

City of Arroyo Grande

Storm Water Master Management Plan

NPDES PHASE II Program



Public Works Department
June 2008

CITY OF ARROYO GRANDE
STORM WATER MANAGEMENT PLAN

June 20, 2008

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City of Arroyo Grande Map

SECTION 1: INTRODUCTION

The City of Arroyo Grande, a general law city, is located in the southern portion of San Luis Obispo County and has a population of over 16,000 within an incorporated area of 3,489 acres (5.45 square miles). Above the City and below Lopez reservoir, watersheds tributary to the City total approximately 73 square miles. The area above Lopez reservoir adds another 68 square miles for a total watershed of 141 square miles draining through the City. According to the County of San Luis Obispo, the City of Arroyo Grande experiences an average annual rainfall of 18 inches.

Pollution from storm water runoff has a major impact on waterways in San Luis Obispo County and our local communities. Storm water runoff transports pollutants from residences, streets, parking lots, and other sources to creeks, rivers, and estuaries. Activities such as land clearing, excavation and filling, use of fertilizers, pesticides and herbicides, illegal dumping, and even improper disposal of pet waste can generate storm water pollution. Water quality concerns that result from storm water pollution include suspended sediment, pathogens, nitrates, chlorides, sodium, polychlorinated biphenyls (PCBs), and low dissolved oxygen levels. Storm water pollutants can inhibit the "beneficial uses" of a waterway that range from human contact and recreational uses to uses for commercial fisheries, drinking water, and habitat for animals and plants.

The State Water Resources Control Board (SWRCB) identified the City of Arroyo Grande as a small municipal separate storm sewer system (MS4) requiring coverage under the National Pollutant Discharge Elimination System (NPDES) *General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s)*, Water Quality Order No. 2003-0005-DWQ (General Permit). A requirement of the General Permit is development of a Storm Water Management Program designed to reduce the discharge of pollutants to the maximum extent practicable and to protect water quality. The General Permit also requires the development and implementation of Best Management Practices (BMPs) to address six Minimum Control Measures (MCMs), which include (1) Public Education and Outreach on Storm Water Impacts; (2) Public Involvement and Participation; (3) Illicit Discharge Detection and Elimination; (4) Construction Site Storm Water Runoff Control; (5) Post-Construction Storm Water Management in New Development and Redevelopment; and (6) Pollution Prevention/Good Housekeeping for Municipal Operations.

Purpose

This Storm Water Management Plan (SWMP) has been prepared by the City of Arroyo Grande pursuant to the General Permit and describes the City's program necessary to comply with the General Permit. More importantly, this SWMP will serve as a framework for identifying, assigning, and implementing control measures and BMPs intended to reduce the discharge of pollutants from the MS4 and protect downstream water quality. In addition to these primary objectives, this SWMP will

- Serve as a planning and guidance document to be used by the City's regulatory body, all City departments, contractors, and the general public;

- Be dynamic and adaptively managed to address changes in General Permit requirements, organizational structure, responsibilities, and goals;
- Define techniques and measurable goals for measuring BMP effectiveness; and
- Define a five-year schedule for Storm Water Management Program implementation to comply with the requirements of the General Permit.

Regulatory Requirements

In 1972, the Federal Water Pollution Control Act, which established the NPDES program was adopted. The NPDES program regulates the discharge of waste waters from point sources to surface waters. The Federal Water Pollution Control Act was amended in 1977 and became known as the Clean Water Act (CWA). In 1987 the CWA was again amended to add section 402, which established a framework for regulating discharges from municipal separate storm water systems (MS4s) as a special category of point source under the NPDES Program.

Enacted in 1990, Phase I of the Storm Water Rule applied to municipal separate storm sewer systems (MS4s) with a service population greater than 100,000, to construction projects affecting five acres or more, and to certain industrial activities. Phase II of the Storm Water Rule is generally applicable to MS4s serving an urban population greater than 10,000 and construction activities affecting 1 acre or more.

Under the Storm Water Phase II Rule small MS4s that meet specific criteria must obtain a National Pollutant Discharge Elimination System (NPDES) permit for storm water discharges. NPDES storm water permits will be issued by the State Water Resources Control Board (SWRCB) and must be renewed every five years.

General Permit

The General Permit adopted on April 30, 2003, requires permits for storm water discharges from Small MS4s and regulates storm water discharges from Small MS4s. The SWRCB defines an MS4 as:

...a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):(i) designed or used for collecting or conveying storm water; (ii) which is not a combined sewer; and (iii) which is not part of a Publicly Owned Treatment Works (POTW)(40 CFR §122.26[b][8]).

The General Permit also defines a “Small MS4” as

...an MS4 that is not permitted under the municipal Phase I regulations, and which is “owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by

or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity....” (40 CFR §122.26[b][16]). Small MS4s include 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, but do not include separate storm sewers in 2 very discrete areas, such as individual buildings.

Small MS4s regulated under the General Permit are designated in one of the following ways:

- 1) Automatically designated by U.S. EPA pursuant to Title 40, Code of Federal Regulations (40 CFR, Section 122.32[a]) because it is located within an urbanized area as defined by the Bureau of the Census, or
- 2) Individually designated by the SWRCB or RWQCB after consideration of the following factors: (a) high population density (1,000 residents per square mile), (b) high growth or growth potential (growth greater than 25% between 1990 and 2000 or anticipated growth greater than 25% over a 10-year period), (c) a significant contributor of pollutants to an interconnected permitted MS4, (d) a discharger to sensitive water bodies, and/or (e) a significant contributor of pollutants to waters of the United States.

These factors were considered by the SWRCB and/or RWQCB when evaluating whether a Small MS4 should be required to obtain coverage under the General Permit and then develop and implement a SWMP. An MS4 and the population that it serves need not meet all of the factors to be designated. The City of Santa Maria is a Small MS4 subject to the General Permit because it meets most of the criteria considered by the SWRCB and RWQCB and was designated by the U.S. EPA as a regulated Small MS4 in the Phase II Final Rule.

Water Quality Control Conditions

February 15, 2008, the Central Coast Water Board 2008, included in Appendix B), the Central Coast Water Board defined a newly established process and schedule for SWMP approval and described expectations for SWMP content necessary for General Permit compliance. In particular the City's SWMP is required to include an array of BMPs to achieve four additional water quality protection conditions not specifically defined within the General Permit. These conditions and their associated implementation requirements are as follows:

1. Maximize Infiltration of Clean Storm Water, and Minimize Runoff Volume and Rate

This condition requires the City to present a schedule for developing and adopting control standards for hydromodification. The schedule for adopting

hydromodification control standards is required to include

- Numeric criteria for controlling storm water runoff volume and rates from new development and redevelopment;
- Numeric criteria for stream stability required to protect downstream beneficial uses and prevent physical changes to downstream channels that would adversely affect the physical structure, biologic condition, and water quality of streams;
- Specific applicability criteria, land disturbance acreage thresholds, and exemptions;
- Performance criteria for control BMPs and an inspection program to ensure proper long-term functioning; and
- Education requirements for appropriate municipal staff on hydromodification and low-impact development.

2. Protect Riparian Areas, Wetlands, and Their Buffer Zones

This condition requires the City to present a strategy to adopt and implement BMPs and/or other control measures to establish and maintain a minimum 30-foot buffer zone for riparian areas and wetlands.

3. Minimize Pollutant Loading

This condition requires the City develop a strategy to reduce pollutant loading through the use of BMPs and/or other control measures including volume- and/or flow-based treatment criteria.

4. Provide Long-Term Watershed Protection

This condition requires the City to present a strategy to develop a watershed-based Hydromodification Management Plan (HMP). The Central Coast Water Board recommends the HMP incorporate Low Impact Development (LID) strategies with the goal of post construction storm water management that achieves an effective impervious area of no more than 3 to 10 percent of watershed area within the City's jurisdiction, depending on local conditions.

The City acknowledges the importance of protecting water quality, beneficial uses, and the biological and physical integrity of its watersheds and is determined to attain compliance with the General Permit and the aforementioned Water Quality Conditions. Therefore, specific BMPs have been selected and defined in this SWMP to realize these goals. The City with the support of the public, staff, and Central Coast Water Board is confident it can reduce the discharge of pollutants to the Maximum Extent Practicable (MEP), establish and effectively manage hydromodification controls, and address specific water quality challenges it currently faces.

Scope of the Storm Water Management Plan

In order to meet the requirements of the Storm Water Phase II Rule, the Cities of Grover Beach, Arroyo Grande, and Pismo Beach have formed an informal partnership to address local storm water quality issues. The Cities also coordinate with the San Luis Obispo County Partnership for Water Quality, which includes all the cities in the County, and the County of San Luis Obispo.

This Storm Water Management Plan (SWMP) was created to serve as a guide for developing and implementing the NPDES Phase II requirements for storm water discharges. This document describes how pollutants in storm water will be controlled and also describes recommended Best Management Practices (BMPs) that address the six required minimum control measures in a small MS4. Each BMP is accompanied by measurable goals to be achieved during the permit term, as a means of determining program compliance and accomplishments, and as an indicator of program effectiveness.

A Small Municipal Separate Storm Sewer System or Small MS4 is 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, city, town, borough, country, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law as a sewer district, flood control district, 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 a large or a medium municipal separate storm sewer system.
- Small MS4s including 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, but do not include separate storm sewers in very discrete areas, such as individual buildings.

This program includes specific BMPs for the six minimum control measures and defines measurable goals for each control measure. Best Management Practices for storm water management are defined as schedules of activities, prohibition of practices, maintenance procedures, the use of pollution control devices and other management practices used to prevent or reduce the amount of pollution introduced to receiving bodies from storm water runoff.

The Maximum Extent Practicable (MEP) standard requires the development and implementation of BMPs and the achievement of measurable goals to satisfy the six minimum control measures. Determining whether a BMP protects water quality to the maximum extent practicable is subjective. MEP is generally a result of emphasizing

pollution prevention. Source control BMPs are the first line of defense and may be used in combination with treatment methods where appropriate as additional lines of defense. The MEP approach is an evolving, flexible and advancing concept, which considers technical and economic feasibility. As knowledge about controlling urban runoff continues to evolve, so does that which constitutes MEP. The individual and collective activities described in this Storm Water Management Plan (SWMP) are the recommendations for reducing or eliminating pollutants in storm water to the MEP.

The Measurable Goals should reflect the specific needs and characteristics of the city according to the EPA guidelines. According to the program guidelines, the measurable goals do not necessarily have to be quantitative, but should be attainable and controllable. Measurable goals shall include at a minimum, a description of the action that will be taken to implement each BMP, what is anticipated to be achieved by each goal, and the frequency and dates for which such actions will be taken.

Inspections and monitoring are both important to a storm water program. Visual inspections and monitoring of storm water runoff and infrastructure (e.g. drop inlets, basins, and gutters) can determine the effectiveness of a storm water program. Through visual inspections and monitoring, non-storm water discharges can be discovered and subsequently eliminated, maintenance needs can be identified, and visual pollutants and erosion problems can be detected. Inspection of facilities is also important to ensure proper BMP implementation and maintenance at businesses and municipal sites, and to detect non-storm water discharges. Monitoring can also be conducted to involve the public through citizen monitoring groups, to identify and target pollutants of concern, and to illustrate water quality improvements and permit compliance.

Storm Water Phase II Program Goals and Objectives

As declared by the EPA, the goal of the Storm Water Management Program is: (1) to protect the water quality of the Nations waterways by reducing the quantity of pollutants that storm water picks up and carries into storm sewer systems and natural drainage ways (e.g. creeks, lakes, estuaries, and the ocean) during storm events to the maximum extent practicable, and (2) to satisfy the requirements of the Clean Water Act.

To meet these goals the Phase II Program requires a Small MS4" to develop, implement, and enforce a Storm Water Management Plan (SWMP) that includes six minimum control measures:

1. Public Education and Outreach
2. Public Participation and Involvement
3. Illicit Discharge Detection and Elimination
4. Construction Site Runoff Control
5. Post-Construction Runoff Control
6. Pollution Prevention and Good Housekeeping for Municipal Operations

Population and Demographics

The City of Arroyo Grande is a large build-out and is expected to experience only modest growth over the next 25 years. The land use development policies within the City are established in the city's General Plan, principally by the Land Use Element (LUE) (Figure 3). This last comprehensive update to the General Plan occurred in October 2001, with Housing Element amendments certified by the state in 2005. The build-out population prediction for the City is 20,000 persons in 2023, and may be slightly more depending upon the potential for an annexation of approximately 185 acres of land that lies southeast of the City within the Sphere of Influence. Table 1 shows the population total for the City of Arroyo Grande with projections to 2025 based on projections that there will be a continuation of the 1% annual growth rate that the City has experienced since the 1990's.

Table 1. Population – Current and Projected

	2005	2010	2015	2020	2025
Population	16,637	17,469	18,344	19,261	20,224

The future land use area allocated for residential development is estimated to be 78 percent Residential Single Family, 18 percent Residential Multi-Family and 4 percent Mobile Home Parks at build-out. Historically, most of the City's residential growth has occurred on large lots and at low densities. However, it is anticipated that future growth will be redistributed to the City's mixed-use and higher density residential areas. Based on project submittals over the past two years, as well as projected development, the recent and foreseeable trend for new residential development is in the form of clustered subdivision, small-lot planned unit development and condominiums.

Climate

The climate of Arroyo Grande has a Mediterranean coastal climate with mild, dry summers and cool, moist winters. The annual precipitation is 17 inches, with the majority of the rain occurring during the months of January through March. Table 3 below outlines the climate characteristics for the Arroyo Grande area. The normal year evapotranspiration rate (Eto) for the city is approximately 52 inches.

Table 3. Climate

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Standard Monthly Average ETo ¹	2.21	2.50	3.80	5.08	5.7	6.19	6.43	6.09	4.87	4.09	2.89	2.28	52.13
Average Rainfall (inches) ²	3.55	3.51	2.79	1.39	0.34	0.05	0.03	0.02	0.26	0.74	1.94	2.54	17.16

Average Temp (F)	63.3	64.8	66.0	68.1	68.9	70.3	70.2	71.0	72.3	72.0	68.5	64.4	68.31
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¹ETo data from CIMIS (California Irrigation Management Information System)

²Average rainfall data from SLO County Public Works Volunteer Precipitation Gauge Station (AG Corp Yard #177.1) www.slocountywater.org/weather

Watersheds Areas

There are major and regional tributary watersheds that contribute drainage to the City's creeks and drainage ways. The seven watershed areas draining into the City of Arroyo Grande are:

- Fair Oaks Drainage Watershed
- Meadow Creek Watershed
- Corbett Canyon Watershed
- Arroyo Grande Creek Watershed
- Los Berros Creek Watershed
- Newsom Springs Watershed
- Orchard Street Watershed

These watershed areas are located below the Lopez reservoir and encompass approximately 73 square miles. Above the Lopez reservoir, an additional 68 square miles adds to the 73 square miles for a total watershed area of 141 square miles. To convey the drainage resulting from these watersheds, the City employs a system of creeks, ditches, basins, and storm drains. Table 2.1 list the each watershed area and is corresponding size. Table 2.1 outlines each watershed areas. A description of each regional watershed is found below.

Table 2.1 – Regional Tributary Watershed Areas

Regional Tributary Watershed	Area (Square Miles)
Fair Oaks Drainage Watershed	1.0
Meadow Creek Watershed	4.5
Corbett Canyon Watershed	4.7
Arroyo Grande Creek Watershed	103.0 ¹
Los Berros Creek Watershed	24.5
Newsom Springs Watershed	1.9
Orchard Street Watershed	2.0

¹34.7 square miles below Lopez Dam, 68.3 sq. miles above Lopez Dam

Fair Oaks Drainage Watershed

The boundaries of the Fair Oaks Drainage Area is roughly defined by the Pacific Ocean on the west; Highway 101 on the north; Halcyon Road on the east; and the northern town limit of the Community of Oceano on the south. The Fair Oaks Drainage Area encompasses portions of the City Arroyo Grande and the community of Oceano, and almost all of the City of Grover Beach.

The portion of the Fair Oaks Drainage Area located within the City of Arroyo Grande is approximately 640 acres in size with a length of approximately one mile or 5,000 feet. The high point is 261 feet in elevation and the low point is at 70 feet. The average slope of this drainage area is 3.5 percent.

According to Standard Drawing D-4 in the County of San Luis Obispo Standard Improvement Specifications and Drawings, the average annual precipitation in the Fair Oaks Drainage Area is 17 inches. The 100-year, 24-hour event is 5.8 inches, according to the map titled "100-YR 24-HR Precipitation (in tenths of inches)" prepared by the US Department of Commerce National Oceanic and Atmospheric Administration (NOAA) .

There are no creeks that run through the Fair Oaks Drainage Area. Furthermore, the Fair Oaks Drainage Area is generally not tributary to major creeks. This area is generally tributary to the City of Grover Beach, except that sump conditions prevent runoff from leaving the City of Arroyo Grande. Stormwater drainage runoff in this area is handled through a series storms drains and infiltration and retarding basins. The basins located in the City of Arroyo Grande include the following:

- South Elm Street infiltration basin
- Golden West Place/Farroll Avenue infiltration basin
- Oak Park Boulevard (West) retarding basin
- Dixon Street retarding basin
- Ash Street Basins
- Poplar Street infiltration basin, and
- Grand Avenue/Courtland Street infiltration basin.

Meadow Creek Watershed

The Meadow Creek Watershed Area contains the northwest section of the City of Arroyo Grande and portions of the unincorporated County area north of the City limit. This area encompasses the canyons that contain Oak Park Boulevard/Old Oak Park Road from Highway 101 to Ormonde Road and Oak Park Boulevard/Noyes Road from Highway 1 to Highway 227.

The Meadow Creek Watershed Area is approximately 2,900 acres in size with a length of approximate 2.8 miles or 15,000 feet. The high point is 685 feet in elevation and the low point is at 4 feet. The average slope of this drainage area is 4.3 percent.

According to Standard Drawing D-4 in the County's Standard Improvement specifications and Drawings, the average annual precipitation in the Meadow Creek Watershed Area is 17 inches. The 100-year, 24-hour event is 6.0 inches, according the map titled "100-YR 24-HR

There is one main creek, Meadow Creek, with one tributary arm and two smaller unnamed creeks that convey storm water runoff through the Meadow Creek Watershed Area. Stormwater runoff in this area is primarily handled by the Oak Park Boulevard (East) retarding basin.

Corbett Canyon Watershed

The Corbett Canyon Watershed Area contains the middle northern section of the City of Arroyo Grande and portions of the unincorporated County area north of the City limits. The Corbett Canyon Watershed encompasses the canyons that contain Corbett Canyon Road from East Branch Street to Verde Road and Carpenter Canyon Road (Highway 227) from East Branch Street to Verde Road.

The Corbett Canyon Watershed Area is approximately 3,000 acres in size with a length of approximately 4 miles or 21,000 feet. The high point is 686 feet in elevation and the low point is at 140 feet. The average slope of this drainage area is 2.6 percent.

According to Standard Drawing D-4 in the County of San Luis Obispo Standard Improvement Specifications and Drawings, the average annual precipitation in the Corbett Canyon Watershed Area is 18 inches. The 100-year, 24-hour event is 6.2 inches, according to the map titled "100-YR 24-HR Precipitation (in tenths of inches)" prepared by the US Department of Commerce (NOAA). There is one main creek, Tally Ho Creek, with eight tributary arms that conveys stormwater runoff through the Corbett Canyon Watershed Area. Stormwater from the Corbett Canyon Watershed is handled by the following:

- Tally Ho Creek
- Via La Barranta retarding basin
- Wildwood Drive retarding basin

Arroyo Grande Creek Watershed

North of Highway 101, the Arroyo Grande Creek Watershed Area contains the northeast section of the City of Arroyo Grande, including the Village and Rancho Grande areas, and portions of the unincorporated County area northeast of the City limits. The area encompasses the large canyons that contain Lopez Drive from East Branch Street to Lopez Lake and Huasna Road from East Branch Street to Huasna Townsite Road. South of Highway 101, the boundaries of the Arroyo Grande Creek Watershed Area is roughly defined by the Halcyon Road to the west; Highway 101 to the north; Valley Road to the east; and the town limits of Community of Oceano to the south.

The Arroyo Grande Creek total Watershed Area is approximately 103 square miles, and approximately 35 square miles of this Watershed Area is downstream of Lopez Dam. The Watershed Area downstream of Lopez Dam has a length of approximately 9 miles or 48,000 feet. The high point is 2058 feet in elevation and the low point is at 60 feet. The average slope of this drainage area is 4.2 percent.

According to Standard Drawing D-4 in the County of San Luis Obispo Standard Improvement Specifications and Drawings, the average annual precipitation in the Arroyo Grande Creek Watershed Area is 19 inches. The 100-year, 24-hour event is 6.8 inches, according to the map titled "100-YR 24-HR Precipitation (in tenths of inches)" prepared by the US Department of Commerce (NOAA).

There is one main creek, Arroyo Grande Creek, with numerous tributary arms that include

Spring Creek and Newsom Springs Creek that conveys storm water runoff through the Arroyo Grande Creek Watershed Area. Stormwater from the Arroyo Grand Creek Watershed is handled by the following:

- Arroyo Grande Creek
- Oro Drive/Platino Lane basin
- Stagecoach Road retarding basin
- Pearwood Avenue retarding basin

The Arroyo Grande Creek continues through the Community of Oceano downstream of the City of Arroyo Grande. For additional information regarding the watershed area above Lopez Dam, refer to "Final Survey Report for Flood Control and Related Purposes, San Luis Obispo County Streams," U.S. Army Corps of Engineers, Los Angeles District, February 1987.

The Lopez Reservoir provides significant flood control benefits to Arroyo Grande Creek and the City of Arroyo Grande. This benefit is less pronounced when the basin is full and able to pass peak flows attenuated only by the spillway. The higher flows currently being released from the reservoir serve to maintain the reservoir water levels at a low elevation and therefore provide significant flood protection along the Arroyo Grande Creek.

Los Berros Creek Watershed

The Los Berros Creek Watershed Area contains the southeast section of the City of Arroyo Grande and portions of the unincorporated County area east of the City limits. The area encompasses the canyon that contains Los Berros Road/Upper Los Berros Road from Valley Road to near the Suey Creek Road terminus. The Los Berros Creek Watershed Area is approximately 27 square miles in size with a length of approximately 12 miles or 62,000 feet. The high point is 1804 feet in elevation and the low point is at 50 feet. The average slope of this drainage area is 2.8 percent.

According to Standard Drawing D-4 in the County of San Luis Obispo Standard Improvement Specifications and Drawings, the average annual precipitation in the Arroyo Grande Creek Watershed Area is 17 inches. The 100-year, 24-hour event is 6.2 inches, according to the map titled "100-YR 24-HR Precipitation (in tenths of inches)" prepared by the United States Department of Commerce (NOAA).

There is one main creek, Los Berros Creek, with numerous tributary arms, one of which is Temettate Creek. Temette Creek conveys stormwater runoff through the Los Berros Creek Watershed Area. There are no stormwater basins in the Los Berros Creek Watershed Area. Los Berros Creek is tributary to Arroyo Grande Creek downstream of the City limit.

Newsom Springs Watershed

The Newsom Springs Watershed contains approximately two (2) square miles east of Branch Mill Road. The watershed includes Newsom Canyon and Guaya Canyon, which is largely undeveloped. Runoff from this watershed impacts several downstream areas that have undersized facilities, as described in Section III.

In a 100-year storm, this watershed will generate about 1,056 cubic feet per second (CFS) of runoff. The runoff crosses Branch Mill road and into the City through an eight (8) foot by four (4) foot culvert. Downstream of the Newsom Springs drainage, an additional watershed of approximately 40 acres contributes additional runoff upstream of the "stone culvert", and a watershed of approximately 70 acres contributes additional runoff to the intersection of East Branch Mill road and Cherry Avenue. A small ditch currently diverts 30 to 100 CFS of this runoff to the east, crossing Branch Mill road again through the three (3) foot by five (5) foot "stone culvert". Downstream, this flow contributes to flooding problems within Tract 139 (Launa Lane), at the Vagabond Mobile Home Park, at the Pacific Coast Christian School and further downstream at Valley Road.

Excess flows are not diverted through the stone culvert. The flow generally sheets across the agricultural fields in the area then concentrates at the intersection of Branch Mill Road and Cherry Avenue. At this point the 100-year runoff is approximately 1103 CFS. The only existing stormwater drainage facility in this area is a small ditch with a capacity of 22 CFS. As a result, homes within Tract 409 have experienced serious flooding during severe storms. In Section IV, several projects are proposed to resolve this specific drainage problem.

Orchard Street Watershed

The Orchard Street Watershed contains approximately 2 square miles. Most of the watershed area is in the County of San Luis Obispo, and is sparsely developed. The watershed lies mostly on the east side of Highway 101, and crosses to the west side via several culverts under the freeway. After crossing the highway, runoff from this watershed enters an earth at behind the Pacific Coast Christian School on Orchard Street. From there runoff continues through the farmlands along Valley Road and the Sunrise Terrace development to the confluence with Los Berros Creek. Approximately 200 acres of the watershed lies within the proposed Arroyo Linda Project.

The table below summarizes the watershed areas and list the corresponding infiltration and retarding basins.

Summary of Watershed Areas and corresponding Infiltration/Retarding Basins

Regional Tributary Watershed	Infiltration/Retarding Basins
Fair Oaks Drainage Watershed	<ul style="list-style-type: none"> • South Elm Street infiltration basin • Golden West Place/Farroll Avenue infiltration basin • Oak Park Boulevard (West) retarding basin • Dixon Street retarding basin • Ash Street Basins • Poplar Street infiltration basin, and Grand Avenue/Courtland Street infiltration basin
Meadow Creek Watershed	Oak Park Boulevard (East) retarding basin
Corbett Canyon	<ul style="list-style-type: none"> • Tally Ho Creek, and

Watershed	<ul style="list-style-type: none"> • Via La Barranta retarding basin Wildwood Drive retarding basin
Arroyo Grande Creek Watershed	<ul style="list-style-type: none"> • Arroyo Grande Creek, and • Oro Drive/Platino Lane basin • Stagecoach Road retarding basin • Pearwood Avenue retarding basin
Los Berros Creek Watershed	Los Berros Creek No Infiltration or Retarding Basins
Newsom Springs Watershed	No Infiltration or Retarding Basins
Orchard Street Watershed	Los Berros Creek. No Infiltration or Retarding Basins

Source: Flood Insurance Study, City of Arroyo Grande, California, San Luis Obispo County, March 1984

Creek Systems

With few exceptions, the creek systems in Arroyo Grande are capable of conveying runoff without causing flooding problems. However there are limited areas where flooding occurs long the major creeks. The most notable of these area include the following:

- West side of Tally Ho Creek from Highway 227 to Le Point.
- South side of Arroyo Grande along Woodland Drive.

These areas that are subject to flooding are shown on the Flood Insurance Rate Maps (FIRM) and the Floodway Boundary Maps (FBM) prepared for the City by the Federal Emergency Management Association (FEMA). Because the areas subject to flooding are limited in area, it is not recommended that creek improvements, such as widening, be pursued as a means of flood control. The recommendation for these (and all areas in the City) is that development be subject to the City's adopted Flood Plain Management Ordinance. This ordinance requires that development in flood prone areas are set back and/or elevated beyond potential flood elevations.

Runoff quantities have been calculated for the major streams by previous consultants as part of the National Flood Insurance Program and mapping. The results of this analysis are listed in the following table.

Summary of Creeks Systems

Name of Creek and Location	Drainage Area (square miles)	100-yr (CFS)	10-yr (CFS)
Arroyo Grande Creek (at State Hwy 101) (at Arroyo Avenue).	109.3 138.6	10,500 15,800	1,900 2,800
Corbett Canyon (at confluence with Arroyo Grande Creek)	4.7	2,600	580
Los Berros Creek			

(at State Hwy 101)	16.1	7,700	1,700
Meadow Creek (at State Hwy 101)	4.4	2,600	560

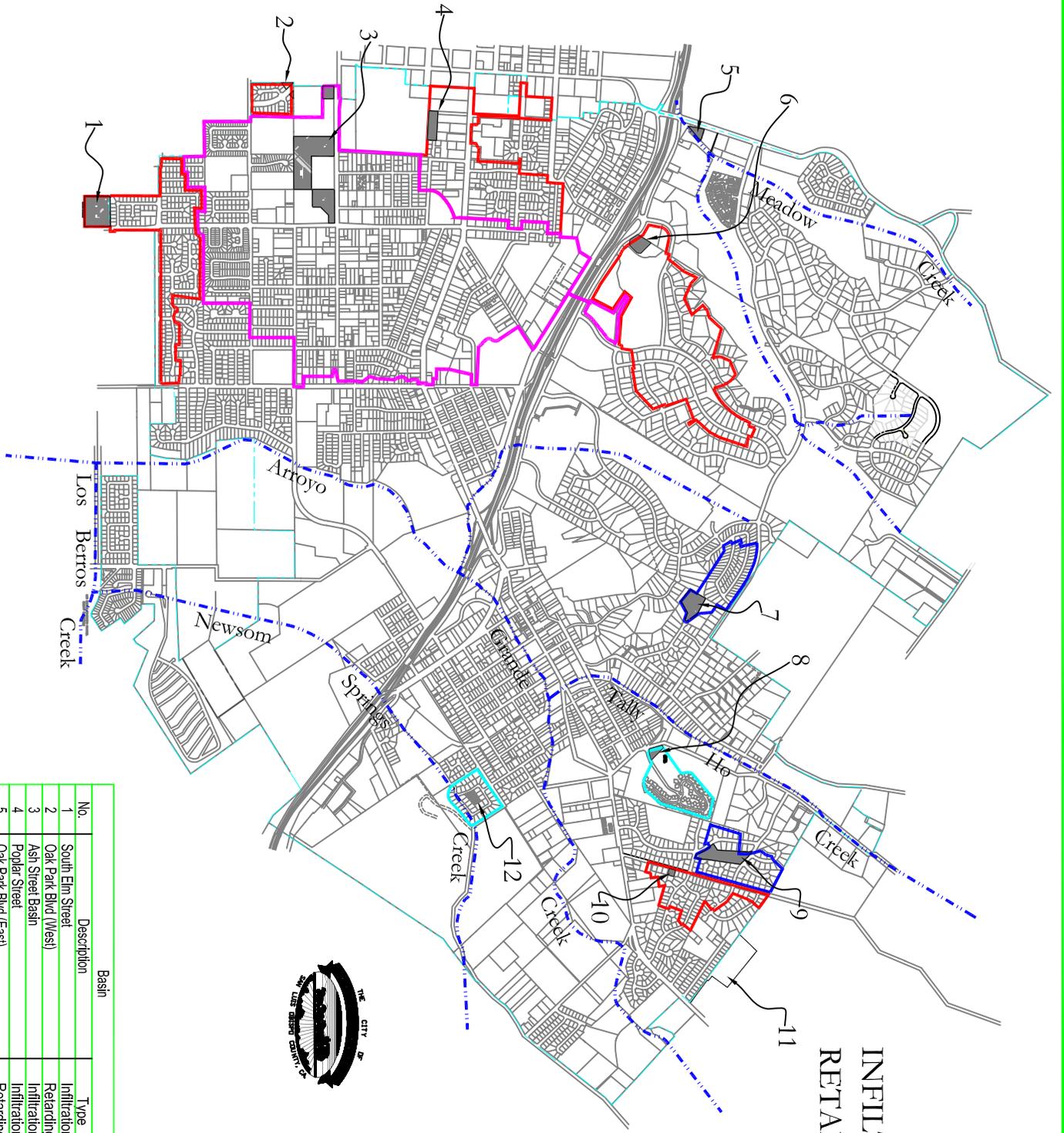
Source: Flood Insurance Study, City of Arroyo Grande, California, San Luis Obispo County, March 1984

Infiltration and Retarding Basins

Within the City of Arroyo Grande there are five (5) stormwater infiltration (retention), nine (9) stormwater retarding (flow reducing detention) basins. Of these, only five (5) stormwater infiltration and three (3) retarding basins are owned and operated by the City. The remaining basins are privately owned and maintained. The location of existing infiltration basins and retardation basins are listed below.

Basin	Size (Acre Feet)	Type	Tributary Area (Acres)
South Elm Street Basin	5.1	Infiltration	65.7
Oak Park Boulevard (West) Basin	1.6	Retarding	9.4
Ash Street Basin	96.9	Infiltration	457.0
Poplar Street Basin	15.0	Infiltration	5.9
Via La Barranta Basin	0.3	Retarding	18.5
Wildwood Drive Basin	0.1	Retarding	20.4
Oro Drive/Platino Lane	5.4	Retarding	22.6
Stagecoach Road Basin	0.1	Retarding	20.2
Pearwood Avenue Basin	7.5	Retarding	112
Oak Park (East) Basin	4.0	Retarding	2810.0
Five Cities Center	6.4	Retarding	113.1

INFILTRATION AND RETARDING BASINS



No.	Basin Description	Type	*Size (AF)	Watershed Tributary Area (Ac)
1	South Elm Street	Infiltration	5.1	65.7
2	Oak Park Blvd (West)	Retarding	1.6	9.4
3	Ash Street Basin	Infiltration	96.9	457.0
4	Poplar Street	Infiltration	15.0	76.0
5	Oak Park Blvd (East)	Retarding	4.0	2.810.0
6	Five Cities Center	Retarding	6.4	113.1
7	Via la Barranca	Retarding	0.3	18.5
8	Wildwood Drive	Retarding	0.1	20.4
9	Oro Drive/Platino Lane	Retarding	5.4	22.6
10	Stagecoach Road	Retarding	0.1	20.2
11	Pearwood Avenue	Retarding	7.5	11.2
12	Tract 2217	Retarding	0.3	11.2

* Approximate Size

Water Quality

Water quality for urban streams is affected by several factors including storm and dry season runoff, riparian vegetation, and canopy and sediment loading. The Watershed is not listed as an impaired watershed by the RWQCB. However, the biological health and productivity of the Watershed appear tenuous. Generally, in smaller watersheds, such as the Arroyo Grande Creek Watershed, riparian areas tend to be disproportionately affected by the hydrologic changes and increased sedimentation associated with agriculture and human activities (USEPA, 2005a).

Land use directly affects the characteristics of runoff. A variety of water quality constituents affect creeks in Arroyo Grande from both urban and agricultural influences. Marked increases in turbidity due to stormwater runoff have been observed during winter rains. This was also evident in storm event water samples collected for the purposes by the City. Some water quality constituents are associated with naturally occurring mineral deposits while others are generated from agricultural practices and urban development including roadways and parks. Constituents such as nitrogen, phosphorus, bacteria and suspended sediments are typically found in agricultural runoff. Creeks within urbanized areas typically have sediment, oxygen-demanding substances, nutrients, heavy metals, pesticides, hydrocarbons, increased temperature and trash and debris (USEPA, 2005a).

A variety of water quality constituents affect habitat conditions within Arroyo Grande Creek. Some of these constituents are associated with naturally occurring mineral deposits, and some are associated with agricultural spraying and fertilization, stormwater runoff from roadways, urbanization, recreational activities, and other land-use practices. Water samples (grab samples) were taken from four locations in 1999 to provide reconnaissance-level baseline information on water quality constituents within Arroyo Grande Creek (one upstream, one within and two samples downstream of the City limits.) The four sampling locations were selected to provide information on changes in water quality constituents within different reaches of Arroyo Grande Creek that may be affected by local land-use practices.

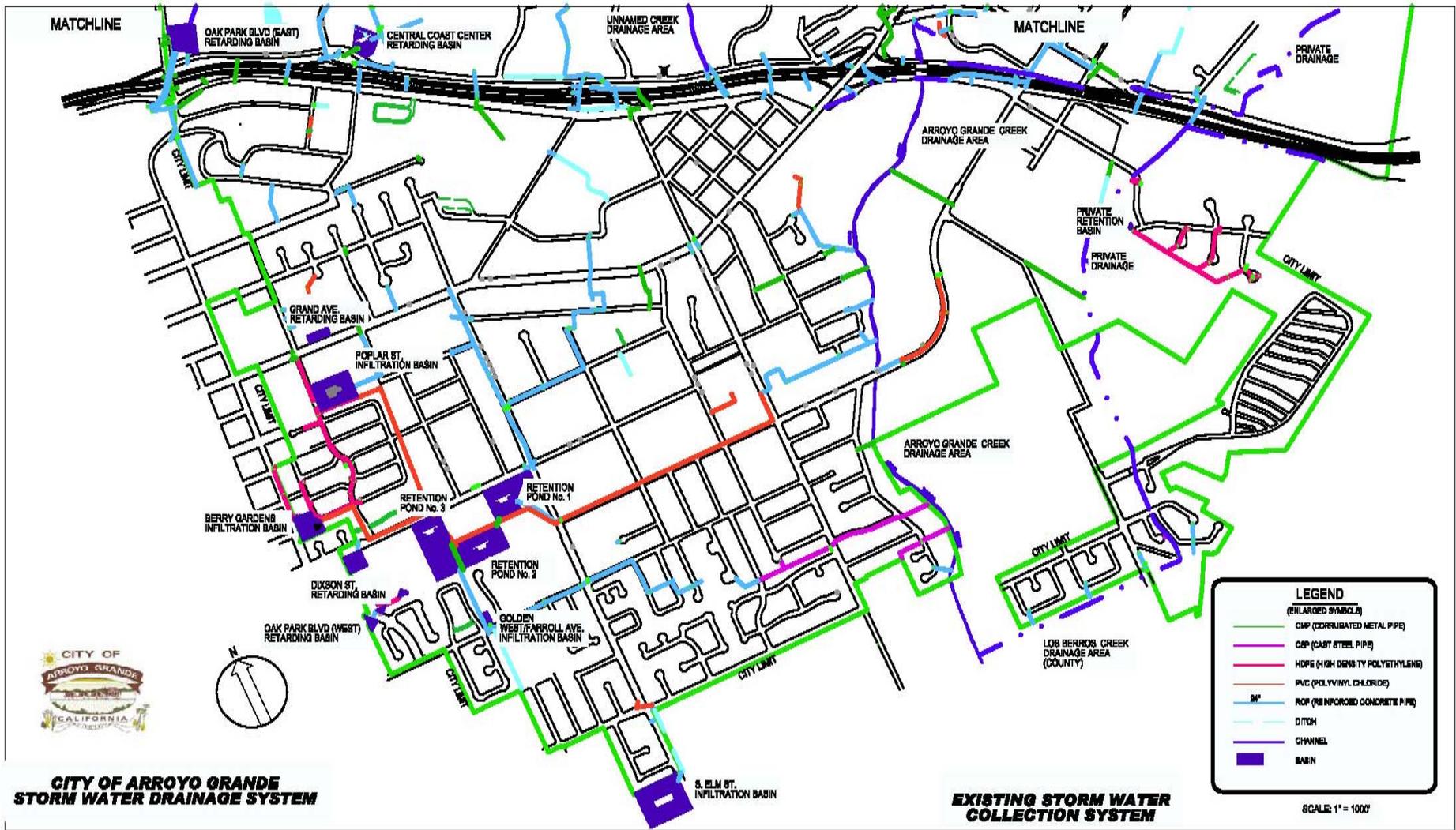
Each grab sample was analyzed, following EPA protocols, for specific conductance, pH, arsenic, cadmium, chromium, copper, lead, nickel, silver, zinc, mercury, total hardness, total dissolved solids, total phosphorous, total nitrogen, ammonia, screening for pesticides and herbicides, and oil and grease. After the July 1999 survey, the sampling design was modified for subsequent surveys with collections at two locations, one within the City and the other downstream at the Arroyo Grande Creek lagoon on October 20, 1999, April 29, 2000, and August 9, 2000. Water quality analyses indicated most constituents were below analytical detection limits. No consistent pattern was observed in water quality constituents between up- and downstream locations. These reconnaissance-level baseline surveys indicate that water quality conditions within Arroyo Grande Creek provide suitable habitat for steelhead, red-legged frogs, and other aquatic resources.

The City also conducted reconnaissance-level sampling in 2007 to check if there were any indications of a change in water quality. Grab samples were collected at two monitoring

sites in Arroyo Grande Creek for baseline parameter data for creek water quality at both pre and post storm events and any change in water quality in the urban creek segment. Figure 5 includes the location of the water sample sites.

Site A is at Arroyo Grande Creek in the vicinity of Strother Park where the creek enters the City limits. Site B is at Arroyo Grande Creek in the vicinity of Woodland Drive, located off of Woodland, near the Grieb bridge where the creek exits the City limits. Pre-storm samples were taken on February 6, 2007 and storm event samples were collected on February 22, 2007 during an one-inch precipitation storm event. Water quality parameters included Ammonia, Apparent Color, Nitrate, Nitrite, Total Suspended Solids (TSS), Oil and Grease, Specific Conductance, Total Kjeldal Nitrogen, Total Nitrogen, Total Organic Carbon, pH, Odor, and Turbidity. No results exceeded any state or federal water quality standards or guidelines. No significant changes were noted in pre-storm sampling between Site A and Site B.

There were some differences in upstream (Site A) and downstream (Site B) storm event samples, including: an increase in apparent color from 5 to 50 units; TSS increased from 2 mg/L to 30 mg/L; Oil and Grease increased from not-detected (detection limit = 2.0 mg/L) to 2.5 mg/L; Specific Conductance decreased from 1000 umhos/cm to 800 umhos/cm (due to more solids in the water); Total Organic Carbon increased from 3.4 mg/L to 8.2 mg/L; and Turbidity increased from 0.7 NTU to 39.3 NTU (which is an increase of over 5 NTU specified in the state standards for General NPDES For Discharge with Low Threat to Water Quality) Very similar increases are noted in the Pre-storm and post –storm Site B samples.



MATCHLINE

MATCHLINE



**CITY OF ARROYO GRANDE
STORM WATER DRAINAGE SYSTEM**



LEGEND	
(ENLARGED SYMBOLS)	
	CMP (CORRUGATED METAL PIPE)
	CBP (CAST STEEL PIPE)
	HDPE (HIGH DENSITY POLYETHYLENE)
	PVC (POLYVINYL CHLORIDE)
	RCP (REINFORCED CONCRETE PIPE)
	DITCH
	CHANNEL
	BASIN

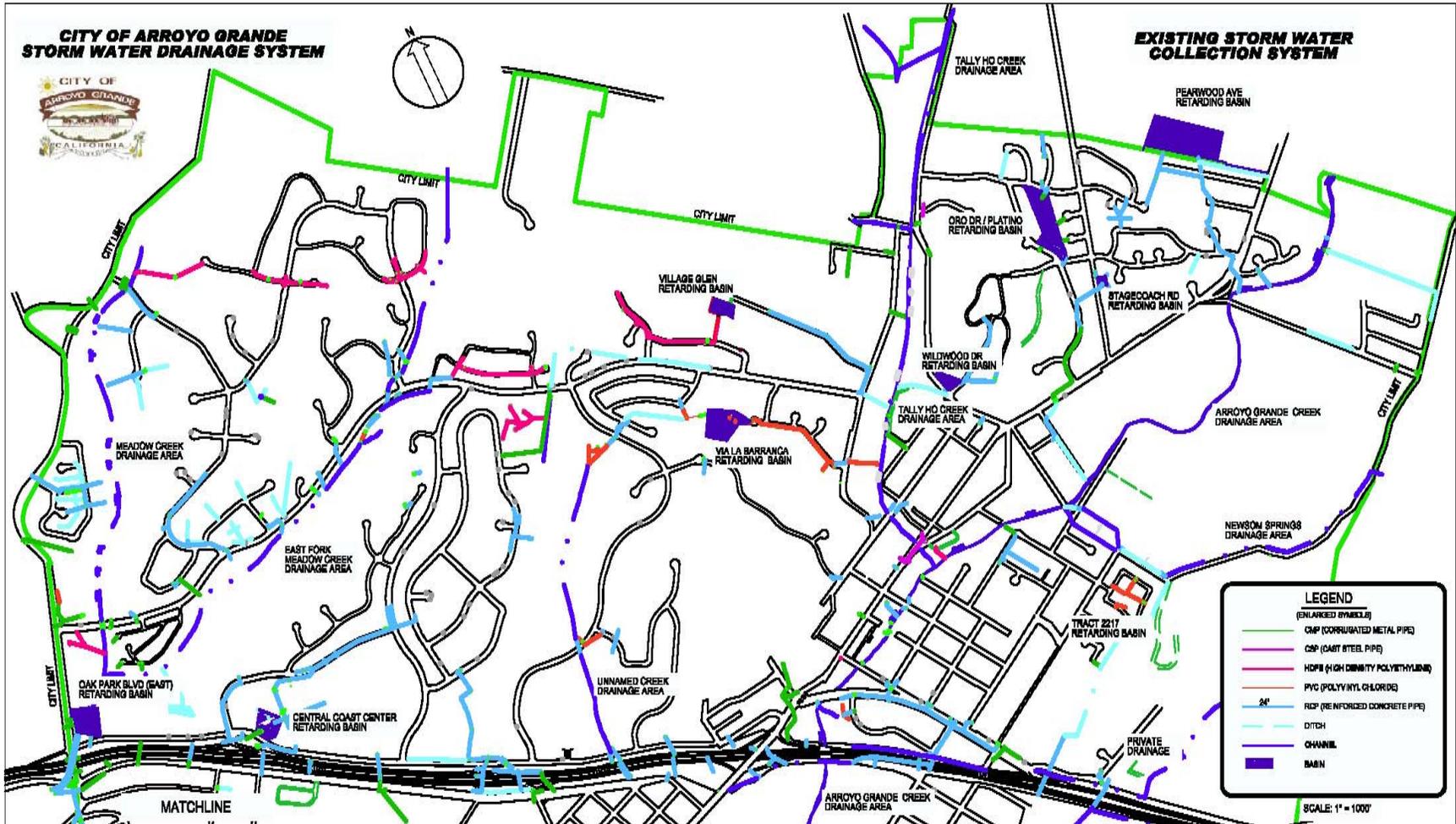
SCALE: 1" = 1000'

**EXISTING STORM WATER
COLLECTION SYSTEM**

**CITY OF ARROYO GRANDE
STORM WATER DRAINAGE SYSTEM**



**EXISTING STORM WATER
COLLECTION SYSTEM**



SECTION 2: PUBLIC EDUCATION AND OUTREACH

This control measure is intended to ensure greater public support and compliance for the storm water management plan. Specifically, these efforts are directed to teach the public the importance of protecting storm water quality, both for the benefit of the environment and human health. The role of each community member, both at home and work, is a major emphasis of this minimum control measure.

Objectives and Requirements

- < Understand the public perceptions and attitudes towards the problem of urban runoff; and
- < Raise public awareness about urban runoff pollution and its impacts on the community's water resources; and
- < Educate the community about specific pollutant sources and what individuals can do to reduce urban runoff pollution; and
- < Foster participation through community-based projects or volunteer activities focused on pollution prevention.

To meet these objectives, the requirements of the Public Education and Outreach component of the Storm Water Program are to:

- < Implement a public education program which distributes education materials and conducts outreach activities aimed at informing the public about the impacts of storm water discharges on local water bodies, and receiving waters; and
- < Implement appropriate BMPs and develop achievable and measurable goals in order to assess the success of the public education and outreach program.

impacts of storm water discharges to local waterways. Educating the public on storm water and water quality practices will help promote better public awareness within the communities.

Existing Ordinances / Policies / Programs / BMPs:

- < A curbside recycling program is provided where any residential or commercial customer will be provided with a basket or other suitable container for the purpose of recycling glass, aluminum, newspaper, motor oil and other recyclable materials.
- < Informational handouts provided on what materials are recyclable, developed by the San Luis Obispo County Integrated Waste Management Authority.
- < Inspections of restaurant grease traps and citations issued to businesses dumping grease or other pollutants in storm sewer inlets.

- < Dog mess bags (mut-mits) are provided for public use at public parks and walking trails. City crews also perform clean-up of dog mess at City parks.

Section D.2.a. of the MS4 General Permit requires that regulated Small MS4s develop and implement BMP's, measurable goals and timetables for implementation of the Public Education and Outreach Minimum control Measure. "The Permittee must educate the public in its permitted jurisdiction about the importance of the stormwater program and the public's role in the program. The Permittee must implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impact of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff."

MINIMUM CONTROL MEASURE #1: PUBLIC EDUCATION AND OUTREACH

OBJECTIVE: *To implement a public education program to distribute educational materials to the community and/or conduct outreach activities about the impacts of stormwater discharges on waterbodies and the steps that the public can take to reduce pollutants in stormwater runoff.*

STORMWATER POLLUTION PREVENTION PUBLIC EDUCATION AND OUTREACH									
BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT <i>WHY WE WILL DO IT</i>	MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE <i>WHEN WE WILL DO IT</i>					IMPLEMENTERS <i>WHO WILL DO IT</i>
				PERMIT YEAR					
				1	2	3	4	5	
PE1	Use collaborative regional partnerships (“SLO County Partners for Water Quality”) to leverage shared resources to distribute stormwater pollution prevention public education and outreach information, materials, and activities throughout the County.	To reduce the <u>source</u> of stormwater pollutants by reaching out to the public and providing educational information, materials, and activities about what each individual can do to reduce pollutants in stormwater runoff.	<p>PE1A: Participate in bimonthly (6) SLO County Partners for Water Quality Meetings each year for planning and evaluating the status and performance of the stormwater pollution prevention public education and outreach program and for sharing information about what is working or not working.</p> <p>PE1B: Review and update the public education and outreach work plan regularly. Review new materials gathered from other agencies and programs for inclusion in the program.</p>	X	X	X	X	X	Public Works and Community Development
				X	X	X	X	X	

STORMWATER POLLUTION PREVENTION PUBLIC EDUCATION AND OUTREACH

BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT <i>WHY WE WILL DO IT</i>	MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE					IMPLEMENTERS <i>WHO WILL DO IT</i>
				<i>WHEN WE WILL DO IT</i>					
				PERMIT YEAR					
				1	2	3	4	5	
PE2	Participate in Broadcast stormwater pollution prevention television (TV) public service announcements (PSAs) about actions the public can take to reduce stormwater pollutants such as sediment, pathogens, oil and grease, litter and trash, pesticides, herbicides, fertilizers, metals, and other chemicals.	To reduce the source of stormwater pollutants using television to reach out to the public and provide information about stormwater pollutants that impair local waterbodies and what actions the public can take to prevent stormwater pollution.	PE2A: Measure and record the reach and frequency achieved using TV PSAs. Target to reach approximately 180,000 individuals using 30 second television public service announcements broadcast on at least one local TV channel at least two times per year.	X	X	X	X	X	Public Works
PE3	Participate in Broadcast stormwater pollution prevention radio public service announcements about actions the public can take to reduce stormwater pollutants such as sediment, pathogens, oil and grease, litter and trash, pesticides, herbicides, fertilizers, metals, and other chemicals.	To reduce the source of stormwater pollutants using radio to reach out to the public and provide information about stormwater pollutants that impair local waterbodies and what actions the public can take to prevent stormwater pollution.	PE3A: Measure and record the reach and frequency achieved using radio PSAs. Target to reach approximately 60,000 individuals using 30 second radio public service announcements broadcast on at least one local radio station at least two times per year.	X	X	X	X	X	Public Works
PE4	Distribute stormwater pollution prevention brochures developed by the Partners for Water Quality and other printed materials targeting residential and commercial audiences. Topics to be	To reduce the source of stormwater pollutants using printed materials to reach out to the public and provide educational information including both general and specific	PE4A: Distribute printed materials in the stormwater permit coverage area each year. PE4B: Measure and record		X	X	X	X	Public Works

STORMWATER POLLUTION PREVENTION PUBLIC EDUCATION AND OUTREACH

BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT <i>WHY WE WILL DO IT</i>	MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE					IMPLEMENTERS <i>WHO WILL DO IT</i>
				<i>WHEN WE WILL DO IT</i>					
				PERMIT YEAR					
				1	2	3	4	5	
	included, but not limited to: General stormwater pollution prevention information about the impacts of urban runoff and the distinction between municipal storm sewer and sanitary sewer systems.	stormwater pollution prevention actions that people can take in their everyday activities to reduce stormwater pollutants.	the number of brochures distributed. PE4C: Post brochures on the City's website.		X	X	X	X	
PE7	Distribute stormwater pollution prevention brochures and other printed materials targeting the <u>development community and construction industry</u> including construction site owners and operators and contractors. Topics to be included, but not limited to: Construction Stormwater General Permit requirements; City ordinances and permits; Stormwater Pollution Prevention Plan (SWPPP) requirements; Erosion and sediment control BMPs; Non-stormwater management; Illicit discharge detection and elimination; and Proper disposal and recycling of construction materials.	To reduce the source of stormwater pollutants using printed materials to reach out to the development community and construction industry to provide educational information including both general and specific stormwater pollution prevention actions that people can take in their construction and development activities to reduce stormwater pollutants such as sediment, pathogens, oil and grease, litter and trash, pesticides, herbicides, fertilizers, metals, and other chemicals.	PE7A: Distribute brochures with every building permit application for projects one acre or more in size and smaller projects that are part of a larger common plan of development that is one acre or larger for all purposes under this SWMP. PE7C: Post brochures on the City website.		X	X	X	X	Community Development Department

STORMWATER POLLUTION PREVENTION PUBLIC EDUCATION AND OUTREACH

BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT <i>WHY WE WILL DO IT</i>	MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE					IMPLEMENTERS <i>WHO WILL DO IT</i>
				<i>WHEN WE WILL DO IT</i>					
				PERMIT YEAR					
				1	2	3	4	5	
PE8	Distribute stormwater pollution prevention brochures and other printed materials about post-construction stormwater management BMPs targeting the <u>development community and construction industry</u> . Topics to be included, but not limited to: Low Impact Development (LID) Design Standards; LID Benefits and Incentives; Post-construction treatment BMPs, and Long-term maintenance requirements.	To reduce the source of stormwater pollutants using printed materials to reach out to the development community and construction industry to provide educational information including both general and specific stormwater pollution prevention actions they can take to reduce stormwater pollutants using post-construction stormwater management BMPs.	<p>PE8A: Distribute brochures with every building permit application for projects one acre or more in size and smaller projects that are part of a larger common plan of development that is one acre or larger for all purposes under this SWMP.</p> <p>PE8B: Distribute brochures to the Builders, Developers, Architects, Landscape Architects, and Engineering companies operating in San Luis Obispo County.</p> <p>PE8C: Post brochures on City website.</p>				X	X	Community Development Department
								X	
							X	X	

STORMWATER POLLUTION PREVENTION PUBLIC EDUCATION AND OUTREACH

BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT <i>WHY WE WILL DO IT</i>	MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE					IMPLEMENTERS <i>WHO WILL DO IT</i>
				<i>WHEN WE WILL DO IT</i>					
				PERMIT YEAR					
				1	2	3	4	5	
PE10	Distribute stormwater pollution prevention brochures and other printed materials targeting <u>tourists</u> through hotels and local tourist attractions. Topics to be included, but not limited to: Why stormwater pollution prevention is important; Impacts of urban runoff on local waterbodies;	To reduce pollutants in stormwater runoff by educating tourists about stormwater pollution prevention and what actions they can take to reduce stormwater pollutants such as sediment, pathogens, oil and grease, litter and trash, pesticides, herbicides, fertilizers, metals, and other chemicals.	<p>PE10A: Distribute brochures to the hotels and local tourist attractions in the coverage area.</p> <p>PE10B: Promote eco and sustainable agriculture tourism programs.</p> <p>PE10C: Provide interpretative stormwater pollution prevention signage in the top three high tourist impact areas in the permit coverage area.</p>				X	X	Public Works
							X	X	
							X	X	
PE11	Make available stormwater pollution prevention educational materials using the City's Website. Audiences and topics to be included, but not limited to: General Public; Residential BMPs; Commercial Business BMPs; Industrial BMPs; Tourists, School Age Children and Educators, and College Students.	To reduce pollutants in stormwater runoff by educating the public about the importance of stormwater pollution prevention and the public's role using the internet to distribute stormwater pollution prevention information and provide contact information for public comment and requests for additional information.	<p>PE11A: Maintain and update the City's website for Stormwater Pollution Prevention.</p> <p>PE11C: Provide contact information and record the number and nature of website contacts and inquiries.</p>				X	X	Public Works
							X	X	

STORMWATER POLLUTION PREVENTION PUBLIC EDUCATION AND OUTREACH

BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT <i>WHY WE WILL DO IT</i>	MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE					IMPLEMENTERS <i>WHO WILL DO IT</i>
				<i>WHEN WE WILL DO IT</i>					
				PERMIT YEAR					
				1	2	3	4	5	
PE13	Support and participate in public events and provide stormwater pollution prevention printed materials and public displays including, but not limited to: Watershed Fairs, Coast and Creek Cleanups, Community Events.	To reduce pollutants in stormwater runoff by reaching out to the public and providing stormwater pollution prevention educational displays and materials at public events especially events that involve the public in cleanup and watershed stewardship activities to provide an interactive opportunity to learn by doing.	<p>PE13A: Support and participate in at least one public event per year.</p> <p>PE13B: Provide public display materials.</p> <p>PE13C: Record the number of people participating and the amount of printed materials distributed.</p>			X	X	X	Public Works
PE15	Provide stormwater pollution prevention education and outreach to Municipal Departments and Personnel	To reduce pollutants in stormwater runoff by educating municipal departments and personnel that perform activities that can contribute to stormwater pollution.	<p>PE15A: Distribute Stormwater Pollution Prevention materials to municipal employees.</p> <p>PE15B: Provide annual stormwater training to municipal employees.</p>	X	X	X	X	X	Public Works
							X	X	

Examples of Public Education and Outreach To Date

The City participates in the SLO County Partners for Water Quality Coalition (“the Partners”), which has implemented public education and outreach and public participation and involvement activities in San Luis Obispo County. As a result, the program continues to evolve as the Partners learn from experience and develop additional partnerships and opportunities to collaborate. The Partners meet bimonthly with other active stakeholder groups to collaborate on opportunities to reach out to the community and provide education, outreach, and public participation and involvement activities. The Partners mailing list includes not only representatives from the fourteen MS4 agency partners, but also many local and regional environmental and conservation groups as well as resource agencies. The Partners Coalition has become a valuable forum to coordinate SWP2 efforts throughout the County.

Sammy the Steelhead Stormwater Icon, Slogan, and Logo

One of the early goals of the SWP program was to identify an icon, slogan and logo. Sammy the Steelhead, the City of San Luis Obispo’s water conservation fish, was selected to represent the Partners in his new role as “Stormwater Pollution Prevention Expert and Official Spokesfish”. The Partners adopted the SWP2 slogan **“You are the solution to stormwater pollution!”** to emphasize the public’s role in preventing stormwater pollution. The Partners SWP2 logo featuring Sammy the Steelhead and the SWP2 slogan along with the official seals of all fourteen MS4 Partner agencies is shown below.



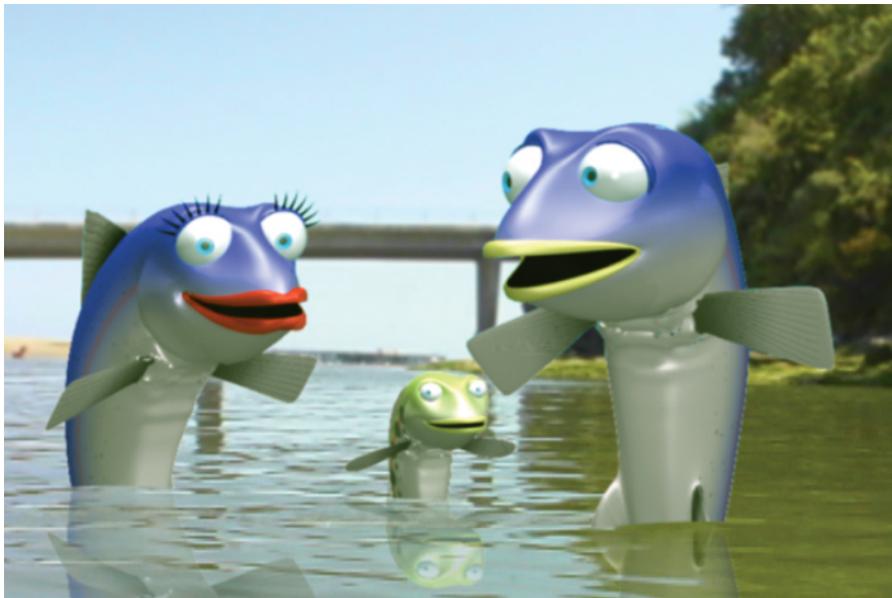
Sammy the Steelhead was selected to be the SWP2 Icon because he was already recognized as a celebrity in the community and because steelhead trout are designated as “threatened” in San Luis Obispo County streams. The community places high value on steelhead trout and since steelhead are very sensitive to water pollution, the connection between stormwater runoff pollution and Sammy the Steelhead’s ecosystem is readily apparent.

II. Television and Radio SWP2 Public Service Announcements (PSAs)

The first Sammy the Steelhead TV PSA was launched in 2004 to reach out to citizens across the County to take stormwater pollution prevention actions before the rainy season. The PSA builds on the community's existing awareness of Sammy the Steelhead and was designed to develop an overall public awareness of stormwater runoff pollution.

The original television SWP2 PSA used older Sammy animation. New animation and graphics for Sammy were introduced in 2005. Sammy was reanimated to look more like a real steelhead trout. The colors and body shape appear more realistic again to build on Sammy's connection to water quality and ecosystem protection. In addition, Sammy has a wife, Samantha and a little fry, Sammy Jr. who joined him in the new SWP2 PSAs. Three new PSAs were launched before the 2005-2006 rainy season using the new animation and featuring Sammy and his new family. The new PSAs focus on specific actions the public can take to prevent stormwater runoff pollution.

Here is a family portrait of Sammy and his family at the mouth of San Luis Obispo Creek.



Sammy the Steelhead SWP2 PSAs are broadcast on the local San Luis Obispo television channel and are estimated to reach 180,000 households throughout the County. Currently, three different Sammy the Steelhead SWP2 PSAs target residential audiences and cover the following topics:

- Proper pet waste management;
- Litter and trash in storm drains;
- Proper car washing;
- Proper car maintenance;
- Proper trash and green waste disposal;
- Proper use of pesticides and fertilizers; and
- Sweeping driveways instead of hosing them down.

In addition to the television PSAs, radio PSAs are currently in development.

SWP Information Telephone Line 788-FISH

As advertised in TV PSAs, printed materials, and poster displays at public events, Sammy speaks in a recorded message to callers when the Partners 788-FISH telephone number is called. Sammy tells callers how to contact each Partner for more information about SWP in their communities.

Printed Materials

A variety of brochures and flyers are distributed to the public at public events. Some examples of brochures currently being distributed include:

General Stormwater Awareness and Pollution Prevention:

- Make Your Home the Solution to Stormwater Pollution
- A Citizen's Guide to Understanding Stormwater
- Protecting Water Quality from Urban Runoff

Specific Actions Citizens Can Take:

- Our Water Our World Less Toxic Alternatives to Pesticide Use factsheets, booklets, wallet cards, magnets, and posters
- Household Hazardous Waste Facilities and Guidelines for the County
- A Homeowner Guide to Septic Systems
- 10 Things You Can Do to Prevent Stormwater Pollution Bookmarks and Display Materials

SWP Printed Materials for Children:

- Sammy the Steelhead SWP2 Activity Book
- Stormwater Challenge Crossword Puzzle
- Caltrans Don't Trash California Activity Book
- Our Water Our World Pest or Pal Activity Book
- Bookmarks

Our Water Our World Program

The City participates in the Our Water Our World Program launched in San Luis Obispo County in January 2005. Press releases, local newsletter articles, and flyers were used to promote the program launch as shown below.

Get Rid of Pests Without the Poison

How to get rid of pesky ants, hungry snails, or threatening spiders without poisoning your family or pets is a big concern for many people. Not to mention the threats to water quality posed by toxic sprays or pellets. What to do? A new program in San Luis Obispo County has the answers.

As a result of a partnership called “Our Water, Our World”, eleven businesses throughout the County now display information about less toxic pesticide products in their stores. Customers can visit participating stores and find free fact sheets on specific pest problems and the “Our Water, Our World” logo next to a variety of less toxic products to help customers make more informed choices when purchasing pesticide products. Participating stores include:

- Orchard Supply Hardware stores in Paso Robles and Pismo Beach,
- Miner’s Ace Hardware stores in Atascadero, Los Osos, and Morro Bay,
- Farm Supply stores in Paso Robles, San Luis Obispo, and Arroyo Grande,
- Pacific Home Improvement in San Luis Obispo,
- Cambria Nursery, and
- Old Towne Nursery in Nipomo.

The “Our Water, Our World” program is aimed at informing consumers about less toxic alternatives to common household pesticides that threaten water quality in water bodies nationwide. Rain water and over-irrigation of gardens and lawns can send these pesticides into streets and storm drains, especially when they are over-used. Remember that stormwater is not treated and flows directly into our rivers, lakes, and streams.

The program in San Luis Obispo County is sponsored by the SLO County Partners for Water Quality, a coalition of municipalities working together to prevent stormwater pollution.

The “Our Water, Our World” program is part of a larger campaign involving garden supply stores and local government agencies throughout California, and is funded primarily through the Coastal Nonpoint Source Grant Program (Prop 13.)

For more information, go to www.ourwaterourworld.org.



The Our Water Our World Program has been well received in San Luis Obispo County. Eleven retail stores display Our Water Our World Factsheets and shelf talkers at their pesticide and herbicide point of sale areas. Training was conducted at each store by the OWOW Program consultant, Annie Joseph. Annie also conducted public workshops at the retail outlets, the Mid-State Fair, and to the general public at the SLO City/County Library.

Although the funding for the program through Prop 13 ended in December 2005, the program will continue to be implemented. Funding through the SLO County Partners for Water Quality has been secured through 2007.

Annual Creek Clean Up

The City participates in the annual Arroyo Grande clean up organized by Central Coast Salmon Enhancement. This annual event provides an opportunity to clean the creeks through volunteer efforts every fall. The City helps sponsor the event, provides area for trash pick up and advertisement.

Storm Drain Marking Events

Storm drain marking events have been scheduled for all of the communities in the permit coverage area. The first storm drain marking event, the “*Waterway Protection Day: Help Us Stick It to Stormwater Pollution*” was led by the Land Conservancy of San Luis Obispo County in May of 2006 and was funded by a grant from the Avila Trustee Council. All storm drains in the Arroyo Grande Creek watershed were labeled by volunteers using the storm drain markers shown below. The storm drain marking was developed by students at Paulding Middle School.



SECTION 3: PUBLIC PARTICIPATION AND INVOLVEMENT

This control measure is intended to foster active community support for the storm water management program and recommendations for its implementation. Participation by the public ensures that the program reflects community values and priorities and thus has the highest potential for success.

Objectives and Requirements

- < Raise public awareness about urban runoff pollution; and
- < Involve the public in developing and implementing the Storm Water Management Plan in order to promote public interest and support.

To meet these objectives, the requirements of the Public Participation and Involvement component of the Storm Water Program are to:

- < Comply with all State, and local public notice requirements; and
- < Involve the public in the continuing development and refinement of the Storm Water Management Plan; and
- < Allow the public to review the permit and the Storm Water Management Plan; and
- < Include a procedure to receive and respond to comments from the public regarding the Storm Water Management Plan; and
- < Implement appropriate BMPs and develop achievable and measurable goals in order to assess the success of the public participation and involvement program.

MINIMUM CONTROL MEASURE #2: PUBLIC PARTICIPATION AND INVOLVEMENT

OBJECTIVE: To comply with all state and local notice requirements and include the public in developing, implementing, and reviewing the stormwater management program including efforts to reach out and engage the communities within the permit coverage area.

PUBLIC PARTICIPATION AND INVOLVEMENT									
BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT <i>WHY WE WILL DO IT</i>	MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE					IMPLEMENTERS <i>WHO WILL DO IT</i>
				<i>WHEN WE WILL DO IT</i>					
				PERMIT YEAR					
				1	2	3	4	5	
PP1	Comply with public notice requirements for stormwater public participation and involvement activities.	To ensure compliance with applicable public notice requirements.	<p>PP1A: Determine public notice requirements for each public participation and involvement activity and ensure compliance.</p> <p>PP1B: Maintain records for public participation and involvement events.</p>	X	X	X	X	X	Public Works and Community Development Department
				X	X	X	X	X	
PP2	Hold Public Involvement Stakeholder Meetings /Workshops including volunteer educators and speakers.	To promote community support for the SWMP and to ensure the community has opportunities to provide input and direction regarding SWMP development, implementation, and review.	<p>PP2A: Maintain a master stormwater stakeholder and interested parties list.</p> <p>PP2B: Organize and conduct at least one stormwater stakeholder meetings per year to review the status and performance of the SWMP.</p>	X	X	X	X	X	Public Works and Community Development Department
				X	X	X	X	X	

PUBLIC PARTICIPATION AND INVOLVEMENT									
BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) WHAT WE WILL DO AND HOW WE WILL DO IT	BMP INTENT WHY WE WILL DO IT	MEASURABLE GOALS AND OUTCOMES HOW WE WILL MEASURE EFFECTIVENESS	BMP IMPLEMENTATION TIMETABLE WHEN WE WILL DO IT					IMPLEMENTERS WHO WILL DO IT
				PERMIT YEAR					
				1	2	3	4	5	
PP3	Promote public participation in Creek Cleanups by providing advertising and incentives for participation as well as other support.	To promote community support for the SWMP and to reduce pollution from litter, trash, and illegal dumping.	PP3A: Promote and support at least one annual creek cleanup. Record the amount and types of trash and debris removed.	X	X	X	X	X	Public Works
			PP3B: Work with community groups, SLO County Partners for Water Quality, and nonprofit organizations to promote and support these programs.	X	X	X	X	X	
PP4	Storm Drain Marking Program	To promote community support for the SWMP and to reduce pollution from litter and illegal dumping.	PP4A: Recruit and organize community volunteers for storm drain marking events.	X		X		X	Public Works
			PP4B: Storm drain marking will be required on all new development projects with storm drains.	X	X	X	X	X	
			PP4C: Maintain storm drain markings on an ongoing basis. The storm drain	X	X	X	X	X	

PUBLIC PARTICIPATION AND INVOLVEMENT									
BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) WHAT WE WILL DO AND HOW WE WILL DO IT	BMP INTENT WHY WE WILL DO IT	MEASURABLE GOALS AND OUTCOMES HOW WE WILL MEASURE EFFECTIVENESS	BMP IMPLEMENTATION TIMETABLE WHEN WE WILL DO IT					IMPLEMENTERS WHO WILL DO IT
				PERMIT YEAR					
				1	2	3	4	5	
			marker maintenance schedule will be included in the first annual report.						
PP5	Promote and support Watershed Stewardship Programs including, but not limited to: volunteer water quality monitoring, watershed planning, community reforestation,	To promote community support for the SWMP and reduce pollution from urban runoff.	PP5A: Promote and support the introduction of Urban Watch and First Flush Monitoring Programs in SL0 County. PP5C: Promote and support	X	X	X	X	X	Public Works and Community Development Department
				X	X	X	X	X	

PUBLIC PARTICIPATION AND INVOLVEMENT									
BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT <i>WHY WE WILL DO IT</i>	MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE <i>WHEN WE WILL DO IT</i>					IMPLEMENTERS <i>WHO WILL DO IT</i>
				PERMIT YEAR					
				1	2	3	4	5	
	storm drain marking, community cleanups, and other environmental restoration activities.		community reforestation programs. PP5D: Promote and support watershed planning activities.	X	X	X	X	X	

SECTION 4: ILLICIT DISCHARGE DETECTION AND ELIMINATION

This control measure of the Storm Water Management Plan is intended to reduce pollutants in storm water runoff to receiving waters. It requires the development and implementation of a system to identify and eliminate sources of illicit discharges and illegal dumping. The program depends on a number of partners including the public and other local agencies.

An illicit discharge is defined as any discharge to the municipal storm drain system that is not composed entirely of storm water, except for discharges authorized by an NPDES permit. Illicit discharges may enter the storm sewer system through either (1) direct connections (accidental or deliberate connections to storm sewers), or (2) indirect connections (i.e. filtering into storm sewers from cracked wastewater pipes, spills draining into storm sewer inlets, or waste waters or materials deliberately dumped into storm sewers). Discharge sources must be controlled and illegal behavior prevented.

The MS4 General Permit requires that the Permittee adopt and enforce ordinances or take equivalent measures that prohibit illicit discharges. The Permittee must also implement a program to detect illicit discharges. Section D.2.c. of the MS4 General Permit requires that the Permittee:

- 1) "Develop, implement, and enforce a program to detect and eliminate illicit discharges (as defined at 40 CFR §122.26(b)(2) into the regulated Small MS4;
- 2) Develop, if not already completed, a storm sewer map, showing the location of all outfalls and the names and locations of all waters of the U.S. that receive discharges from those outfalls;
- 3) To the extent allowable under State or local law, effectively prohibit, through ordinance, or other regulatory mechanism, non-stormwater discharges into the MS4 and implement appropriate enforcement procedures and actions;
- 4) Develop and implement a plan to detect and address non-stormwater discharges, including illegal dumping to the system that are not authorized by a separate NPDES permit;
- 5) Inform public employees, businesses, and the general public of the hazards that are generally associated with illegal discharges and improper disposal of waste; and

Objectives and Requirements

- < Control illicit discharges by conducting field surveys / investigations of the storm sewer system to identify and eliminate improper connections and discharges; and
- < Prevent improper disposal of waste through public education and providing appropriate waste material disposal options and incentives; and
- < Contain and clean-up accidental spills using proper clean-up and disposal materials and methods.

To meet these objectives, the requirements of the Illicit Discharge Detection and Elimination component of the Storm Water Program are to:

- < Develop a storm drain map that shows the location of all outfalls and the names and locations of all waters that receive discharges from the outfalls; and
- < Develop enforceable means to prohibit non-storm water discharges (i.e. an ordinance or other regulatory mechanism); and
- < Develop a City-wide plan to detect and address non-storm water discharges; and
- < Educate the general public, businesses, and public employees about the hazards (and legal consequences) of illicit discharges.

The following table of discharges may be exempted from regulations unless they are determined to be a significant source of pollution or a nuisance.

Discharges or flows from fire fighting activities are excluded from the effective prohibition against non-storm water and need only be addressed where they are identified as significant sources of pollutants.

MINIMUM CONTROL MEASURE #3: ILLICIT DISCHARGE DETECTION AND ELIMINATION

OBJECTIVE: *To adopt and enforce ordinances or take equivalent measures that prohibit illicit discharges and to implement a program to detect and eliminate illicit discharges.*

ILLICIT DISCHARGE DETECTION AND ELIMINATION										
BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT <i>WHY WE WILL DO IT</i>	MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE					IMPLEMENTERS <i>WHO WILL DO IT</i>	
				<i>WHEN WE WILL DO IT</i>						
				PERMIT YEAR						
				1	2	3	4	5		
L1	<p>Adopt an ordinance prohibiting illicit discharges and including enforcement provisions. <u>The ordinance must also address the categories of non-storm water discharges or flows listed in Section D.2.c. (6) of the MS4 General Permit.</u> The ordinance will include a system of enforcement and penalties. Model ordinances will be used to help draft this ordinance.</p>	<p>To reduce pollutants in stormwater runoff by enforcing illicit discharge prohibitions.</p>	<p>IL1A: Ordinance to be drafted and adopted by Year 4. The ordinance will include progressive penalties and enforcement provisions and ordinance enforcement will begin as soon as the ordinance is adopted.</p>				X			<p>Public Works Community Development</p>
			<p>IL1B: Establish a system of enforcement and penalties and train inspectors. IL1C: Track and trend annual enforcement reports. Violation types will be evaluated to measure effectiveness over time.</p>					X		

ILLCIT DISCHARGE DETECTION AND ELIMINATION

BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT <i>WHY WE WILL DO IT</i>	MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE					IMPLEMENTERS <i>WHO WILL DO IT</i>	
				<i>WHEN WE WILL DO IT</i>						
				PERMIT YEAR						
				1	2	3	4	5		
IL2	Use City Atlas to map the storm sewer system showing the location of storm sewer features and all outfalls and the names and locations of all waters of the US that receive discharges from those outfalls.	To reduce pollutants in storm water runoff by mapping the storm sewer system to facilitate tracking the source of stormwater pollutants.	IL2A: Complete storm sewer maps. IL2B: Update maps on a bi-annual basis to include new and modified storm sewer facilities.			X				Public Works, Community Development, Building and Fire Departments
IL3	Develop a form for citizens to report illicit discharges, illegal dumping, construction site runoff violations, and other stormwater pollution problems.	To reduce pollutants in storm water runoff by providing a mechanism to detect and eliminate illicit discharges, illegal dumping, construction site runoff violations and other stormwater pollution problems through citizen reporting.	IL3A Pollution Complaint form to include illicit discharge, illegal dumping, and construction site runoff. IL3C: Record the number of stormwater reports and document follow up actions and problem resolution. Track and trend report types. Report results in annual report. 100% of the stormwater reports must be responded to.		X					Public Works, Community Development, Building and Fire Departments
						X	X	X		

ILICIT DISCHARGE DETECTION AND ELIMINATION										
BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT <i>WHY WE WILL DO IT</i>	MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE <i>WHEN WE WILL DO IT</i>					IMPLEMENTERS <i>WHO WILL DO IT</i>	
				PERMIT YEAR						
				1	2	3	4	5		
IL4	Implement procedures for illicit connections/discharge inspections and dry weather screening for the storm drain system including residential, commercial business, industrial and other governmental and quasi-governmental discharges. These procedures will apply to anyone discharging into the City storm sewer system. The procedures will ensure that any illicit connection or discharge detected will be detected and eliminated.	Reduce illicit discharge to storm sewer systems	<p>IL4A: Develop and implement a procedure and checklist for detecting illicit connections and discharges.</p> <p>IL4B: Inspect for illicit connections and discharges during storm drain and cross-connection inspections.</p>			X	X	X		Public Works
IL5	Incorporate illicit connection prohibitions and inspections in construction plan review and building inspections for new development and redevelopment projects.	To prevent the discharge of pollutants in stormwater runoff by preventing new illicit connections in new development and redevelopment projects.	<p>IL5A: Revise inspection checklists and procedures to prohibit illicit connection and discharge to the storm sewer system.</p> <p>IL5B: Include stormwater illicit connections and discharges in construction plan review and</p>		X					Department of Building and Fire
						X	X	X	X	

ILICIT DISCHARGE DETECTION AND ELIMINATION

BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT <i>WHY WE WILL DO IT</i>	MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE					IMPLEMENTERS <i>WHO WILL DO IT</i>
				<i>WHEN WE WILL DO IT</i>					
				PERMIT YEAR					
				1	2	3	4	5	
			building inspections on an ongoing basis for all new development and redevelopment projects.						
IL6	Sanitary Sewer Overflow Prevention and Spill Response Program	To reduce pollutants in storm water runoff from sanitary sewer overflows and spills.	<p>IL6A: Audit the adequacy of the operations and maintenance programs for wastewater collection systems to ensure that these systems are properly operated and maintained to prevent sanitary sewer overflows and spills into the storm sewer system. 100% of the problems detected in the audit will be corrected.</p> <p>IL6B: Track and trend sanitary sewer overflow events and implement corrective and</p>	X	X	X	X	X	Public Works
				X	X	X	X	X	

ILLCIT DISCHARGE DETECTION AND ELIMINATION

BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT <i>WHY WE WILL DO IT</i>	MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE					IMPLEMENTERS <i>WHO WILL DO IT</i>
				<i>WHEN WE WILL DO IT</i>					
				PERMIT YEAR					
				1	2	3	4	5	
			preventive measures. Report performance annually.						
IL8	Post signage prohibiting littering and illegal dumping.	To reduce pollution in storm water runoff from litter and illegal dumping.	IL8A: Identify and prioritize locations experiencing littering and illegal dumping in the stormwater permit coverage area. IL8B: Post signs prohibiting illegal dumping.	X					Public Works
IL9	Support and promote the SLO County Integrated Waste Management Authority (IWMA) Recycling and Household Hazardous Waste Programs.	To reduce pollutants in stormwater runoff from litter and illegal dumping by promoting recycling and household hazardous waste programs.	IL9A: Include the SLO County IWMA Recycling and Household Hazardous Waste Programs in the Stormwater Pollution Prevention public education and outreach and public participation and involvement BMPs.			X	X	X	Public Works
						X	X	X	

ILLICIT DISCHARGE DETECTION AND ELIMINATION

BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT <i>WHY WE WILL DO IT</i>	MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE <i>WHEN WE WILL DO IT</i> PERMIT YEAR 1 2 3 4 5					IMPLEMENTERS <i>WHO WILL DO IT</i>
			<p>IL9B: Coordinate activities with the IWMA.</p>						

SECTION 5: CONSTRUCTION SITE RUNOFF CONTROLS

This control measure of the Storm Water Management Plan is intended to prevent soil and construction waste from entering storm water. Sediment is usually the main pollutant of concern; during a short period of time, construction sites can contribute more sediment to creeks than can be deposited naturally over several decades. The resulting siltation, and contribution of other pollutants from construction sites can cause physical, biological, and chemical harm to local waterways.

Section D.2.d. of the MS4 General Permit requires that the Permittee “develop, implement, and enforce a program to reduce pollutants in any stormwater runoff to the Small MS4 from construction activities that result in land disturbance of greater than or equal to one acre. Reduction of stormwater discharges from construction activity disturbing less than one acre must be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more. The program must include the development and implementation of, at a minimum:

Objectives and Requirements

- < Develop, implement, and enforce a program to reduce the amount of pollutants in storm water runoff from construction activities that result in land disturbance of one acre or more.

To meet this objective, the requirements of the Construction Site Runoff Control component of the Storm Water Program are to:

- < Develop an ordinance or other regulatory mechanism, requiring the implementation of proper erosion and sediment controls on construction sites, and penalties for non-compliance; and
- < Require construction site operators to implement appropriate and effective erosion and sediment control BMPs to reduce or eliminate storm water pollution; and
- < Require construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality; and
- < Develop procedures for site plan review of construction plans to address water quality impacts; and
- < Develop procedures for site inspections and enforcement of control measures; and
- < Establish procedures for receiving information / concerns about construction site practices from the public.

Based on additional guidance provided by EPA in Fact Sheet 2.6, "Construction Site Runoff Control", this section of the SWMP must include the following minimum requirements:

- Have an ordinance or other regulatory mechanism requiring the implementation of proper erosion and sediment controls and controls for other wastes on applicable construction sites;
- Have procedures for site plan review of construction plans that consider potential water quality impacts;
- Have procedures for site inspection and enforcement of control measures;
- Have sanctions to ensure compliance (established in the ordinance or other regulatory mechanism);
- Establish procedures for the receipt and consideration of information submitted by the public; and
- Determine the appropriate best management practices and measurable goals for the construction site runoff minimum control measure.

Existing Ordinances / Policies / Programs / BMPs:

- < Grading Ordinance.
- < The Public Works Department reviews discretionary projects submitted for impacts to water quality and hydrology. If a project is considered to have a potentially significant impact to either, the project proponent is required to mitigate impacts to the greatest extent feasible.

MINIMUM CONTROL MEASURE #4: CONSTRUCTION SITE RUNOFF CONTROL

OBJECTIVE: To develop a program to control the discharge of pollutants from construction sites greater than or equal to one acre in size and smaller projects that are part of a common plan of development that is one acre or more in size. The program must include inspections of construction sites and enforcement actions against violators.

CONSTRUCTION SITE RUNOFF CONTROL										
BMP ID#	BEST MANAGEMENT PRACTICES (BMPs) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT <i>WHY WE WILL DO IT</i>	MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE <i>WHEN WE WILL DO IT</i>					IMPLEMENTERS <i>WHO WILL DO IT</i>	
				PERMIT YEAR						
				1	2	3	4	5		
CON2	Conduct Construction Site Plan Reviews	To reduce pollutants in stormwater runoff by controlling the discharge of pollutants from construction sites greater than or equal to one acre in size and smaller projects that are part of a common plan of development that is one acre or more in size using construction site plan reviews.	CON2A: Implement procedures for reviewing grading plans to verify that erosion and sediment control BMPs are included and are adequate before issuing permits for projects that involve one acre or more of land disturbance and smaller projects that are part of a common plan of development that is one acre or more in size according to schedule.		X	X	X	X	Department Building and Fire Public Works	

CONSTRUCTION SITE RUNOFF CONTROL

BMP ID#	BEST MANAGEMENT PRACTICES (BMPs) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT		MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE					IMPLEMENTERS <i>WHO WILL DO IT</i>	
		<i>WHY WE WILL DO IT</i>			<i>WHEN WE WILL DO IT</i>						
					PERMIT YEAR						
		1	2	3	4	5					
CON3	Conduct construction site inspections and enforce construction site runoff control requirements.	To reduce pollutants in stormwater runoff by controlling the discharge of pollutants from construction sites greater than or equal to one acre in size and smaller projects that are part of a common plan of development that is one acre or more in size using construction site inspections and enforcement.	CON3A: Create a procedure for inspecting construction site stormwater BMPs to ensure that they are being implemented and are properly maintained. Establish a protocol to determine inspection priorities and frequency based on potential water quality impacts.		X	X	X	X		Department of Building and Fire Public Works	
CON4	Conduct a public education and outreach program for construction runoff controls targeting project applicants, contractors, developers, property owners and other responsible parties.	To reduce pollutants in stormwater runoff by controlling the discharge of pollutants from construction sites greater than or equal to one acre in size and smaller projects that are part of a common plan of development that	CON4A: Issue construction site education and outreach information to all construction permit applications for projects with one acre or more of land disturbance and smaller projects that are part of a common plan of development that is one acre or more in size.	X	X	X	X	X		Department of Building and Fire and Public Works	
						X	X	X	X		

CONSTRUCTION SITE RUNOFF CONTROL

BMP ID#	BEST MANAGEMENT PRACTICES (BMPs) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT		MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE					IMPLEMENTERS <i>WHO WILL DO IT</i>
		<i>WHY WE WILL DO IT</i>			PERMIT YEAR					
			is one acre or more in size using public education and outreach.	CON4B: Include construction site runoff control in public education and outreach information in the Stormwater Pollution Prevention Public Education and Outreach Program.						
CON5	Work with the County to Develop and disseminate a construction site BMP policy and procedures guidance manual. The CASQA Construction BMP Manual can be	To reduce pollutants in stormwater runoff by controlling the discharge of pollutants from construction sites by providing guidance on policies and procedures.		CON5A: Disseminate policy and procedure guidance materials according to schedule using handouts and the City website.		X	X	X	X	Department of Planning and Building Public Works

CONSTRUCTION SITE RUNOFF CONTROL

BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT <i>WHY WE WILL DO IT</i>	MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE <i>WHEN WE WILL DO IT</i>					IMPLEMENTERS <i>WHO WILL DO IT</i>
				PERMIT YEAR					
				1	2	3	4	5	
	used as a model.								
CON7	Provide for citizen reporting on construction site runoff violations.	To reduce the discharge of pollutants from construction sites using citizen reporting.	<p>CON7A: Train staff to forward citizen reports about construction runoff violations to Public Works or Neighborhood Services</p> <p>CON7B: Record the number of citizen reports and problem resolution and report annually.</p>			X	X	X	Public Works
						X	X	X	

SECTION 6: POST-CONSTRUCTION RUNOFF CONTROLS

This control measure of the Storm Water Management Plan focuses on site and design considerations, which are most effective when addressed in the planning and design stages of project development. Effective long-term management and maintenance are critical, so the best design opportunities are those with minimum maintenance needs. The goal of this control measure is to integrate basic and practical storm water management techniques into new development to protect water quality.

The MS4 General Permit requires that the Permittee “require long-term post-construction BMPs that protect water quality and control runoff flow to be incorporated into new development and significant redevelopment projects. Post-construction programs are most efficient when they stress (i) low impact design; (ii) source controls; and (iii) treatment controls.”

Objectives and Requirements

- < Reduce the long term potential for discharge of pollutants into urban runoff from new development and redevelopment.

To meet this objective, the requirements of the Post-Construction Runoff Control component of the Storm Water Program are to:

- 1) Develop, implement, and enforce a program to address stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre including projects less than one acre that are part of a larger plan of development or sale, that discharge to the Small MS4 by ensuring that controls are in place that would prevent or minimize water quality impacts;
- 2) Develop and implement strategies, which include a combination of structural and/or nonstructural BMPs appropriate for the community;
- 3) Use an ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under State or local law. For those Small MS4s described in Supplemental Provision E, the requirements must at least include the design standards contained in Attachment 4 of the MS4 General Permit or a functionally equivalent program that is acceptable to the appropriate RWQCB.
- 4) Ensure adequate long-term operation and maintenance of BMPs.”

Based on additional guidance provided by EPA in Fact Sheet 2.7, “Post-Construction Site Runoff Control”, this section of the SWMP must include the following minimum requirements:

- Develop and implement strategies that include a combination of structural and/or

- non-structural best management practices;
- Have an ordinance or other regulatory mechanism requiring the implementation of post-construction runoff controls to the extent allowable under State or local law;
 - Ensure adequate long-term operation and maintenance of controls; and
 - Determine the appropriate best management practices and measurable goals for the post-construction runoff minimum control measure.

EXISTING CITY POST-CONSTRUCTION BMPs

The goals of post-construction BMPs are to prevent and control erosion and sedimentation, provide source control of potential pollutants, control and treat runoff, and protect wetlands and water quality resources. Post-construction BMPs are required if a project cannot achieve stormwater quality standards through site-planning measures alone. Vegetative swales or other biofilters are recommended as the preferred choice for post-construction BMPs for all projects with suitable landscape areas, because these measures are relatively economical and require limited maintenance. For projects where landscape based treatment is impracticable, or insufficient to meet required design criteria, other post-construction BMPs should be incorporated. All post-construction BMPs must be maintained to operate effectively. The BMPs listed below can be routinely designed into a project to control specific sources of pollutants once a project is completed.

- A. Education and Training. Provide practical information materials on good housekeeping of hazardous products proper use and disposal for hazardous products and prohibited discharge practices and materials to residents and tenants.
- B. Root Downspout System. Direct roof drains to pervious areas to allow infiltration prior to discharging to water bodies or the municipal storm drain system.
- C. Run-off Control. Maintain post-development peak runoff rate and average volume of runoff at levels that are similar to post-development levels.
- D. Stream Erosion Control. Direct runoff through an erosion control structure such as an energy dissipater or other form of outlet protection prior to entering the stream or other water body. Biotechnical controls should be used for stream bank protection whenever possible.
- E. Vegetated Filter Strip. Use vegetated filter strips to treat sheet flow.
- F. Swales and/or Flow-Through Planters. Drainage from all paved surfaces, including streets, parking lots, driveways, commercial drive-through areas, and roofs should be routed through swales, buffer strips or filtered through planters prior to discharge to the storm drain system. Roof downspout systems can alternatively be used to treat roof drainage.

- G. Labeling and Maintenance of Storm Drain Facilities. Label new storm drain inlets with “No Dumping – Drains to Ocean” to alert the public to the destination of stormwater and to prevent direct discharge of pollutants into the storm drain.
- H. Vehicle/Equipment Cleaning. Commercial/industrial facilities or multi-family residential developments of 50 units or greater should either provide a covered, bermed area for washing activities or discourage vehicle/equipment washing by removing hose bibs and installing signs prohibiting such uses. Vehicle/equipment washing areas shall be paved designed to prevent run-on or run off from the area, and plumbed to drain to the sanitary sewer.

Commercial car wash facilities shall be designed and operated such that no runoff from the facility is discharged to the storm drain system. Wastewater from the facility shall discharge to the sanitary sewer or wastewater reclamation system.

- I. Common Area Litter Control. Implement trash management and litter control for commercial and industrial projects or large-scale residential developments to prevent litter and debris from being carried to water bodies or the storm drain system.
- J. Food Service Facilities. Design food service facilities (including restaurants and grocery stores) to have a sink or other area for cleaning floor mats, containers, and equipments that is connected to a grease interceptor prior to discharging to the sanitary sewer system. The cleaning area should be large enough to clean the largest mat or piece of equipment to be cleaned.
- K. Refuse Areas. Trash compactors, enclosures and dumpster areas should be covered and protected from roof and surface drainage. Install a self-contained drainage system that discharges to the sanitary sewer if water cannot be diverted from the areas.
- L. Outdoor Storage Controls. Oils, fuels, solvents, coolants, and other chemicals stored outdoors must be in containers and protected from drainage by secondary containment structures such as berms, liners, vaults or roof covers and/or drain to the sanitary sewer system. Bulk materials stored outdoors must also be protected from drainage with berms and covers. Process equipment stored outdoors must be inspected for proper function and leaks, stored on impermeable surfaces and covered. Implement a regular program of sweeping and litter control and develop a spill cleanup plan for storage areas.
- M. Cleaning, Maintenance and Processing Controls. Areas used for washing, steam cleaning, maintenance, repair or processing must have impermeable surfaces and containment berms, roof covers, recycled water wash facility, and discharge to the sanitary sewer. Discharges to the sanitary sewer may require pretreatment systems

and/or approval of an industrial waste discharge permit.

- N. Loading Dock Controls. Design loading docks to be covered, surrounded by berms or curbs, or constructed to prevent drainage onto or from the area. Position roof downspouts to direct stormwater away from the loading area. Water from loading dock areas shall be drained to the sanitary sewer, or diverted and collected for ultimate discharge to the sanitary sewer. Door skirts between the trailers and the building should be installed to prevent exposure of loading activities to rain.
- O. Street Sweeping: Implement a program to regularly sweep streets, sidewalks and parking lots to prevent the accumulation of litter and debris. Debris resulting from pressure washing should be trapped and collected to prevent entry into the storm drain system. Washwater containing any cleaning agent or degreaser should be collected and discharged to the sanitary sewer.
- P. Fuel Dispensing Controls: Fuel dispensing areas must be on impermeable surfaces extending 10 to 12 feet beyond the actual dispensing area and covered. They must be constructed to prevent drainage across or from the dispensing area, and must drain to sump/tank or clarifier to allow for testing and interruption of stormwater flow before discharge to the storm drain system.

TREATMENT CONTROL BMPs

If sufficient site planning, design measures, or post-construction BMPs are not implemented to the maximum extent practicable, then the development project must include treatment control BMPs. Stormwater systems must be designed to address the environmental effects of non-point source pollution and increases in runoff volume and velocity caused by the development. There are four basic strategies for treating runoff.

- Infiltrate runoff into the soil (examples: infiltration trench, infiltration basin, or retention irrigation)
- Retain/detain runoff for later release with the detention providing treatment (examples: wet pond or extended detention “dry” basin)
- Convey runoff slowly through vegetation (example: vegetated swale, vegetated buffer strip, or bioretention)
- Treat runoff on a flow-through basis using various treatment technologies (examples wet vaults or separators)

BMPs should be based on site conditions and sized in accordance with one or more of the following volume and flow based hydraulic design criteria.

- A. Volume-based design. Design criteria for treatment measures relying on infiltration and detention.
- i.) The maximized stormwater capture volume for the area, based on historical rainfall records, determined using the formula and volume capture coefficients set forth in *Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998) pages 175-178, or*
 - ii.) Volume of annual runoff required to achieve 80% or more capture, determined in accordance with the methodology in Section 5.5.1 and Appendix D in the *California Stormwater Quality Association Stormwater Best Management Practice, New Development and Redevelopment Handbook (2003)*, using local rainfall data.
- B. Flow-based design. Design criteria for treatment measures relying on filtration (e.g., swales, sand filters, or wetlands)
- i.) *Intensity-duration-frequency* - An option based on ten percent of the 50 year peak flow rate, or
 - ii.) *Percentile rainfall intensity* - An option based on the runoff flow produced by a rain event equal to at least two times the 85th percentile hourly rainfall intensity based on historical records of hourly rainfall depths, or
 - iii.) 0.2 inches/hour - An option based on the runoff flow resulting from a rain event equal to at least 0.2 inches per hour intensity (this is the recommended option).
- C. Treatment BMPs. Appropriate treatment controls include public domain BMPs and manufactured (proprietary) BMPs such as wet ponds, constructed wetlands, vegetated swales, bioretention and wet vaults. See the California Stormwater Quality Association Stormwater Best Management Practice Handbooks for fact sheets on the various treatment controls.
- D. Operation and maintenance. The long-term performance of BMPs hinges on ongoing and proper maintenance. An operation and maintenance agreement must be provided by the project sponsor for any project using treatment control BMPs. See Appendix F of the *Stormwater C.3 Guidebook* for guidance on preparing an operation and maintenance plan.

According to the Regional Water Quality Control Board, drain inlet filters and oil/water separators in their current form have very limited ability to effectively remove pollutants found in urban runoff and use of these devices as a stand-alone treatment control does not meet the Maximum Extent Practicable compliance standard.

Low Impact Development

The Central Coast Water Board defines Low Impact Development (LID) as: minimizing or eliminating pollutants in storm water through natural processes and maintaining pre-development hydrologic characteristics, such as flow patterns, surface retention, and recharge rates. LID is required because traditional development and redevelopment techniques typically cause or threaten to cause pollution problems. The volume and velocity of storm water discharged from impervious surfaces also cause increased bank erosion and downstream sedimentation, scouring, and channel widening, which significantly impact aquatic ecosystems and degrade water quality.

LID practices reduce urban impacts to receiving waters. This is achieved by:

1. Designing sites (starting with the site layout, and the grading and compaction phases of construction) that:
 - disturb only the smallest area necessary;
 - minimize soil compaction and imperviousness;
 - preserve natural drainages, vegetation, and buffer zones.
2. Utilizing on-site, lot-sized storm water infiltration techniques that minimize pollutant transport and maximize on-site pollutant treatment.

Retrofit projects that replace impervious surfaces with pervious ones, utilize landscaped areas for infiltration, and capture rain water for future use are effective at returning an existing developed site to a more natural state.

The Central Coast Water Board requires municipalities, via the Municipal General Storm Water Permit, to minimize negative impacts on aquatic ecosystems and degradation of water quality to the maximum extent practicable. Permittees must implement Best Management Practices (BMPs) that reduce pollutants in storm water runoff to the technology-based standard of Maximum Extent Practicable (MEP) to protect water quality.”

Hydromodification Management Plan

It is the City’s intent to implement hydromodification to meet the goals identified in the February 15, 2008 letter from the Central Coast Regional Water Quality Control Board by (1) maximizing infiltration and minimizing runoff volume and rate, (2) protecting riparian areas with buffer zones, (3) minimizing pollutant loading, and (4) providing long-term watershed protection.

A hydromodification plan for the City will be developed to include the following:

1. Problem Statement and Objectives
2. Literature and Data Availability
3. Watershed and Future Development Patterns
4. Assessment Methodology
5. Guidance for Hydromodification Control Selection, Design, Monitoring, Maintenance, and Inspection
6. Implementation Strategy

The goal is to develop a process to determine an economically viable and practicable hydromodification management strategy that will provide protection of water resources (e.g., water quality, beneficial uses, biological and physical integrity of watersheds and aquatic habitats) in the City to the maximum extent practicable.

The process will consider how implementation of different runoff volume and rate control techniques, Low Impact Development (LID) strategies, and riparian buffer zones might impact local stream stability and water quality. Primary focus will be placed upon techniques that utilize the existing detention basin system to achieve positive impacts on water quality in the City. The process will address the following objectives:

- Establish numeric criteria for runoff rate and volume control for development and redevelopment projects;
- Establish numeric criteria for stream stability impacts for development and redevelopment projects;
- Identify areas within the City where these criteria must be met;
- Specify performance and monitoring criteria for installed hydromodification control infrastructure; and
- Establish a strategy for education of the appropriate City staff on LID and hydromodification control concepts.
- Subparagraph iii of paragraph 2e of Section 16.68.030. "Flood control and drainage" requires the subdivider or developer to provide on-site retention facilities for the incremental increase in runoff which will be created by the subdivision or development for all subdivisions or other residential, commercial or industrial development substantially changes, concentrates or increases the natural flow of surface water onto adjacent property and no adequate outlet is available or easement has been made for drainage purposes across the affected property.

Measurable Goals

1. The City's Public Works, Community Development, and Building and Fire Departments will work together to develop the following: a brief technical memorandum stating the problem and objectives; a literature review and data availability report; and a watershed characterization report (year 2).
2. Based upon the above, the City's Public Works and Community Development Departments will develop a report describing the assessment methodology, numeric criteria, and areas of applicability (year 3).

Interim Standards for Hydromodification

In order to maximize infiltration of clean stormwater and minimize runoff volume and rate, the City will adopt interim standards for hydromodification, which are as effective as the following requirements within one year of SWMP adoption. All projects the City has discretionary approval of will be subject to these requirements.

- For new and redevelopment projects, effective impervious area shall be determined using data from existing data for areas that have similar geographic and geologic characteristics. Effective impervious area is defined as the portion of the impervious area that drains directly to an existing infiltration/retarding basin or surface water body via a hardened storm drain conveyance without first draining to a pervious area.
- For new and redevelopment projects that create and or replace 5,000 square feet or more of impervious surface, the post construction runoff hydrograph for a range of events with return periods from 1 year to 10 years shall be used. Some areas of the City adjacent to Arroyo Grande Creek may discharge directly to the creek to avoid releases during peak flows that would increase flood potential.
- For projects whose disturbed project area exceeds two acres, preserve the pre construction drainage density (miles of stream length per square mile of watershed) for all drainage areas serving a first order stream or larger and ensure that post project time of concentration is equal or greater than pre project time of concentration.

Projects may be exempt from Hydromodification requirements based on the location.

- Direct discharge to existing infiltration/retarding basins:

Sites which drain directly to a basin without discharging to a drainage channel, creek or closed storm drain system may be exempt from infiltration and other water quality control requirements determined on a case by case basis.

- Geotechnical concerns:

Increased water pressure in soil pores reduces soil strength, making foundations more susceptible to settlement and slopes more susceptible to failure. Infiltration areas and devices shall be set back from building foundations and steep slopes. Development on top of the slope and 2:1 back from the top of slope shall not be required to infiltrate stormwater. Also the City has known unstable areas where infiltration may not be feasible and areas with high depth to bedrock or an impermeable layer, infiltration may not be feasible. These areas may be exempt from infiltration requirements on a case by case basis.

- Depth to groundwater and potential groundwater pollution concerns:

To protect groundwater quality, the City will require devices designed for direct infiltration to have a minimum of 10-foot separation between the bottom of the device and the high seasonal groundwater level. The City prohibits direct infiltration of runoff from certain land uses, including but not limited to industrial or light industrial areas, highways, automotive repair shops, car washes, fleet storage areas, nurseries, hazardous and or chemical storage areas and waste disposal areas. These areas may be exempt from infiltration requirements on a case by case basis.

- Projects approved prior to the implementation of these requirements.
- Approved projects include projects under construction, projects with an approved building permit or Public Works construction plans, and discretionally projects approved or deemed complete prior to the adoption of the SWMP and that do not have specific conditions of approval reflecting the hydromodification control requirements.
- Road maintenance projects, including: Pavement overlays, street reconstruction, sidewalk repair and replacement, and utility repair or installation.

Post-Construction Storm Water Management

The City is in the process of constructing a bio-swale in an existing parking area to filter storm water runoff prior to entering Arroyo Grande Creek. The bio-swale will be constructed adjacent to and around an existing storm drain inlet. The design includes landscape materials and trees to filter storm water prior to entering the storm drain inlet. The storm drain inlet will also be fitted with a carbon filter. The project is scheduled to be completed in the Fall of 2008.





Conceptual Bio-Swale Layout

MINIMUM CONTROL MEASURE #5: POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

OBJECTIVE: To require long-term post-construction BMPs that protect water quality and control runoff flow to be incorporated into new development and significant redevelopment projects. Post-construction programs are most effective when they stress (1) low impact design; (2) source controls; and (3) treatment controls.

POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT									
BMP ID#	BEST MANAGEMENT PRACTICES (BMPs) WHAT WE WILL DO AND HOW WE WILL DO IT	BMP INTENT WHY WE WILL DO IT	MEASURABLE GOALS AND OUTCOMES HOW WE WILL MEASURE EFFECTIVENESS	BMP IMPLEMENTATION TIMETABLE WHEN WE WILL DO IT					IMPLEMENTERS WHO WILL DO IT
				PERMIT YEAR					
				1	2	3	4	5	
PC1	Adopt and enforce revisions to the City's Development Code (Title 16) to require specific post-construction stormwater management controls for new development and redevelopment projects that disturb one acre or more of land and smaller projects that are part of a common plan of development that is one acre or more in size. Provide enforcement sanctions to ensure compliance. Model ordinances will be used to draft these revisions.	To reduce pollutants in stormwater runoff by requiring long-term post-construction BMPs that protect water quality and control runoff in new development and significant redevelopment projects.	PC1A: Revise existing ordinances to require specific post-construction stormwater management controls				X	X	Department of Community Development

POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

BMP ID#	BEST MANAGEMENT PRACTICES (BMPs) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT <i>WHY WE WILL DO IT</i>	MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE <i>WHEN WE WILL DO IT</i>					IMPLEMENTERS <i>WHO WILL DO IT</i>
				PERMIT YEAR					
				1	2	3	4	5	
PC2	Revise the CEQA initial study checklist to include urban runoff quantity and quality and post-construction stormwater management considerations.	To reduce pollutants in stormwater runoff by checking for good site design and post-construction stormwater management during the CEQA process.	PC2A: Revise the CEQA initial study checklist by the end of permit year 4.				X	X	Department of Community Development
PC3	Include post-construction stormwater management in the development review process.	To reduce pollutants in stormwater runoff by checking for good site design and post-construction stormwater management during the development review process.	PC3A: Add post-construction stormwater management to development review beginning in Year 2.			X	X	X	Department of Community Development and Public Works

POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT <i>WHY WE WILL DO IT</i>	MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE					IMPLEMENTERS <i>WHO WILL DO IT</i>
				<i>WHEN WE WILL DO IT</i>					
				PERMIT YEAR					
				1	2	3	4	5	
PC4	Include post-construction stormwater management in site inspection and ongoing storm sewer system inspections. Include self-certification to ensure long-term maintenance of post-construction stormwater management controls.	To reduce pollutants in stormwater runoff by inspecting for post-construction stormwater management controls during the site inspection and ongoing storm sewer inspection processes.	PC4A: Inspect project sites one acre or more in size and smaller projects that are part of a common plan of development that is one acre or more in size for compliance with post-construction stormwater management controls. Inspections must include a check to verify that that post-construction runoff controls have been implemented and are being maintained.	X	X	X	X	X	Building and Fire Public Works

POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT <i>WHY WE WILL DO IT</i>	MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE					IMPLEMENTERS <i>WHO WILL DO IT</i>
				<i>WHEN WE WILL DO IT</i>					
				PERMIT YEAR					
				1	2	3	4	5	
PC5	Work with the County to develop and implement a Low Impact Development (LID) Design Standards Manual.	To reduce pollutants in stormwater runoff by implementing Low Impact Development Design Standards in San Luis Obispo County.	<p>PC5A: Develop and publish the LID Design Manual. Compliance with Design Standards applies to all new projects one acre or more in size and smaller projects that are part of a larger common plan of development that is one acre or larger. The LID Design Manual is required to provide design specifications and guidance to help project proponents achieve compliance with the ordinance.</p> <p>PC5B: Provide copies of the LID Design Manual on the City website.</p>				X		Department of Building and Fire, Public Works and Community Development
								X	

SECTION 7: POLLUTION PREVENTION / GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

This control measure of the Storm Water Management Plan is intended to assure that the City's delivery of public services occur in a manner protective of storm water quality.

The MS4 General Permit requires that the Permittee 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.

Section D.2.f. of the MS4 General Permit requires that the Permittee:

- 1) "Develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations; and
- 2) Using training materials that are available from the U.S. EPA, the State, or other organizations, the program must include employee training to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet building maintenance, new construction and land disturbances, and stormwater system maintenance."

Objectives and Requirements

- < Reduce the amount and type of pollutants that are discharged from streets, parking lots, material storage areas and vehicle maintenance yards into the storm sewer system.

To meet this objective, the requirements of the Pollution Prevention / Good Housekeeping for Municipal Operations component of the Storm Water Program are to:

- < Develop and implement an operation and maintenance program for the City to prevent or reduce polluted runoff from municipal operations; and
- < Provide employee training on how to incorporate pollution prevention and good housekeeping into all municipal operations such as park and open space maintenance, fleet and building maintenance, roads maintenance and storm drain maintenance; and
- < Determine the appropriate BMPs and measurable goals to meet these requirements.

Existing Programs and BMPs:

- < Street sweeping activities.
- < Public parking lot sweeping.
- < Catch basin clean-up prior to and during rain events.

MINIMUM CONTROL MEASURE #6: GOOD HOUSEKEEPING AND POLLUTION PREVENTION FOR MUNICIPAL OPERATIONS

OBJECTIVE: *To examine the County's activities and develop a program to prevent the discharge from these activities. At a minimum, the program must educate staff in pollution prevention and minimize pollutant sources.*

GOODHOUSEKEEPING AND POLLUTION PREVENTION FOR MUNICIPAL OPERATIONS										
BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT <i>WHY WE WILL DO IT</i>	MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE					<i>WHO WILL DO IT</i>	
				<i>WHEN WE WILL DO IT</i>						
				PERMIT YEAR						
				1	2	3	4	5		
MO1	Implement an employee training program for municipal operations employees including, but not limited to, road maintenance, park and open space maintenance, fleet and building maintenance, new construction and land disturbances, water and wastewater system operators, and stormwater system maintenance operations employees. The training program includes provisions for new employee training and bi-annual refresher training.	To reduce pollutants in stormwater runoff by preventing the discharge of pollutants from municipal operations.	<p>MO1A: Implement an employee training program for Public Works, Parks & Recreation, Building, and other staff covering how to incorporate pollution prevention and good housekeeping into municipal operations.</p> <p>MO1B: Provide stormwater pollution prevention training to each municipal operations employee on a bi-annual basis.</p> <p>MO1C: Measure the effectiveness of the training using scored quizzes and evaluations.</p>	X		X	X	X		Public Works, Department of Building and Fire, and Parks & Recreation

GOODHOUSEKEEPING AND POLLUTION PREVENTION FOR MUNICIPAL OPERATIONS

BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) WHAT WE WILL DO AND HOW WE WILL DO IT	BMP INTENT WHY WE WILL DO IT	MEASURABLE GOALS AND OUTCOMES HOW WE WILL MEASURE EFFECTIVENESS	BMP IMPLEMENTATION TIMETABLE WHEN WE WILL DO IT					WHO WILL DO IT
				PERMIT YEAR					
				1	2	3	4	5	
MO2	Provide street sweeping program.	To reduce the amount of pollutants in stormwater runoff from paved county roads with curb and gutter.	<p>MO2A: Sweep City streets.</p> <p>MO2B: Sweep City-owned parking lots.</p> <p>MO2C: Track curb miles swept and the amount of material collected annually.</p>	X	X	X	X	X	Public Works
MO3	Provide Storm drain Inspection and Maintenance Procedures and Schedules	To reduce the amount of pollutants in stormwater runoff by inspecting and properly maintaining the storm sewer system	<p>MO3A: Implement routine inspection and cleaning procedures and schedules for storm drain catch basins and other components of the storm drain system that require cleaning on an ongoing basis. Additional cleaning may be needed based on historical need in specific locations. The storm drain collection system inspection program will include inspecting all catch basins and other storm drain once a year. Catch basins and other storm drain components will be cleaned at least once a year unless inspections demonstrate that cleaning is not necessary.</p>	X	X	X		X	Public Works

GOODHOUSEKEEPING AND POLLUTION PREVENTION FOR MUNICIPAL OPERATIONS

BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) WHAT WE WILL DO AND HOW WE WILL DO IT	BMP INTENT WHY WE WILL DO IT	MEASURABLE GOALS AND OUTCOMES HOW WE WILL MEASURE EFFECTIVENESS	BMP IMPLEMENTATION TIMETABLE WHEN WE WILL DO IT					WHO WILL DO IT
				PERMIT YEAR					
				1	2	3	4	5	
MO4	Implement Stormwater Pollution Prevention Plans (SWPPPs) and Self-Inspection Checklists for Public Works Corporation Yards	To reduce pollutants in stormwater runoff by preventing the discharge of pollutants from County Public Works Corporation Yards	<p>MO4A: Develop and implement SWPPPs for Public Works corporation yard.</p> <p>MO4B: Use a self-inspection checklist to conduct annual inspections.</p> <p>MO4C: Track the number and type of nonconformances and response time for preventive and corrective actions. Respond to all instances of noncompliance and implement corrective actions on 100% of noncompliance issues.</p>	X	X	X	X	X	Public Works
			X	X	X	X	X		
			X	X	X	X	X		
MO7	Monitor hazardous materials storage and spill prevention and control procedures for stormwater pollution prevention in City facilities.	To reduce the possibility of pollutants entering the County storm sewer system from hazardous material storage or spills from City facilities.	<p>MO7A: Audit existing hazardous materials storage and spill prevention and control procedures and practices for stormwater pollution prevention requirements.</p> <p>MO7B: Include checks for proper hazardous materials storage and spill prevention on the self-inspection checklist.</p>	X	X	X	X	X	Public Works
			X	X	X	X	X		

GOODHOUSEKEEPING AND POLLUTION PREVENTION FOR MUNICIPAL OPERATIONS

BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) WHAT WE WILL DO AND HOW WE WILL DO IT	BMP INTENT WHY WE WILL DO IT	MEASURABLE GOALS AND OUTCOMES HOW WE WILL MEASURE EFFECTIVENESS	BMP IMPLEMENTATION TIMETABLE					WHO WILL DO IT
				WHEN WE WILL DO IT					
				PERMIT YEAR					
				1	2	3	4	5	
			MO7C: Report the number of noncompliances and preventive and corrective actions implemented. Respond to all instances of noncompliance and implement corrective actions.	X	X	X	X	X	
MO8	Implement procedures to prevent stormwater runoff pollution from City vehicle fuel dispensing and maintenance facilities.	To prevent stormwater runoff pollution from City vehicle fuel dispensing and maintenance facilities.	MO8A: Review vehicle maintenance and fueling procedures and practices for stormwater pollution prevention BMPs including, but not limited to, proper material storage and spill prevention and control, proper cleaning procedures, proper material disposal, and oil recycling. MO8B: Revise procedures and retrain employees based on findings. MO8C: Inspect for compliance on an ongoing basis.	X					Public Works
				X	X	X	X	X	

GOODHOUSEKEEPING AND POLLUTION PREVENTION FOR MUNICIPAL OPERATIONS

BMP ID#	BEST MANAGEMENT PRACTICES (BMPS) <i>WHAT WE WILL DO AND HOW WE WILL DO IT</i>	BMP INTENT <i>WHY WE WILL DO IT</i>	MEASURABLE GOALS AND OUTCOMES <i>HOW WE WILL MEASURE EFFECTIVENESS</i>	BMP IMPLEMENTATION TIMETABLE					<i>WHO WILL DO IT</i>
				<i>WHEN WE WILL DO IT</i>					
				PERMIT YEAR					
				1	2	3	4	5	
MO9	Implement procedures to prevent stormwater runoff pollution from City vehicle and equipment washing.	To prevent stormwater runoff pollution from vehicle and equipment washing.	MO9A: Maintain runoff systems at least semi-annually (two times per year).	X	X	X	X	X	

SECTION 8: MONITORING AND REPORTING

The NPDES Phase II Final Rule and the MS4 General Permit require that the City as a Permittee report annually on the progress of SWMP implementation. The City must track and assess its program to ensure BMP effectiveness and must conform to other monitoring requirements that may be imposed by the RWQCB.

Monitoring Progress and Reporting

Program monitoring will be conducted via coordination and communication between all City departments involved with SWMP implementation. Each City department/division will be responsible for the tracking of BMPs for which they have been given responsibility. Results of BMP implementation and success measures will be documented by each responsible party and communicated to the Regulatory Compliance Division of the Utilities Department for evaluation and consideration. BMPs and their associated Measurable Goals may be adjusted if necessary. Any proposed changes to the SWMP will be presented to the Central Coast Water Board, along with justification for the change.

Water Quality Monitoring Program

A series of key water quality challenges have been identified by the Central Coast Water Board (2008b, included in Appendix B), which include:

- Waterbodies impaired by pathogens, nutrients, pesticides, and un-ionized ammonia (see footnote on page 2-9).
- Areas vulnerable to hydromodification from new development and redevelopment.
- Co-mingling of polluted storm water and agricultural tailwater in storm drains.
- Accumulation of trash in storm water facilities such as detention basins and channels.

To properly address challenges, the City intends to improve on its current Water Quality Monitoring and Reporting Program. The primary goals of the program will be determining (1) the source of pollutants (pathogens, nutrients, pesticides, (2) the contribution agricultural activities have on water quality within the City's MS4; and (3) the contribution urban runoff has on water quality within the City's MS4.

The new Monitoring and Reporting Program for the City will be implemented better understand and identify the areas within the City that are impacted with pollutants from urban runoff. The City expects this Program to evolve and change as a result of each monitoring event and intends to revise the Program accordingly. With the first storm event

of Year 1, sampling will be performed in three watersheds and results will be analyzed. A second storm event will initiate sampling in the other three watersheds and results will be analyzed. During Year 2, the same sequence will be followed and results compared. This approach will accomplish two things: (1) the City will begin to identify more clearly what is urban runoff and what is contributed from the County and agricultural fields. In Year 3 (and subsequent years) this knowledge will help the City to identify specific sites for sampling purely urban runoff and specific BMPs will be added or deleted to the Program accordingly.

Annual Report and Compilation of Data

The City is required to prepare and submit an annual report to the Central Coast Water Board. The purpose of the annual performance review is to evaluate (1) the SWMP's effectiveness, (2) the implementation of the SWMP, (3) the status of measurable goals, (4) the effectiveness of BMPs, and (5) improvement opportunities to achieve MEP.

The State has provided an Annual Report Guidance Document (March 5, 2004) to assist Small MS4s with evaluating their storm water programs and reporting the status of measurable goals. The guidance document offers specific direction on completing the suggested Annual Report Form; however use of the provided form is not a requirement, as MS4s may choose to comply with the General Permit's annual report requirements by using their own format. The City intends to provide summaries of data in tabular form. Data such as number of employees trained, number of educational materials distributed, number of construction sites inspected, etc. will be presented in summary tables.

The General Permit requires the City to report

- The status of compliance with permit conditions;
- An assessment of the appropriateness and effectiveness of the identified BMPs;
- The status of the identified measurable goals;
- Results of information collected and analyzed, including monitoring data, if any, during the reporting period;
- A summary of the storm water activities the Permittee plans to undertake during the next reporting cycle;
- Any proposed change(s) to the SWMP along with a justification of why the change(s) are necessary; and
- A change in the person or persons implementing and coordinating the SWMP.

The annual report will focus on a summary of progress and discuss any proposed changes to the SWMP the City sees as necessary in order to achieve the MEP standard. Changes to the annual reporting format from year to year will be appropriately explained with the goal being to clearly present program effectiveness and progress, discuss program adjustments, and provide response to challenges in implementing the SWMP. Upon submittal to the Central Coast Water Board, the City's annual report will be posted on the City's website for public information.

Pursuant to the General Permit, the City will retain storm water records for 5 years. Each department responsible for implementing substantive elements of the SWMP will be instructed to keep their records for 5 years. These records will be the source of compiled data contained in the Annual Report.

NON-COMPLIANCE REPORTING

If the City has any instances of noncompliance with the General Permit, the Director of Utilities will notify the Central Coast Water Board within 30 days, without creating any delay to clean up efforts. The notification will identify the non-compliance event, an initial assessment of any impact caused by the event, immediate actions taken, and/or a time schedule indicating when compliance will be regained.

The Department of Public Works has the mission of achieving compliance with federal, state and local environmental regulations. The three key City departments involved in the implementation of the SWMP are the Department of Public Works, the Community Development and the Department of Building and Fire. The department responsible for each BMP and the roles for each of the key departments are described below.

The Department of Public Works manages the City's roads and the majority of the drainage facilities. The department also operates the water system and sanitary sewer collection system within the SWMP coverage area. In addition, the department manages construction projects on City roads and utility systems. The Department of Public Works conducts plan review for all private development projects that propose grading or drainage changes and inspects all privately constructed facilities intended for dedication to the public.

The Community Development Department oversees private development projects. In addition, the Department develops and manages the General Plan, Specific plans, Development Code and CEQA Compliance. The Department will participate in the implementation of the City's SWMP by ensuring compliance with pre/post distributing public education and outreach materials to the development community, and by developing and implementing land use and infrastructure policies and programs that benefit stormwater.

The Department of Building and Fire issues building permits for residential and commercial construction projects. This Department also includes the Neighborhood Services Program, which provides code enforcement. The Department will participate in the implementation of

the City's SWMP by implementing BMPs and by distributing educational materials to developers and contractors. They will also be enforcing the City's Municipal Code by pursuing and investigating potential violations.

The Environmental Health Services Division of the Department of Public Health works to protect the health of the community by preventing the transmission of disease and exposure to harmful levels of environmental contaminants. County Environmental Health Services works with organizations, businesses and regulatory agencies to protect the overall health of residents and visitors by preventing the transmission of disease and exposure to harmful chemicals and microbes in the environment. Environmental Health programs address issues related to: drinking water, recreational water, food safety, indoor mold abatement, lead abatement, liquid and solid waste, water well contamination, hazardous materials and wastes, vector surveillance, land use hazards, and housing and institutions. Environmental Health will assist in the implementation of the Illicit Discharge Detection and Elimination minimum control measure BMPs.