the food web. These organisms can be harmed by discharges of pesticides in the runoff coming out of urban areas. You can reduce this risk by using effective less toxic pesticides. Consider using these less toxic pesticides:

USE:	FOR:	INSTEAD OF:
Ant Stakes	Ants	Chemical Sprays
Iron Phoshate (Sluggo)	Slugs/Snails	Chemical Bait Killers
Traps	Rats	Chemical Bait Killers
Flea Combs	Fleas	Chemical soaps / Sprays
Soapy water	Aphids	Chemical Sprays

For more information call the City of Davis Integrated Pest Management Specialist at (530) 757-5656 ext. 7322

Use less toxic alternatives to pesticides. Go to "Our Water, Our World" website at www.ourwaterourworld.org for more information.

To remind everyone about the importance of preventing pollution of our stormwater, be it from pesticides or other sources, the City of Davis has installed these storm drain inlet markers near each drain:

These markers are easy to install. If you, your group, or organization would like to participate in this pollution awareness program, please contact City of Davis Public Works at (530) 757-5686. Stormwater pollution can be extremely harmful to the health of the plants and animals with which we share this planet. Help us to protect your water resources for current and future generations.

If you see anyone dumping questionable materials, please call City of Davis Public Works at (530) 757-5686.

If it is an emergency, call 911.

PLEASE KEEP OUR WATERSHED CLEAN!!

Flame Weeding

Your informational guide to Flame Weeding, Pesticides, and Weeds

"Promoting Alternatives to Pesticides"

Provided by:
The City of Davis

Flame Weeding: A non-chemical strategy for controlling weeds

Flame weeding is used as an alternative to harmful pesticides. It works by killing the weeds with an intense wave of heat.

All plants are made up of tiny cells that are filled with water. By delivering a thin blast of heat directed at the stalk and young leaves, the heat will boil the water inside the cell, rupturing them. After this happens, nutrients and water for the plant cannot move from roots to leaves and results in the plant withering and eventually dying. By destroying the cell structure, the weed will not put energy towards growth. Flame weeding is nearly 100% effective on broad leaf weeds that are caught early. Flame weeding will be controlled and done by trained City staff on City properties. If you have any questions and/or concerns about this project, please contact the City's Integrated Pest Management Specialist Martin Guerena @ (530) 757-5656 ext. 7322.

The truth about Pesticides

A pesticide is any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest. Pests can be insects, mice and other animals, unwanted plants (weeds), fungi, or microorganisms like bacteria and viruses. Though often misunderstood to refer only to insecticides, the term pesticide also applies to herbicides, fungicides, and various other substances used to control pests. The pesticides that are used in everyday life can actually be harmful to people, animals, and the environment. Pesticides are designed to kill or otherwise get rid of target organisms.

Pesticides are likely to end up in our waterways that are home to aquatic life. Pollutants have a big impact on these organisms if pesticides are used for the wrong reasons or in the wrong way.

Did you know.....

Certain pesticides have been known to cause birth defects and serious health problems in young children, and pets as well as ant farms.

What are weeds?

Weeds are simply plants that are undesireable where they are growing. They take the light and nutrients needed by the other plants which results in limited growth of the wanted plants. Weeds are known to be unsightly, however some weeds, such as Corncockle (shown below), are used as garden plants. This flower was a common field weed but, due to its beauty, is now used as a garden plant.

Corncockle

Oleander

Some weeds, on the other hand, have thorns or prickles or can even be poisonous such as Oleander (shown above) that can lead to skin irritation if touched. They can also attach to clothes as well as animal fur.

Good Gardening Tips:

Using compost in your garden helps prevent erosion which promotes soil fertility and aids in healthy root development. It also increases the water holding capacity so you will not have to water as often!

into compost. During this time, you can continue to add more material to the pile, just be aware that the material added later will not be ready at the same time as the first material you added.

You can tell that the material in your pile has turned to compost when you can no longer recognize it. After about 3 months, the material will undergo a transformation, and instead of looking like the materials you incorporated into your backyard compost container, the materials will take on a soil or humus-like appearance. You can use a seed-planting tray to screen out the unfinished bits from the finished compost. The screened material can go into a wheelbarrow, and the larger pieces can be tossed back into the pile for additional composting.

Once you have removed the compost, spread it out and leave it exposed to the sun. Drying out the material will cure the compost, and help to kill any remaining plant pathogens. It will also make this material easier to spread. Once the compost has been cured in the sun, it can be added to your garden—a home-made, natural fertilizer!

Troubleshooting Guide

- Pile not heating up.
  - Not enough water—add water.
  - The compost pile is too small—build the pile to at least 3'X3'X3'.
  - Lack of nitrogen-rich materials—mix in grass clippings, kitchen scraps, or fresh manure.
  - The materials in the pile are too big—chop or grind the materials.
- Pile smells bad.
  - Not enough oxygen—aerate; turn the pile.
  - Too wet—add sawdust, dry leaves, etc.
  - If odor smells like ammonia, too much green material present—turn the pile and add dry-woody materials
- Rodents in pile
  - Non-compostable material present. Do not include dairy products, meat, or bones.
  - Food scraps not covered—cover food scraps with dry materials.
  - Too many food scraps, fruits or vegetable scraps added to the pile—stop adding these materials, add more dry materials and turn the pile.

Common Ways to Use Compost

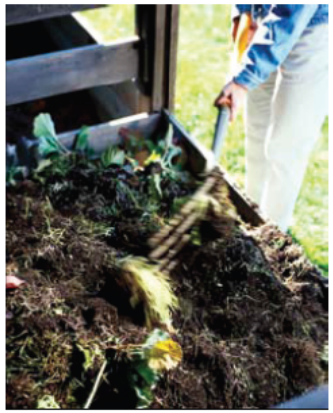
Soil Amendment—As much as six inches of compost can be added to your soil each year. When used as a soil amendment, compost reacts with soil to slowly release both plant nutrients and essential trace elements.

Mulching—Compost is not mulch, yet it can be applied in the same ways that mulches are used. Compost is a stable product that will not deprive your soil of nitrogen. Spread compost two to six inches thick around plants, trees, shrubs, and exposed slopes. This will deter weeds, prevent crusting, curtail erosion, attract earthworms, and conserve water.

Potting Mix—Finished compost can be combined with equal parts of sand and soil to create an excellent potting mix.
For more information about composting, see www.davisrecycling.org, or contact the City

of Davis Recycling Program at 757-5686.

Backyard Composting



Turn over an old leaf...compost!

Davis

City of Davis
Public Works Department
Recycling Program
1717 5th Street
Davis, CA 95616
(530) 757-5686
www.davisrecycling.org

Why Compost?
Composting is a means of using natural decomposing processes to turn kitchen and yard wastes into a nutrient-rich soil supplement for your yard or garden. Returning organic matter to the land perpetuates natural biological cycles and is an ecologically sensible means of using organic wastes. It also has the potential to divert a significant amount of waste from our landfill. If proper composting techniques are followed, composting can require very little work and be odor and rodent free.

What Can I Compost?

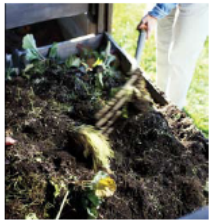
- houseplants
- flowers
- weeds
- grass clippings
- plants
- flowers
- chopped twigs
- leaves
- prunings
- hay/straw
- sawdust/wood chips
- fruit wastes
- vegetable wastes
- coffee grounds
- coffee filters
- paper towels
- tea bags
- egg and nut shells
- bread
- grains
- pasta
- legumes

Do not add meat, fish, bones, dairy products, grease, fat, oil, invasive weeds or badly diseased plants to your compost pile.

Always bury fruits, vegetables and food scraps deep in your compost pile to discourage rodents.

Backyard composting should NOT be used to compost ONLY fruits, vegetables and food scraps or you will attract rodents and other pests. If you want to compost fruits, vegetables and food scraps, be sure that you bury them deep in your compost pile and cover them up with dried grass, leaves and other yard materials. The material in your compost bin should never be comprised of more than 10% fruits, vegetables and food scraps or you may attract rodents.

Essentials of Composting
There are two primary types of composting: anaerobic and aerobic composting. In this brochure, we will be discussing aerobic or "oxygenated" composting methods. There are four essential factors for maintaining a healthy microbial population:



1. Aeration: A compost pile should be turned once a week so that it remains aerobic. If you do not turn your pile regularly it will become anaerobic (lacking oxygen) and will begin to emit foul-smelling odors as well as slow down decomposition. Chop materials into small pieces to enhance air flow and increase surface area.

2. Temperature: The higher the temperature of the pile, the more rapid the decomposition rates. A proper "hot" pile will reach 120-180 degrees Fahrenheit. Maintaining heat in your pile will kill weed seeds and plant pathogens.

3. Moisture Content: The pile should be kept moist but not soggy. If the pile is too wet, water will fill up the air spaces and the pile will become anaerobic. If your pile is usually uncovered, you should cover it with some type of lid during heavy rains to prevent over saturation. Material in your pile should clump in your hand when you squeeze it and leave a drop or two of moisture on your fingers.

4. Carbon-Nitrogen Balance: Wet or "green" materials such as fresh grass clippings and food wastes tend to be high in nitrogen, while dry or "brown" materials such as leaves and dried yard waste are high in carbon. You should try to maintain a balance of 50% dry carbon-rich materials, 35% nitrogen-rich materials, and 15% soil or finished compost.

5. Size: Both the size of the pile and the size of the materials in the pile is important in composting. Piles should be at least 3'x3'x3' to retain a high temperature. To speed decomposition, material should be chopped up before being added to the pile.

Building Your Pile
Compost bins can be constructed from any combination of wood, wire, and concrete. The piles and bins listed here represent just a few of the most basic designs. Choose a design and materials to suit your needs, taste, and pocketbook. If you do not want to build your own bin, a wide variety of commercial compost bins are also available.

1. Loose Pile—The loose pile is easier to turn but takes up more space than a bin.

2. Hoop Bin—This is one of the simplest and least expensive kinds of bins. You will need about 10 feet of chicken wire, hardware cloth, or similar material. The ends should be fastened together with wire or hooks.

3. Wooden Pallet Bin—You can nail a few pallets together to get a easy to turn compost bin. To make composting even easier, if you have room, you might want to consider having two or three open wooden compost bins, so that you can easily turn the compost from one bin to another.

Harvesting Your Compost
It will take 3 to 6 months for your pile to turn

your worms are avoiding the coffee and citrus fruits in your worm bin, stop adding acidic material for a while.

> **Tip:** *Always bury your food scraps at least 1"-2" deep in the bedding to discourage molds and fruit flies.*

You can usually feed your worms once a week, burying the food in a different corner of the box at each feeding. Over feeding your worms can lead to problems in your worm bin, so before you feed the worms, check to make sure that the food you added last time is at least half eaten. If not, wait another week before feeding the worms.

Harvesting the Compost

After a few months, you will notice that the original bedding has disappeared and has been replaced with rich, dark worm compost. Once your bin is about 1/3 full of compost, it's harvest time! Put your worms on a diet for a week, then coax your worms to one side of your box by feeding only on that side. Then remove the compost from the worm-free side of the box, spread the remaining compost evenly across the worm bin and add several inches of fresh bedding.

There will still be some worms in the compost you removed, so you will need to sort them out. Pile the compost on a flat surface in a well lit area (not in the hot sun though or you will kill the worms!). The worms will bury themselves deep in the pile to avoid the light, so you can scrape off the compost from the pile bit by bit until you are left with a small pile of worms at the bottom (place the worms back in the worm bin).

> **Tip:** *Worms often avoid eating seeds, so beware that seeds in your compost remain viable and may grow in your garden.*

Once you have removed the worms, dry the compost out in the sun and screen out any un-composted scraps (you can put them back inside the worm bin). Once the compost has been cured in the sun, it can be added to your garden—a home-made, natural fertilizer!

Troubleshooting

- The bin smells bad
  - There is too much food—feed less
  - The bin is too wet—check drainage holes & add dry bedding
  - The food isn't buried in the bedding—add more bedding to cover the food
- The bin has fruit flies
  - The food isn't buried in the bedding—add more bedding to cover the food
  - The holes in the bin are too large—cover the holes with duct tape and poke smaller holes (1/8" or less) in the duct tape
- The worms aren't eating
  - There is too much food—feed less
  - The bin is too acidic—stop feeding coffee grounds and citrus fruits

More Information

For more information including City-taught composting classes, composting videos, and local places to purchase composting worms, see DavisRecycling.org.

Copies of Mary Appelhof's book *Worms Eat My Garbage* (1982) are available for loan at the Davis branch of the Yolo County Public Library, 315 East 14th Street, 757-5591.

Worm Composting

Let worms turn your kitchen scraps into compost for your garden!

Davis

City of Davis
Public Works Department
Recycling Program
1717 5th Street
Davis, CA 95616
(530) 757-5686
DavisRecycling.org

Let worms recycle for you! They will quickly turn your kitchen scraps into an exceptionally rich fertilizer for your houseplants or garden. Worm composting is easy. You feed the worms your banana peels, wilted lettuce or stale bread and the worms do the rest. Worm composting, also called vermicomposting, can be done year round, indoors or outdoors.

The benefits of vermicomposting are many. Composting is recycling. You and your worms help the environment by reducing the amount of garbage you produce. A medium sized worm box can process more than 5 lbs of food waste each week! In return, you get a valuable soil amendment good for growing just about anything. Worm composting is ideal for composting lots of food scraps quickly. With proper care, your worm box will have a pleasant odor, like that of fresh earth dug out of the ground.

The Worms

Red worms, also called red wigglers, are the best worms for worm composting. Red worms are a different species from common garden worms and night crawlers, which need large amounts of soil and cool temperatures to survive. One pound of red worms (about 1000 worms) is enough to start a worm bin. Get your worms from a friend's bin, or buy them from a worm farm or bait shop. Just type "worm composting" in your internet search bar to find a place that sells worms. Once your worm bin is established you will have enough worms to help your friends start vermicomposting too.

The Worm Bin

You may already have what you need to make a worm bin. A plastic storage container (not a clear plastic though) or a sturdy wooden box can be easily fashioned into a home for your worms. If you prefer, you can buy a bin specially designed for worms.

Whatever you use, your worm box should be shallow, between 12"-24", since worms like to live near the surface where they can breathe. Your box should be large enough to thermally insulate your worms—if your box too small, it will heat up and cool down too rapidly. A 60-70 quart storage bin works nicely. Your bin should also have a tight-fitting lid and holes 1/8" or smaller drilled in the lid and on the bottom for ventilation and drainage. Do not drill large holes and do not put holes in the sides of the bin.

Tip: *As the worms are composting, your worm bin will produce a liquid fertilizer known as "worm tea". If you are using a plastic storage bin for a worm bin, get a second one and place your worm bin inside to collect this excellent fertilizer.*

Locating Your Worm Bin

The worms can tolerate temperatures from 50°-84°, but they prefer 55°-77°. They reproduce and compost the fastest when the weather is warm, so if you have your bin outdoors, keep in mind that the worms will not compost food scraps as quickly during the fall and winter as they do in the spring and summer. Also, if your worms are kept outside, be careful not to freeze or overheat the worms. If your bin is outside, keep it in complete shade. Do not place the bin on concrete or asphalt—the radiant heat from the paved surface will kill your worms. If your bin is outside in the wintertime, place it in a protected area close to your house so that your worms will not freeze. Under a shaded deck against the house is often a great location year-round.

Tip: *If you plan to keep your worms indoors (or move them indoors to protect them from freezing temperatures) place several sheets of damp newspaper over the top of the bedding to add another barrier to fruit flies.*

Bedding

Bedding in a worm bin is like water in a fish bowl. You wouldn't put only an inch or two of water in a fish bowl. Be sure to provide plenty of bedding for your worms to live in, usually 8"-10" of bedding will suffice. Common bedding materials include strips of newspaper, regular shredded paper and shredded cardboard. Moisten the bedding thoroughly and squeeze out excess water BEFORE placing inside your bin. When you are starting your bin, adding a handful of soil is a good idea to provide grit that will help your worms digest food particles.

Feeding the Worms

Worms will eat fruits, vegetables, coffee grounds and filters, tea bags, rice, pasta and bread. To avoid odors, raise your worms as vegans and do not feed them any meat, fish or dairy products. Do not feed your worms salad with dressing on it, or pasta with meat sauce.

Be careful when adding acidic material to your worm bin—coffee grounds and citrus fruits are tasty to worms, but too much can kill them. If

side and shovel the dark, soil-like compost out of the bottom. While harvesting compost from your digester, watch out for the jagged metal around drainage and air holes. If the finished compost is wet and smelly, mix it with some soil, lay it in the sun and wait a week for it to turn drier and sweet smelling. Place the un-composted material back in the digester for further composting. You can also bury the top layer in a trench in the garden, making more room for food scraps in the can.

The simplest way to get completely finished compost without strong odors is to install two digesters. When one digester gets full, just start using the second digester. Usually, by the time the second digester is full, the material in the first digester has finished composting (6-12 months) and is ready to harvest and use.

Using Compost From Your Digester
Before using the compost from your digester, be sure to dry it in the sun for a few days. Drying out the material will work to cure the compost. It will also make the compost easier to spread.

Compost can be used as mulch on established plants, as a soil amendment at planting time, and in potting mixes. Food scrap compost contains more nutrients than yard waste compost, and should be used more sparingly. It can be applied as a one-inch mulch around plants or up to two inches can be dug into garden soil. For a potting mix, add up to 20% food scrap compost to a commercial or homemade potting mix.

Food Digester Trouble Shooting
The best way to keep odors and fruit flies at a minimum is to make sure the digester lid always fits tightly. If flies and odor are still troublesome, stir in leaves or coarse sawdust to keep the food scraps aerobic. When adding more food scraps, you can also cover fresh food scraps with leaves, coarse sawdust, straw or shredded newspaper to exclude fruit flies. If you prefer to use grass clippings as a covering material, first leave them in the sun to dry out and turn brown. Keep in mind that adding dry material each time food scraps are added will make your digester fill up faster. Another way to cut down on flies in your food digester is to hang strips of fly paper on the inside of the digester lid. Once a healthy worm population is established in the digester, they will help reduce odors by aerating the food scraps. The inside of the digester may have a slightly unpleasant smell and some fruit flies—the goal is to make sure that the *outside* of the digester does not smell or have flies buzzing around.

It's important to keep the lid on your digester closed to keep pests out. Place a rock on the lid or tie the lid handle to the handles on the sides of the garbage can to hold the lid on. Also, be sure to keep meat, fish, dairy and greasy food scraps out of your digester. They will smell bad and attract animals, so it is better to put them in the garbage.

Sources:

Building Your Own Composting Bin: Designs for Your Community, California Department of Resources Recycling and Recovery (CalRecycle) Last Revised: June 2006. www.calrecycle.ca.gov/Publications/Organics/44295054.pdf

Composting Yard and Food Waste at Home. The Natural Lawn & Garden, Healthy Landscapes for a Healthy Environment, sponsored by Seattle Public Utilities, 2005. www.seattle.gov/util/stellent/groups/public/@spu/@csb/documents/webcontent/spu01_001989.pdf

Homemade Food Scrap Digester, The Natural Soil Building Program, sponsored by Seattle Public Utilities and managed by the Seattle Tilth Association. Revised 12/03. www.seattle.gov/util/Services/Yard/Composting/Brochures_&_Fact_Sheets/index.asp

More Information

See www.davisrecycling.org for more information about composting and City taught composting classes.

Additional information about composting can be found on the California Department of Resources Recycling and Recovery website www.calrecycle.ca.gov/Organics/HomeCompost/

Food Scrap Composting Made Easy

You *can* compost food scraps yourself without a lot of mess and hassle!

Davis

City of Davis
Public Works Department
Recycling Program
1717 5th Street
Davis, CA 95616
(530) 757-5686
www.davisrecycling.org

Properly composted food scraps can turn into an excellent fertilizer. However, composting food scraps in a regular backyard compost bin can be tricky. If done incorrectly, backyard composting of food scraps can attract some unwanted urban pests (rats, mice, raccoons and opossums). Fortunately, there are three simple ways to compost your food scraps without fear of pests.

Please keep in mind that all three of these methods are ONLY for composting fruit and vegetable trimmings, bread, rice, pasta, tea bags, coffee grounds, coffee filters and other such materials. Do NOT attempt to compost meat, fish, dairy products, pet waste or greasy food through these methods. These items can attract pests and cause problems during composting.

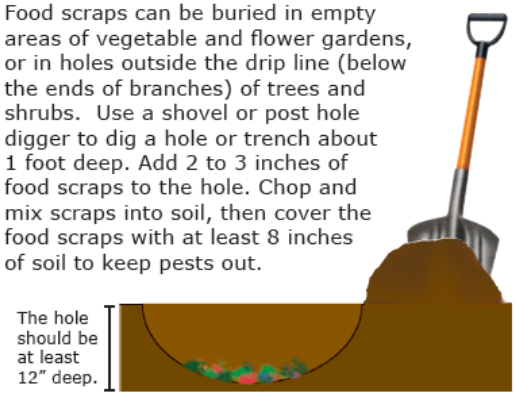
Option #1: Worm Composting

Vermicomposting, a.k.a., worm composting, is the practice of using worms to do your composting. The worms feed on your fruit and vegetable trimmings and decompose them for you. The goal of vermicomposting is to create the ideal environment for worms to thrive so they can efficiently decompose the material you feed them. Worm composting is simple. You need a box, bedding, fruit and vegetable trimmings, and worms. Detailed information about worm composting is available online at www.davisrecycling.org or call Public Works at 757-5686 to request a worm composting brochure.

Option #2: In-Ground Composting

A very simple way to compost your food scraps is just to bury them at least 8 inches deep in your garden. Garden soil provides a natural barrier that keeps out flies and other pests, and holds in moisture and odors. If you have dogs that like to dig in your garden, this approach may not be the best for you.

Food scraps can be buried in empty areas of vegetable and flower gardens, or in holes outside the drip line (below the ends of branches) of trees and shrubs. Use a shovel or post hole digger to dig a hole or trench about 1 foot deep. Add 2 to 3 inches of food scraps to the hole. Chop and mix scraps into soil, then cover the food scraps with at least 8 inches of soil to keep pests out.



Add 2 - 3" of food scraps to the hole, mix with soil, and cover with at least 8" of soil.

Check occasionally for signs of digging by rodents, dogs or other pests. If you see signs of digging, it may be better to switch to a digester or worm bin.

Food scraps may take from 1 to 6 months to decompose depending on the season, moisture, soil and the type of food scraps that are buried. Seeds and small seedlings may be planted on top of buried food scraps immediately. Large transplants should not be planted until the food has decomposed. Do not bury more food scraps in the same place until the first scraps have been fully composted.

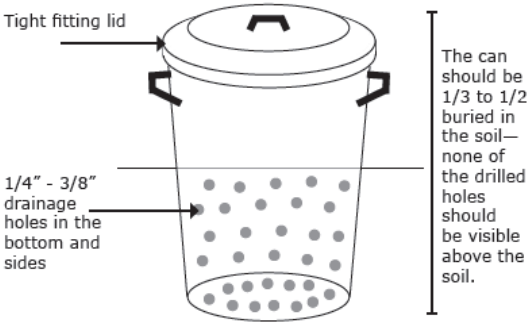
Option #3: Composting with a Food Digester

Making a Food Digester

One of the simplest ways to compost food waste is in a food digester. You can buy one pre-made, or you can make your own using a galvanized metal garbage can (a 32 gallon can works well). The can should have a tight-fitting lid. Drill or punch about 20 drain holes, 1/4 or 3/8 inch diameter, in the bottom of the can. Drill 20 more holes in the sides of the can, but only in the lower third, which will be covered by soil.

It is very important to make sure that the lid fits snugly on the can to keep raccoons and other pests out. If the lid does not fit tightly you can make a lid out of a piece of ply-wood, with a handle on the top and some wood blocks underneath to fit the lip of the can and help hold the lid on. If needed, a bungee cord or rope can be attached to the lid handle and the can handles to secure the lid.

Dig a hole at least 15 inches deep in a well-drained area of your yard and set the can into the hole. The can should be 1/3 to 1/2 buried in the soil—none of the holes you drilled should be visible above the soil. Once the hole is deep enough, push the soil back in around the sides. Your new food digester is ready to use! You do not need to add worms to your digester—worms will find their way into the digester through the holes and will help break down the food scraps.



Composting With Your Digester

Now that your food digester is ready, you can start adding food scraps. You can collect your food scraps in a container in the kitchen, and place the food scraps in your food digester once or twice a week. Be sure the digester lid is on tight after adding the food scraps.

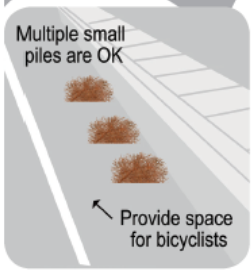
Harvesting the Compost From Your Digester

Depending on your household's food habits, the digester will fill in 4-12 months. Once the digester is full, the compost can be harvested.

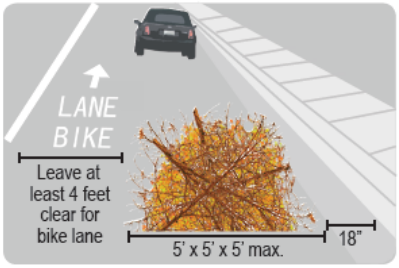
Harvesting the compost is simple. Shovel the upper foot or so of un-composed food off to one

BICYCLE SAFETY

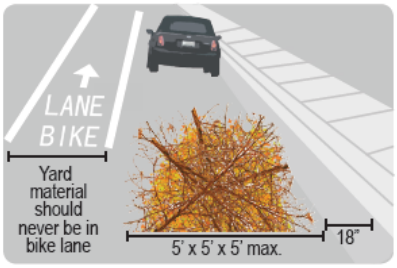
Yard material piles can create serious hazards for cyclists and have caused cyclists to crash because they may not see piles in time to properly avoid them, especially at night. In addition, piles in the gutter may not only cause flooding, but also bring pollutants to nearby waterways. Place piles away from the curb or gutter to avoid making contact with storm water, while being careful not to completely block the bike lane. This may mean that your yard material pile cannot be 5 feet wide if any part of it fully obstructs the bike lane or protrudes into the gutter. Yard material piles cannot be larger than 5'x5'x5' at any given time. Please place yard material piles on the street the day before pick up. This reduces the number of days the piles pose a hazard to bicyclists and also limits the amount of debris movement across the street during windy weather conditions.



Yard material placement—narrow bike lane



Yard material placement—single-striped bike lane



Yard material placement—double-striped bike lane

For more information on street sweeping, yard materials collection and recycling, vist

DAVISRECYCLING.ORG

YARD MATERIAL PILES

Best Management Practices

DavisRecycling.org

Davis California

DavisRecycling

City of Davis Public Works Department
1717 5th Street 757-5686

Yard material pile placement and pick-up information

Davis Waste Removal collects yard materials once a week, usually the day before trash pick-up.

In order to make disposal of yard material easy for you and safe for others, please follow these guidelines.

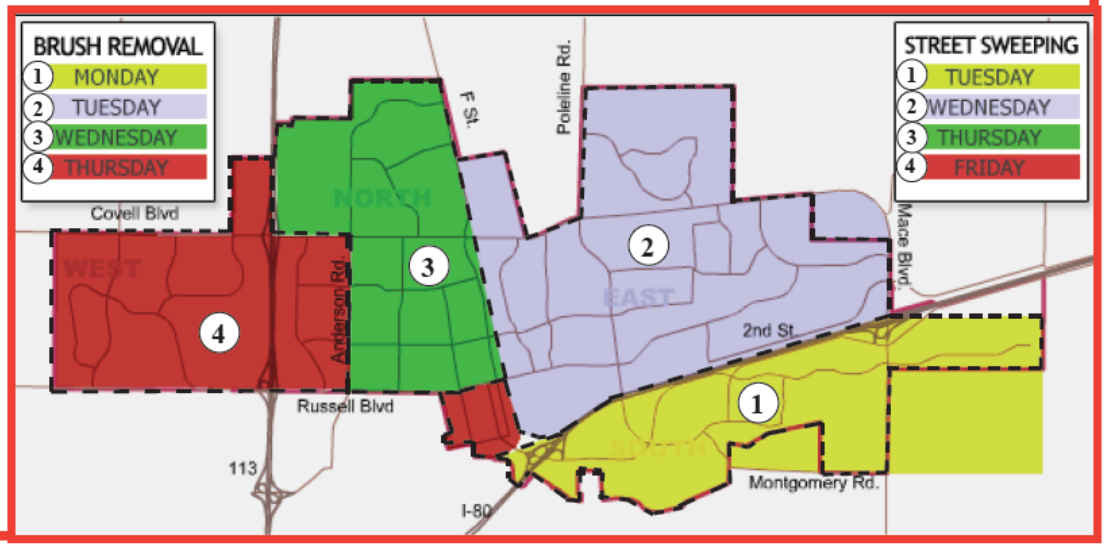
- Place yard materials directly in front of your house, not across the street or around the corner from your house—it will not be picked up.
- Place piles away from the curb or gutter; piles in the gutter may cause flooding and may bring pollutants to nearby waterways.
- Yard material piles should not be larger than 5 feet in any dimension. If space is limited, create multiple small piles instead of a few large ones so as not to obstruct the bike lane.
- Do not block fire hydrants, storm drain inlets or driveways with yard material piles.
- Be aware that yard material piles can create serious hazards for cyclists; bike lanes should never be blocked.
- Do not park on top of or within 3 feet of yard material piles.
- Do not drive over yard material piles.

- Do not place yard materials in bags—leave them loose in piles on the street.
- Avoid placing yard materials out prior to stormy or windy days.
- Place yard material on the street as close to your scheduled pick-up date as possible. See the map below to find your street sweeping and yard materials pick-up days.
- If you are using a leaf blower to clean your property and/or sidewalk, please pick out any trash that you may have collected and do NOT leave trash in your yard material pile.

- Acceptable items for yard material piles include grass clippings, brush, leaves, prunings, weeds, floral displays, Christmas trees, and branches less than 8" in diameter.
- Unacceptable items include sod, soil, concrete, flowerpots, florist's wire, stumps, vegetables, fruit, food scraps, and branches more than 8" in diameter.

For more information on street sweeping, yard materials collection and recycling, see

DAVISRECYCLING.ORG



YOLO/SOLANO

STORM WATER COORDINATION COMMITTEE (SWCC)

AGENDA

Thursday, August 11, 2011, 9:30 am -11:00 am

Location:

Yolo County Planning & Public Works, Cache Creek Conference Room

292 West Beamer Street

Woodland, CA 95695

1. Welcome and introductions

2. Topic for discussion

   - How is each agency dealing with the draft Phase II MS4 Permit?
   - What are the major concerns?
     - Costs, funding, etc.?
     - Implementation of new requirements?
     - Possible non-compliance?
   - Has your agency made final decision on hiring or training a QSD / QSP to meet the permit requirements?
   - Others ……?

3. Next meeting date (suggested December 8, 2011), location -tbd

YOLO/SOLANO

STORM WATER COORDINATION COMMITTEE (SWCC)

AGENDA

Thursday, December 8, 2011, 9:30 am -11:00 am

Location:

The City of Dixon, Dixon City Hall

600 East A Street

Dixon, CA 95620

1. Welcome and introductions: in attendance were
   Sean Cross with RWQCB, Elizabeth Lee with RWQCB, Roberta Childers with the City of Woodland, Carol Scianna with the City of Winters, Paulina Rosenthal with the City of West Sacramento, Patricia Marsh with the City of West Sacramento, Brent Cutler with UC Davis, Tom Reyes with the City of Vacaville, Suellen Coast with the County of Yolo, and Janet Koster with the City of Dixon

2. Topics for discussion:

   - The Draft Phase II MS4 Permit Update!
     This is still being rewritten with no real information as to when it is expected to go out again for comments.

   - What are the Stormwater concerns for your agency?
     The biggest concern is where we are to go from here – most are continuing to do things the same way they have been since the new General Construction Permit came into effect.

   - How has your agency dealt with meeting the QSD / QSP general permit requirements?
     Most of the agencies either have someone or are getting someone qualified as a QSP at least – and requiring the construction company on capital improvement projects to have the required SWPPP prepared by a certified QSD.

   - Have you run into any problems using the SMARTS program?

For capital improvement projects this program has been not caused a problem – but we are all interested in how we are going to use the system for submitting our annual reports next September, since that is what we have been informed.

- Others ……?

Elizabeth Lee was asked what Region 5 has decided about the statement in the Draft MS4 Permit that states that it will be up to each RWQCB to decide weather each jurisdiction's currently approved SWMP is adequate to meet the requirements of the new Phase II MS4 Permit. She said they haven't made any decisions yet due to the rewriting of the permit going on now – that once they have the new permit in place they will make that decision.

3. Next meeting date, April 12, 2012), location – West Sacramento will be hosting this meeting

YOLO/SOLANO

STORM WATER COORDINATION COMMITTEE (SWCC)

AGENDA

Thursday, April 12, 2012, 9:30 am -11:00 am

Location:

City of West Sacramento, Room 238, 2nd Floor, City Hall

1110 West Capitol Avenue

West Sacramento, CA 95691

1. Welcome and introductions

2. Topics for discussion:

   - An Update on the Phase II MS4 Permit
   - How is your agency dealing with QSD/QSP requirements of the GCP on private construction and capital improvement projects?
   - Other items for discussion ……?

3. Next meeting date (suggested August 9, 2012), location –tbd

   Since our meetings are three times/year

   the tentative schedule for 2012-13 would look like:

   August 9, 2012

   December 13, 2012

   April 11, 2013

GP Actions Implementation Analysis for the Stormwater Management Plan

GP Section – Policy # - Action	Text of the Action	How it Effects the SWMP of Stormwater?	Priority Level	Status	Scheduled Implementation
Section III - Visions					
6. Natural Resource Protection and Restoration – bullet #3	Minimize impacts on Davis' land, water, air and biological resources and seek to enhance and restore Davis' environment, through such projects as wetlands and multi-functional drainage ponds.	While this is not a specific action item, it is a governing principle applicable to nearly every action the city takes. At minimum, it would be appropriate to revise the last part of the sentence to the following: "through such projects as wetlands, ~~and~~ multi-functional drainage ponds, and the stormwater and pollution prevention programs".	High	In process	On-going. This would be a text amendment that could be accomplished with next General Plan update after 2013.
Section IV – Community Form					
LU 1.5 - Action a.	Negotiate with affected governmental jurisdictions and public and private agencies or organizations to obtain support for permanent designation of open-space and agricultural zoning within the Davis Planning Area beyond proposed designated urban development in the General Plan.	Development of permanent open space and agricultural zones helps reduce potential for stormwater runoff and therefore helps maintain overall water quality.	Low	In process	On-going
LU 2.1 – Action d.	Immediately following the adoption of the General Plan, initiate a process (1) to develop residential infill and densification design guidelines and strategies and (2) examine zoning in conjunction with neighborhoods and neighborhood councils where applicable. Such guidelines may include the establishment of floor area ratios, second story setback requirements, below grade construction to address scale and mass issues, "green" development and building, landscaping and other "buffering".	Guidelines for infill, densification, and zoning amendments for FAR, setbacks, basements, green development, and landscaping all effect the ability to provide for on-site infiltration and treatment of run-off.	High	Completed In process	Implemented Dynamic process that is improved upon through experience in implementation
LU 3.1 – Action c.	Periodically review Zoning Ordinance performance standards and revise them as needed to ensure high environmental quality, streamlined processing where appropriate, and compliance with State standards.	Environmental quality, streamline process and compliance with State standards all effect stormwater implementation. Staff needs to remain involved with this process as it arises.	Medium	In process	On-going

GP Section – Policy # - Action	Text of the Action	How it Effects the SWMP of Stormwater?	Priority Level	Status	Scheduled Implementation
MOB 1.7 – Action d.4	Buildings and streets outside of the highway rights-of-way shall have generous landscaped areas.	Add the following text to the end of the sentence: "designed to be drought tolerant, contribute to urban wildlife habitat, prevent erosion, detain and treat on-site storm water."	Low	Not completed	Not scheduled. This would be a text amendment that could be accomplished with next General Plan update after 2013.
MOB 1.7 – Action d.9	Utilize drought tolerant vegetation.	Amend the sentence to read as follows: "Utilize native and drought tolerant vegetation."	Low	Not completed	Not scheduled. This would be a text amendment that could be accomplished with next General Plan update after 2013.
MOB 2.1 – Action d.	Review city parking standards for residential and non-residential uses, with priority on non-residential uses, to recognize the utilization of transit and other modes and reflect shared parking opportunities.	Striving to reduce parking or utilize pervious surfaces reduces impervious surfaces, therefore directly affecting stormwater run-off.	Medium	In process	On-going in that zoning is completed project by project through the Planned Development process.
MOB 3.1 – Action k.	Develop standards to mitigate impacts of bicycle facilities on sensitive land uses such as wildlife habitat.	This is an opportunity to incorporate LID design BMPs into bicycle facilities and aid wildlife.	Medium	Not Completed	Staff will work with the City's Transportation Coordinator to complete with the next General Plan update after 2013.
MOB 3.3 – Action d.	Prepare and implement bicycle parking standards for new developments.	More bicycle use means less parking, less impervious surfaces and less pollutants on the road ways.	Medium	Completed	Implemented. The bicycle master plan was revised and adopted in 2009.
MOB 3.5 – Action f.	Install additional landscaping along Old Highway 40/I80 and Second Street.	This provides an opportunity to install LID and treatment for these corridors and to reduce what erosion does occur.	High	Partially completed	Installed in 1997 to 1998 on the old Lincoln Highway from Mace Blvd to Olive Drive. The Second Street component is not currently scheduled. Funding is not secured.

Appendix B – Attachments

GP Section – Policy # - Action	Text of the Action	How it Effects the SWMP of Stormwater?	Priority Level	Status	Scheduled Implementation
MOB 5.1 – Action i.	Create a bicycle pool for use by City employees during working hours.	Reduced use of motor vehicles means less pollution coming off roadways.	Low	Initiated	Implemented. The city has made bikes available for employee use.
UD 1.1 – Action o.	Develop flexible street design standards that provide adequate bicycle and pedestrian safety, emergency vehicle access, and strong aesthetic qualities in rights-of-way that are as narrow as possible.	This is an opportunity to incorporate LID into street corridor design reducing impervious surfaces and providing treatment opportunities for runoff prior to discharge to the waters of the State. This action is not inconsistent with implementation of stormwater BMP's adjacent to, or within public street right of way.	Medium	Work plan in develop-ment	Not scheduled. This would be a text amendment that could be accomplished with next General Plan update after 2013.
UD 2.2 – Action h.	In redevelopment or new development areas, plant trees and other vegetation to the greatest extent possible, with a minimum of pavement.	This is an opportunity to incorporate LID into new development areas, reducing impervious surfaces and providing treatment opportunities for runoff prior to discharge to the waters of the State.	Medium	Completed	Already being practiced in our development review process.
UD 5.1 – Action e.	Develop site design standards for new single-family residential development that create variability of lot sizes, FARs, setbacks, building heights, floor plans, and architectural styles/treatments within each new development area. The Community Development Department shall take the lead in developing these standards with input from various community groups and local professionals.	This is an opportunity to incorporate LID into design standards.	High	On-going	Implemented on a case-by-case basis. Much of site design in Davis happens with each project and the Planned Development process.
Housing 1.1 – Action f.	As part of proposed large housing developments, consider requiring a percentage of small residential lots and structures with related floor area ratio standards to contribute to the supply of affordable housing and to avoid overbuilding of lots.	Requiring un-paved surfaces on lots allows for infiltration and treatment and less run-off.	Medium	Completed	Implemented in development as zoning is approved.

GP Section – Policy # - Action	Text of the Action	How it Effects the SWMP of Stormwater?	Priority Level	Status	Scheduled Implementation
Housing 1.1 – Action g.	Encourage increased densities in Davis in order to facilitate greater affordability without sprawl. Study such dwellings as row houses, town houses, second story apartments over businesses, and second dwelling units. At a minimum, the study parameters should included analysis of the cost of construction impact on local infrastructure, impact to the city General Fund, affordability, proximity to shopping and services and consistency with neighborhood preservations standards as they relate to adaptive reuse, privacy open space, building mass and scale and parking impact issues.	Less sprawl means less impervious surfaces and more treatment opportunities for stormwater.	High	Completed	Implemented in development as zoning is approved.
Housing 4.1 – Action l.	Study the structure of storm-water quality fees and sewer fees for housing units so that smaller units pay lower fees than larger units by considering unit square footage, or other legally acceptable criteria such as the number of bathrooms, or the number of rooms that potentially could be occupied as a bedroom.	Fees set in Ordinance. Fees pay for maintaining the conveyance system. Users should pay according to their impact.	Medium	Completed	Fees revised in May 2011.
ED 3.2 – Action a.	The city should establish fees at levels which are competitive with surrounding jurisdictions. In addition, in special circumstances (that is, job generation, business retention or the city's fiscal base) the city should consider providing fee and other incentives to targeted businesses that are considering locating in Davis in order to be competitive with surrounding jurisdictions.	Fees set in Ordinance. Fees pay for maintaining the conveyance system. Users should pay according to their impact. However, economic sustainability must be considered in setting fee rates.	Medium	Completed	Fees revised in May 2011.
ED 3.2 – Action i.	Clarify and simplify regulations and processing of development applications.	The process effects the implementation of storm water regulations. Staff needs to be at the table if any processes are altered.	Low	On-going	This is typically done departmentally. Nothing currently planned for implementation.
Section V Community Facilities and Services.					

GP Section – Policy # - Action	Text of the Action	How it Effects the SWMP of Stormwater?	Priority Level	Status	Scheduled Implementation
Water 1.1 – Action k.	Develop a program to encourage appropriate, cost-effective and environmentally sound reuse of treated wastewater, gray water and other suitable drainage water. Identify specific opportunities for reuse and incorporate them into City's Urban Water Management Plan.	Gray water is the primary concern with this action. Gray water is a potential pollutant. Any regulations that facilitate its use, must also have strict standards for its use so as to limit any runoff. Drainage waters are used to establish and now maintain diverse wildlife habitat within the city's wetlands that principally serve as flood protection. Broad urban reuse has been evaluated at a planning level recently. Findings demonstrate that the costs far out weight the benefits. Recommend further analysis of various forms of small scale use of gray waters (e.g., with institutions, property managers), permitted locally through application that derives sit conditions and proposed system management and monitoring.	High	Not completed	Unknown time schedule. Staff must be involved in the planning discussions in order to ensure protection for storm water quality.
Water 1.2 – Action c.	Continue to enforce requirements for water-conserving landscaping and encourage developers and property owners to exceed these basic requirements.	Conserving water and drought tolerant landscaping generally means less run-off. Staff must continue to enforce requirements of the Water Conservation Ordinance. Unintended consequences: concentrating pollutants in used waters through reduced water usage and elevates the fixed components of the consumption based water rate.	Medium	Completed and On-going	Water Conservation Ordinance revised and adopted. Continue to monitor completed projects in the field and require conservation BMPs.
Water 1.2 – Action d.	Continue the best management practices and policies related to water conserving landscaping as detailed in the Urban Water Management Plan and other adopted water plans. Review and update the Urban Water Management Plan every five years.	Conserving water and drought tolerant landscaping generally means less run-off. .	Low	Completed	On-going since June of 2006.

GP Section – Policy # - Action	Text of the Action	How it Effects the SWMP of Stormwater?	Priority Level	Status	Scheduled Implementation
Water 1.2 – Action e.	Implement in the public sector and promote, through the Urban Water Management Plan, the implementation in the private sector of Demand-Side Management methods that are proven and cost effective. For instance, programs or ordinances from the Plan could advance improved irrigation distributional uniformity, use of the California Irrigation Management Information System (CIMIS) in irrigation scheduling, and inclusion of Xeriscape principles in landscaping planning, installation and management.	Conserving water and drought tolerant landscaping generally means less run-off.	High	Completed	The use of Xeriscape principles in City facilities has been implemented within the City since June 2006.
Water 2.1 – Action d.	When opportunities arise, plan and design water demand uses to be matched with appropriate water supply qualities. For example, larger areas of landscape or some non-residential uses may be able to use water from lower quality supplies which would reduce demand on higher quality supplies needed for other urban uses.	Quality of water is important in run-off. If lower quality water is to be utilized, then run-off must be minimized. The effect in the Davis SWMP would largely be high saline waters. High TDS in runoff can be problematic, however, that is to be addressed through outreach on proper irrigation equipment /system and practices. Irrigation is also to be addressed through water conservation ordinance.	High	Completed	City Adopted Water Conservation Ordinance in December 2010.
Water 2.2 – Action e.	Support efforts to implement conjunctive water use (coordinated surface and groundwater uses) to stabilize long-term groundwater levels and improve water quality in the Davis Planning Area.	Aquifer stabilization also results in stabilized subsidence. Reduced subsidence means less impact to existing water conveyance systems such as nuisance water pooling. Improved water quality means improved quality of discharge.	Medium	On-going	Implemented

GP Section – Policy # - Action	Text of the Action	How it Effects the SWMP of Stormwater?	Priority Level	Status	Scheduled Implementation
Water 2.2 – Action f.	Where feasible and consistent with General Plan land-use policies, locate stormwater-retention ponds in areas where soil is suitable for groundwater recharge.	Storm water retention and detention ponds act as regional facilities to improve overall water quality and recharge the groundwater basin.	High	On-going	The City has constructed several regional ponds already. We are working on incorporating an in-lieu funding mechanism into our Storm Water Ordinance (SWO) to help pay for regional facilities for projects that can't install on-site facilities.
Water 2.3 – Action a.	Continue to implement best management practices and policies incorporated in the Urban Water Management Plan and other adopted plans.	The BMPs of the Urban Water Management Plan have to do primarily with water conservation. Water conservation, in general means less run-off.	Low	On-going	In progress since June 2006.
Water 2.3 – Action b.	Continue to monitor and enforce, at the local level, provisions to control non-point source water pollution contained in the United State Environmental Protection Agency NPDES program.	Speaks to fundamental elements of the MS4 permit requirements. Non-point source for water quality for discharge is critical to stormwater quality discharge.	High	On-going	Pollution prevention and outreach programs help to get at this. Implemented since 2006.
Water 2.3 – Action c.	Continue to enforce provisions to control erosion and sediment from construction sites	Davis GP action the directly addresses the need to minimize soil disturbance for both source and pollution control measures. Sediment in discharge from construction sites is a key pollutant regulated by the State.	High	On-going	The City has been reviewing construction documents for E&SC plans for many years.

GP Section – Policy # - Action	Text of the Action	How it Effects the SWMP of Stormwater?	Priority Level	Status	Scheduled Implementation
Water 3.1 - Action b.	Prepare management plans for storm drains and channels that stress recreation, long-term landscape maintenance and wildlife habitat.	Reinforces the Davis SWMP in that components of the City's SW system incorporate multi-purpose systems. Davis' SWMP Program is inclusive of diverse wildlife habitat, native vegetation, and SW treatment, and flood protection. The conveyance system not only works as conveyance of storm water, but for treatment as well. Maintenance is needed to keep channels clear for flood flows and to keep landscaping maintained to treat runoff.	Medium	On-going	The City prepared an annual channel and ditch maintenance plan in 2003. It has been implemented since that time.
Water 3.2 - Action c.	Implement on-site storm drainage treatment facilities in City projects wherever feasible.	The Davis SWMP encourages development, implementation and management of on-site treatment systems. Treatment improves the water quality of runoff.	High	On-going	The City has been reviewing projects for treatment controls since 2006. The SWO will formalize this requirement in local code.
Water 3.2 - Action d.	Operate City storm drainage treatment facilities as demonstration projects, and include long term water quality monitoring.	Demonstration projects would allow the City to share knowledge of what worked and what did not with other jurisdictions and the public. This helps to advance storm water treatment technology.	Low	Not completed	Unknown, but as funds allow are developed, this would become a higher priority.
Water 4.2 – Action a.	Continue to work cooperatively with UC Davis, Yolo County, the Flood Control District and other cities through the Water Resources Association (WRA) and other means to address regional water issues.	This provides the opportunity to work with other jurisdictions on regional water quality issues. This provides the opportunity to establish common objectives for respective service areas, e.g., standards for contractors who perform work within the region, share information and improve the quality of discharge.	Medium	In-progress	The City works with the SWCC which is a regional organization of SW managers from various local Cities, UCD, the County and the RWQCB.

GP Section – Policy # - Action	Text of the Action	How it Effects the SWMP of Stormwater?	Priority Level	Status	Scheduled Implementation
Water 4.2 – Action b.	Continue to take a leadership role in the region regarding appropriate management of water resources in Yolo County.	Water resource management advances allocating the appropriate quality of water for its intended purpose. This serves to reduce demand for the higher quality waters. These practices elevate stakeholders awareness of the need to not only properly manage water consumption but also increases user's awareness and knowledge of water quality. This provides the opportunity to work with the County and other local agencies on water quality issues in the County and region.	Medium	On-going	The City participates in CWEA, SWCCC, CV-Salts, CVCWA, CASQA and other regional organizations.
Mat 1.1 – Action c.	Continue to support the city-wide recycling system including service to apartments and businesses, and strive for annual reductions in commercial and industrial waste disposal.	A reduction in waste provides a reduction in threat to water quality through pollution.	Low	On-going	A City-wide curbside, apartment and business recycling program has been conducted by DWR since 2004.
Mat 1.1 – Action d.	Provide attractive well-designed trash receptacles with provision for recyclable materials in appropriate areas in public areas.	Well-designed trash receptacles also involves containment and keeping water out of containers to keep trash "drool" out of the storm drain.	Medium	On-going	Being implemented in project review since 2001 with specific storm water design features since 2006.
Mat 1.1 – Action g.	Revise yard waste collection policies so that lawn clippings are no longer placed in plastic bags.	Plastic contributes to the degradation of water quality.	Low	Completed	Being collected on the street since 2004.
Mat 1.1 – Action h.	Continue to implement the City-wide recycling/composting program for yard debris and plant materials.	The reduction of green waste being collected helps reduce green waste that ends up in the storm water conveyance system.	Low	On-going	The City has collected and composted green waste since 2004, including composting outreach programs and classes since 2007.

GP Section – Policy # - Action	Text of the Action	How it Effects the SWMP of Stormwater?	Priority Level	Status	Scheduled Implementation
Mat 1.1 – Action n.	Study the feasibility of expanding the plastic recycling program.	Plastic contributes to the degradation of water quality.	High	Completed	The expansion involved the collection of rigid plastics #3, #5, #6 and #7 at a 24 hour drop off site and drop off of plastic bags at grocery stores.
C & T 2.2 – Action b.	Work with the local Transportation Management Agency to encourage use of telecommuting and alternate forms of transportation (rideshare, public transit).	Fewer auto trips helps reduce non-point source pollution in storm water discharge.	Medium	On-going	The City's Transportation Coordinator has been working with SACOG and provided comment on the MTP effort in addition to promote events such as May is Bike Month and seeking grants to maintain City bike paths.
Pos 1.1 – Action b.	Develop and implement a parks and recreation facilities master plan.	An opportunity to influence park design to incorporate LID.	Medium	Completed	Process completed 2008. PW staff missed the opportunity to provide meaningful input.
Pos 1.1 – Action c.	Establish design guidelines for the physical development of parks and open space areas.	An opportunity to influence park design to incorporate LID features.	High	Completed	Process completed 2008. PW staff missed the opportunity to provide meaningful input.
Pos 1.2 – Action c.	Work with Yolo County to develop a public campground within the Davis planning area to provide a rustic alternative to hotels and motels for short-term overnight accommodations.	Storm water BMPs would need to be utilized in the development of any campground.	Low	Not completed	Not being actively pursued
Pos 1.2 – Action f.	Develop criteria regarding the types of locations where the City would like to establish new resource preservation, education and recreation areas and programs.	Storm water BMPs would need to be utilized in the development of any facilities.	Low	Completed	Process completed 2008. PW staff missed the opportunity to provide meaningful input.

GP Section – Policy # - Action	Text of the Action	How it Effects the SWMP of Stormwater?	Priority Level	Status	Scheduled Implementation
Pos 1.2 – Action g.	Establish criteria for location and design of natural habitat areas accessible to the public, including criteria for natural habitat areas that can complement and accommodate other open space uses such as viable wildlife habitat.	Storm water BMPs would need to be utilized in the development of any facility.	Low	Completed	Process completed 2008. PW staff missed the opportunity to provide meaningful input.
Pos 1.2 – Action h.	Set policies and criteria for the establishment of trails and picnic areas in natural open space areas.	Storm water BMPs would need to be utilized in the development of any facility.	Low	Completed	Process completed 2008. PW staff missed the opportunity to provide meaningful input.
Pos 3.1 - Action n.	Develop, adopt and enforce greenbelt design guidelines for new subdivisions.	An opportunity to incorporate storm water BMPs in design standards for greenbelts.	Low	Completed	Process completed 2008. PW staff missed the opportunity to provide meaningful input.
Pos 3.2 - Action a.	Establish standards for greenbelts and accessways in non-residential areas, with bicycle access as the key design goal.	An opportunity to incorporate storm water BMPs in design standards for greenbelts.	Low	Completed	Process completed 2008. PW staff missed the opportunity to provide meaningful input.
Pos 3.3 - Action a.	Develop, maintain and improve a trail, and or other greenbelt type amenities, if possible, in the corridor of the railroad right-of-way/F Street/H Street, with design flexibility to provide habitat. The goal of this project is to connect the Northstar Pond area to the downtown core area.	An opportunity to incorporate storm water BMPs in design standards for this facility.	Low	Partially completed	A pathway up to Faro Avenue was installed in 2005. No future extensions currently planned.
Pos 3.3 - Action b.	Develop, maintain and improve a trail, and other greenbelt type amenities, if possible, in the Second Street/I-80 Corridor.	An opportunity to incorporate storm water BMPs in design standards for this facility.	Low	Completed	Installed in 1997 to 1998 on the old Lincoln Highway from Mace Blvd to Olive Drive. No other improvements currently planned.

GP Section – Policy # - Action	Text of the Action	How it Effects the SWMP of Stormwater?	Priority Level	Status	Scheduled Implementation
Pos 4.2 – Action e.	Study potential development of new parks focusing on underutilized land or existing City-owned land with attention given to the potential impacts on wildlife and other resources.	An opportunity to better understand how to mitigate park's impacts with storm water BMPs.	Low	Completed	Part of the Davis Sports Park EIR and Parks and Facilities Master Plan Update due to be completed by the Fall 2010/Winter 2011.
Pos 6.1 – Action f.	Encourage and support the development and maintenance of recreation and park facilities by the private sector.	Because any development will affect the quality of storm water run-off, staff needs to have a seat in development review to ensure SW treatment controls in such development.	Low	Completed	Part of the Davis Sports Park EIR and Parks and Facilities Master Plan Update due to be completed by the Fall 2010/Winter 2011.
Y & E 5.1 – Action b.	Support private, non-profit environmental education programs.	An opportunity to have storm water component in education programs	Low	On-going	The City works with OWOW on storm water and IPM programs.
Y & E 7.1 – Action b.	Continue to review proposed school sites for consistency with the General Plan, and require the reservation or dedication of school sites in proposed projects consistent with the General Plan.	Storm water LID should be incorporated into design for school sites.	Medium	On-going	The City provides comment on school sites when proposed in development review.
Hab 1.1 – Action q.	Maintain the City-owned South Fork Preserve site as natural habitat and compatible agriculture with public access limited to certain portions of the site so as to minimize impacts to sensitive areas.	An opportunity to incorporated storm water measures for any site improvements and/ or maintenance activities.	Low	On-going	No improvements currently planned for this site. Native grasses will be maintained annually using mowing and grazing methods.

GP Section – Policy # - Action	Text of the Action	How it Effects the SWMP of Stormwater?	Priority Level	Status	Scheduled Implementation
Hab 1.2 – Action f.	Cooperate with other governmental agencies, the University, and citizens' groups in restoring natural areas and habitats that have been lost or degraded. Preserve these areas as habitat and scenic areas, and, where appropriate, for passive recreation.	Make sure that storm water BMPs are incorporated into the design of any projects related to this issue.	Low	On-going	Grasslands habitat restoration improvements to the Mace Ranch Community Park Natural Area are anticipated to occur in Fall of 2010. Native vegetation will be used in this restoration effort, in part, to reduce irrigation needs. The City, in cooperation with the Putah Creek Council is seeking funding to enhance the habitat within the Covell Drainage Channel. If successful the project will be implemented in Fall of 2011. Native plants and appropriate post planting soil stabilization BMPs will be implemented.
Hab 1.2 – Action g.	Implement a program of habitat enhancement in the existing drainage ponds and other appropriate areas within the Urban Agricultural Transition Area for migratory wetland wildlife.	Make sure that storm water BMPs are incorporated into the design of any projects related to this issue.	Low	On-going	No habitat enhancement project is currently planned within existing drainage ponds.
Hab 1.2 – Action h.	Implement the Wetlands Demonstration Project associated with the City's wastewater treatment plant. This should be done in a manner that does not impose restrictions on adjacent agricultural operations.	Make sure that storm water BMPs are incorporated into the design of this project.	Medium	Completed	Implemented.
Hab 2.1 – Action c.	Provide and distribute to schools and teachers information regarding City environmental programs in wildlife habitat creation and wildlife protection.	Make sure that storm water message is included in this material.	High	On-going	No new materials currently being planned.

GP Section – Policy # - Action	Text of the Action	How it Effects the SWMP of Stormwater?	Priority Level	Status	Scheduled Implementation
Ag 1.1 – Action c.	Establish a 150-foot minimum agricultural buffer around the City. Require dedication from developers of lands to make up the buffer concurrently with any peripheral development.	Make sure that storm water BMPs are incorporated into the design of any projects related to this issue.	Medium	On-going	Implemented on a project by project basis as development occurs on the periphery.
Ag 1.1 – Action d.	Continue to work with the counties, other cities and the general public to minimize conflicts with land uses such as agriculture and wildlife habitat when developing agricultural buffers.	Make sure that storm water concerns are addressed in these discussions.	Low	On-going	The City has participated in County HCPs to facilitate land development while preserving wildlife habitat.
Ag 1.1 – Action i.	Continue to implement the provisions of the Farmland Preservation Ordinance requiring buffering, notification and conflict resolution in the Planning Area. Maintain a strong right-to-farm policy .	Make sure that storm water BMPs are incorporated into the design of any projects related to this issue.	Medium	On-going	Implemented on a project by project basis as development occurs on the periphery.
Ag 2.1 – Action a.	Maintain all City-owned community gardens as “organic” as defined by California law.	Make sure that good storm water principles are also practiced on these sites.	Low	On-going	Continue to work with Parks and General Services to make sure this program is being implemented.
Ag 2.1 – Action b.	Develop a sustainable gardening ordinance to encourage users of City-owned community gardens to garden sustainably.	Make sure that good storm water principles are incorporated into this ordinance.	Medium	Not completed	The City has worked on outreach efforts to modify behavior in gardening including community gardens. For the past 4 years the City has offered composting classes every year and composting bins in addition to promoting IPM techniques.

GP Section – Policy # - Action	Text of the Action	How it Effects the SWMP of Stormwater?	Priority Level	Status	Scheduled Implementation
Ag 3.1 – Action c.	Regulate activities that cause soil compaction and stratification.	Compaction causes greater runoff, erosion, and less infiltration.	Medium	On-going	While the City has essentially no agricultural land, grading and earth moving activities are regulated through grading permit process in addition to development review.
Ag 3.1 – Action d.	Include information on soil erosion in the public water conservation program and school education program.	Outreach opportunity to raise awareness.	Low	On-going	The City conducts annual presentations at local schools regarding wildlife, storm water and IPM.
Ag 3.1 – Action e.	Coordinate with Yolo and Solano counties, the Resource Conservation District, and the Natural Resources Conservation Service in implementing programs to reduce soil erosion by wind and water and prevent soil contamination.	Opportunity to coordinate efforts on a regional basis.	Low	Not completed	Staff will work with Yolo and Solano Counties to accomplish this action item by 2014
Ag 3.1 – Action f.	Work with area farmers and farming organizations to coordinate farming practices conducive to soil conservation. Provide assistance when appropriate.	Opportunity to work more regionally to reduce erosion.	Medium	Not completed	Staff will work with local ag commission to accomplish this action item by 2014.
Energy 1.5 – Action e.	Develop design guidelines for climate-oriented site planning, building design and landscape design to promote energy efficiency.	An opportunity to incorporate storm water BMPs into site design guidelines for any projects.	High	Completed	The City developed the Interim Infill Guidelines and the Core Area Design Guidelines in the 2002 and 2001 respectively.
Section VII. Community Safety					

GP Section – Policy # - Action	Text of the Action	How it Effects the SWMP of Stormwater?	Priority Level	Status	Scheduled Implementation
Haz 1.1 – Action e.	Adopt and revise as needed a local Flood Plain Management Ordinance.	The ordinance, codified in the Buildings section of the Davis Municipal Code, is related to development within regulatory floodways and/or Special Flood Hazard Areas (SFHA). It peripherally addresses some areas related to the hydromodification of areas subject to inundation, but is not associated with stormwater quality issues. The ordinance is modified, as necessary (as directed by FEMA) as part of the City's participation in the Flood Insurance Program.	Medium	In progress	To be completed by June 2013.
Haz 1.1 – Action h.	Evaluate the effects of development proposals on upstream and downstream flooding and drainage courses.	This is a necessary step and requirement of all project review as it relates to storm water.	High	On-going	Currently evaluated only as a means of limiting site runoff on a project-by-project basis.
Haz 1.2 – Action a.	When designing new or retrofitted flood control facilities, include wildlife and/or public open space facilities in them to the extent possible.	This is an opportunity to incorporate storm water BMPs into site design guidelines for any flood control projects.	Low	On-going	No current opportunities. Implemented since 2006.

GP Section – Policy # - Action	Text of the Action	How it Effects the SWMP of Stormwater?	Priority Level	Status	Scheduled Implementation
Haz 4.1 – Action a.	Before construction starts, a project proponent will submit a hazardous materials management plan for construction activities that involve hazardous materials. The plan shall discuss proper handling and disposal of materials used or produced onsite, such as petroleum products, concrete, and sanitary waste, shall be established prior to the commencement of construction-related activities, and shall be strictly enforced by the project proponent. A specific protocol to identify health risks associated with the presence of chemical compounds in the soil and/or groundwater and identify specific protective measures to be followed by the workers entering the work area. The City of Davis will make available up-to-date information on known hazardous waste sites if the presence of hazardous materials is suspected or encountered during construction-related activities, the project proponent shall complete a Phase I or Phase II hazardous materials study for each identified site.	Hazardous materials represent pollutants in storm water. Proper management of these materials is key to the storm water program.	High	On-going	Implemented since 2006.
Haz 4.1 – Action f.	Develop an enforcement program to maintain a high level of compliance with hazardous materials regulations.	Hazardous materials represent pollutants in storm water. Proper management of these materials is key to the storm water program.	High	In progress	Public Works and Fire Departments enforce hazardous materials handling with local industries and highly trained to deal with spills. A Haz Mat policy was developed in 2011 for Public Works.
Haz 4.1 – Action h.	Educate owners of business with operations potentially polluting groundwater as to appropriate management practices.	Speaks to itself.	High	On-going	Implemented since 2006.

GP Section – Policy # - Action	Text of the Action	How it Effects the SWMP of Stormwater?	Priority Level	Status	Scheduled Implementation
Haz 4.1 – Action i.	In cooperation with local agricultural interests and the agricultural commissioners from the counties of Solano and Yolo, work toward voluntary reduction or elimination of aerial and synthetic chemical application in areas adjacent to the city.	The reduction of chemicals in agricultural runoff is a concern for storm water. It improves water quality.	High	Unknown	Unknown. Staff will work with local agricultural commission to accomplish this action item.
Haz 4.2 – Action a.	Continue the program to educate residents on the negative impacts of dumping hazardous materials in driveways, streets, and drains.	Outreach opportunities to increase awareness reduces pollutant loads in storm water runoff.	High	On-going	Implemented since 2006.
Haz 4.2 – Action b.	Continue programs aimed at ensuring that household hazardous wastes and small generator commercial wastes are not disposed of in the general waste stream.	Reduces pollutant loads in storm water runoff. Means of doing this is primarily outreach, but also code enforcement.	High	On-going	Implemented since 2006.
Haz 4.2 – Action c.	Continue and expand the household hazardous waste collection and recycling program and the small quantity generator program.	Reduces pollutant loads in storm water runoff. Means of doing this is primarily outreach.	Medium	On-going	Implemented since 2006.
Haz 4.2 – Action d.	Work with the County to establish a permanent household hazardous waste collection facility.	Reduces pollutant loads in storm water runoff.	Medium	Completed	Davis Waste Removal has been collecting hazardous household wastes since 2007.
Haz 4.2 – Action e.	Develop and adopt a pressure treated timber disposal ordinance.	Reduces pollutant loads in storm water runoff. Means of doing this is primarily outreach.	High	Not completed	Nothing currently scheduled.
Haz 4.2 – Action f.	Maintain used oil drop-off sites.	Reduces pollutant loads in storm water runoff. Means of doing this is primarily outreach.	High	Completed	DWR and several auto parts stores c
Haz 4.3 – Action a.	Develop and adopt an Integrated Pest Management Ordinance. The ordinance should consider the impacts that City pesticide applications may have on wildlife.	Reduces pollutant loads in storm water runoff. Means of doing this is primarily outreach.	Medium	Not-completed	Nothing currently scheduled though an IPM policy has been adopted by the City.
Haz 4.3 – Action b.	Develop a program to encourage alternatives to the use of pesticides and herbicides and practice integrated pest management strategies.	Reduces pollutant loads in storm water runoff. Means of doing this is primarily outreach.	High	Completed	City's IPM program conducts outreach and awareness classes.

GP Section – Policy # - Action	Text of the Action	How it Effects the SWMP of Stormwater?	Priority Level	Status	Scheduled Implementation
Haz 4.5 – Action a.	Monitor sediments and water quality in areas used by wildlife for pesticides, heavy metals and other contaminants, and establish base line data.	Helps to monitor water quality and trace sources of pollutants to attempt to eliminate the activities that cause them.	Low	Not completed	Not currently scheduled. The City lacks resources to accomplish this task.
Haz 4.7 – Action a.	Maintain an enforcement program to ensure that all releases of hazardous materials are promptly and appropriately cleaned up to the level required by law.	Reduces pollutant loads in storm water runoff. Means of doing this is primarily outreach, but also code enforcement.	High	On-going	Implemented since 2006.
Haz 4.7 – Action b.	Proactively work with site owners and state and federal agencies to expediently clean up hazardous materials sites.	Reduces pollutant loads in storm water runoff. Means of doing this is primarily outreach, but also code enforcement.	High	On-going	Implemented since 1994 with the Frontier Fertilizer site.
Section VIII. Plan Implementation					
Imp 3.2 – Action a.	Revise the City's tax and fee structure to be as competitive as possible on a regional basis.	An opportunity to make sure the City's fee structure is compatible with the region.	Medium	Completed	Revised in May 2011.
Imp 4.1 – Action a.	Review current Planning and Building, Public Works and other departmental project management and processing in order to make the project approval process more efficient and streamlined.	Make sure environmental compliance staff remains an integral part of the review process.	High	Completed	Revised in 2010-11
Imp 4.1 – Action b.	Investigate a "one-stop" approval process for non-discretionary applications which require actions from multiple departments. The purpose would be to avoid unnecessary and confusing processing steps.	Make sure environmental compliance staff remains an integral part of the review process.	Medium	Completed	Completed September 2012..
Imp 4.1 – Action c.	Provide developers in advance with full information needed to reduce the length of time and cost of approval of development.	Helps integrate permanent storm water BMPs into the site design.	High	Completed –On-going	Implemented in 2009.
Imp 4.1 – Action d.	Continue outreach efforts to inform architects, contractors, and builders of City standards and requirements.	Helps projects be designed with storm water concerns in mind.	High	Completed -On-going	Implemented in 2009.
Imp 4.1 – Action e.	Develop mechanisms in the Planning and Public Works Departments to allow for early and expedient evaluation of alternative designs proposed by private applicants to meet City standards.	Helps integrate permanent storm water BMPs into the site design.	High	Completed –On-going	Implemented in 2009.

GP Section – Policy # - Action	Text of the Action	How it Effects the SWMP of Stormwater?	Priority Level	Status	Scheduled Implementation
Imp 4.1 – Action g.	Establish and apply maximum time limits for permit processing.	Make sure that adequate time is still provided for staff to respond for development review.	High	Completed	Part of development review process subject to Permit Streamlining Act..

STORMWATER CONTROL MEASURES HANDOUT

PUBLIC WORKS DEPARTMENT

1717 Fifth St Davis, CA 95616

Phone: (530) 757-5686, Fax: (530) 758-4738

INTRODUCTION/PURPOSE

The intent of this handout is to provide guidance for developers in complying with the City and State Regional Water Quality Control Board permanent storm water control measure requirements for new and redevelopment projects. This handout is applicable to discretionary projects only.

BACKGROUND

For storm water discharges, the City of Davis is required under the National Pollution Discharge Elimination System (NPDES) to obtain a permit. The permit is referred to as the "General Permit." Attachment 4 of the General Permit provides specific thresholds by which new and redevelopment projects must implement permanent stormwater control measures on site. For a project exceeding the thresholds, the project then becomes known as a "Categorical Project." Categorical projects are required to meet the specific requirements of Attachment 4 (See page 2 for Categorical Project thresholds under "Definitions"). The requirements can be met by either volumetric treatment control measures or by flow based treatment measures (See Page 3 for "Requirements" for Categorical Projects).

In 2008, the City established guidelines for development to facilitate compliance with Attachment 4 of the State's General Permit requirements by developing the *Manual of Stormwater Quality Control Standards for New Development and Redevelopment (Manual)* (available at the following webpage: http://cityofdavis.org/pw/stormwater/pdfs/sw_NewDev.pdf). The Manual establishes standards for stormwater quality control measures and provides guidance on their design and implementation. The Guidelines are applied differently for Categorical and Non-categorical projects (see pages 3 and 4).

The City is asking developers/contractors to inventory and report on permanent 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 pages provide tables for: the project type and applicable control measures, the required format for the inventory in the Checklists provided, and the general control measures required as specified in the City's *Manual*.

CITY REQUIREMENTS

All new and redevelopment projects are required to implement some level of Low Impact Development (LID) and employ permanent Best Management Practices (BMPs) on site. All new and redevelopment projects that do not meet the definitions for Categorical Project types are considered Non-Categorical (See page 5 for definitions of Categorical Project types). Categorical Projects are required to provide greater levels of stormwater controls than Non-Categorical Projects. See page 90 to determine if your project is Categorical or Non-Categorical. The tables on pages 87 and 89 provide further guidance in determining applicable and appropriate control measures for your project.

As noted above, the *Manual* is available at the City's website.

Process Outline

Below is a step by step outline of the process for selecting control measures applicable and appropriate for your project. See the process flowchart on page 9 for better understanding of the process.

Step 1: Determine if your project is categorical or not. See "Definitions" on page 90 to determine if your project meets the criteria for Categorical or Non-Categorical.

Step 2: Select appropriate control measures for your project.

Non-Categorical Projects (Use Table 1)**:**

- You must choose at least one measure from "General Site Design Control Measures," D-1 through D-4"
- You must choose at least one measure from "Site-Specific Source Control Measures," S-1 through S-6 as applicable to your project.
- You must choose at least one "Effective Imperviousness Control Measures" per drainage basin on the site, D-4.1 through D-4.6.
- The specific design parameters for these measures can be found in Section 3.0 of the Manual. These measures do not have to be engineered to capture and treat the 85th percentile rain event as is required for categorical projects.

Categorical Projects (Use Table 2)**:**

- You must choose all appropriate and applicable measures for your project from "General Site Design Control Measures," D-1 through D-4
- You must choose all appropriate and applicable measures for your project from "Site-Specific Source Control Measures," S-1 through S-6 as applicable to your project.
- You must choose at minimum, one "Treatment Control Measure" per drainage basin on the site, T-1 through T-11. Treatment control measures must be designed to capture and treat the 85th percentile rain event as is required for categorical projects (See "Requirements for Categorical Projects" on page 5).
- Specific design criteria for these measures can be found in Section 5.0 of the Manual. These measures **DO** have to be engineered to capture and treat the 85th percentile rain event as is required for categorical projects (See "Requirements for Categorical Projects" on page 4).

Some level of calculation will be necessary to make sure the treatment control measures or site design control measures are designed appropriately for the project.

Step 3: Once you have selected control measures, the checklists on pages 7 and 8 will help you record your selections for submission to the City.

- **Non-Categorical Projects:** use the checklist on page 7.
- **Categorical Projects:** use the checklist on page 8. Calculations must be submitted. Use the "Design Data Summary Sheets" from Section 5 of the Manual for each control measure used to summarize the calculations to achieve compliance.

Step 4: Submit checklists - A draft checklist should be submitted with proposed development plans at the discretionary review stage of the development process and a completed checklist should be submitted with the building permit plans. For all projects, a Maintenance Plan shall be submitted at the time of submission of building permit plans. For Categorical Projects, a Maintenance Agreement shall also be required. Maintenance plan guidance can be found in Section 6 of the Manual .

The checklist will be cross-checked with the project plans submitted, will be verified by field inspection during installation and by inspection after construction.

TABLE 1

APPLICABLE STORMWATER CONTROL MEASURES BY PROJECT TYPE – NON-CATEGORICAL

Project Type (definitions below)	*General Site Design Control Measures (Mandatory)*		D-3 Minimize Impervious areas (As appropriate)				*D-4 Minimize Effective Imperviousness Control Measures (Select one for each drainage basin)*						*Site-Specific Source Control Measures (As appropriate)*					
	D-1	**D-2**	**D-3.1**	**D-3.2**	**D-3.3**	**D-3.4**	**D-4,1**	**D-4.2**	**D-4.3**	**D-4.4**	**D-4.5**	**D-4.6**	**S-1**	**S-2**	**S-3**	**S-4**	**S-5**	**S-6**
	Conserve natural areas	Protect slopes & channels	Minimize Sidewalk & Street Widths	Minimize Impervious Footprint	Cluster Develop-ment	Use Porous Paving Materials	LID Grass Swale/ Channel	LID Grass Filter Strip	LID Stormwater Planter	LID Porous Pavement Filter	LID Vegetated Swale	LID Infiltration Trench/ Vault	Storm drain message & signage	Outdoor storage area design	Trash storage area design	Loading dock area design	Wash area design	Fueling area design
Redevelop-ment < 5,000 sf of impervious paving	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●		
Commercial Development < 5,000 sf of impervious paving	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Automotive repair shop < 5,000 sf of impervious paving	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●
Retail gasoline outlet < 5,000 sf of impervious paving	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●
Restaurant < 5,000 sf of impervious paving	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Home subdivision (≤ 10 units)	●	●	●	●	●	●	●	●	●	●	●		●	●				
Parking lots (≤ 5,000sf or ≤ 25 spaces)	●	●	●			●	●	●	●	●	●	●	●	●	●			

All control measures are not required by site, but certain control measures are more suitable for some sites and a proposed land use. The above table is intended to help guide the developer to select the appropriate control measures by the project type.

TABLE 2
APPLICABLE STORMWATER CONTROL MEASURES BY PROJECT TYPE – CATEGORICAL

Project Type (definitions below)	*General Site Design Control Measures (All Mandatory)*				*Likely Treatment Control Measures (Select a minimum of one per drainage basin as appropriate)*											*Site-Specific Source Control Measures (As appropriate)*					
	D-1	**D-2**	**D-3**	**D-4**	**T-1**	**T-2**	**T-3**	**T-4**	**T-5**	**T-6**	**T-7**	**T-8**	**T-9**	**T-10**	**T-11**	**S-1**	**S-2**	**S-3**	**S-4**	**S-5**	**S-6**
	Conserve natural areas	Protect slopes & channels	Minimize imperv-ious areas	Minimize effective imperv-iousness	Grass Swale	Grass Filter Strip	Wet Pond	Construc-ted Wetland Basin	Extended Detention Basin	Infiltra-tion Trench/ Vault	Infiltra-tion Basin	Vegetat-ed Swale	Storm-water Planter	Media Filter	Porous Pavement Filter	Storm drain message & signage	Outdoor storage area design	Trash storage area design	Loading dock area design	Wash area design	Fueling area design
Significant Redevelopment ≥ 5,000 sf of impervious paving	●	●	●	●	●	●			●	●	●	●	●	●	●	●	●	●	●		
Commercial Development ≥ 5,000 sf of impervious paving	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Automotive repair shop ≥ 5,000 sf of impervious paving	●	●	●	●	●	●				●		●	●	●		●	●	●		●	●
Retail gasoline outlet ≥ 5,000 sf of impervious paving	●	●	●	●	●	●				●		●	●	●		●	●	●		●	●
Restaurant ≥ 5,000 sf of impervious paving	●	●	●	●	●	●				●	●	●	●	●	●	●	●	●	●	●	
Home subdivision (≥ 10 units)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
Parking lots (≥ 5,000sf or ≥ 25 spaces)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			

All control measures are not required by site, but certain control measures are more suitable for some sites and a proposed land use. The above table is intended to help guide the developer to select the appropriate control measures by the project type.

1 DEFINITIONS FOR CATEGORICAL PROJECT TYPES:

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.

GENERAL DEFINITIONS

DRAINAGE BASIN - is the extent or area of land where surface water from rain and melting snow or ice converges to a single point to discharge from the basin.

REQUIREMENTS FOR CATEGORICAL PROJECTS

Treatment controls may be designed based on either volume or flow. For Categorical Projects the State has developed design standards for post-construction treatment controls to mitigate (infiltrate, filter or treat) storm water runoff prior to discharge from private property. Below are the design standards for treatment control measures from the State's General Permit Attachment 4.

1) Volumetric Treatment Control BMP:

a) The 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area, from the formula recommended in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998); or

b) The volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in California Stormwater Best Management Practices Handbook – Industrial/ Commercial, (2003); or

c) The volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for "treatment" that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event.

2) Flow Based Treatment Control BMP:

a) The flow of runoff produced from a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the area; or

b) The flow of runoff produced from a rain event that will result in treatment of the same portion of runoff as treated using volumetric standards above.

MAINTENANCE OF POST-CONSTRUCTION BMPS:

Submit a Maintenance Plan and Maintenance Agreement for the stormwater control measures. Items that should be included in maintenances 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.

INFORMATION EXPECTED FOR EXPLANATION

In the narrative explanation for each measure used, include the following:

- A 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.

STORMWATER CONTROL MEASURES CHECKLIST
FOR NON-CATEGORICAL PROJECTS

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.
☐	**D-1:** Conserve Natural Areas	
☐	**D-2:** Protect Slopes & Channels	
☐	**D-3:** Minimize Impervious Areas (select as appropriate) ☐ Minimize Sidewalk & Street Widths ☐ Minimize Impervious Footprint ☐ Cluster Development ☐ Use Porous Paving Materials	
☐	**D-4:** Minimize Effective Imperviousness (select one for each drainage basin) ☐ D-4.1 LID Grass Channel / Swale ☐ D-4.2 LID Grass Filter Strip ☐ D-4.3 LID Stormwater Planter ☐ D-4.4 LID Porous Pavement Filter ☐ D-4.5 LID Vegetated Swale ☐ D-4.6 LID Trench/Vault	
☐	**S-1:** Storm Drain Message & Signage	
☐	**S-2:** Outdoor Storage Area Design	
☐	**S-3:** Trash Storage Area Design	
☐	**S-4:** Loading Dock Area Design	

Appendix B – Attachments

√	Measure required	Explanation of how project is complying.
☐	**S-5:** Wash Area Design	
☐	**S-6:** Fueling Area Design	

STORMWATER CONTROL MEASURES CHECKLIST FOR CATEGORICAL PROJECTS

GENERAL INFORMATION (Print or Type)

Name of Proposed Project	#	Assessors Parcel No

Applicant/Contact Name	Phone No:	Fax No.

Address	Email Address

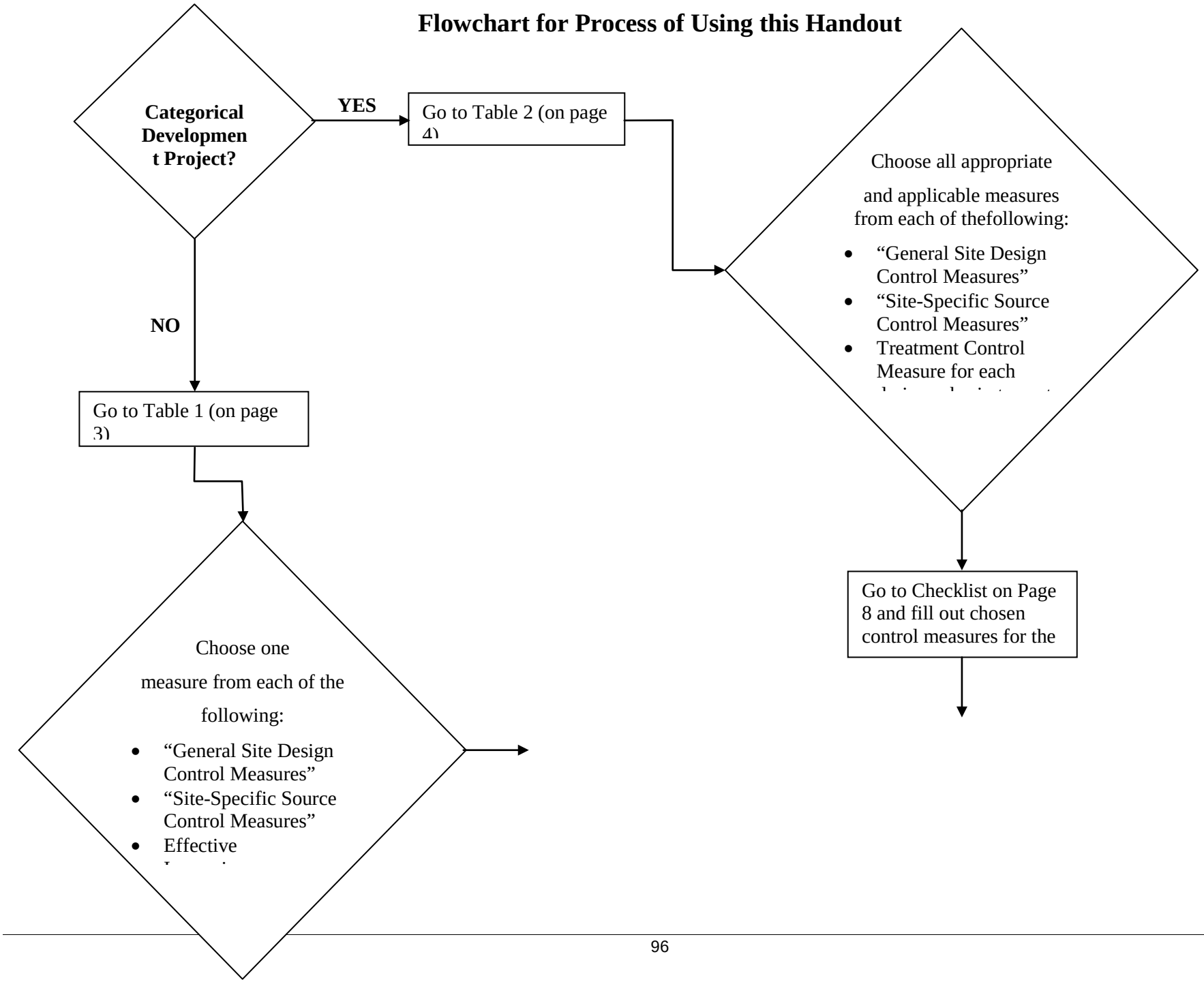
Location of Project	Property Owner

Description of Project	Type of Project

Identify the stormwater control measures used for your project below:

√	Measure required	Explanation of how project is complying.
☐	**D-1:** Conserve Natural Areas	
☐	**D-2:** Protect Slopes & Channels	
☐	**D-3:** Minimize Impervious Areas ☐ Minimize Sidewalk & Street Widths ☐ Minimize Impervious Footprint ☐ Cluster Development ☐ Use Porous Paving Materials	
☐	**D-4:** Minimize Effective Imperviousness ☐ Grass Channel / Swale ☐ Grass Filter Strip ☐ Stormwater Planter ☐ Porous Pavement Filter ☐ Vegetated Swale ☐ Trench Vault	
☐	**S-1:** Storm Drain Message & Signage	
☐	**S-2:** Outdoor Storage Area Design	
☐	**S-3:** Trash Storage Area Design	
☐	**S-4:** Loading Dock Area Design	
☐	**S-5:** Wash Area Design	

√	Measure required	Explanation of how project is complying.
☐	**S-6:** Fueling Area Design	
Treatment control measure (check those that apply): ☐ **T-1** - grass swale ☐ **T-2** - grass filter strip ☐ **T-3** - wet pond ☐ **T-4** - constructed wetland basin ☐ **T-5** - extended detention basin ☐ **T-6** - infiltration trench / vault ☐ **T-7** - infiltration basin ☐ **T-8** - vegetated swale ☐ **T-9** - stormwater planter ☐ **T-10** - media filter ☐ **T-11** - porous pavement filter ☐ alternative / proprietary treatment (explain)		**Explain how, the purpose (flow or volumetric treatment), and where on the site the control measure(s) are being used.**


Flowchart for Process of Using this Handout
Categorical Development Project?
YES
Go to Table 2 (on page 4)
NO
Go to Table 1 (on page 3)
Choose all appropriate and applicable measures from each of thefollowing:
"General Site Design Control Measures"
"Site-Specific Source Control Measures"
Treatment Control Measure for each
Choose one measure from each of the following:
"General Site Design Control Measures"
"Site-Specific Source Control Measures"
Effective
Go to Checklist on Page 8 and fill out chosen control measures for the


Shop the AREA'S LARGEST SELECTION of
attractive • low-water • easy-care • region-appropriate plants
SPRING 2012
Plant Sales
UC Davis Arboretum • 75th Anniversary
Member Appreciation Sale:
9AM-1PM SATURDAY, MARCH 10 Friend Us!
Friends of the UC Davis Arboretum & members of the Davis Botanical Society are eligible to attend this private sale and receive a special gift. Not a member? Join at the door!
Public Sales:
9AM-1PM SATURDAY, APRIL 14 Birds, Bees & Beneficials
9AM-1PM SATURDAY, MAY 19 Some Like It Hot!
Location: Arboretum Teaching Nursery
UC Davis, 920 Garrod Dr. (across from Vet School)
Members save 10% off their purchases!
Not a member? Join at the door and receive an additional $10 off!
DAVIS BOTANICAL SOCIETY
UC DAVIS 75 YEARS ARBORETUM
proceeds benefit:
Friends of the UC DAVIS ARBORETUM
arboretum.ucdavis.edu
(530) 752-4880